

L E E D S M E T R O P O L I T A N U N I V E R S I T Y
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**The Role of an Organizational Futurist in
Integrating Foresight into Organizations**

A synthesis presented

by

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Abstract

The difficulties in integrating foresight into organizations suggest an opportunity for exploring a new organizational futurist role. The published works introduced this role and explored its feasibility along two principal paths: positioning and credibility. These works were critically reviewed to identify gaps and inform new research questions.

A first gap was that the narrow focus on positioning missed opportunities for a broader view of integration. An Integration framework was developed to re-contextualize the activities involved in integration. A second gap was that an emphasis on practice and action missed opportunities to gain insight from a more informed theoretical approach. A social constructionist perspective was adopted to provide an epistemological orientation to the work.

Addressing these gaps provided a firmer foundation upon which to identify and investigate new research questions. The first research question explored the connection of the organizational futurist to the foresight field. The second investigated ways for the organizational futurist to be more effective in bringing about successful outcomes. The third looked at the potential for institutionalizing foresight in organizations.

Contributions to knowledge include:

1. The development of the Integration framework maps the process and roles involved in foresight integration.
2. Making a case that the organizational futurist adopts a social constructionist perspective to guide the process of foresight integration.
3. Making a case that the development of the foresight field toward professionalization could be an important influence for aiding the organizational futurist role.
4. The development of an Outcomes framework provides a useful mechanism for the organizational futurist to stimulate a dialogue and discourse about successful outcomes for the integration of foresight.

5. Making a case that the organizational futurist adopts a discursive approach to institutionalization that builds from the periphery to the core of the organization.

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And finally, thanks to the many students and alums I've had the pleasure of working with at the University of Houston's Futures Studies program, and for those yet to arrive.

Declaration

I confirm that this thesis is my own work and that all other sources of work referred to have been properly referenced. I confirm that this thesis has not been submitted for a comparable academic award.

Andy Hines

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List of submitted worksⁱ

Enhancing positioning path

1. (1999) with Louise Trudeau. Futurists on the “inside:” the state of practice of organizational futurists. **Futures Research Quarterly**, 15 (4), Winter, pp.49-62.
2. (2001) with Kerry Kelly & Scott Noesen. Viral Futures at Dow. **Futures Research Quarterly**, Fall, pp.59-66.
3. (2002) A practitioner’s view of the future of futures studies. **Futures**, 34 (3-4), pp.337-347.
4. (2003a) An audit for organizational futurists: ten questions every organizational futurist should be able to answer. **foresight**, 5 (1), pp.20-33.
5. (2007) with Peter Bishop. Chapter 6. Acting in **Thinking about the future: guidelines for strategic foresight**. Washington, DC, Social Technologies, pp.191-229.

Enhancing credibility path

6. (1994) with Joseph Coates & John Mahaffie. Technological forecasting: 1970-1993. **Technological Forecasting & Social Change**, 47 (1), pp.23-33.
7. (2003) The futures of futures: a scenario salon. **foresight**, 5 (4), pp.28-35.
8. (2004) The history and development of the Association of Professional Futurists. In: Slaughter, R. **The Knowledge Base of Futures Studies, Professional Edition**. Indooroopilly, AU, Foresight International.
9. (2007) with Peter Bishop & Terry Collins. The current state of scenario development: an overview of techniques. **foresight**, 9 (1), pp.5-25.
10. (2009) How accurate are your forecasts? more accurate than you might think. **World Future Review**, 1 (5), October/November, pp.5-22.

ⁱ The submitted works are organized into two themes or paths: the first is positioning for a more client-centred approach; the second is enhancing credibility by promoting the field and identifying and promoting high-quality work.

Chapter One: Synthesis and critique of published works

1.1 Introduction

The question of how to integrate foresight into organizations has dominated my twenty-plus years of research and practice as a professional futurist. My direct experience with the difficulties of getting foresight integrated, that is melded with and part of the organization's culture and work processes, has driven me to explore "why" and "what might be done about it."

This work assumes applying the concepts and methods of foresight will enable organizations to more effectively anticipate and influence the future, and work toward their preferred futures. It recognizes, however, that it is an assumption. Many organizations do not seek the help of foresight or professional futurists. Gavigan & Scapolo (1999) observed that over the past 30 years, much strategy and policy-planning work has been conducted without using the foresight label, in some cases purposely avoiding it because it was in disrepute in planning circles. Nor has the case been decisively made that foresight can deliver on this promise for those who do use it.

A recent response to the "why so difficult" question was offered by van der Steen et al. (2011, p.337) in suggesting that foresight "delivers a type of knowledge that is difficult to apply in organizations," because there is a mismatch in timeframe such that the organization and its members have difficulty in fitting foresight findings into existing decision-making processes. This creates a gap between foresight and regular organizational processes that cannot be easily bridged.

They go on to suggest that "in futures studies it is necessary to maintain a fundamental distance from the everyday flows, agendas and processes in the organization" (van der Steen et al., 2011, p.338). While agreeing with the gap notion, I propose that the prospects for foresight integration may be improved with an organizational futurist immersed in the centre of these "flows" and aware of what "has already been constructed as 'real and good' and is 'in history'" (Hosking, 2011, p.55). Thus the organizational futurist role, rather than eschewing politics and power relations, studies, understands and uses them to the advantage of integrating foresight.

I became aware of this gap as a consulting futurist in the 1990s as clients consistently reported back their inability and ineffectiveness in applying our work internally. They usually claimed to have understood the work themselves, but that their internal clients

neither understood it nor saw it as useful. Discussions with colleagues and clients did not produce sufficient insight into just what the problem was. This thesis proposes that an organizational futurist role could help bridge this gap--thus, the guiding research question is:

“What is the role of an organizational futurist in integrating foresight into organizations?”

The organizational futurist role

Finding a role as an organizational futurist² proved challenging, as a 1997 job search turned up no such positions. These roles may have existed informally, but for my purposes that role had to be crafted. I later reviewed the Association of Professional Futurist (APF) membership lists when I was Chair or a Board Member and found that the percentage of non-student members who fit the organizational futurist category was:

- 21% of 28 members (no student members) in 2002
- 17% of 201 non-student members in 2007
- 18% of 197 non-student members in 2010.

These figures suggest that organizational futurists are under-represented--consulting futurists have been much more prominent in the APF.

I set about crafting an organizational futurist role using an ethnographic/action research approach to explore whether it could help to more effectively integrate foresight. The published works relaying this experience were principally exploratory in providing a feasibility study on whether the organizational futurist role seemed promising.

There are many headings under which the work described here, and those who do it, can fall. For this work, the practitioners are “futurists” working within the field of “foresight.” There are legitimate questions on whether futurists are professionals or whether foresight is a profession. Futurist Verne Wheelwright (2000, p.319) argues that, “By nearly any traditional academic standard, ‘Futurist’ or ‘Studies of the Future’ [aka “foresight”] is not a profession. There are no professional standards, no code of ethics,

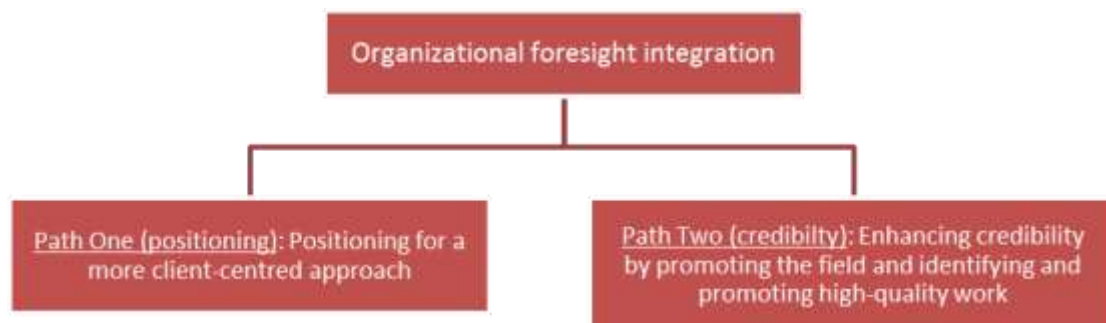
² An “organizational futurist” is defined as a futurist working as an employee for a single organization with responsibility for foresight activities.

no professional organization [no longer the case] and little public recognition or acceptance.” This issue is explored further in Section 1.3.2.

The research captured in the published works followed two paths.

- The positioning path centred on ways to position³ a foresight capability internally, suggesting that organizational futurists would benefit from adopting a more client-centred approach.
- The credibility path focused on ways to improve the perception of the quality of foresight work, suggesting that organizational futurists would benefit from a thriving field and doing more systematic evaluation of their work and sharing it with clients.

Figure 1. Two paths to organizational foresight integration



A summary of each of the ten published works, including the methodologies, key issues, contribution to understanding, and the questions they raised is appended in Table A1.

The first path found that organizational futurists too often left it to clients to figure out how to apply the work, which often led good work to languish. Coates (2001) lamented that far too little has been written about how foresight is actually conducted or used in organizations. The APF added that “we’ve got to highlight good futures work” (Hines, 2003b, p.35). My idea was to develop an organizational futurist role occupied by someone with expertise as a professional futurist and working “inside” with clients that could perform a translation role (Hines, 1999a; 2002a). I took two jobs inside large organizations--The Kellogg Company and The Dow Chemical Company--developing this role (Hines, 2003a, p.5).

³ Positioning is operationally defined as actively advocating for greater use of foresight, including marketing, branding, and politicking.

1.2 Research approach

The issue of futurists needing to pay greater attention to their theoretical orientations has recently been raised (Mermet, Fuller & van der Helm, 2009; Miller & Poli, 2010; Oner, 2010; Tiberius, 2011). Cunliffe (2011) provides a useful framework for this challenge of situating philosophical commitments and the logic behind the methods and knowledge claims of research. Her update of Burrell & Morgan's (1979) seminal work on paradigmatic perspectives suggests instead the use of knowledge problematics that tie together ontology, epistemology, and methodology, drawing upon Lather's (2006, p.51) notion that this approach provides, "a cross-disciplinary sense of where our questions come from, what is thinkable and not thinkable in the name of social inquiry in particular historical conjunctions."

The beauty of Cunliffe's revision is that it addresses the confining nature of Burrell & Morgan's four paradigms and opens up possibilities for cross-disciplinary approaches that more easily navigate across perspectives. It is compatible with an emerging strand of thinking in foresight, captured in a recent special issue of *Futures* edited by Inayatullah (2010, p.99) noting that "the strength of futures studies is its epistemological pluralism." The research underpinning the published works found this pluralist approach useful in meeting organizational culture and members where they stand, that is, having the epistemological flexibility to understand and accommodate different positions to aid understanding, sense-making, and a collaborative approach to constructing meaning--the organizational futurist audit being a prime example (Hines, 2003a).

The inter-subjective problematic adopted for this research is summarized as:

- Ontology: social reality is relative to interactions between people in moments of time & space
- Epistemology: social construction with an emphasis on in situ knowing-from-within, with the research embedded and embodied
- Methodology: principally ethnographic and drawing upon dialogic action research, but also including more conventional methods such as content analysis, case studies, issue identification and analysis, literature review, scenario planning, interviewing, questionnaires, historical analysis, and critical analysis (see Table A1 for methods used with published works)

A social constructionist perspective, which fits with Cunliffe's inter-subjective problematic, characterizes the approach taken for this work. It reflects the belief that

gaining insight into what is “going on” in an organization is best discerned by participating in the dialogue and discourse that is constructing the organization’s reality vis-à-vis foresight. It acknowledges that reality (both present and future) emerges inter-subjectively from people’s constructions, but at the same time allows for the existence of an external reality independent of our cognition, reflecting Bhaskar’s (1989, p.13) view that ontologically, things “exist and act independently of human activity” and therefore they are not infinitely pliable according to the vicarious play of the transitive language-games. In other words, the research sees the crucial importance of language as constructor of reality, but acknowledges a reality outside of it that is useful for research to explore and attempt to understand.

Berger & Luckmann (1967, p.43) observed that an organization’s “social stock of knowledge” supplies “typificatory schemes” for the major routines of daily life. As long as the knowledge works, it is largely unquestioned and “the routines become legitimated” (1967, p.99). The introduction of new ideas, such as foresight, raises questions about the stock of knowledge and the routines and challenges existing interests. The burden then falls on the organizational futurist to offer an alternative approach worthy of legitimation. And this does not happen in isolation, as there are multiple discourses going on at any time competing for attention and potentially offering different solutions.

While Berger & Luckmann (1967, p. 152) note that conversation is the “most important vehicle of reality-maintenance,” it is not sufficient to drive creation of new shared meaning in organizations. Section 2.3.2 below notes that creating of new institutional meaning involves an iterative process involving the formation of texts, narratives, and discourses informed by dialogue.

The organizational futurist role is highly compatible with the key assumptions of social constructionism, as shown in Table 1 below (Gergen, 1985, pp.2-5).

Table 1. Social constructionism and the organizational futurist	
Social construction assumption	Organizational future role
A critical stance toward taken-for-granted knowledge	Key tenet is uncovering and challenging assumptions
Historical and cultural specificity	Need to be “in the mix” in order to be attuned to local conditions
Knowledge is sustained by social processes	Need to collaboratively create the future together
Knowledge and social action go together	Draws upon an action research approach

A note on methodology

It is important to address and critique the nature of the research approach of the published works. It was pursued more from a reflective practitioner approach (Schon, 1983) than a traditional academic research one. The approach acknowledges Gray's (1996) concept of "practice-led" research within the context of formal research for higher degrees, in that my practice provided the foundation for the research questions. A key objective of this thesis, then, is to revisit and critique the published works from a more theoretical academic perspective.

In retrospect, the research in the published works drew upon the social constructionist epistemology noted above. Indeed, there is precedent for adopting a social constructionist perspective to foresight. Fuller & Loogma (2009, p.71) observe that foresight "...is both a social construction, and a mechanism for social construction." My positioning work implicitly took a social constructionist perspective in stimulating a dialogue about what might be useful, generating responses, and working toward shared meaning. Burr's (2003, p.113) text on social constructionism noted that the notion of positioning (Davies & Harre, 1990; van Langenhive & Harre, 1999) acknowledges the "active mode in which persons endeavour to locate themselves within particular discourses during social interaction."

In both of my organizational futurist roles, I regularly initiated dialogues with new potential internal clients about my foresight capabilities, learned about their problems, and in many cases found a match. Gergen (1995, p.37) observes that "if others do not recognisably treat one's utterance as meaningful, if they fail to co-ordinate themselves around such offerings, one is reduced to nonsense." Schon (1983, p.261) adds that "a participant's credibility behaves like a stock on the stock market, going up or down with the perception of his success or failure." My term for describing my approach was "permission futuring" (Hines, 2003a). When I was able to help with a problem, I leveraged that to ask for permission to explore new problem areas. As Burr (2003, pp.118-119) suggests, "an understanding of positioning and an ability to use it skilfully could be an important tool in a person's efforts to change themselves or their circumstances."

These conversations informed by texts provided a stream of data--along with resulting narratives, and discourses--that provided the foundation for developing interpretive insights, concepts, hypotheses-on-probation, frameworks, and theories elaborated here.

The aim of this research is to increase general understanding of the situation for organizational futurists in integrating foresight rather than showing or proving a cause-effect situation (Turnbull, 2002).

Lofland & Lofland (1995) observed that many research publications emerge out of the researcher's personal biography. The published works drew heavily from my personal experience, often mixing theory and practice. As Gummesson (2000, p.9) observes, theory and practice are typically separated in academic research: "Backed by bits and pieces of theory, the consultant contributes to practice, whereas the scholar contributes to theory supported by fragments of practice." The reflective practitioner approach attempts to put them back together (Schon, 1983). Using an action research approach, theory is linked to practice and practice to theory reciprocally (Yorks, 2005). Schon (2000, p.34) also noted how "the epistemology appropriate to the new scholarship must make room for the practitioner's reflection in and on action."

Denzin & Lincoln (1994, p.325) suggested that qualitative research strategies are rarely used in their pure forms. They describe the process as "bricolage," drawing on a combination of strategies, methods, and materials. Along those lines, my approach relied on a variety of methods noted in Table A1. I worked collaboratively with my colleagues as research participants, using our conversations as inspiration to influence the use of particular methods. The approach drew on Bakhtin's (1986, p.92) notion of dialogism, that is, "living utterances and the two-way movement of dialogue between people in particular moments and particular settings, in which meaning emerges in the interaction and struggle of back-and-forth conversation between people." Shotter (2005) refers to this as "witness-thinking" because our research interweaves talk with action and activities as we develop, work out, and sustain ways to relate to one another in unique moments of time.

This process often produced what are referred to as "hypotheses on probation" (Gold et al., 2011) that involve defensible reasoning from observation to explanation or explanation to action, but can be substituted if more promising ones are found. These and other interpretive insights were shared informally in the day-to-day working of the organizational futurist role. There were more formally shared in one case in a community of practice formed by the author known as the Explorer's Network, which provided regular opportunities to reflect and strategize on how to more effectively integrate foresight among a community of practitioners (Hines, 2003a).

Those hypotheses on probation and insights judged most useful were described and discussed in a regular dedicated research column “Hinesight” in the journal **foresight**. The “Organizational Futurist’s Audit paper (2003a) integrated several of these columns and won the Emerald Literati paper of the year⁴ in foresight in 2003. These ideas were also discussed at conferences, workshops, and professional forums (Hines & Trudeau, 1999; Hines, 2003b, 2004, 2005; Hines & Bishop, 2007) as well as in publications.

This exploratory approach and its findings are described further in Chapter 1. Chapter 2 reports on a critical analysis of these findings that systematically broke them down and identified and evaluated potential alternative explanations. It noted inconsistencies and gaps in the published works and treated them as sources of potential new research questions. The specific critical approach used, taught at the University of Houston Graduate Program in Futures Studies and developed by Bishop (2011) drawing on Toulmin (2001), is described Section 1.4.

1.3 A conceptual framework of foresight integration

The critical review of my work revealed a gap in understanding and explaining the integration process. Thus I developed a conceptual framework of foresight integration to map the activities involved and link them to roles on the futurist and client side. The framework emerged both deductively from the review of the published works in considering the process and inductively from the critical review process for generating the new research questions. It revealed that my emphasis on positioning was situated in the middle of the integration process, and that future work would benefit from an understanding of the larger context.

Figure 2 below is a conceptual framework consisting of six activities operating across three different levels with various roles on the futurist and client sides. First, Table 2 explores the three levels: field, organization, and individual--with their respective actors (Hines, 1999b; Hines 2002b).

Table 2. Foresight levels and actors

Level	Actors
Field	Foresight field and the various client industries
Organization	Foresight firms and the client firms
Individual	Those actually doing the activities

⁴ See <http://www.emeraldinsight.com/journals.htm?issn=1463-6689&volume=6&issue=5&articleid=1491160&show=html>

Consulting futurist	Works outside and consults to the client firm	Sometimes a sole proprietor Sometimes a member of consulting futurist firm Sometimes with a general consulting firm Members of the foresight field
Organizational futurist	Works for a single client firm	Sometimes the client Sometimes a broker between internal clients and consulting futurists Sometimes does the work as internal consultant for client Members of foresight field
Client	Engages consulting futurists	Part of client organization and industry Initially a champion Sometimes a broker between futurist and client of client Sometimes an organizational futurist; in this case also part of foresight field
Client of the client	End user of the foresight work	Part of client firm and industry Sometimes the direct client

Second, the six sequential activities comprising the integration process are explained in Table 3. “Doing the work” and “evaluating outcomes,” appear twice, once after introducing and again after positioning.

Table 3. Activities in foresight integration	
Activity	Description
1.Publicizing	Raising awareness of foresight capabilities. Also happens at individual futurist and foresight firm level with support from the foresight field.
2.Introducing	The client responds to publicizing and decides to engage, typically a champion persuades an internal client to sponsor a project.
3A. Doing the work	The foresight project is carried out, led by the futurist(s) with support from clients.
4A.Evaluating outcomes	Done formally or informally. If client side judges the project a success, they may spread the word internally and expand potential for more foresight work.
5. Positioning	The organizational futurist develops a positioning strategy to promote the capability.
3B. Doing the work	Project work is now accompanied by positioning work.
4B. Evaluating outcomes	If project and positioning work is judged successful, a discourse around foresight emerges and spreads more widely through the organization.
6. Institutionalizing	The organization provides a formal recognized role, e.g., showing up in formal work processes and/or on the organization chart.

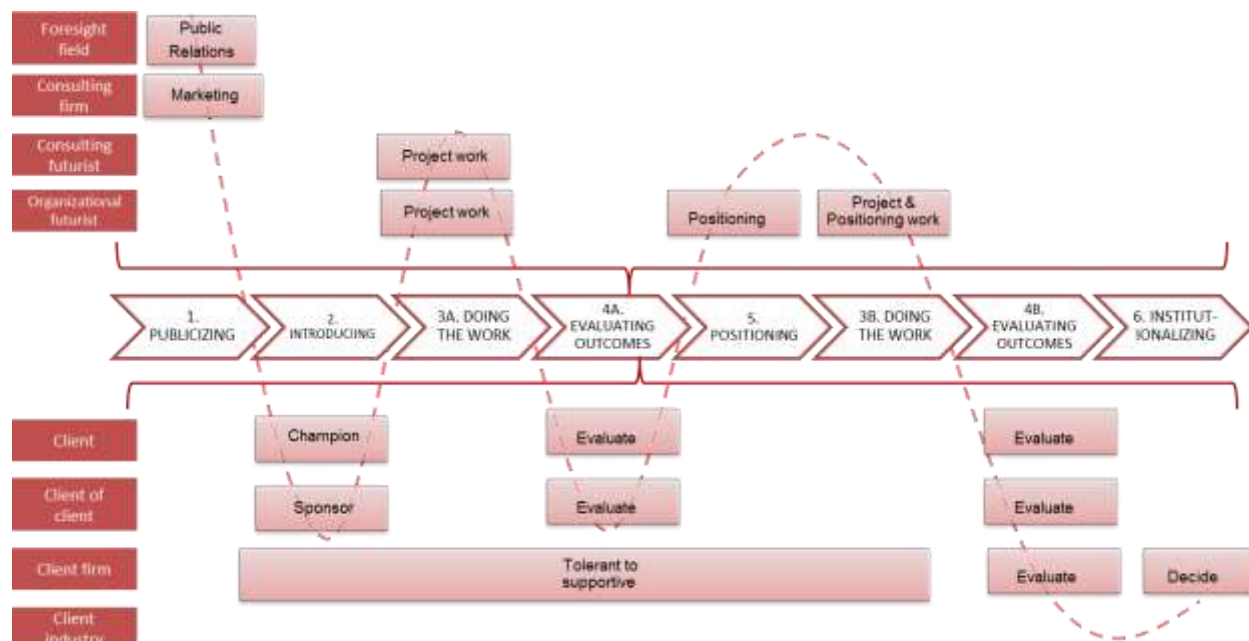
Tables 2 and 3 provide the building blocks for the Integration framework below. The six activities are at the centre, influenced above and below from the futurist and client sides, which each operate on the three levels. Figure 2 indicates where primary

responsibility resides at each step of the process, with the curved line demonstrating how responsibility shifts from the field to the organization to the individual level—and from the futurist side to the client side—during the process. It shows that the foresight field plays a key role in initiating the process by raising awareness about foresight.

It is important to note that while the figure highlights primary responsibility for the sake of clarity, Table 2 notes there are secondary and sometimes tertiary actors involved in each step. For instance, the client firm leadership can play a role ranging from tolerant to supportive early in the process. Tolerant means allowing the foresight work to take place “under the radar” where supportive suggests actively promoting it.

The organizational futurist role could also be placed on the client side, since they are employed by the client. The organizational futurist role in publicizing and introducing is indirect, in that an organizational futurist-in-waiting could champion the role (Hines, Kelly, & Noesen, 2000). That said, the bulk of the organizational futurist’s contribution begins with “doing the work” and proceeds from there along the framework. Figure 2 shows the process and relationships together.

Figure 2. Integration framework



The conceptual framework ties together the positioning and credibility research paths of the published works:

- Introducing, positioning, and institutionalizing activities relate primarily to the positioning path.
- Publicizing, doing the work, and evaluating outcomes activities relate primarily to the credibility path.

1.3.1 Positioning path

Introducing

Introducing typically takes place via a project, although there are cases where a foresight function is commissioned before formal project work is done. In my case at Kellogg's, for instance, I was hired by a team doing "informal" work. In contrast, at Dow Chemical there had been several years of formal foresight activity before I joined (Hines, Kelly & Noesen, 2000).

Positioning

My consulting futurist work in the 1990s with literally hundreds of clients from a wide variety of organizations, industries, agencies, etc., brought home an important lesson: much more thought and consideration would have to be paid to the application of foresight if it was to become more integrated into organizations (Hines, 2002b). In social constructionist terms, I adopted an institutional entrepreneurship approach by generating texts, dialogues, and narratives aimed at influencing discourses about the future (Phillips, Lawrence, & Hardy, 2004).

I eventually produced a diagnostic "foresight audit" to suggest what kinds of questions one should answer to determine one's positioning strategy (Hines, 2003a).

Institutionalizing

My vision was that foresight would ultimately permeate the thinking of the entire organization and formal recognition as a function or small department would best enable that. The goal was to tie into and enhance existing work processes such that foresight became a routine part of organizational thinking (Hines, 2002b; Hines & Bishop, 2007).

Zucker (1987, p.446) notes that "institutional elements commonly arise from within the organization or from imitation of other organizations. Already institutionalized elements

can “infect” other elements in a contagion of legitimacy.” I used the term “viral strategy” to characterize my approach to communicating foresight capabilities to the parts of the organization beyond my initial responsibility (Hines, 2003a).

1.3.2 Credibility path

The credibility path explored the role of professionalization and the evaluation and promotion of foresight work (focusing on technological forecasting and scenario planning). The goal of these works was to help enhance the credibility of organizational futurists. The professionalization works assumed that the field’s move toward professionalization would help the organizational futurist by being able to refer to a reputable source for this relatively novel capability (Hines, 2003b, 2004). The evaluation works assumed that credibility would be enhanced by providing a response to questions about the quality of foresight work through demonstrating the accuracy of previous forecasts and the multiplicity of scenario methods in practice (Hines, 1995; Hines, Bishop & Collins, 2007; Hines, 2009).

The synthesis reconsidered this approach to credibility in two ways. First, the question of quality work and methods was unpacked to identify a larger question of how to discuss successful foresight outcomes (Section 2.2). Second, I judged that quality work and methods to be dependent up the larger question of the professionalization and the prospects for the field as a whole (Section 2.1).

A common source of credibility that foresight lacks as a relatively new field is professional status. The field emerged after World War Two from the military and related think tanks in the US and along a separate path in Europe about the same time (Bell, 2003). It moved into national planning efforts and eventually was adopted by the private sector, with Shell’s use of scenario planning in the 1970s being the most well-known example (Wack, 1985a, 1985b). The APF was founded in 2002 with a goal of creating a “credible profession, thriving professionals” noting that “we are living in critical times for our profession....it’s ours to envision the future of the profession” (Hines, 2003b, pp.32-33).

Table 4 provides a view on the state of professionalization drawing on Gold & Bratton (2003) and Wheelright (2000). Wheelright surveyed 300 random participants from the World Future Studies Federation, the World Future Society, and University of Houston Futures Studies program alumni. The survey questions mixed a focus on individual practice and the field. My analysis, drawing upon Hines (2003b; 2004) and my

subsequent vantage point as Chair or Board Member of the APF through 2010, and the literature review, provides a judgement of yes or no. It suggests that of the ten criteria in Table 4, foresight meets three, and doesn't meet seven. A development favouring professionalization is that while just 54% agreed on the need for a professional association in 2000, one was nonetheless founded in 2002. That said, it is perhaps problematic that 41% preferred not to be identified as futurists, though it may be that the survey design included those who would not likely identify as professional futurists. Based on this analysis, it seems reasonable to conclude that foresight has not yet achieved professional status.

Table 4. Foresight and professionalization criteria

Hodson & Sullivan (2002, p.282)	Freidson (2001, p.180) "ideal-type profession"	Wheelright (2000) drawing on Barber (1965) & Pavalko (1988)	Does foresight meet it?
Specialized knowledge	Specialized work that is grounded in a body of theoretically based, discretionary knowledge and skill that is given special status	Theory and intellectual technique	Yes; 57% agree their practice meets this criterion; Slaughter (2005) attempted to codify a knowledge base
Autonomy	Exclusive jurisdiction created and controlled by occupational negotiation	Autonomy	No; only 30% agreed they had autonomy in using their knowledge vis-à-vis clients
Authority over other subordinate occupational groups	A sheltered position with labour markets based on qualifying credentials of the occupation	[Addressed in "Autonomy"]	No; futurist is not listed as an occupation by the Bureau of Labor Statistics (2010) in the US or the Office for National Statistics (2011) in the UK
A degree of altruism	An ideology that asserts a commitment to doing good and quality	Social values	No; not yet agreed as a field, but 65% agree in their individual practice
	A formal training programme to provide qualifying credentials		No; Hines (2004) notes failure to agree on certification; still the case today
		Sense of community and commitment	Yes; 66% agree

Ethics	No; 61% agree on need; APF and WFSF (World Futures Studies Federation) have not adopted a code of ethics
Standards	No; 62% agree on need; Slaughter's (1999) call for professional standards not yet addressed
Professional association	Yes, APF founded in 2002; 54% agreed on need at the time, before the APF was founded
A new name?	No; 41% preferred not to be identified as futurists; <i>Futures</i> 42 (3) issue with 4 articles citing disagreement on name: Sardar (2010); Masini (2010); Marien (2010); Tonn (2010)

1.4 Generating new questions

The research questions emerged from a critical review process developed at the University of Houston's Futures Studies program by Bishop (2011), drawing on Toulmin (2001). Bishop notes that since conclusions are based on evidence and assumptions, a route to alternative conclusions is to look for alternative evidence and assumptions. I chose the route of investigating the assumptions required to use the evidence at hand and explore alternative assumptions as part of the new research.

The process was to systematically go through each line of the published works looking for alternative assumptions, which were then put into question form, as follows:

1. A first-cut review of each work produced 358 potential new research questions.
2. An initial sort eliminated duplicates and an initial clustering reduced the number of questions to 324 in 22 categories.
3. The categories were re-clustered into what would become the Integration framework. The idea of crafting an Integration framework first emerged in Step 1. Thus the clustering was influenced by a rough notion of what the key activities might be, producing six categories with sub-categories.
4. The re-sorted questions were then reduced to 242 by eliminating those that did not seem particularly promising research questions.

5. The remaining questions were then prioritized using three criteria:
 - Was the question not addressed in previous work?
 - Would answering it help organizational futurists, clients, and the field?
 - Did it seem reasonable to answer?
6. This brought the number to 39. A fourth prioritization criteria was introduced:
 - Did the resulting “portfolio” of questions provide balanced coverage across the Integration framework?

This process reduced the list to the three research questions below. Table 5 below lists the research questions and notes their link to the Integration framework. The contributions to knowledge associated with each research question are described in Chapter 4.

Table 5. Research questions	
Integration Framework Activity	Research Question
Publicizing/Introducing	To what extent do developments in the foresight field influence the role of the organizational futurist in integrating foresight into organizations?
Evaluating outcomes	What are the ways in which organizational futurists can be effective in bringing about successful outcomes?
Institutionalizing	To what extent can foresight knowledge and understanding become institutionalised in organizations?

Exploring the first research question revealed that the organizational futurist role is dependent on, or at least influenced by, developments in the foresight field. The primary influence of the publicizing and introducing activities from the Integration framework derives from the field. The field’s publicizing activities influences whether the organizational futurist role exists and grows. The growth in credibility for the field may in turn provide credibility for the organizational futurist. Section 2.1 characterizes the current situation of the field as a means for offering clues as to how much help might be available.

The second research question investigates ways for the organizational futurist to discuss the question of what successful foresight means. Section 2.2 proposes an Outcomes framework for this purpose--recognizing that there is not a single right answer and acknowledging the importance of context. The framework is intended to provide organizational futurists with a mechanism for initiating and framing a discussion of outcomes and success. Greater clarity on that topic is assumed to improve the

prospects for integration, but that assumption remains to be tested. In addition, the literature search identified two new models for evaluating foresight work that are promising moves toward promoting a discourse on the topic.

The third research question focuses on the day-to-day process of foresight integration by drawing upon institutional theory. Institutionalization bears close resemblance to integration; for this work they are distinguished by referring to integration as the process of making greater use of foresight, while institutionalization represents a goal or outcome of that process in being formally acknowledged as an organizational capability or function. The use of the term “integration” allows for using foresight internally, and perhaps more deeply, but without the explicit aim of institutionalizing. It accommodates futurists who prefer the outsider role (see Figure 4) and are concerned about the possibility of insiders compromising their views in pursuit of institutionalization.

Section 2.3 observes that while the Integration framework identified key sets of activities involved in integration, it did not specify how movement occurs along the framework. The social constructionist perspective suggests that meaning-making emerges from relationship and dialogue. Institutional theory draws upon this perspective to provide a more micro view of what the process involves. These perspectives arm the organizational futurist with an approach to move the integration process along.

Chapter 2 describes what was learned from addressing these questions by doing a literatures search and analysis.

Chapter Two. Researching the new questions

A literature review of the entire catalogue of five leading foresight journals-- Technological Forecasting & Social Change, Futures, Futures Research Quarterly/World Future Review, Foresight, The Journal of Futures Studies--was conducted for perspective on the research questions. Literature from other fields was brought in as appropriate.

2.1 Publicizing & introducing

To what extent do developments in the foresight field influence the role of the organizational futurist in integrating foresight into organizations?

This research question explores the beginning of the Integration framework--the publicizing and introducing activities. The immediate question regarding them is "of what?" What exactly is foresight? A striking observation from the literature review was the lack of consensus over what the field should be called, what it entails, and where it stands. The published works' focus on professionalization overlooked these fundamental questions about field. An investigation into these questions could provide useful input to the field and those promoting professionalization, which in turn could benefit the organizational futurist.

2.1.1 Naming

The issue of what to call the field has received intermittent attention over the years (Cornish, 1977; Horton, 1999; Becker, 2002; Schwarz, 2005; Amsteus, 2008; Sardar, 2010; Masini, 2010; Marien, 2010; Tonn, 2010; Rohrbeck, 2011). There does appear to be some movement toward "foresight" as the name:

- A Google (2011) trends comparison of the search volume of foresight and futures studies found that futures studies was only mentioned 2% as frequently as foresight from 2004 to the present.
- There is a small trend toward academic programs being named foresight/strategic foresight rather than futures studies; of 16 dedicated graduate programs, three of the four newer ones are called strategic foresight, and the longest running program at the University of Houston is seeking to change from futures studies to foresight (Ramos, 2002; Acceleration Studies Foundation, 2011).

- The many European national technology foresight programs use the term, which emerged somewhat serendipitously as shorthand for a wide range of future-related activities (Martin, 2010).
- Foresight is often accompanied with a descriptor, thus social foresight (Slaughter, 2004), corporate foresight (Daheim & Eurz, 2006), adaptive foresight (Eriksson, 2008) strategic foresight (Slaughter, 2009), and technology foresight (Martin, 2010).

Many thoughtful and useful definitions of foresight have been proposed but consensus has not been achieved (Amsteus, 2008; Coates, 2010; Rohrbeck, 2011).

2.1.2 Setting boundaries

The boundary question is not new. Amara (1984, p.401) lamented that “Futures Research is currently in a state of abeyance and may well be approaching a critical crossroad. In order to survive it needs to dispense with its tendency to be ‘all things to all people’, dealing with almost any activity that involves the future, and define for itself a unique and synthesizing role within a larger forecasting and planning framework.”

Nor is it limited to foresight. For instance, Gold, Rodgers & Smith (2003, p.440) note: “...two crucial issues for the claim of HRD professionalism. First, what is the HRD field of competence? Second, who negotiates the boundaries and has exclusivity been established? Clearly, with respect to the first issue, there are continuing debates about the field of HRD, how it is constituted and what exactly its ‘objects’ are.”

The multi-disciplinary nature of foresight, while a strength for practice, creates a challenge in terms of boundary-setting. Schultz (2002) observed that foresight is “inter-, trans-, and meta-disciplinary” and noted influences from philosophy, political science, history, international relations, systems science, economics, sociology, psychology, and literature. Boundary-setting is also difficult because much foresight work takes place without professional futurists. Kuosa (2011, p.332) notes that a “futures orientation is really not “owned” by futurists alone and this leads to fragmentation. Disciplines have their own interest in the future and their own ways of producing knowledge about it.

So, is technology forecasting part of foresight? Operations research? Technology assessment? Strategic planning? Some scenario planners have set themselves up as “forecasters” or “scenarists” rather than futurists. Some futurists have crafted names for their work as a way to carve out a professional niche, for example, Micic (2006, p.20)

coined “future management” as a bridge between futures research and strategic management.

Addressing the “what’s in” question is important because clients seeking expertise will often look for it at its source. If they are looking for strategic planning help, for instance, will they turn to futurists as the central source? Will strategic planners themselves identify as futurists? Table 6 summarizes several attempts that have been made to define the field.

Table 6. Proposals to organize the field of foresight		
Author	Type	Categories
<i>Historical, evolving paradigms/perspectives</i>		
Inayatullah (1990)	Traditions/perspectives	Predictive, interpretive, critical and action learning
Mannermaa (1991)	Research paradigm	Descriptive, scenario, and evolutionary paradigm
Slaughter (2004)	Traditions/perspectives	Empirical and cultural, critical, integral
Kuosa (2011)	Paradigms	Prediction, management, and dialectic thinking
<i>Static perspectives</i>		
Amara (1981)	Types of futures	Possible, probable and preferred
Linstone (1981)	Multiple perspectives	Technical, organizational and personal
Marien (2002a)	Futurist’s thinking	Probable futures, possible futures, preferable futures, present changes, panoramic views, and questioning
<i>Approaches/methods</i>		
Hines & Bishop (2007)	Foresight approach (activities)	Framing, scanning, forecasting, visioning, planning, and acting
Von der Grach (2010, p.384) citing Daheim & Uerz	Methodological evolution	Expert-based foresight, e.g., the Delphi; Framework-based foresight, e.g., quantitative forecasting; trend-based foresight, e.g., environmental scanning; context-based open foresight
<i>Content^b</i>		
Slaughter (2005)	Knowledge base (core elements of the field)	Futures concepts and metaphors, futures literature, futures organisations, futures methods and tools, images and imaging processes, and social innovations

It reveals that the most common approach is using paradigms or perspectives and how they have evolved over time. The most comprehensive attempt by Slaughter (2005) developed a knowledge base by gathering key writings about the field, its methods, as well as “content” knowledge, though there is disagreement about which are “key.” The

⁵ The author just published *Teaching about the future: the basics of foresight education*. Houndmills, UK, Palgrave Macmillan, 2012 with Peter Bishop. It also offers a conceptual description of the field as taught by the University of Houston’s Futures Studies program.

challenge ahead is not to select the “right” approach, but to gain agreement on how they fit together. Chapters 3 and 4 discuss the potential for exploring a foresight “ecosystem” to address this challenge.

2.1.3 Current standing

Integrating is an issue that any new capability or field faces. Organizations want to know what the capability purports to do and then assess whether it believes it can do it. And in organizations, it is always easier to not do something than to try something new (Kleiner, 1996; Kahane, 2004; Hines & Bishop 2007, pp.228-229). Legitimacy and credibility questions are inevitable. Slaughter (1999) points out that all fields must pass through a process of academic, professional and social legitimation to be taken seriously. Table 7 is my analysis of where foresight “stands,” based on how it measures up to standard definitions, from least to most complex.

Table 7. Where does foresight stand?		
Definition (Cambridge Online Dictionary)		Meet the criteria
Capability	the ability to do something	Yes (Hines, 2002b)
Field	an area of activity or interest	Yes (Hines, 2002b)
Discipline	a particular area of study, especially a subject studied at a college or university	Maybe; 16 graduate degree programs globally
Profession	any type of work which needs special training or a particular skill, often one respected because it involves a high level of education	No, see Table 4 and description in 1.3.2

The literature review suggests foresight meets the capability test even with debate over what the “something” is. It also meets the definition of a field, but with some dissension. Marien (2002a, pp.261,264) for instance, argues: “....for those who persist in proclaiming that there is a ‘field’, I simply ask that you tell me who is in it, and who is not, and why.” Whether foresight is a discipline is a trickier question. It was noted in Section 2.1.1 that there are 16 graduate degree programs globally. There are about two dozen universities offering a course or courses--it could be more or less depending on how one defines a foresight course (Ramos, 2002; Acceleration Studies Foundation, 2011). It is not clear if that represents sufficient critical mass for a discipline.

Table 4 above suggested that foresight has not yet met the criteria of a profession. But other professions have been in similar positions at this point in their development. Henshel (1981) explored this question thirty years ago and found interesting parallels. In

short, the “marginal respectability” of foresight back then was very similar to that of the social sciences in their early years. Sociology began with the rather grandiose claim that it was going to create a science of society using natural science methods. Henshel suggested the foresight may also have been guilty of grandiose claims about oversimplifying the study of the future. He found that new fields tend to make ‘imperialist’ claims to large territories, yet colonize only a fraction of the area claimed....sociology often became the study of what was left over” (Henshel 1981, pp.404,410).

The situation hasn’t substantially changed in the thirty years since Henshel suggested that foresight might be on a slow path to professionalism. The continuing confusion around what foresight is and what professional futurists are makes it difficult to determine whether the field is growing or not. Slaughter (2009, p.7) observes that it is “impossible to quantify the number of futurists in the world, mainly because of the lack of an agreed definition.”

For the field to continue its journey towards becoming a profession, Fournier (2001, p.71) suggests that it will have to take an active part in its construction. She notes the example of accounting, which “took an active part in the construction of the organizational and social order it now claims to know.” In other words, the boundaries of foresight will not somehow be “revealed,” but, in social constructionist terms, must be proactively developed as part of an on-going dialogue process between futurists and clients. As the field has wrestled with these questions, clients have been left with what Shotter (1993, 148) calls a “chaotic welter of impressions.” He advises avoiding a “Neo-Darwinian struggle” for the correct view or approach but rather to create “a continuous, non-eliminative, multi-voiced conversation” (Shotter, 1993, p.9). Developing such an on-going dialogue is included as part of the research agenda in Chapter 4.

2.2 Evaluating outcomes

What are the ways in which organizational futurists can be effective in bringing about successful outcomes?

It has been observed that “futurists have a hard time defining success” (Hines, 2003b, p.35). This section proposes an Outcomes framework for organizational futurists to use in stimulating a discourse about successful foresight outcomes. Gaining consensus on successful outcomes is a logical precursor to refining explicit measures--in other words, agree on what success is before measuring it.

The Outcomes framework could also be used for similar discussions within the foresight field—it could help the field build a consistent discourse on successful outcomes, which in turn could inform and benefit future organizational futurists.

2.2.1 Attempts at defining successful outcomes

Probably the most common current position among futurists is to rely on the marketplace--being asked back--as an indicator of success (Coates, 2000). Another school of thought suggests that not being asked back is a measure of success! It argues that futurists ought to challenge their clients' fundamental assumptions in a way that makes them uncomfortable to the point where they don't want the futurist to come back (Buchen, 2005).

A weakness of a confrontational approach is that it can slow or eliminate dialogue and progress toward shared meaning. The social constructionist perspective suggests that dialogue with its accompanying creation of texts and narratives and building of discourses, is vital to creating the shared meaning that would underpin any notion of "success." Dialogue is distinguished from discussion in its intent to generate new understanding. Bohm (1995) observes that in dialogue, "there is no attempt to gain points, or to make your particular view prevail," where in discussion "people are batting the ideas back and forth and the object of the game is to win or to get points for yourself." Nonetheless, organizational members will employ all sorts of rhetorical devices to persuade others, such as metaphor, simile, euphemism, irony, personification, rhetorical questions, but with the aim of generating new understanding rather than seeking to "win" (Watson, 1995). [see also 2.3.2 The Discursive model of institutionalization]

The Outcomes framework seeks to avoid the temptation of trying to pin down a simple clean definition of success to fit all cases. Rather it attempts to aggregate broad areas of agreement to help provide a coherent framework for dialogue. The intent is "changing the style of future argumentation" (Shotter, 1993, p.18). As Phillips, Lawrence, & Hardy (2004) point out, discourses that present that a more unified view of some aspect of social reality have a greater chance of being accepted--"reified and taken for granted" in their terms--than those where the texts contradict each other or are less clear.

Forty sources were identified in the literature review as touching on outcomes, including a mix of purposes, goals, and benefits (see Table A3). The list was sorted into two principal categories of targets for outcomes: decision-making and deliverables. A key

observation is that successful outcomes are context-dependent--the particulars of each organizational situation will suggest some variation on “success” within the framework.

The first target, the decision-making process, is defined here as the process of making a decision that involves: (1) gathering information/knowledge (learning); (2) making choices among options (deciding); and (3) taking action--without acting it's not really a decision in operational terms (acting). The three components are part of what Hendry (2000, p.956) calls a strategic discourse that is “complex, iterative and multi-layered.” It is not a simple linear progression from information to decision to action. Sometimes “decisions” are legitimations of actions already taken. The process is one of collective sense-making involving iterations between the components.

The second target involves project deliverables, the specific, tangible item(s) to provide to the client--e.g., reports, presentations, workshops, etc.--that contain the desired results, e.g., forecasts, new business opportunities, strategic options, etc. They provide a secondary focus or supporting role in the framework. They are the “means” by which the “end” of improved decision-making is pursued.

The decision-making process is depicted sequentially in Figure 3 below, but in practice it is often iterative and feeds back on itself (arrows depict this). For instance, learning influences decisions and actions that in turn can lead to further learning. Learning, which may refer either to operational or conceptual levels, here uses Kim's (1993, p.43) definition of “increasing an organization's capacity to take effective action.” Kim's framework links individual and organizational learning via shared mental models.

Giddens (1976) suggests deeper processes of learning or meaning creation as both influencing and being constrained by those shared mental models. Individual learning is shared with groups, leading in some cases to group learning--or not--and sharing among groups can ultimately lead to organizational learning. This learning is captured in texts, or what Kim calls standard operating procedures, as well as in shared mental models that represent the organizational memory. This memory is accessed to solve problems, but it can inhibit learning when the standard operating procedures become hardened orthodoxies that are difficult to challenge (Kim, 1993). Wack (1985a, p.74) suggests that effective scenarios “....change the decision-makers' assumptions about how the world works and compel them to reorganize their mental framework of reality.”

This approach captures the key themes regarding the appropriate target of influence for futurists being to improve decision-making about the future, which involves learning (as described above), aims at action, and is achieved via foresight activities and deliverables. A weakness of this approach is that there is little direct input from clients.

The ideas in the previous section are brought together in a second conceptual framework. The approach takes a systemic view of outcomes, but acknowledges Georghiou (2006, p.761) and Waehren's (2009, p.329) views that foresight cannot be fully evaluated independently from its context.

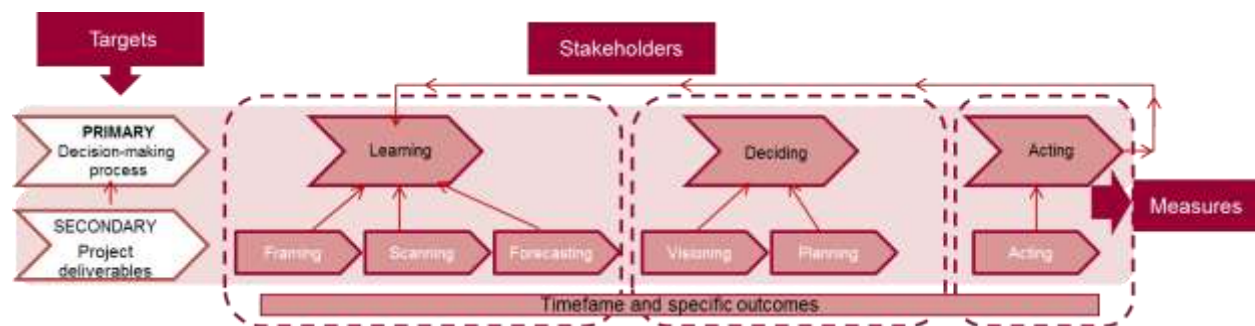


Figure 3 suggests three principal foci to the dialogue. For stakeholders, the issue is deciding who to involve and when. The bulk of the dialogue explores the appropriate targets for foresight work. The framework suggests beginning with the primary focus of the decision-making process, which is broken into the components of learning, deciding, and acting. A subsequent dialogue would explore the secondary target of project deliverables, which are the linked to the components of decision making via the six activities of foresight work (explained on p.35). That dialogue would be followed by moving on to the timeframe and identifying more specific outcomes within the three components. It is conceivable that the dialogue could progress in reverse--from secondary to primary.

The learning from this step would feed into the third focus on measures. It is beyond the scope of this work to specify those measures, but some promising candidates identified in the literature are suggested in Section 2.2.3. The three foci are further elaborated below.

1. Stakeholders

Futurists and their clients are the principal stakeholders. The organizational futurist straddles the boundary between futurist and client. In using the framework with clients, the important question for the organizational futurist is who to include from client side and when. It is a question relevant to positioning strategy. For instance, one may start the discussion with smaller and supportive groups, and then expand from there using that feedback (see Section 2.3.2)

In using the framework with the field, it might be helpful to have a discussion about the types of futurists involved, as different types are likely to have different expectations for success. I propose types that vary along three dimensions, with most having a blend of the characteristics of each type.

Figure 4. Types of futurists



Along the applied-normative dimension, the applied futurist focuses on helping the client to achieve their goals without explicitly advocating their own point of view. The normative futurist focuses on getting clients to adopt their view (Slaughter, 2010). Along the facilitator-expert dimension, facilitator types are focused on processes for helping clients develop their own views (see, for instance, Scharmer, 2007). Expert futurists concentrate on providing their expert views to client. Along the insider-outsider dimension, insider futurists use their political and persuasive skills and intimate knowledge of the organization to help get foresight implemented. Outsider futurists raise challenging questions for the organization, aka “disturbing the present;” in some cases, they suggest explicitly avoiding organizational politics (Inayatullah, 2000, p.373)

Each of the types is an extreme on a continuum and one can imagine a degree of blending or hybrids. For instance, I earlier developed the inside-outer role in an organizational futurist capacity (Hines, 2003a, p.23). From an outcome point-of-view, one can imagine that applied and normative futurists would have different views of success, as would insiders and outsiders—probably less so with facilitator and expert. But the framework developed should be robust enough to handle all types. Put simply, the applied and normative (and insider-outsider) will seek to achieve different kinds of learning results, but they are both still learning. Similarly, they will both seek to influence decisions and actions, albeit with different intended results. But these dual approaches are not without their downsides. For instance, the client might be confused by expecting one type and getting other. Amara (1984, p.404) warned that:

“the futures research community must be vigilant about maintaining as clear a separation as possible between its advocacy (value-driven) and its conceptual and analytical arms. Failure to do so will obfuscate the meaning of futures research and raise basic questions about its long-term credibility, effectiveness, and viability.”

2. Targets

The Outcomes framework suggests that influencing decision-making about the future is the primary aim of foresight, achieved, principally, though not exclusively, through projects and deliverables. It acknowledges that “non-deliverable” benefits may emerge.

The framework suggests that foresight is undertaken for purposes of aiding a decision or decisions, although occasionally a project is asked for by clients for learning purposes. Even in this case, it could be argued that this learning is ultimately going to be tied to a decision, e.g., should we proceed with foresight? Does what we have learned apply to our work? Acting completes the framework as decisions are not really decisions until action is taken, unless the decision is not to act or delay acting.

Learning is placed before the decision to represent the process of gathering information, knowledge, and options to aid the decision. Acting completes the decision-making process, and, of course, can feed back into learning and continue the process.

The three components are linked to deliverables organized along the *Thinking about the Future* framework (Hines & Bishop, 2007). The first three activities--framing, scanning, and activity--are principally aimed at learning. There is work at clarifying the problem (framing), gathering information about the future (scanning) and mapping out the potential future landscape (forecasting). Visioning and planning are aimed principally at deciding. Visioning helps clients develop a vision of their preferred future and planning provides options for enabling that vision. Acting in the framework provides tools for enabling the client to take action on the work. Hines' (2007) analysis of responses by thirty-six futurists citing the benefits of their work to clients sorted under the six activities as follows:

- Framing (22%)
- Scanning (16%)
- Forecasting (22%)
- Visioning (10%)
- Planning (7%)
- Acting (23%)

It was somewhat surprising to note that relatively high contribution of framing and acting, which were acknowledged to be the newest of the six activities (Hines & Bishop, 2007). Framing notes the important of dialogue and mutual agreement on that nature of the problem to be explored, clarifying and re-clarifying what is to be learned, while acting emphasizes the importance of following through, perhaps reflecting the practitioner's recognition that too often foresight work did not get there in the past.

The timeframe is an important boundary condition worth noting in the framework relates to decisions about the future. Technically speaking, of course, all decisions are about the future, so for our purposes here, there are three time horizons: (Hines, 2003a, citing Baghai, Coley & White, 2000; Curry & Hodgson, 2008)

- Horizon One (H1), the short term focus on the current prevailing system and executing the core work; operationally focused, typically 2-5 years
- Horizon Two (H2), the medium term, focuses on extending the core work into new areas; transitionally focused, typically 5-10 years
- Horizon Three (H3), the long term, explores new territory and potentially new systems, typically greater than 10 years.

Finally, the target dialogue could expand to identify specific outcomes. Table 8 suggests specific candidates for each component based on the literature review that identified potential success criteria mentioned by forty sources (see Table A3).

Table 8. Examples of outcomes in the decision-making process

Learning (anticipate and understand what the future looks like)	<ul style="list-style-type: none">• Preparing/rehearsing/thinking through options and implications as related to specific decisions or continuous learning• Reframing, transforming, and consciousness-raising• Creating new ideas that could inspire new decisions.....and actions• Avoiding surprises/threats• Identifying future possibilities, and opportunities, especially discontinuous change
Deciding (improving decisions and the decision-making process)	<ul style="list-style-type: none">• Guiding strategic conversation and influencing individual mental frameworks• Extending traditional planning horizons to longer, broader, and deeper view• Multiplying the perspectives considers• Opening up the organization to the outside world• Increasing sophistication in dealing with complexity• Countering systematic biases that affect our ability to think about and act upon the future
Acting (provide a stimulus to action)	<ul style="list-style-type: none">• Acting more skilfully based on the learning and improving the decision-making process to mobilize the organization to “shape the future”

3. Measures

The Outcomes framework suggests there is a lot of dialogue to be had before getting to the point of measuring the outcomes. Future research would be needed to link the results of that dialogue to potential measurement tools identified in the foresight literature. Section 2.2.3 explores some promising measurement tools.

2.2.3 Attempts at measuring successful outcomes

Many researchers have observed that the issue of measuring foresight’s impact has been around for a long time (Backer, 1984, p.416; Georghiou & Keenan, 2006, p.762; Chermack, 2006, p.767; Amsteus, 2011, p.64). Until recently, there appear to have been no quantitative attempts to do so. Timing is an issue, as the outcome of a future-based decision may not be apparent for several years. At the same time, “there are always alternative explanations possible” (Horton, 1999, p.8). Given these difficulties, some suggest an alternative route, such as Bishop’s (2001) suggestion to highlight the top performers. The challenge with this approach, however, is deciding who the “top performers” are.

Measuring the practices

Grim's (2009) Foresight Maturity Model defines best practices in foresight and provides a guide to measuring an organization's competency with those practices. It is based on previous work that has been done to assess software development and more directly in Grim's experience in developing a Strategy Maturity Model for IBM. I assisted in the development of the foresight model by providing insight on the five levels of the practices involved in the six activities of foresight adapted from Hines & Bishop (2007), which are used to assess the maturity of an organization's foresight practices.

Grim believes that the inherent difficulties in measuring outcomes suggests it is more practical to measure how well the work is carried out--measure the practices rather than outcomes. So far clients have not been willing to invest in measuring their foresight practices, likely because their use of foresight is not mature enough yet and scarce resources for investing in foresight get directed to actual projects rather than evaluation. In Boje's (2001) terms, foresight often remains "stuck" at the ante-narrative level, that is, a story that captures the sequence of events about the project, but not progressing to the narrative level, in which a meaning making process develops a plot about how it can successfully help the organization in the longer term.

Measuring the decision-making process

Instruments identified in the literature search were found to address the three components of the decision-making process suggested above.

Table 9. Instruments for "measure" aspects of decision-making process

Learning	<ol style="list-style-type: none">1. Chermack (2006) developed an instrument to measure the impact of a scenario planning intervention. One study found increased perceptions of organizational learning across six of the instrument's seven constructs.2. Chermack (2006) also recommends Watkins & Marsick's (1999) Dimensions of the Learning Organization Questionnaire based on 30 years of experience working with organizations to increase their capacity to support learning.
Deciding (strategic conversation aspect)	Chermack, van der Merwe & Lynham (2007) offer the Conversation Quality and Engagement Checklist (CQEC) instrument to measure the impact of scenario planning on the strategic conversation. The CQEC has been around for thirty years. It assesses participant conversation and communication skills--a "surrogate" for strategic conversation.
Acting	Amsteus (2010) developed an instrument that correlates foresight capability and firm performance. It includes a diagnostic tool for determining which aspects of foresight

on which managers are weak. One study of the instrument found a moderately positive, statistically significant relationship between managerial foresight and firm performance.

Rohrbeck (2011) devised a different approach to developing a foresight maturity framework that aims more broadly than Grim's, but perhaps with less precision. His framework has three components:

- Context: assesses the companies' needs for corporate foresight by: (1) size of company (2) nature of strategy (3) corporate culture (4) source of competitive advantage (5) complexity of environment (6) industry clockspeed
- Capabilities: assesses the corporate foresight system concerning its strength in identifying, interpreting, and responding to discontinuous change along five dimensions: (1) Information usage (2) method sophistication (3) communicating foresight information and insights (4) organization (5) culture
- Impact: assesses the value contribution of foresight activities by: (1) reduction of uncertainty (2) triggering actions (3) influencing others to action (4) secondary benefits

The capabilities component covers similar ground as Grim, but characterizes the activities much differently. A likely explanation is Grim coming at it from the practitioner perspective and Rohrbeck from the academic. Some of Rohrbeck's characterizations might appear quirky to practitioners, such as citing the combination of roadmapping and scenario planning as a best practice. Rohrbeck also casts a wider net in combining the futures research perspective with those of strategic management and innovation management. The impact component covers some of the ground of deciding and acting in the decision-making process.

These models offer a promising start in providing a means to evaluate outcomes, but are perhaps premature in that the dialogue among futurists and clients about the specifics of success remain to be negotiated. The Outcomes framework is intended to stimulate the dialogue about outcomes and thus inform future measurement approaches.

2.3 Institutionalization

To what extent can foresight knowledge and understanding become institutionalized in organizations?

Institutionalization appears at the “end” of the sequence of activities in the Integration framework (Figure 2). It is dependent on how well its predecessor activities fare. Institutionalization is only likely to be considered if foresight outcomes are judged to be useful and if it is introduced in the first place.

As a new capability, foresight is going to challenge existing interests in the organizational “territory or “turf,” and thus be engaged in competition for limited resources (Taylor & Van Every, 2000, p.292). Lave & Wenger (1991) suggest that new ideas and approaches typically come from new actors on the periphery of the organizational mainstream. “Newcomers” propose ideas that are responded to by the appropriate territory or “community of practice” in their terms. If judged of sufficient interest the newcomers and their ideas are gradually integrated into the community. Barrett (1998, p.616) observed that “essential to organizational learning is....understanding how to function as an insider. This recognizes that learning is much more than receiving abstract, acontextual, disembodied knowledge. It is a matter of learning how to speak the language of the community of practitioners.”

2.3.1 Assessing the potential response to foresight

The synthesis suggested a potential area for improving the integration of foresight by assessing the potential responsiveness of the client audience to foresight before a project is undertaken. I developed the Organizational Futurist audit (Hines, 2003A) for this purpose, but it was aimed primarily at organizational futurists themselves and asked them to judge the receptivity of the audience without their participation.

Rohrbeck et al. (2008, p.27) suggests that “a corporate culture needs to provide support to SF (strategic foresight) and foster openness for applying new concepts.” He observes that it helps the futurist if the organization is supportive of foresight and is willing to take risks and try new concepts. This puts the burden on the client and client organization to be open and receptive to novel concepts. But as Shotter (1993, p.5) put it, “for those who currently occupy the centre, new approaches can often seem like dangerous monsters on the prowl.” Institutional theory suggests that “deviation from the accepted institutional order is costly in some way, and the more highly institutionalized a particular social pattern becomes, the more costly such deviations are (Lawrence, Winn, & Jennings, 2001).

Organizations provide guidance to its members on the established ways of doing things. Its discourses, defined as structured collections of meaningful texts that include any

kind of “symbolic expression requiring a physical medium and permitting of permanent storage” (Parker, 1992; Taylor & Van Every, 1993, p.109), make “certain ways of thinking and acting possible, and others impossible or costly” (Phillips, Lawrence, & Hardy, 2004, p.638). Those who suggest new ways of doing things thus ought to assume the burden of proof that the established way of doing things is either not up to the task, or that the proposed new approach will achieve better results, since they are asking clients to take on professional risk. Mack (2005, p.75) embraces this notion that the burden is on the futurist by noting the need to create a safe haven for change, not simply to assume that it ought to be there.

The literature review identified four instruments for assessing potential responsiveness to foresight, summarized in Table 10. The first three instruments get to individual views. The fourth is a more general assessment of the context. Of the three that get to individual views, the Foresight Styles Assessment is most directly aimed at foresight, but it is the least developed and tested. The other two have been used more extensively, but they are less directly related to foresight.

Table 10. Instruments for assessing “receptivity” to foresight	
Foresight Styles Assessment (Dian, 2009)	Specifically developed to provide a reliable measure of one’s foresight capacity. Gary (2009) analysed and fine-tuned it with a factor analysis that revealed a four factor solution of Framer, Adapter, Tester, and Reactor.
Leadership Development Profile (Cook-Greuter, 2005)	This instrument benchmarks foresight capacities. It suggests that one’s personal developmental level in terms of leadership maturity and personal integration will provide a useful indicator of one’s ability to understand and apply foresight.
Strategic Orientation (Miles & Snow, 1978)	Gary (2009, p.20) suggested this well-established instrument could be used by futurists. It identifies three strategic orientations: defenders, prospectors, analysers and a fourth, reactors, which is a lack of strategic orientation.
Rohrbeck’s Maturity Model (2011)	One part of his three-part model addresses context by assessing a companies’ needs for corporate foresight by: (1) size of company (2) nature of strategy (3) corporate culture (4) source of competitive advantage (5) complexity of environment (6) industry clockspeed.

Other instruments could be added to this list, but they also do not directly address views on foresight. For instance, I have used Beck & Cowan’s (1996) Spiral Dynamics assessment of team member’s worldviews as a way to indirectly gauge their receptivity to foresight and my own New Dimensions Values Assessment tool gauges individual values types (Hines, 2011c).

Shotter (1993, p.52) observes that “acceptable responses must be negotiated within a context of argumentation.” A new or revised instrument that sheds insight on this context could help stimulate a more effective dialogue about how foresight can help organizations approach the future more effectively. It could help the organizational futurist to be aware of the way the organization constructs its conventions, makes sense of reality, and how it rules in or rules out certain ways of thinking and acting (Fairclough,1992), or shed insight into the appropriate genres that are “recognizable, interpretable, and usable” (Phillips, 2004, p.644).

2.3.2 Discursive model of institutionalization

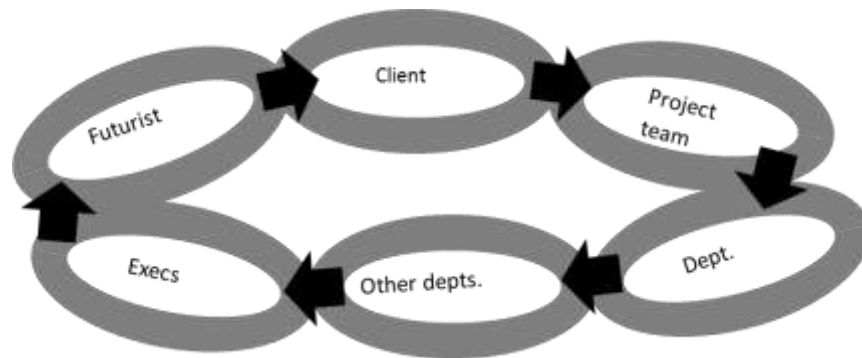
Clients are situated within a web of relationships. They are typically part of a project team, which is in turn is situated within a larger group, such as a department. Their activities will formally or informally be made known to this larger group, by means such as departmental update meetings or informal “water-cooler” conversations. If the client becomes an advocate, they can take a proactive role in stimulating these conversations. Along the way foresight texts may be shared. Thus, a dialogue may spread throughout the organization in a similar fashion and eventually create a discourse, as people from the department talk to people in other departments and so on. Figure 5 below suggests the process can be visualized in terms of a chain of integration.

The social constructionist approach to integration suggests building the case from the ground up, one dialogue at a time as part of crafting a discourse, and proceeding from futurist to client to project team to department to other departments and so on up to the executive level. Each link presents a narrative or text attempts to persuade the next of the validity. Members use rhetorical techniques aimed at persuading the social construction of discourse (Watson, 1995). Taylor & Van Every (2000, p.96) argue that “discourse is built up progressively” as texts move from the local to the global.” The process can be stalled by a break in the chain at any point along the way. Along these lines, van der Heijden et al. (2002, p.166) drew upon Vygotsky’s notion of scaffolding, which suggests a role for organizational futurists in connecting random intuitive knowledge existing in a “zone of proximal development” into codified knowledge by asking appropriate questions, stimulating dialogue, and thus building toward a discourse.

Figure 5 provides a visual of the process, but it oversimplifies the complexity of the twists, turns, back-and-forth, need for iteration, and its generally messiness. Boje (2001, p.64) observes that “stories are not static; stories web, assemble, disassemble, and

otherwise deconstruct one another in self-organizing systems.” In other words, the initial ideas being introduced, once shared, begin a journey that the organizational futurist cannot control. The stories may be interpreted differently than intended, or re-interpreted in unanticipated ways, by individuals or groups unknown to the futurist. Boje (2001, p.64) adds that stories spread across “sanctioned channels and catch points” such as meetings, briefings, memos and events, but also informally as well, and alternative or more complex stories may emerge.

Figure 5. Hypothetical chain of integration

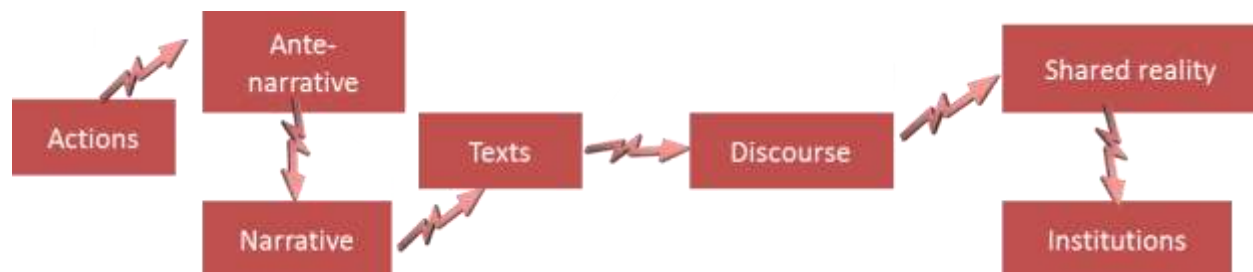


Thus, it might help to suggest a complementary metaphor of a jazz performance taking place in forging each of the links. It highlights the elements of uncertainty, teamwork, and the iterative nature of the process. Advanced jazz performers seek to create “shared meaning” by coordinating various improvisational acts. A soloist offers an “ante-narrative or narrative” (Boje, 2001), that is responded to by his fellow players. Many times it does not click initially, and it may take several iterations before it does and the piece comes together and flows. The jazz performance captures the messiness and beauty of the process (Barrett, 1998). The way in which the narrating processes are conducted and reflected are crucial to whether or not intended changes are simply changes in surface content--in narrative themes--or are more radical changes in constructing shared meaning (Hosking & Haslam, 1997).

The jazz metaphor assumes that the foresight discourse is being considered in isolation, but competing discourses are typically present--whether directly related to foresight or unrelated issues that are competing for organizational attention. Additionally, powerful organizational interests that “warrant voice” may seek to preserve the status quo and impede the foresight discourse (Burr, 2003, p.137).

Figure 6 shows Phillips, Lawrence, & Hardy's (2004, p.641) Discursive model of institutionalization, which I adapted by adding in a step between actions and texts to highlight the importance of the dialogue signified as ante-narrative and narrative. Their key four steps suggest that actions generate texts that embed in discourses that in turn produce institutions.

Figure 6. Discursive model of institutionalization



Source: Adapted from Phillips, Lawrence & Hardy, 2004, p.641.

Each step involves an act of meaning making--an utterance is presented and responded to in dialogue, and later reflected upon if sufficiently interesting. The process begins with actions; for our purposes, when a foresight project is undertaken. It will generate ante-narratives, or stories that convey a sequence of events (Boje, 2001). These ante-narratives spread among the client and project team. If they are found of sufficient interest, they are cast into narratives by adding a plot to the story--an act of meaning-making. The important insights will be captured in texts, some directly from the project and others incorporating interpretations that recasts the output. These are shared with either the department or other internal groups. Assuming further interest, groups of texts will come together as a discourse on the topic. Through dialogue on the discourse, a shared sense of reality may emerge and thus may lead to institutionalization (Phillips, Lawrence & Hardy, 2004).

2.3.3 Challenges

At the broadest level, the challenge can be said to be the lack of an agreed-upon discourse for the institutionalization of foresight. As Phillips, Lawrence, & Hardy (2004, p.645) point out, "discourses that are more coherent and structured are more likely to produce institutions than those that are not." A review of the institutionalization of foresight activities by Becker (2002, pp.18-19) reveals that the challenges he cited ten years ago remain (Schwarz, 2005; Daheim & Eurz, 2006; Vecchiato & Roveda, 2010; Oner & Beser, 2011). For instance, he cited that corporate foresight:

- is too fragmented (few centralized departments and lots of lone hands) and too segmented (activities are too specialised and uncoordinated)
- is too often limited in scope (e.g., R&D-decision-making)
- is not integrated strongly enough in the corporate culture
- lacks internal and external networks, which creates inefficient re-work
- is at odds with shareholder value mentality that discounts long-term thinking.

There is some disagreement within the field about whether institutionalization is an appropriate goal. Figure 4 previously identified three dimensions along which futurists vary. The most polarized combinations are the applied-insider and normative-outsider. An applied-insider type, which best characterizes the organizational futurist role described in this work, is likely to argue for institutionalization as an appropriate goal. The normative-outsider type is more likely to argue for provoking the organization and staying out of politics, feeling that such participation will inevitably compromise futurists' views in order to fit in.

The argument for institutionalization suggests gains for learning and building on experiences. Dator (2009, p.3) suggests “the necessity of setting up some kind of an on-going ‘futures’ unit which can keep the future-oriented process going.” Voros (2003, p.12) adds the need for foresight to avoid “being a separate, special and merely ‘episodic’ occurrence which shines forth briefly and then vanishes without trace,” and make it a permanent part of organizational planning. Along those lines, Slaughter (2009, p.15) laments that few futurists appear to take seriously the need to build on foresight capabilities within an organization and “to devote time and attention to enabling structures and processes that would provide this work with continuity and security....” Finally, Rohrbeck & Gemünden (2011, p.233) also emphasize the need for integration into an organization’s process landscape and organizational structure to create an impact and add value.

2.3.4 Current status

Several researchers support the view that institutionalization is struggling. Slaughter (2009, p.17) suggests that “integration of this work appears to be rare at every level.” Rohrbeck (2011, p.177) found that “even though I was able to identify various best practices in specific capability dimensions, none of the firms had implemented a comprehensive, stable and effective corporate foresight system.” Interestingly, it was earlier noted in Table 9 that Chermack (2006) reported success measuring a scenario intervention on six of seven constructs—“embedded systems” was the one that did not

return significant results. Where there has been success, it's been driven by an individual who knows how to "work the system" (Slaughter, 2009, p.16). Otherwise, implementation tends to be hit and miss, so that a foresight capability is not typically embedded in organizational processes.

This does not mean that foresight is not being applied in organizations. I introduced the notion of a "stealth positioning" of foresight to highlight the potential for avoiding any potential negative baggage with the term and/or the field by doing the work using language more palatable to the organization (Hines, 2000). Several years later, this stealth positioning continues (von der Gracht, Vennemann & Darkow, 2010). Graves (2007, p.122) noted that it may feel dangerous to engage in "foresightful practices," so that one strategy "is to go undercover--in other words, to introduce foresight by stealth."

Schwarz (2008) notes an increase in corporate foresight in Germany. Vecchiato & Roveda (2010) found that for those firms using foresight, some established autonomous and permanent foresight units while others embedded foresight within other departments.

There is also progress to be noted in many European Union initiatives regarding foresight (see for instance The European Foresight Platform <<http://www.foresight-platform.eu/>> and European Foresight <<http://forera.jrc.ec.europa.eu/>>). Georghiou et al. (2008, p.239) did find "a growing interest in technology foresight in the OECD member countries and were also able to cite 495 cases involving national technology foresight programs. These programs are both "distinguished from more general approaches of futures studies initiated by central government or agencies" (Georghiou et al., 2008, pp.xviii,3). This makes them different from the organizational futurist role covered here, where the individual typically crafts their own role and draws from full range of foresight capabilities.

A key contribution of Chapter 2 was the development of the Outcomes framework. It arguably fills the largest gap in the integration process by providing the basis for a dialogue around outcomes for clients. These dialogues have often been avoided. Other times, clients are barraged with confusing and sometimes contradictory notions of "success." Integration is an involved and time-consuming process that involves a patient process of back-and-forth and give-and-take between futurists and clients. Integration and institutionalization are constructed jointly—and there is much work to do on the futurist side in helping clients to understand not only what foresight is about, but how it

can help them improve their decision-making as they confront problems and challenges regarding the future. As Shotter (1993, p.39) observes: “as people coordinate their activity in with the activities of others, and respond to them in what they do, what they as individuals desire and what actually results in their exchanges are often two very different things. In short, joint action produces unintended and unpredictable outcomes.”

With this foundation in place, Chapter 3 explores the theoretical and practical implications and Chapter 4 concludes the work and lays out a research agenda to follow up on the questions and issues raised.

Chapter Three. Implications

3.1 Theoretical implications

The critical review of the published works identified two paths to foresight integration--positioning and credibility--upon which to focus new research and theorization. The Integration and Outcomes frameworks that emerged open up significant possibilities for new knowledge and thus frame the implications.

The Integration framework that emerged from the positioning path contextualized integration and the social constructionist perspective provided a guiding epistemology. It addresses questions such as: which activities typically happen before positioning and which after; what other stakeholders might be involved; and how do the activities and stakeholders relate?

The Outcomes framework emerging from the credibility path similarly provides a context to stimulate and guide dialogue about what success might mean in terms of foresight integration. This second path centred on how to improve the credibility of foresight by promoting quality foresight work. The literature search revealed a lack of consensus around what entailed “high-quality” work, which in turn related to a larger question of what successful foresight work is.

The theoretical and practical implications explored here form the basis for a research agenda in Chapter 4. To help make the linkages between the implications and the research agenda explicit, the connection of the implications to the eight research agenda items is noted in brackets.

3.1.1 Theoretical implications from the activities of the Integration framework

The Integration framework provides a contextual view of the integration process. Adopting a social constructionist approach offers promise by emphasizing a dialogue approach aimed at creating shared meaning across stakeholders, within the field and with clients, building on the ideas of Shotter (1993, p.9) to create a “multi-voiced conversation.” Indeed, Fuller & Loogma (2009, p.78) note that “foresight, as a concept and as practice, is a social construction.” The social constructionist approach also offers potential guidance for aiding the professionalization of the field and its clients (Fournier, 1991; Gold & Bratton, 2003). As Henshel (1981) observed, foresight is travelling down a path that other fields have traversed before it. The current wide range of views about

what to call it (Cornish, 1977; Horton, 1999; Becker, 2002; Schwarz, 2005; Amsteus, 2008; Rohrbeck, 2011), how to define it (Amsteus, 2008; Coates, 2010; Rohrbeck, 2011), how to bound and describe it (see Table 6) and how to talk about outcomes and success (see Figure 3), can be viewed as a natural, though not inevitable, stage in the social construction of the profession. The literature review revealed a significant opportunity for improving this dialogue by including more of the client perspective. This may require incentivizing practitioners to share their client experience and capturing the learning from the dialogues in texts, sharing those texts, and integrating them into an overall discourse about integrating foresight. But practitioners, struggling to make a living, arguably have an incentive to keep client dialogues private as a competitive advantage. They may see little gain in sharing with the field at present. Phillips, Lawrence, & Hardy (2004) suggest that sharing can be incentivized by making the case that a more coherent dialogue about foresight will help enlarge the pool of potential clients. [Item 1]

There is an opportunity for creating forums to host this sense- and meaning-making process that can build the discourse about what foresight is and what it offers. While the question has been occasionally addressed by the field, it has yet to catalyze toward consensus. There is no guarantee of consensus and attempts to enlarge the conversation could be perceived as a power play or insult or encroachment upon one's "defined turf" (Schein, 2010, p.96). These challenges suggest a need for research to identify potential approaches for engaging the field and its stakeholders in this dialogue. [Item 1]

The Integration framework suggests that the process iterates between the individual, organization, and firm levels. It suggests that insights at the individual level aggregate to the firm level and then the field level. But that is an assumption that remains to be tested. Further study of the Integration process would also benefit from bringing in the client perspective. [Items 3, 7]

Publicizing is first in the Integration framework because clients have to find out about foresight before they can introduce it. But it is situated at the end of the research agenda in Chapter 4. The reasoning is that the field would benefit from clarifying its discourses before appealing to potential clients and the public. This position is not meant to suggest that publicizing efforts stop, but that it might be more useful to invest time and resources in building the discourse first. Jumping into a public relations campaign, for example, without addressing foundational theoretical questions, could

reinforce the current confusion among clients and the public about foresight and drive them elsewhere for answers, as observed earlier by Gavigan & Scapolo (1999). [Items 1, 6]

A place to start was raised by Coates, Mahaffie & Hines (1994) in mapping the landscape of science and technology foresight and looking for patterns among industries or sectors. It did not identify whether particular sectors or fields had used foresight to a greater extent than others. To do this properly would require gathering input from individual futurists and firms and sharing them with the field. Researching and discussing these questions among the foresight field could lead to adjustments in the publicizing and introducing dialogue and activities of the integration process. Case studies could be an effective mechanism to broaden insights into the patterns that govern foresight adoption, rejection, or ignorance. [Item 4]

More effective publicizing enhances the prospects for introducing. The Outcomes framework may have a role to play here as well. Clients are unsure of what to expect from foresight, thus the Outcomes framework provides a means to have a more informed dialogue on outcomes. It provides a starting point to address concerns from clients on what they will get from introducing foresight. Failure to do so makes it less likely to overcome client tendencies to being timid about risk (Kahneman & Lovallo, 1993). The framework provides a mechanism around which to base the conversation by providing a set of expectations that can be checked, and enabling adjustments of mental frameworks by “surfacing, testing, and improving [of] our (actors’) internal pictures of how the world works” (Senge, 1990, p.175). [Items 3, 4, 7]

Positioning activities, central to my previous published work, are likely to be more effective by drawing upon the expanded view of the context of integration. There is an opportunity to be more deliberate and strategic in plotting these activities with a greater awareness of how they fit within the larger context. One troubling aspect of the previous work is that it was highly experimental, often relying on my intuition to decide what to try next, which sometimes worked out favourably, but sometimes didn’t. Weick (1987) observed that organizations are uncomfortable with trial and error, lest the error propagate through the organization. An important benefit of the current work would be to reduce the riskiness of trial-and-error approaches by taking a more grounded and systematic approach with the Integration framework as context. [Items 1, 7]

The last component of the Integration framework, institutionalizing, similarly appears to benefit from a bottom-up, gradually-spreading dialogue approach that builds shared meaning along the way. As Phillips, Lawrence, & Hardy, (2004, p.646) argue, “the likelihood a discourse will produce powerful institutions will depend on the degree to which the discourse is structured and coherent...” [Items 1, 3]

As with publicizing, institutionalization is further down the road in terms of prioritizing for research. Phillips, Lawrence, & Hardy’s (2004) Discursive model of institutionalization offers a process guide for the organizational futurist. It suggests the importance of developing dialogues with clients that will test ideas, concepts, and approaches in an iterative fashion that will lead to an on-going refinement of the sense that the organizations makes from foresight. It remains to be tested in terms of how it applies to the integration of foresight. But Lawrence, Winn, & Jennings (2001) caution that this dialogue process involves deviating from the existing order and creating risk for clients. Thus, the futurist community needs to advance its understanding of itself and offer a more coherent dialogue for clients to respond to and lessening their risk in participating. [Items 3, 4, 7]

Finally, the Integration framework provided the context for an opportunity for improving the prospects or foresight integration by further development of the field. Professionalization can provide a forum for engaging the many questions relating to the building the texts, narratives, and discourses of foresight. This field-level activity can benefit the firms and practitioners as they engage with clients, and provide the feedback loops that continually build understanding and effectiveness. [Items 1, 2, 5, 6]

3.1.2 Theoretical implications from the Outcomes framework

The Outcomes framework may be more difficult to gain consensus around than the Integration framework. Fewer claims have been made in the literature around integration. Table A3 identified forty sources addressing notions of successful outcomes, but my research identified just three efforts to model the process of foresight integration (Voros, 2003; Hayward, 2004; Keller, 2007). Thus, gaining consensus around and outcomes framework may require more give-and-take or unlearning and relearning (Hedberg, 1981). [Items 1, 7]

The three primary components of the Outcomes framework--stakeholders, targets, and measures--are analysed for their implications.

Stakeholders are organized into futurist and client sides. For futurists, the Outcomes framework seeks to provide a framework under which differing views of success can coalesce or at least peacefully co-exist. It is intended that a focus on influencing the decision-making process can provide a broad enough frame under which futurists with different purposes can feel comfortable. [Item 1]

The opportunity for including clients in the dialogue has been noted as well. In light of the different types of futurists, there is an opportunity for being clear with clients on identifying which type of futurist one is getting. This could be part of a project to develop a professional code of ethics for foresight. [Items 3, 5]

On the client side, the challenge is stimulating multiple dialogues. It is tempting to focus on senior executives as the perceived power brokers in organizations. An alternative school of thought, perhaps captured best by Hamel's (2000) *Leading the Revolution*, argues that change and innovation is everyone's job and explicitly attacks the orthodoxy that senior executives set organizational direction. This thinking aligns with the social constructionist approach advocated here that suggests that the dialogues need to be far more inclusive. The dialogue starts with the immediate clients and only when sharing meaning is gained is "permission" granted to expand the dialogue to additional groups. One could imagine beginning with senior executives, but this simply starts the process from a different point--the rest of the organization still needs to buy-in for integration to take place. [Items 3, 7]

The timeframe issues are perhaps less urgent, but nonetheless still involve significant issues and differences among practitioner as well as clients. Brier (2005) documented several conflicting definitions of what constitutes short, medium, or long term, concluding that "there is, so far, as I know, no generally accepted standard of time for futures researchers when they refer to the future." He also noted some disagreement on the "proper" timeframe, citing Shostak: "I do not work within 5 years of the present, as it is too close;" Stevenson, "I think a generation ahead, anything else is hardly futures;" and Coates, "I have no interest in those tactical short term futures." Further complicating the issue is that clients tend to "discount the future" as timeframes extend (Linstone, 1973). The goal here would be seek agreement on a range of years or principles for what constitutes the short-, medium-, and long-term, and simply to gain willingness to agree-to-disagree and acknowledge different views about which is the "proper" focus rather than trying to resolve it one way or another. [Item 1]

The important point is not to drive toward consensus on a single definition of success, but rather provide a framework that organizes outcomes in a coherent manner. It could be helpful to think of layers of success. The top layer seeks consensus that the decision-making process is proper focus for considering success—in other words, how successful has foresight been in influencing the decision-making process. The next layer involves three aspects of decision-making: learning, deciding, and acting. The analysis in Chapter 2 suggested that these aspects indeed range broadly enough to encompass the various views of success identified in the literature search. The next layer involves the specific attributes of each of these three aspects: learning, deciding, and acting. There is an opportunity to refine these attributes with subsequent research. [Items 1, 7]

The question of measures follows the above. Gaining consensus around success in turn influences the required types of measures. There are emerging candidate measures that can be built upon, modified, and adapted as the outcomes dialogue unfolds. [Items 1, 7]

Perhaps the most important overall theoretical implication of the outcomes question is that the Outcomes framework provides a starting point for the dialogue and meaning-making. Dialogue about it will likely lead to revisions, tweaks, and improvements. If such a discussion can build a discourse among futurists, it will bring a greater clarity to the dialogue with clients. [Item 1]

3.2 Practical implications

The strong focus on the individual organizational futurist in integrating foresight following the positioning and credibility paths outlined in the synthesis makes sense given the relative immaturity of the field. Steps in building the field toward a profession could benefit futurists and clients, and their firms, in a way that creates reinforcing feedback loops. One might argue that the problem has been an inability to achieve “critical mass” to ignite the process. Or to use Gergen’s (1995, p.37) term, it has often been responded to as “nonsense.” [Items 1, 3]

The practical implications are organized by the three research questions around publicizing/introducing, evaluating outcomes, and institutionalizing. An important insight is that some cases the research literature seemed to be ahead of developments in practice. In these cases, it was necessary to “back up” to where developments had not yet gained shared meaning between futurists and clients in order and start the analysis

there. For instance, it is noted that it is somewhat premature to talk about institutionalization when the publicizing/introducing and outcomes question are still being negotiated.

3.2.1 Practical implications of “introducing”

The literature review did not find best practices for introducing foresight. The Integration framework was created to begin filling the gap by providing a conceptual map of the integration process. For futurists, the explanation of integration could become more consistent, so that multiple futurists aren't each explaining it differently and thus confusing clients. For clients it provides a framework around which to devise their integration plans. The Integration framework also revealed that a publicizing step precedes introducing, which suggests an opportunity for a contribution from the field about raising the profile of foresight, so that more introducing opportunities could become available. [Item 6]

The Integration framework also revealed that introducing is driven by dialogue with clients that are captured in narratives and texts as part of developing a discourse that works toward shared meaning. It suggests that organizational futurists be prepared for an iterative, on-going dialogue taking place in a disorderly, unaccountable, chaotic fashion--the edge of chaos or “to-and-fro'ing” (Shotter, 1993). It cautions patience and an open-minded perspective that is willing to actively listen to client needs and make adjustments, which can be challenging for normative futurists who may have strong views about what is right for the clients (Kahane, 2004), and thus suggests an approach informed by epistemological pluralism.

The Integration framework suggests a sequential flow to the activities, such that it is difficult to tackle a new activity in the framework if a previous one has not been adequately addressed--as noted in the above paragraph--and “shared meaning” has not been attained. [Item 7]

Section 3.3.1 suggested a need for various field-building activities: naming, defining, and bounding the field, to which evaluating outcomes can be added from Section 2.2. In terms of naming, defining and bounding the field, an ecosystem approach is suggested that defines what is core to foresight and what is shared with other fields. It is worth noting that while the field's multi-disciplinarity is a strength in terms of the range of perspectives it can draw upon, it is a weakness in terms of clarifying its unique contribution. It may be possible through further research to build a visual, graphic, and

dynamic depiction of the field and all its activities and relationships that can be used as a dialogue-starter. [Item 1]

The challenge of incentivizing field- and profession-building, noted earlier, may be approached from multiple vantage points. While this work seeks to build the theoretical argument for its necessity, it may also be approached from the more practical vantage point of assessing expectations about the field from practitioners and clients. It may be that the incentives are less elusive than anticipated. It may be useful to explore as well the possibility organizational and consulting futurists could be seen at cross-purposes or that the current prevalence of consulting futurists (see page 2) could lead to a view that organizational futurists are akin to second-class futurists having less status. [Item 5]

It is anticipated that the field will involve a move toward professionalization, but it is also possible to develop a complementary focus on the field's academic base. While some promising developments are underway, clearly there is much work ahead (Wheelright, 2001). There are only 16 graduate degree programs in foresight globally (Ramos, 2002; Acceleration Studies Foundation, 2011). There may be greater opportunities to reinforce cooperation between academics and practitioners, as well as clients; for instance, a gathering of academic programs could initiate a best practices research project. [Item 5]

Finally, the Organizational Futurist Audit instrument, a key deliverable from the synthesis work originally developed in 2003, could be updated to incorporate the learning from the research done for this work (Hines, 2003a). [Item 8]

3.2.2 Practical implications of “evaluating outcomes”

Evaluating outcomes provides a rich area of focus for enhancing integration. That said, it would be greatly aided by--and to a degree dependent on--other questions around the field being addressed first: naming, defining, and bounding. Systems effects suggest that making progress with outcomes would have beneficial impacts on introducing and institutionalizing. Nonetheless, work in this area can proceed independently and could provide support for futurists in persuading clients of the value of foresight work. [Items 1, 4, 7]

My analysis occasionally got too far ahead of developments. For instance, an early draft of research questions suggested developing a success “scorecard,” which presumed a degree of consensus around what success is that is clearly not here yet. But identifying this gap led to the contribution of the Outcomes framework. [Item 7]

The most promising development around measuring outcomes, Grim's (2009) Foresight Maturity Model, focused the outcomes question on the futurist side. It measures how well futurists are doing in relation to proposed best practices in doing foresight work. A practical next step to build on this framework is to expand the focus to other activities on the Integration framework and to look for ways to include more of the client perspective. [Item 1, 3, 7]

An interesting research question would be to explore whether a top-down approach--focusing first on overall goals and then working out details--or a bottom-up approach works better. [7]

An obvious practical step in understanding integration is to do research with organizations that have tried it. What worked, what didn't, and why? [Item 4, 7]

Current efforts to evaluate foresight work noted in the credibility path and by others (Popper et al., 2010) are largely piecemeal, suggesting an opportunity for a field-level initiative to coordinate these activities on a larger scale. It may be possible to promote a similar initiative to assess the viability of the several measurement instruments that have emerged, and their perceived contribution. It may be possible to integrate these measures into an overall assessment instrument. But this focus on evaluating foresight work is best viewed as a means for contribution to the dialogue with clients for creating a shared understanding of success. [Items, 1, 4, 7]

3.2.3 Practical implications of “institutionalizing”

This research question produces fewer actionable implications owing to it being the least developed of the three. Being at the “end” of the integration processes, it is dependent on earlier activities in the process. Success in institutionalizing is dependent on success in introducing and evaluating outcomes. The social constructionist approach provides a perspective that can guide the institutionalizing question. A model of typical steps and their process flow in institutionalization was suggested by Hypothetical chain (Figure 5) and the Discursive model (Figure 6), which provides the organizational futurist with frameworks around which to craft an institutionalization strategy. [Items 1, 4, 7]

A social constructionist perspective also suggests that the question of whether institutionalization is a “proper” goal should emerge from discussion and negotiation

among futurists and with clients. This work suggests that institutionalizing is a proper goal, but recognizes that it is not a binary question—“for” and “against”—but depends on the context (Hines, 2002b; Hines & Bishop, 2007). There may be cases where external provocation that challenges the existing order is more appropriate (Inayatullah, 2000). To inform this discussion about institutionalization, a research project could compare the social constructionist approach proposed in this work with cases where foresight is institutionalized when it is introduced--i.e. by CEO mandate, or a “skunk works” approach where the capability is explicitly removed from organizational politics. [Items 1, 4, 7]

The Outcomes framework could be used to evaluate and track projects/efforts on an institutionalization path, perhaps comparing outcomes with organizations adopting a provocateur path. [Items 4, 7]

Another implication emerging from the research on outcomes and success was to reconsider the “stealth” positioning that I had advocated (in certain circumstances) in the synthesis and more recently and expanded on with some new ideas (Hines, 2000, 2011a, 2011b). The long-term viability of stealth should be questioned, and it may be that a goal for the field is to make “stealth” unnecessary. While it may facilitate getting foresight introduced, it may do a disservice to crafting a discourse around it. If integration is to succeed, the stealth eventually has to be unmasked. Stealth may be guilty of creating the confusion about what foresight is, which was identified as a key challenge in Section 2.1. [Item 7]

A more directly practical implication was the identification of specific frameworks for positioning foresight in the organization from my earlier work (Hines, 2000; Becker, Daheim & Eurz, 2006) that could be evaluated and built upon. [Items 4, 8]

These implications naturally come together in the form of a proposed agenda for future research, in a way that combines the big theoretical questions with the more “hands-on” practical ones. It was often difficult to separate the theoretical and practical, which may be viewed as a positive, as it suggests the potential for stronger links between theory and practice.

Chapter Four. Conclusion

The published works began with a fundamental question on why integrating foresight into organizations has proven so difficult and this work went on to explore ways in which an organizational futurist might help. The synthesis of the published works represented an exploratory research approach to investigate the feasibility of an organizational futurist role, based to a large extent on my direct experience in crafting such a role. This exploratory work relied on an action research approach that was light on theory and conceptualization. This thesis addresses this gap. It began with a critical review of the published works to identify new research questions. A thorough review of the foresight literature supplemented by reviews of literature in topics such as social constructionism, narrative theory, discourse analysis, institutional theory, organizational learning theory, business and management research assisted the conceptualization.

The research questions inspired five principal contributions to knowledge.

Guiding Research Question: What is the role of an Organizational Futurist in integrating foresight into organizations? [refers to contributions 1 and 2 below]

1. The development of the Integration framework for mapping the process and roles involved in foresight integration.

The Integration framework describes six activities involved in the foresight integration process, operating across the levels of individual futurists, futurist firms, and the foresight field as well across the client side. It fills a gap in the foresight field, which has not focused sufficient attention on how the integration process unfolds within organizations. This lack of attention likely reflects the prevalence of consulting futurists who typically work with several organizations rather than focusing on an individual organization over a long period of time. This work suggests a framework for contextualizing the integration process that in turn provides an orientation for the organizational futurist role.

The intent was not to identify a definitive path that characterized every attempt at integration. It would be over-reaching, perhaps, even to suggest it was typical. Rather the intent was to provide a starting point to enable a dialogue about integration, acknowledging the crucial rule of the social construction process of integration unique to

each organization. The Integration framework provides context for exploring the integration process.

The analysis revealed that the published works account of the organizational futurist role focused heavily on positioning in the middle of the integration process. This suggested an expanded range of possibilities for thinking more broadly about before and after.

2. Makes a case that the organizational futurist adopts a social constructionist perspective to guide the process of foresight integration.

A social constructionist perspective, informed by an epistemological pluralist approach, provides an opportunity to meet organizational clients “where they are.” It focuses attention on the need for greater dialogue with clients and among the field. Fuller & Loogma (2009, p.77) note that “a central tenet of social constructionism is that without participation between people in making meaning (or sensemaking) no meaning exists. The proposed organizational futurist role emphasizes an insider approach (see Figure 4), recognizing that other approaches, such as the provocateur are viable and useful as well, but not appropriate to this one. The key rationale is that the socially constructed nature of meaning-making in the organization (and for that matter of the future itself) involves a high degree of dialogue and relating that is difficult to effectively participate in from outside the organization (i.e., in a consulting futurist role). The organizational futurist benefits from being “closer” to the inner workings of organization. As Cunliffe (2011, pp.653-654), suggests “knowledge is ephemeral, indeterminate, embedded, and reflexive, thus one must be present with it.” Gergen (1985, p.267) notes that “the process of understanding is not automatically driven by the forces of nature, but is the result of an active, cooperative enterprise of persons in relationship.” And Shotter (1999, p.371) adds that...”our actions are, to an extent, responsively shaped by what occurs around us.” These quotes illustrate how dialogue, rhetoric and argumentation are central to this meaning-making process, and the need for participation is vital. The process is elaborated more specifically in contribution #5 below.

The organizational futurist is likely to benefit from an approach informed by epistemological pluralism. This assumes greater attention to epistemological issues, as some futurists have pointed out (Mermet, Fuller, & van der Helm, 2009; Miller & Poli, 2010; Oner, 2010; Tiberius, 2011). The organizational futurist is likely to confront a plurality of epistemologies. This suggests an approach that is open to dealing with this

plurality. This informs and builds on the published works initial suggestion of a need for political skills. It is not meant to suggest that all futurists must take this approach, but rather that is of great value to the organizational futurist role as outlined.

The integration of foresight can be viewed as a socially constructed process involving the six activities of the Integration framework. The next three contributions derive from relating the organizational futurist role to this socially constructed process along the Integration framework, linked to the three supporting research questions.

Research question one. To what extent do developments in the foresight field influence the role of the organizational futurist in integrating foresight into organizations?

3. Makes a case that the development of the foresight field toward professionalization could be an important influence for aiding the organizational futurist role.

The first research question focused on how foresight is publicized and introduced to organizations. The analysis suggests that the prospects for the organizational futurist role are to a significant degree dependent on the field level: how well the field publicizes itself and persuades clients to adopt foresight. Key issues for the field are identified as well as an analysis of the state of professionalization. Several criteria are combined to assess professionalization and provide a view on where it currently stands. In addition, the social constructionist approach could be applied to field building. Dialogue among practitioners and with clients about the field/profession could help bring the two together to a much greater extent. The field itself has not sufficiently developed its own discourse about foresight, nor has it adequately involved its prospective or actual clients. There is not yet a clear or compelling case on why organizations should adopt and integrate foresight. It also suggests the organizational futurists could benefit from participating in field- and profession-building.

Research question two: What are the ways in which organizational futurists can be effective in bringing about successful outcomes?

4. The development of an Outcomes framework provides a useful mechanism for the organizational futurist to stimulate a dialogue and discourse about successful outcomes for the integration of foresight.

The second research question led to a framework for evaluating foresight outcomes and discussing the question of what success in foresight integration might look like. It addresses a challenging issue for the organizational futurist in providing a means to stimulate a dialogue about expectations for success. It proposes an emphasis on influencing decision-making processes, based on three components of influencing learning, the decisions themselves, and actions based on those decisions. The framework links six principal activities of foresight work (Hines & Bishop, 2007) to the three components of the decision-making process, thus demonstrating specific potential avenues for how foresight work can contribute. The Outcomes framework is intended to stimulate conversations within organizations, providing a mechanism to have a discussion about success.

Research question 3. To what extent can foresight knowledge and understanding become institutionalized in organizations?

5. Makes a case that the organization futurist adopts a discursive approach to institutionalization that builds from the periphery to the core of the organization.

The third research question explored the potential contribution of institutional theory to the integration process. Exploring this question led to introducing contributions from several other bodies of knowledge, including social constructionism (Shotter, 1993), discourse analysis (Phillips et al., 2004; Taylor & Van Every, 2000), communities of practice (Lave & Wenger, 1991), narrative theory (Boje, 2001), organizational learning (Barrett, 1998), relational constructionism (Hosking & Haslam, 1997) and Vygotsky's notion of scaffolding (van der Heijden, 2002). While the relative immaturity of foresight integration suggests it might be a bit premature to talk about institutionalization, given the need to address many others issues involved in the integration process, it nonetheless provides a basis to further discuss and explore the question. It identified a Discursive model of institutionalization (Figure 6) to characterize the process for how ideas, concepts, or capabilities, such as foresight, typically emerge from the fringe of the organization and work their way toward the mainstream. It suggests the burden is on the organizational futurist to make the case for foresight--since it challenges existing routines and interests, it is likely to face resistance. A Hypothetical chain of integration (Figure 5) suggests what the process typically looks like, again offering a basis for discussion rather than a rigorous solution for what the process must look like. It suggests a scaffolding approach to integration that leads to new ways of understand

that progressively build the case for integration. Meaning emerges in the interaction and struggle of back-and-forth conversation between people (Bakhtin, 1986). If agreement isn't reached at any stage, foresight integration can stall. Thus, it is not suggest that this is a linear process of simple to greater complexity, but a highly iterative socially constructed process--one that moves from text to narrative to discourse to meaning-making and back again.

The implications from Chapter 3 included several specific recommendations to promote the integration of foresight. Items 1-6 are envisioned as sequential, as each builds upon its predecessor. Items 7 and 8 could proceed on a parallel path.

4.1 Research agenda

1. Design a "Building the Profession" project to identify potential approaches for naming, defining, and bounding the field and evaluating outcomes. The APF is a logical initiator and convener for this project, which could provide a design for how to approach and talk about these vital issues for the field. It would aim toward eventually gathering stakeholders for dialogue, potentially combining publications, meetings, conferences, etc. Perhaps the most difficult of the issues in terms of approach is bounding. One recommendation is to borrow from Gold, Rodgers & Smith's (2003) "field of competence" and Prahalad & Hamel's (1990) core competencies ideas and do a core competence activity. The goal would be to map out a foresight "ecosystem" that would help clarify which approaches and tools are unique to futurists and which are best shared with like-minded groups--and explore the resulting relationships between approaches, tools, and groups.

2. Create a "Learn from other fields" project. The research for this work frequently went outside the foresight literature to social constructionism, organizational development, organization learning, narratives and discourse, and institutional theory among others. While foresight prides itself on including multiple disciplines and perspectives in carrying out its project work, there is an opportunity to expand the application of this multi-disciplinary perspective to looking at itself as a field. Along those lines, a project to explore how other new fields have dealt with issues around integrating foresight, including the questions identified here, could be initiated.

3. Explore ways to increase the incorporation of client perspective. This too could be part of #1 but also has a home in foresight's academic programs. One specific project would be to refine existing "responsiveness" instruments: Foresight Styles Assessment

(Dian, 2009); Leadership Development Profile (Cook-Greuter, 2005); Strategic Orientation (Miles & Snow, 1978); Rohrbeck's Maturity Model (2011); or to draw upon them to develop a new one. The results could also be incorporated into an updated Organizational Futurist Audit (Hines, 2003a) as part of Item #8.

4. Assess the state of foresight in general and organizational foresight in particular.

Timing-wise, this project makes sense after the first three. It may be beneficial to first clarify the field issues, and then explore its current status. An important component, or perhaps a separate project, would be to look for patterns in industry adoption. Another important component, which could also be a separate project, would be to focus specifically on the status of integration of foresight into organizations. A case study approach makes sense here.

5. Incorporate client and public input on professionalization. Table 4 provided a view of how futurists see the state of professionalization. The social constructionist perspective suggests two important missing inputs: the perspectives of clients and the public.

6. Design potential approaches for a public relations campaign to promote awareness of foresight. A public relations campaign could be designed to raise awareness of foresight capabilities with the goal of stimulating dialogues with potential clients. But how to go about it? What have other fields done? What particular points might be most useful to promote? A useful first step would be to gather data around the current degree of awareness of foresight in organizations and the public-at-large, which could build off of Item #4.

7. Test the Integration and Outcomes frameworks with futurists and clients. This project would gather input from experienced and new clients for their input on the Integration and Outcomes frameworks. Has integration proceeded along the proposed framework in their experience? Does the Outcomes framework provide a useful guide for discussing success? In what cases is institutionalization a proper goal for organizational futurists--or not?

8. Revise and update the organizational futurist audit. Revisit the ten questions in the original audit (Hines, 2003a) in light of the learning from this work, as well as from this research agenda.

Appendix

Table A1. Summary of published works

Papers	Methodologies	Key issues explored	Contribution to understanding	Questions raised
<i>Path One: Positioning for a more client-centred approach</i>				
1. (1999) with Louise Trudeau. Futurists on the "inside:" the state of practice of organizational futurists. Futures Research Quarterly , 15 (4), Winter, pp.49-62.	Content analysis used to report and analyse results from a one-day Organizational Futurists Workshop at World Future Society Professional Members Forum designed and facilitated by the author. Twenty-seven participants shared experiences and mini-case studies around several categories and questions relevant to the organizational futurist role.	Focuses on more effective positioning of foresight activity with an emphasis on understanding client receptivity. Suggests a shift in organizational futurist roles from traditional planning functions to new areas such as market research and new product and business development.	New organizational roles suggest a need to reassess the skills, approaches, and methods for doing this type of foresight work. .	A formidable list of identified challenges suggests there are issues with how well foresight is being practiced. This in turn raises the question of what success looks like.
2. (2001) with Kerry Kelly & Scott Noesen. Viral Futures at Dow. Futures Research Quarterly , Fall, pp.59-66.	Case study of authors' organizational experience in integrating foresight, derived from interviews as well as authors' direct ethnographic experience, with the analysis providing an evaluation and lessons learned.	Reviews the recent history and experience of the author's organization in integrating foresight, noting the reliance on a few key champions in promoting it and exploring the process of how it spreads through the organization.	Identifies one path to the integration of foresight. Suggests the crucial importance of participating and stimulating dialogue, crafting narratives, and building a discourse around foresight as a means to promote and integrate it into the organization.	Is there a typical path or process to integrating foresight? Is there some guidance in terms of identifying and enlisting champions and change agents for foresight?
3. (2002) A practitioner's view of the future of futures studies. Futures , 34 (3-4), pp.337-347.	Issue identification and analysis from the practitioner point-of-view for the future of the field, drawing on author's ethnographic experience, discussions with colleagues and a literature review.	Explicitly calls for more effective integration of foresight into organizations and challenges futurists to focus more on client needs, rethink methodology, and reconsider the development of the profession as a whole.	Makes the case for a long-term confluence of organizational needs with the offerings of futurists, provided they can meet several challenges identified at the field and practitioner level, including methodological development.	Identifies the possibility of gaining useful insight by exploring the individual and industry levels and perspectives to supplement the existing focus on the organizational level. Challenges raised in the call to arms have not yet been met. Why?

4. (2003a) An audit for organizational futurists: ten questions every organizational futurist should be able to answer. foresight , 5 (1), pp.20-33.	Ethnographic approach leading to issue identification and analysis around the organizational futurist role led to the creation of a diagnostic instrument; issues and insights from the author's experience were reported on in "a regular column on business futures" in the journal foresight and provided the basis for the audit.	Formally proposes an "organizational futurist ^{vii} " role, a futurist who works exclusively for one organization, as a means for more effective integration. Proposes a diagnostic audit that identifies and explores 10 key issues facing organizational futurists as they position foresight within organizations.	The audit's ten questions provide a mechanism for individuals or teams to consider when positioning foresight within an organization. It can also be used as an evaluation tool for assessing the health of an existing foresight function.	The audit that assumes foresight is being introduced, but leaves open the question of how and why the introduction process occurs. The audit does not suggest what success looks like.
5. (2007) with Peter Bishop. Chapter 6. Acting in: Thinking about the future: guidelines for strategic foresight . Washington, DC, Social Technologies, pp.191-229.	Questionnaires from three-dozen contributors from around the world (>50% outside the US) captured their best practice guidelines for strategic foresight; insights from the questionnaires were prioritized, collated, and edited into a common voice and format; gaps in the framework were filled by the author.	Focuses sharply on guidelines for improving the effectiveness of getting futures acted upon, as well as emphasizing ways to institutionalization as a means for achieving integration into organizations.	Provides specific guidance for consulting and organizational futurists, as well as clients, on how to improve prospects integrating foresight.	Is institutionalization necessarily the appropriate goal? Or is a skunk works approach that sets foresight outside the mainstream potentially more effective? These questions then get back to "what is success? Is success fitting into the mainstream or transforming the organization?
Path Two: Enhancing credibility by promoting the field and identifying and promoting high-quality work				
6. (1994) with Joseph Coates & John Mahaffie. Technological forecasting: 1970-1993. Technological Forecasting & Social Change , 47 (1), pp.23-33.	Evaluation--using a analysis template developed for the project--of more than 1,500 science and technology forecasts done from 1970 to 1993 organized into 54 scientific and technological areas. The templates were then analysed for	A comprehensive exploration and assessment of the state of technological forecasting that reports lessons learned from a three-year consulting project that resulted in the book 2025. ^{vii}	Captures a shift in the field away from more traditional quantitative approaches to technological forecasting to more qualitative ones, in particular the use of scenario planning. Observed that different industries have different levels of	Many of the identified issues still exist today. Why do some industries use foresight while others don't? It also raises the question of how do industries become aware of foresight and decide to try it. And do those industries using technology forecasting or foresight do any better than those who

^{vii} Joe Coates, John Mahaffie & Andy Hines, *2025: Scenarios of US and Global Society Reshaped by Science and Technology* (Akron: Oak Hill, 1997).

	lessons about technology forecasting and sharing those with the field.		interest and performance regarding foresight.	do not? Reinforces the need for a multi-layer or -level framework that looks at both practitioners and clients, and their interactions.
7. (2003b) The futures of futures: a scenario salon. foresight , 5 (4), pp.28-35.	Scenario planning project designed and led by the author for the Association of Professional Futurists, drawing on research and more than three dozen interviews and using a variation of the 2x2 uncertainty matrix approach, and identifying implications of the scenarios and identifying potential strategic responses for the association.	Focal issue of the project is what the future of the field and the role of the professional futurist might look like in the next 20 years. It identifies issues very similar to those in author's experience-- around market demand, futurists' approaches and tools and how they fit, as well as exploring issues in the development of the field and profession.	Provides a degree of consensus among professional futurists around some key issues identified by the author as being important to the field and profession.	Raises questions about the viability of the field going forward unless futurists adjusted and enhanced their approaches and methodologies, as well as potential benefits from greater cooperation among futurists.
8. (2004) The history and development of the Association of Professional Futurists. In: Slaughter, R. The Knowledge Base of Futures Studies, Professional Edition. Indooroopilly, AU, Foresight International.	Descriptive historical account and analysis of the formation and early history of the Association of Professional Futurists.	Reveals the still-nascent state of foresight and that it is on the path to professional status, but not there yet, and identifies some key challenges ahead on that path.	Provides support for the notion that the foresight field is still under-developed and suggests issues in further developing it	Can the field address issues it will confront if it is able to develop and mature?
9. (2007) with Peter Bishop & Terry Collins. The current state of scenario development:	Literature review and creation of a framework to identify, categorize, and analyse 26 scenario techniques, comparing their strengths and	Provides a comprehensive review and assessment of the popular scenario planning method.	Finds that the greater use of scenario planning is representative of a larger shift from quantitative to qualitative tools.	It is not clear how effective scenario planning has been. This shift can be linked to more qualitative methods is linked to the larger credibility question, i.e.,

an overview of techniques. foresight , 9 (1), pp.5-25.	weaknesses.		Identified more than two dozen techniques sorting into eight general categories that are or could be used, with a key conclusion that scenario planning is in danger of becoming "stale."	has the greater reliance on qualitative tools further harmed the prospects for improving the credibility of futures?
10. (2009) How accurate are your forecasts? more accurate than you might think. World Future Review , 1 (5), October/November, pp.5-22.	Critical evaluation of 107 of the forecasts made in the authors' 1997 book <i>2025: Scenarios of US & Global Society as Reshaped by Science & Technology</i> . Compares the author's own evaluations with those of organizational colleagues and professional colleagues with the APF and identified lessons learned.	Suggests a key reason for ineffective responses is a lack of scholarship that evaluates the effectiveness of forecasting in particular and foresight in general. Evaluated 107 forecasts for accuracy and identified patterns in forecasting and areas to improve.	Describes ways to reposition the accuracy question. Finds a reasonably high degree of accuracy; the work provided support for responding to accuracy question.	Identifies questions around what accuracy is, how is it measured, how useful is it, etc. Raises the possibility of developing more rigorous mechanisms for evaluation or the possibility of using third-party evaluation of forecasts.

Table A2. Initial prioritized questions along the Integration framework

Cluster	Description
1. <u>Publicizing</u> . The role of foresight field in supporting the integration of foresight	<p><i>Overall demand for futures</i></p> <ol style="list-style-type: none"> 1. How much foresight work is available? Is there really there “lots more foresight work available than there are futurists to do it? How many qualified futurists are there? 2. Would deeper theoretical and foundational work coming from universities help build the credibility of foresight internally? <p><i>Changes in client base</i></p> <ol style="list-style-type: none"> 3. What about an analysis of which business sectors are paying attention to the future, and which are not? 4. Can we verify the cyclical of interest in foresight? Is there a way to track interest in the future over time? Did interest surge with the millennium and then recede? <p><i>Organization/client culture readiness</i></p> <ol style="list-style-type: none"> 5. What is the role of organizational values and culture in relation to “receptivity” to foresight?
2. <u>Introducing</u> . Explores how client industries and firms become aware of and adopt foresight and the role of futurists in the process	<p><i>Leverage points</i></p> <ol style="list-style-type: none"> 6. What are the mechanisms by which foresight gets introduced into organizations? 7. What is the best way to attract “newbies” to foresight? Aim at individuals, organizations, industries? All of the above? <p><i>Role or value of history/case studies</i></p> <ol style="list-style-type: none"> 8. Should experts be brought in more frequently to critique the work of futurists (and vice versa)? 9. Can foresight use its own case histories to make its case, e.g., here’s how futurists in the past have dealt with a comparable situation? 10. How useful would it be to point out where foresight advice was ignored and turned out to be right?
3. <u>Doing the work</u> . How consulting futurist(s), often with participation of direct client/organizational futurist do the foresight work.	<p><i>Practitioner attributes</i></p> <ol style="list-style-type: none"> 11. Is the field better served by a personality-led quirky guru boutique approach or a “lunch pail” anonymous approach? 12. To what extent should the insider embody the program? <p><i>Frameworks</i></p> <ol style="list-style-type: none"> 13. Have organizational futurists spent too much time at the organization level, thereby neglecting the opportunity to focus more on the individual level? 14. Should foresight follow standard project management practices, such as milestones, or will this water down the impact? 15. Does the layered/depth approach adequately address the orientation question? <p><i>Tool kit</i></p> <ol style="list-style-type: none"> 16. Does it help internal clients to understand how the tools work, or

	<p>is it better to just focus on the results and keep it a black box?</p> <p><i>Quantitative versus qualitative</i></p> <p>17. Should futurists “translate” a qualitative message into quantitative terms? Does this compromise the work?</p>
<p><u>4. Evaluating success.</u></p> <p>How do all the actors decide what success is</p>	<p><i>Measuring success</i></p> <p>18. How is success in foresight defined? What does it look like?</p> <p>19. Do organizations that use foresight perform better? Do the industries and firms that do rigorous forecasting perform any better than those without?</p> <p>20. Is it possible to develop some form of foresight scorecard--measure the futurist or measure how well the organization responds to the futurist (or both)?</p> <p>21. Which is the goal of foresight--is it transformation or just solid professional contribution?</p> <p>22. How do futurists best answer the “contribution to the bottom line” question?</p> <p>23. Is success in doing the good work (in futurists control) or in getting it acted on (not in futurist’s control)?</p> <p>24. How is the organizational futurist’s performance defined?</p> <p>25. Should futurists seek “small wins” or is the home run more in line with our agenda?</p> <p><i>Third party as source of credibility</i></p> <p>26. Would have a professional certification of some sort help the credibility of the organizational futurists?</p> <p>27. To what extent could the credibility of foresight be enhanced by 3rd party review?</p> <p>28. Would professional standards and code of ethics (and certification) help?</p>
<p><u>5. Positioning.</u> How the direct client/organizational futurist decides to interact with their clients and consulting futurists</p>	<p><i>Broker role</i></p> <p>29. How deeply should futurists know the industry—does it water down the foresight perspective?</p> <p><i>Credibility/Stealthiness</i></p> <p>30. What is the corporate view on the term/the discipline itself? Is it safe to come out of the closet? Is there any cachet or cool factor in foresight?</p> <p>31. What is the role of credentials in providing credibility?</p> <p>32. Do university degrees, certifications, or certificates matter?</p> <p><i>Permission Futuring</i></p> <p>33. Is there a way to track the long-term prospects of the foresight activity, in terms of how it evolves over time?</p>
<p><u>6. Institutionalizing.</u> How, or whether, the client or client decides to formalize foresight work and role of</p>	<p><i>Institutionalization</i></p> <p>34. Is institutionalization the proper goal?</p> <p>35. Where are the proper influence points for foresight?</p> <p>36. Where does futurists role extend--up front stimulus to back end</p>

the futurist in that process

implementation?

37. How successful has succession been in foresight functions?

38. Is foresight better suited for skunk works?

39. How important is the role of training? When is the right time to introduce it?

Table A3. Sources of outcomes considerations		
Adelson, 1989, p.30	Coates, 2010, p.1431	Neef & Daheim, 2005
Alsan & Oner, 2003, p.33	Curry, 2008, p.119	Oner, 2011, p.50
Amanatidou, 2008, pp.539-540	Daim et al., 2009, p.34	Pang, 2010, p.5
Amara, 1984, p.404	Eriksson, 2008, p.463	Ratcliffe, 2005, p.3
Amsteus, 2010, p.59	Fuller, 2009, p.71	Rohrbeck et al., 2008, p.29
Barber, 2009, p.142	Georgiou & Keenan, 2006, p.765	Rohrbeck, 2011, p.51
Becker, 2002, pp.8-9,18-21	Glenn, Gordon & Dator, 2001, p.185	Slaughter, 1999, p.836
Bezold, 2010, p.1514	Hayward, 2004, p.29	Slaughter, 2009, p.7
Bootz, 2010, p.1590	Inayatullah, 2000, pp.370,373	van der Helm, 2007
Buchen, 2005, p.4	Jarratt & Mahaffie, 2009, p.5	Waehrens, 2010, p.329
Burke, 2009, p.100	Karlsen, Overland & Karlsen, 2010, p.61	Wilson, 2000, p.23
Burt & van der Heijden, 2008, p.1110	Karp, 2004, p.9	Wright et al., 2008, p.219
Chermack, van der Merwe & Lynham, 2007, p.380	Korte & Chermack, 2007, p.646	
Coates, 1989, p.15	Micic, 2010, p.1503	

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Submitted works^{viii}

Enhancing positioning path

1. (1999) with Louise Trudeau. Futurists on the “inside:” the state of practice of organizational futurists. **Futures Research Quarterly**, 15 (4), Winter, pp.49-62.
2. (2001) with Kerry Kelly & Scott Noesen. Viral Futures at Dow. **Futures Research Quarterly**, Fall, pp.59-66.
3. (2002) A practitioner’s view of the future of futures studies. **Futures**, 34 (3-4), pp.337-347.
4. (2003a) An audit for organizational futurists: ten questions every organizational futurist should be able to answer. **foresight**, 5 (1), pp.20-33.
5. (2007) with Peter Bishop. Chapter 6. Acting in **Thinking about the future: guidelines for strategic foresight**. Washington, DC, Social Technologies, pp.191-229.

Enhancing credibility path

6. (1994) with Joseph Coates & John Mahaffie. Technological forecasting: 1970-1993. **Technological Forecasting & Social Change**, 47 (1), pp.23-33.
7. (2003b) The futures of futures: a scenario salon. **foresight**, 5 (4), pp.28-35.
8. (2004) The history and development of the Association of Professional Futurists. In: Slaughter, R. **The Knowledge Base of Futures Studies, Professional Edition**. Indooroopilly, AU, Foresight International.
9. (2007) with Peter Bishop & Terry Collins. The current state of scenario development: an overview of techniques. **foresight**, 9 (1), pp.5-25.
10. (2009) How accurate are your forecasts? more accurate than you might think. **World Future Review**, 1 (5), October/November, pp.5-22.

^{viii} The submitted works are organized into two themes or paths: the first is positioning for a more client-centred approach; the second is enhancing credibility by promoting the field and identifying and promoting high-quality work.

Futurists on the “Inside:” The State of the Practice of Organizational Futurists

Futures Research Quarterly,
Winter 1999.

Organizational futurists, you ask? Surely they have gone the way of the dodo after the downsizings of the 1980s. Alas, it appears that the tide has been stemmed and we're replenishing the species. So we're alerting the futurist community and organizational folks that we're here, and hopefully we're merely the tip of a larger iceberg. This article will brief you on what we've been up to by describing the activities of the Organizational Futurists session of the 1999 World Future Society's Professional Members Forum in Washington DC this past July. The twenty-seven organizational participants [see Figure 1] participants included corporate as well as governmental “insiders,” with the other Professional Forum members sorting themselves into either educational or consulting futurists sessions.

Figure 1. Participants in WFS Professional Forum Organizational Futurists Session

Ken Hunter (Professional Member Forum organizer)	Brett Hawkes
Andy Hines (Organizational Futurists session facilitator)	Mel Kattago
Adnan Alrefai	Jyrki Kettunen
Raza A. Babar	Jim Mathews
Brent Barnes	Tarja Meristo
Darlow Botha	Ervin K. Nowak
A. Bukhari	Amy Oberg
Roger Caldwell	Pascal Perin
Denise Chiavetta	Amanda Pike
Monique Cliché	Peter Rzeszdarski
Maria Eklind	Linda Todd
Rudy Garrity	Louise Trudeau
Tony Grider	Dave Winfrey
	Wyman Winston

The session covered the following topics, each of which will be described below:

- Building upon last year's session
- The tools of organizational futurists
- The deliverables of organizational futurists
- The challenges for organizational futurists
- The best practices of organizational futurists
- “Selling” futures inside the organization
- Attributes of successful organizational futurists

Before arriving at our organizational futurists session, we participated in a plenary session led by Jennifer Jarratt of Coates & Jarratt, Inc. that gave us our KAI (Kirtan Adapter-Innovator Inventory) types. The KAI describes one's cognitive preferences toward problem-solving. We kicked off our organizational session by identifying our

KAI types during our introductions. As we suspected, we tended to have similar KAI/problem-solving profiles, clustering towards the innovator end of the spectrum. This is a challenge for us, because most of our internal organizational customers cluster towards the adapter end of the spectrum, as this type is more conducive to survival in an organization.

Building Upon Last Year's Session

After getting to know one another, we briefly reviewed the principal topics covered by last year's organizational futurists session [see Figure 2]. We assessed their relevance to our discussion and chose to emphasize the topics that focused on the process of doing futures work rather than the content about the future.

Figure 2. Organizational Futurists Topics of Interest 1998

- Managing change
- Environmental Management
- Value & visibility of futures in the organization
- Supporting decision-making with futures
- Working with futures researchers & universities
- Professional development program
- "So what?" need to provide tangible value to organization

One of the outputs from last year's meeting we sought to build upon was a survey [see Figure 3] that was drawn up, but not subsequently administered. We felt that these questions were indeed ones we wanted to discuss, and managed to touch upon each during our session. The group felt that building upon previous work was a good pattern to establish, and we agreed that next year's session would similarly build on this year's.

Figure 3. Survey Created by Organizational Futurists Session 1998

- What value does your organization see in future studies?
- What future tools/techniques/approaches do you use in your organization?
- What are your measures of success for futures work?
- How are you spreading the word about futures work in your organization?

The Tools of the Organizational Futurist

We then moved into the meat and potatoes of the day's session – what we are actually doing inside organizations and the results. We approached this by first generating a list of the futures tools that we had actually put into practice, producing a list of a dozen practices captured in Figure 4.

Figure 4. The Practices

- | | |
|----------------------|------------------------|
| • Systems analysis | • Stakeholder Analysis |
| • Strategic Planning | • Visioning |
| • Scenarios | • Idea Generation |
| • Forecasting | • Trend Analysis |

- Issues Identification and Management
- Benchmarking and Reengineering
- Taboos Identification & Analysis
- General futures education

This list should not surprise anyone, perhaps with the exception of taboo identification. The rest have been around and employed for years. What's more revealing is what's not there. For instance, quantitative methods such as trend extrapolation are missing. Neither is the cross-impact matrix, although upon reflection, this could be a case where we use a tool implicitly rather than explicitly (speaking at least from my own experience).

In retrospect, the shift from quantitative to qualitative methods has been underway for some time in the futurist consulting realm. Perhaps what we're now witnessing is the organizational futurists catching up with this trend. It also signifies a shift in organizational cultures. Where once numbers and forecasts were king, it has been recognized in today's rapidly changing and uncertain operating environment, that softer, "squishier" methods are more often appropriate to the task.

The Deliverables of Organizational Futurists

While it's useful to know what tools people are using, we felt the more interesting question was what they are being used for. So we next generated a list of the deliverables that our tools were being asked to produce. We eventually sorted these deliverables into three overarching categories to help clarify the over-riding objectives [see Figure 5]. The "strategic" deliverables relate to tools that help the organization answer a question, typically a yes or no, such as "do we build the new facility?" or "should we invest in biotechnology?" The "creative" deliverables relate to tools that help the business come up with new ideas or create new business opportunities. The "educational" deliverables relate to tools that help raise a general awareness of the future in the organization.

Figure 5. The Deliverables

Strategic	Creative	Educational
Transition strategy	Technology opportunities	Ongoing identification of threats and issues
Plans analysis	New business opportunities	Identification of discontinuities
Input to budget	New markets	Provide comfort level
Long-range forecasting for business restructuring	Consumer insights	Create sense of urgency
Business and strategic plans	Constituent needs	

The strategic and educational deliverables are perhaps more conventional than the creative. We suspect that the creative deliverables may be more characteristic of organizations at the leading-edge for using organizational futurists. This suggests that this area may be an area around which to focus any educational or training efforts aimed at organizational futurists.

The Challenges for Organizational Futurists

We then moved on to the challenges we face in getting our futures work implemented. We agreed that good work often isn't enough, and that we must pay strict attention to getting futures work acted upon within the organization. We generated a list of these challenges in implementation, [see Figure 6] trying to make it as practical as possible by having participants base their "challenges" on their actual experiences. In particular, we asked participants for their biggest flops, which came forth after a promise of anonymity.

Figure 6. The Challenges

- Futures work is seen as a threat to the existing order
- Futures work lack political support and "Whomever Holds the Gold Makes the Rules"
- There is no connection between the futures work and the ultimate implementers
- There is no champion for the work
- The work stays at too high a level
- "Fact" people predominate, but futurists are mostly "vision" people
- Futurists don't tend to like the details, but the "business types" do, and they often view futures as too soft or squishy
- Futurists have to wear multiple hats and are spread too thin
- Lack of time commitment or leads to futurists doing too much of the work themselves, which is time-consuming and hampers buy-in
- Lack of concrete deliverables at each stage of futuring
- Bringing people into the futuring process before they are ready
- Lack of a sense of urgency for the future
- Need iterative cycles to gain "permission" or acceptance
- Being sabotaged by "closed" thinking styles
- Need to build "trust capital"
- Outsiders (consultants) are often viewed as more credible than insiders
- The "This is the way we do it here" syndrome
- Confronting the "sacred" elements or taboos

The Best Practices of Organizational Futurists

The challenges capped off the morning. After a lively lunch discussion, we moved into best practices. We decided to approach this by having participants offer up brief case studies based on their actual experiences. The specifics are "sanitized" so participants could speak freely. Below is a distillation of the essence of what the futures tool/project accomplished, and what some of the challenges were.

Case 1. Building Scenarios to Identify Market Opportunities

The organization in this case was sitting upon a lot of market data that was not being effectively leveraged. A scenario project was undertaken to try and bring this data to life,

and identify and fill any gaps. The project was positioned -- and we assume bought into -- to the team involved as a chance to be pioneers in the organization, since this was the organization's first try at scenario planning. The team followed the scenario planning process popularized by the Global Business Network (GBN). The futurist facilitator took GBN's training course in scenario planning. This additional credential was deemed a key selling point in getting the team involved to try the tool out.

The team, despite time and other business pressures, went all the way through the process, including 18 one-hour interviews with extended team members and two successful off-site workshops, one for the scenario generation and another to work through the implications and action items coming out of the scenarios.

Assessing the project in hindsight, it is clear that the team did come up with fresh looks at the marketplace under question. For a couple of team members, this "freshness" was perhaps too much and led to a "buy-out." Others found this freshness refreshing, but were not quite able to make the leap into acting upon the perhaps unsettling findings. In sum, the scenarios improved the team's understanding of the market (the "strategic conversation" to use GBN jargon), but didn't quite earn the buy-in necessary to spur following up on the actions identified.

Perhaps the most unique feature of this case was its relative success, given its predicament of being an unconventional tool in an organization characterized by very conventional thinking. The organizational futurist involved rated this project a solid success.

Case 2. Positioning Futures Work in the Organization

Our second case involves the positioning of futures work (also touched upon above). The organizational futurist involving, sensing potential resistance to the terms "futurist," "future studies," and the like, took the tack of cloaking the work under the rubric of "special projects." The special projects used futures tools and strove to maintain credibility throughout, ruling out anything approaching the incredible or ridiculous.

A feature that proved particularly attractive to the "business types" in the organization involved was the use of futures tools to demonstrate the benefit of cost-avoidance by employing foresight. The numbers involved and the bottom-line nature of this case spoke the language that the organization involved was most comfortable with.

The chief difficulty in relying on the numbers-heavy approach was the danger that the qualitative assumptions relied upon to generate the numbers get overlooked. This is the familiar case of numbers conveying a sense of "objectivity" that misrepresents the qualitative base of human judgment that generates them. On balance, however, the futurist felt the benefit of the buy-in outweighed the risk of hidden assumptions.

An interesting follow-on to this case would be to see whether the futurist involved will be able to "come out of the closet" as a futurist.

Case 3. Emerging Issues Identification and Analysis

The exciting feature of this case was its comprehensive approach to emerging issues identification and analysis. Several futures tools were employed to identify a “show-stopping” issue, and to put together a plan to deal with it. The tools employed included trend analysis, pattern analysis, surveys, benchmarking, cost assessment, and forecasting – comprehensive indeed!

The value of identifying a “show-stopper” cannot be understated as a best practice. It enables the positioning of futures tools as a solution to solving a business problem. Often times, new tools such as those of the futurists, are viewed by those inside organizations as impractical, flavor-of-the-month, hammers looking to call everything nails. More simply, they are viewed as tools for the sake of tools. Hence, carefully identifying a business issue to which the futures tool can then be applied, is an extremely useful positioning.

Once the buy-in was obtained, the tools generated priorities and identified cost savings. As in the case above, the qualitative findings generated by the tools were validated and put into numbers that the business types are comfortable with. Despite all this solid work, however, the key challenge involved was getting the organization to “cross the Rubicon” and implement the findings.

Case 4. Cost Avoidance Issue

This is another “multi-tool” case. In fact, as we went through the cases we agreed that this feature is the rule rather than the exception in futures work. We continually draw from our futures tool kit as needed in the course of a project and rarely rely on just a single tool.

In this case, the organizational futurist worked with a consultant. One of the key value-adds of the insider futurist was to act as something of a consumer buyer’s guide expert. Based on our intimate knowledge of what’s going on inside, we can leverage our unique insight about the strengths and weaknesses of the consulting futurists to form strong partnerships. Most organizations, we felt, suffered from not being informed consumers of futures work, and having an insider expert can save a lot of time and money and ultimately increase the effectiveness of futures work.

“Selling” Futures Inside the Organization

The point continually arose throughout the day about the importance of “selling” futures work inside the organization, perhaps standing out as our key professional challenge today. So we spent some time cataloging the various approaches we tried in selling futures inside the organization [see Figure 7]. It is not yet clear that the list in Figure 7 yet qualifies as best practices, as the “selling” concept is still fairly unrefined.

In our discussion accompanying the generation of the list, we concluded that a prerequisite for a successful “sale” was that the organizational client group be ready for change. This could be either from a reactive or proactive orientation. While proactive was clearly more favorable, reactive seemed to be the norm. By reactive, we mean that the client group senses trouble on the horizon or hits a crisis, and turns to the organizational futurist for help. By proactive, we mean that the client group organization employs futures from a desire to change before crisis hits or to positively exploit future opportunities. “Fat and happy” group resting on their laurels and therefore allergic to messages of change, we agreed, are extremely difficult targets for our work.

Figure 7. Selling Futures Studies in the Organization

- Don’t call it futures studies, e.g., “trends program” or “special studies unit”
- Sell yourself as a guru -- the cult of personality approach
- Prove relevance of futures to the organization
- Offer systemic analysis
- Offer to visualize the intuitive
- Offer decision support -- actionable information
- Offer a fresh perspective
- Offer help in “navigating the sea of data/information”
- Offer help in taking advantage of short- and long-range opportunities (futures is not just about the long term, but can aid the short- and medium-term as well)

The list above is not meant to suggest that one pick a single approach in isolation. Surely, a successful approach will combine many if not all of the above. Rather, the list highlights particular approaches that session participants identified as having particularly strong “juice” in their organization.

Attributes of Successful Organizational Futurists

Lastly, we generated a list of the attributes we felt we important to success as an organizational futurist. Given all the work done up to this point – knowing what we now knew about the tools, challenges, best practices, etc. – we brainstormed the attributes for the perfect organizational futurist. At the same time, we anticipated that this list could be a useful measuring stick of our own performance. (It would be interesting to compare this list with similar ones generated by the educational and consulting futurists and note the differences.)

Figure 8. Attributes of a Successful Organizational Futurist

- | | |
|-----------------------------------|-----------------------|
| • Tools/Methods/Concepts training | • Political skills |
| • Academic training | • Negotiation skills |
| • Cultural awareness | • Integration skills |
| • Creative | • Information skills |
| • Systems thinking | • Networking skills |
| • Facilitation skills | • Storytelling skills |
| • Critical listening skills | • Desire to Learn |

- Energy
- Process orientation
- Not worried about getting credit
- Awareness of ethical issues

It is interesting to note that while training in the tools is at the top of the list, most of the other skills are a fairly standard assemblage for any successful person in an organization. There isn't much inherent to the futurist, except perhaps that their combination in an individual is rare in the typical "business type" and more endemic to the futurist.

That said, we also don't want to overlook the extreme importance of mastery of the tools. There was a loud murmur of assent, and even some visible shuddering, when the point was raised about the damage that an "amateur" effort can do to the long-term credibility of our cause. We agreed that it is better not to use a futures tool that one is not comfortable and capable with, than to risk destroying credibility with a badly botched effort. Just because we are organizational futurists does not mean we are masters of every futures tool or in control of every futures effort. We need to know when we need help, be it training or bring in consulting futurists. At the same time, we felt there was no reason to be afraid to experiment as long as we are comfortable with our ability in general and can adapt on the fly.

Conclusion

While we are not pretending to represent the whole of futurist practitioners inside organizations, we surmise that we're at least a fair indicator of what's going on. Several big multinational companies and government agencies were represented amongst the participants. It is an interesting question as to what percentage of the total we are. Let's hope it's a small one, and we're going to get lots of feedback from other organizational futurists on what they are doing.

One particularly tricky item is whether people doing futures-type work actually refer to themselves as futurists. Based on experience, we can safely say that many folks are doing the work without the moniker. One can get drawn into a debate about what constitutes a professional futurist. It's probably wise not to get hung up on this. Anyone doing futures-type work is welcome with open arms in our session. We are hungry for the learnings and experiences of others with futures tools, whatever you are called.

A note for the upcoming session in Houston is that we had hoped to more formally identify a research agenda for futures studies based on our organizational experience. The challenges discussed above are raw material suggestive of such an agenda. Perhaps one of the goals in Houston we can pursue is to explicitly develop this research agenda. You can send your suggestions for topics to Andy Hines (ahines@dow.com).

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Viral Futures at Dow

Andy Hines, Kerry Kelly and Scott Noesen*
Futures Research Quarterly, Fall 2001.

Abstract

The use of formal futures tools and concepts has been spreading "virally" in the dozen years since its introduction to the Dow culture. A handful of people spread this virus, building a network such that today the effort is poised to enter the corporate cultural mainstream.

The Dow Chemical Company is typical of big multinationals wrestling with how to deal with the future, but of a particular genre that has been very successful and well run for a long time. For them, looking to the future in a formal, systematic way has not been seen as necessary. After all, it is hard to argue with success. But increasingly rapid changes in the business environment and a recent commitment to triple the size of the company in ten years are challenging the company to think about the future more systematically.

The good news is that over the last dozen years several people within the company have anticipated this need, and have taken the initiative to explore the field of future studies and seek futurist' help. Consequently, the use of futures in the company to date has been largely tied to these few individuals. Were any one of them to have been hit by the proverbial beer truck, the use of futures may well have been eliminated along with them. Thankfully, they haven't been, and steady progress has been made in spreading a futures orientation. The recent hiring of a professional futurist is a signal that the futures cause is gaining a more serious hearing.

The contributors to this piece are key links in the futures chain at Dow, representing its continuity and growing influence. Three of the four principals of the story are currently employed at Dow, and two have been here from the beginning. The other key contributor has been the futurist consulting firm Coates & Jarratt, Inc., which has been Dow's primary external source of futures insights over this time period, including the breeding of the professional futurist that the company hired.

Introducing the future

The exploration of the future has been making steady progress since its introduction, but it has yet to be fully integrated and systematized throughout company planning. It was introduced via a bottom-up approach that has been low-key and relied on "infecting" people with the message. The infected have become vectors to others, thus the moniker "viral futures." The principals have kept "futures" as a term in the background in support of their work.

The first link in the chain of developments, Kerry Kelly, began investigating futures in the late 1980's when doing some exploratory R&D. He was part of a Wednesday morning book club and introduced some books on the future to the club, such as Peter Senge's *The Fifth Discipline* and John Naisbitt's *Megatrends*. Consulting futurist Joe Coates was first brought in during the 1980s, with the result being a lively debate, as his provocative style confronted an audience game for the challenge.

In the early 1990s Kelly moved into a new job in corporate ventures, and began a more serious personal exploration of futures work, buying books, going to World Future Society conferences, and periodically bringing in the futurist consultant. Co-author and current Dow futurist Hines visited Dow as part of the consulting team in support of a new business opportunity workshop sponsored by Kelly. In 1997, Kelly left Corporate Ventures, but was able to persuade his new boss into continuing a relationship with the consulting firm's multi-client, *Forecasts in Science, Technology & Engineering* for another year.

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This brings us to the first sharp transition. Scott Noesen, through his contact with Kelly, became a principal driver of futures thinking in support of his interest in furthering the cause of sustainable development. He saw the value of futures as a tool for raising the profile of sustainability. A milestone in this effort was an engagement with the World Business Council on Sustainable Development several years ago with their now well-regarded scenario project. Noesen and others convinced a key executive about the importance of the scenario project, and got five hours with the Executive Committee, the top thirty executives in the company. Jed Davis from the Shell Scenario Planning team was brought in and led a successful scenario session in May of 1998. Perhaps the capstone was the CEO remarking that "this may look like the soft stuff, but this is really the hard stuff." Later, the scenarios were integrated into a sustainable development workshop that is still being given today. It is remarkable about how ingrained sustainability is now in the Dow culture. One can surely point to this as a successful use of futures with a broad internal constituency.

The second transition was the hiring of Hines into the Growth Center for new business development. His charge has been to adapt the tools and concepts of futures to fit the language and manner conducive to Dow's corporate setting. So far, he has deliberately downplayed the use of the terms "futurist" and "futures studies" and instead emphasized business language and outcomes. Of course, many have figured out his "true identity" as a futurist, and are positive about it. For example, he was recently introduced at an important internal meeting as Dow's corporate futurologist. Nonetheless, the judgment of the futures vectors at this stage is to continue with a low-profile. Our strategy is that it will take numerous demonstrable successes based on futures work to bring it out into the open as a tool of widespread utility.

While the evolution has followed the sponsors, along the way they have infected many others, who in turn have infected even more. A key tactic in building this informal coalition was bringing the individuals to project meetings involving futures topics hosted by the consultants. The fruits of this effort are visible today as there is a constituency for futures thinking in the company around this core group. Its usage is no longer dependent on the survival of the three vectors. While futures thinking may now be able to stand alone, it is likely that some kind of evidence of success from its application will be necessary to spread it throughout the organization, and seriously engage senior management.

Futures work has centered around new business growth, although there has been recent work with business unit strategy. Environmental Health & Safety has been the other primary user. Human Resources dabbled in futures work early on, but interest has faded. The evolution has been:

- Human resources -- Future of HR project
- Discovery research -- Kelly enters -- futures has an R&D emphasis
- Corporate Ventures -- futures takes on more of a new business emphasis
- Future Day -- in 1998, did a "big show" with the consultants to a much wider audience
- EH&S (Environment, Health & Safety) -- Noesen enters -- emphasis on sustainability
- Growth Center (New business development) Hines enters -- renewed emphasis on new business development
- Public affairs -- emphasis on telling the story about Dow's future

The use of outside futures resources

The futures effort initially, as noted, relied primarily on a single consulting firm. Futurist Marvin Cetron was brought in once. Kelly brought back other perspectives from meetings such as the World Future Society General Assembly. As mentioned, Noesen worked with the World Business Council on Sustainable Development. But the range of outside futures expertise has been steadily expanding over the last few years based on Hines' professional knowledge of the strengths and weaknesses of various firms. For instance, Dow began a working relationship with the Global Business Network, and has also worked with the Institute for Alternative Futures and Battelle.

Most of the work with outside futures resources has come in the form of co-sponsoring multi-client studies. Our experience is that multi-client studies are a cost-effective way to get lots of futures information and to build a futures constituency. Some of the outside futures projects that have been supported are:

- Coates & Jarratt, Inc. multi-client "Future of Human Resources"
- Coates & Jarratt, Inc. multi-client "Project 2025"
- Coates & Jarratt, Inc. multi-client follow-on to "Project 2025" called "Forecasts in Science, Technology & Engineering"
- World Business Council on Sustainable Development's "Environmental Future Scenarios"
- Coates & Jarratt, Inc. multi-client "Future of Packaging"
- Global Business Network's "Worldview Corporate Associates Program"
- Coates & Jarratt, Inc. multi-client "Future of Lifestyles"
- Institute for Alternative Futures "E-Health"
- Coates & Jarratt, Inc. multi-client "Future of Sustainability"
- Battelle's "Healthy Home" Scenario project

Expectations regarding the looking to the future

Given the bottom-up and individual-dependent nature of the commitment to the study of the future, expectations rests more on individual initiative than senior management commitment. The top has had few expectations of futures, since it has only grazed their radar screen. The attitude toward futures at the top has largely been forbearance. The reception has been more positive at the grassroots level, as many have been yearning for support in taking a wider-ranging and bigger picture view. One could divide the audience for futures-related projects into three main groups. The smallest, unfortunately, is the group who "get it." The biggest is those who "don't get it yet, but are likely to" with some coaching and experience. The last group are those "who don't get it, and never will."

The individuals spreading the futures message have typically looked to the long term, and their sponsors have gone along with this. For instance, Dow was a sponsor of a precedent-setting project that looked to the year 2025. On the other, most futures-related thinking today is around a shorter-term view. Lengthening the organization's typical time horizon is a central challenge.

Organizing the engagement of the future at Dow

The futures effort has resided in the people who introduced it and the projects they sponsored. There are not any special facilities or dedicated space nor a fixed home on the organization chart. But both types of homes are being discussed and may come to fruition. The lack of roots has led the authors to joke that what we're really doing is "subliminal futures," in that the approach has been to use the concepts and tools without letting on that that is what we are doing.

One very strong lesson is that collecting binders full of information and waiting for colleagues to call up and ask for the information is an exercise in futility. The internal futurist or futurist-sympathizer needs to do synthesis and interpretation to relate the work to the specifics of the organization. Then he or she must be willing to do some "push" marketing to make something happen.

An example of this push comes from Kelly and the use of "Project 2025." He selected various provocative assumptions and forecasts, and asked a group of internal experts for an email response along the lines of -- "do you believe it or not?" He then did a mass mailing of the responses. That had a very positive effect. For instance, the then CEO got more interested in futures and forward thinking. He brought in management consultants with futures concepts, although not professional futurists. Another positive outcome involves an R&D scientist using the 83 assumptions about the future from "Project 2025. He compared several hundred projects in R&D against the assumptions, and found that only 1% of the projects were tapping into the future these assumptions were projecting. This led him to rethink how his group chooses the projects they are going to work on. They now make sure their projects are in line with future trends.

The state of the future today

Kelly and Noesen continue to use futures work along the lines they've been pursuing for several years. Hines, the most sanguine of the authors about the influence of futures, sees futures making inroads in several ways. He

- led a project exploring future "whitespace" growth opportunities;

- regularly consults and leads workshops exploring future growth opportunities for completely new business ventures;
- regularly consults and leads workshop regarding future growth opportunities for existing business units;
- has been invited to run workshops regarding the formation of alternative futures business strategies for the strategy group;
- gives talks and runs trends-related exercises for other functional activities, such as public affairs, information systems, and environmental health and safety;
- is a source of referrals to expert futurists and consulting firms;
- seeds futures thinking through the circulation of trip reports from visits to futures meetings and conferences;
- created a "Trends Universe" web site that houses trends also used in various workshops;
- writes a bimonthly Newsline column the company Intranet on topics from a "Future of Lifestyles" project the Growth Center is sponsoring.

His argument cites the very practical nature of the Dow culture-- futures would not be spreading unless it is viewed as benefiting the bottom line.

Report Card: How useful has it been

In assessing the impact of futures, we agreed that a key difficulty is that it is hard to measure success. For example, "nothing happens right away," which is even more true regarding futures work. It is very difficult to trace back a project to the original insight or insights. Perhaps someone heard something from an futures project, a year later he or she raises the insight at a meeting, not recalling the source. A project is launched and later becomes successful. It sounds like something we suggested, but we can't necessarily be sure. Is that a success? We'd say yes, but, alas we cannot prove it. For instance, the most recent Newsline column on futures lifestyles topics had just under 2,000 readers, with just two readers initiating a formal follow-up. How might the other 1,000 plus readers be making use of this?

Interestingly, it was observed that the reception to futures has been better at the top and the bottom and runs into choppy water in the middle. Middle management has their feet to the fire to deliver now, and has little incentive to think long term. As all of us in the corporate world know, it is middle management that really runs the company. This suggests another challenge is how to incentivize middle management to think and act futuristically.

The Future of the Future at Dow

The future is clearly gaining a more prominent role. Many in the company are enthusiastic about a professional futurist being in residence. If nothing else, that is a symbol of more attention to the future. A futures function is mentioned in the description of the new business development organization, and futures information, such as the Dow Trend Universe, resides virtually on the company Intranet. Futures tools and concepts are increasingly becoming a routine part of our day-to-day activities. The network of futurists and futures consulting firms we use continues to expand. These developments all point to the potential for futures to flourish in the decade ahead.

The Growth Center is a particularly attractive spot for futures thinking, as it wrestles with new territory to explore and new approaches to take to create future business for the company. This foothold can then be built upon to bring futures thinking into the existing business. Happily, progress is being made on both of these fronts. A recent expansion has been a greater role for the futurist in Dow public affairs, although it's still too early to tell where that will lead.

Some Lessons Learned

In conclusion, here are seven key lessons we've gleaned from our experience:

- It's all about people and networks -- this is truly a one-person-at-a-time effort; nothing is more valuable than helping internal customers solve problems and the resulting word-of mouth promotion

- Bring the outside in -- multi-client consortiums are a cost-effective way to get lots of futures information and help build a futures constituency
- You must push to generate pull -- this is an evangelistic undertaking
- Be patient -- have a long view in terms of years of slowly "infecting" the organization
- Deliver the goods, even at the expense of purity -- the principle here is that it's better to deliver on a two-year outlook than hold out for a ten-year one; delivering solid, actionable results on the two-year future will open the door to longer-term
- Present futures thinking and tools as a means, not an end -- do not get hung up on whether something is called a futures study or whether there is a department of futures studies.
- It is worth it -- there is nothing like the excitement and joy of turning people on to futures thinking

A practitioner's view of the future of futures studies

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Abstract

This article looks at the future of futures studies (FS) over the next 20 years from a practitioner's viewpoint. It begins with favorable developments for FS in the organizational context. The main body covers how FS can take advantage of these more favorable developments. It then anticipates some key methodological and professional challenges and how FS might meet them. It concludes with a few comments about the prospects for a self-actualized FS.

The single biggest challenge for FS over the next generation from my practitioner's point-of-view is to get beyond the cyclicity of interest in the future and get FS firmly integrated into the organizational context. Our experience to date convinces me that we have earned "the right to practice," and we must now focus the next few decades on sinking roots "inside." The good news is that there are several developments suggesting that this is not just a preferable but also a probable future.

Favorable developments in the organizational context

While there is a lot of lip service today about innovation and foresight, the reality is that the bottom line still prevails most of the time. But the tables are turning in our favor. Shareholders are often cited as the culprit behind short-term, bottom-line focus. The good news, however, is that there is a favorable shift underway in the investing public. The shareholder umbrella is expanding, and including more and more sophisticated investors. Children today are exposed to investing much earlier than previous generations, and will be increasingly savvy. The investors of the future will be less inclined to be happy with the safe, regular earnings of the blue-chip stocks. They'll want the higher returns promised by more innovative companies, and will do the homework necessary to sniff these companies out. Also, witness the tremendous growth of ethical or socially responsible investing¹, and the even better news is that these fund return very well. These factors suggest that today's organizational lip service to innovation and social responsibility will be routine behavior as we move into the 21st century, because one thing we can bank on is corporate sensitivity to shareholder concerns.

There is also positive news on the values front. Many futurists have made a case for a coming values transformation². In my organizational role, I have been using the data coming from the yeoman's work or Ronald Inglehart³ and colleagues in their World Values Survey work to make this shift more tangible to my organizational colleagues. The World Values Survey makes the case for a "boiling frog" shift to postmodern values

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along the lines of a 1% a year, which has been underway since the 1970s. By postmodern values, they mean shifts to values of self-expression, feminizing, trust of people/distrust of institutions, revaluing of tradition, tolerance, spirituality, and meaningful work. The US and several Northern European countries are about one-quarter postmodern. It's still an open question what the critical mass is to institutionalize these changes more deeply, but the message will eventually get through to organizations that something really different is happening. Imagine the difference in introducing transformational concepts and tools to an audience where maybe 1% is in agreement compared to 25%. In effect, trying to implement some of the transformation tools and concepts of FS 10-15 years ago had to have been something of an exercise in futility, since the context or audience simply wasn't ready. I believe the data shows that the context will be increasingly ready.

The confluence of organizational needs and FS strengths

As organizations become more committed to innovation and foresight at the behest of their shareholders, they will be looking for principles, approaches, and tools for delivering the goods. Here, the capabilities and strengths of FS are strongly, if not uniquely, positioned to step in. I'll suggest there are four key needs organizations will look to fulfill over the next generation that dovetail with the strengths of FS:

- To be more future-oriented
- To think more deeply and systematically
- To be more creative
- To better deal with change

To be more future-oriented

I'm submitting that being competent in innovation and foresight will come to be seen as perhaps the most important source of competitive advantage for organizations in tomorrow's knowledge economy. This entails decision-making with the future in mind. But there are three important contextual challenges for futures-based decision-making:

- *The past is home sweet home.* Decision-making is still largely based on the past. The knee-jerk inclination to approaching problems in the organizational world is to look to the past. How have we done this before? What's the precedent? The case history? The past is where organizational leaders made their careers. It is familiar terrain. The issues, the people, and the technologies of the past are comforting places to look for answers.
- *The present is about putting out fires.* Often times, the feeling is just to survive the day, have a drink, and come back for another round tomorrow. There is great pressure to deliver the goods immediately. This terrain, while uncomfortable or even undesirable, nonetheless has the advantage of being familiar.
- *The future is uncharted territory:* The future is often a scary place for organizational executives. It represents new challenges, new technologies and young, hungry upstart

competitors for jobs. It may mean that you'll become obsolescent. The payoffs are uncertain. This terrain is not only unfamiliar, but perceived as hostile.

In this context, the future is lucky to get a few sentences of discussion before the serious people point out the need to make "hard decisions." The future is still seen as providing soft, nebulous information not appropriate to serious decision-making. The good news is that this situation is ever so slowly changing to where the future is getting a "seat at the table" and more progressive organizations are taking steps along these lines. For instance, BP Amoco has just produced an integrated financial report that includes financial, social, and environmental performance⁴, and many firms, including my own, are at least talking about triple bottom line accounting. Within our twenty-year timeframe, the mass of firms and even the laggards will tag along.

A key assumption is that using futures thinking and tools will improve the quality of decision-making. My experiences, those of my colleagues, and the FS literature suggests that this is indeed the case – the evidence suggests using futures thinking and tools improves our decision-making and our lives, on a personal, organization, and community/social, and global level. Unfortunately, a lot of that evidence comes from post-mortems of decisions where the FS point-of-view suggested a course of action that was ignored in favor of a decision seen as more practical in the shorter term. If you're ever in a conversation with an organizational futurist, and need to leave in a hurry, don't ask about the times that FS advice was ignored and played out to have been the sensible course of action.

An interesting new source of usefulness for FS as we head into the next few decades is working with small organizations. Most of our work has focused on the very large organizations. This focus won't go away, but there has been an interesting sub-plot developing. As organizations have gone more virtual and moved to team- and project-based work⁵, we practitioners have been working with smaller and smaller groups. I realize now that most of my work is with teams of six or less. One area where we need some help is in adapting futures methods for use by small project teams. Most of our methods are more aimed at the larger organization, since the emphasis of FS has been on changing entire organizations. These efforts shouldn't cease, but they require an enlightened CEO and upper management that sees the need for this thinking. This, unfortunately, remains the small minority of situations. And even though the situation is improving, and will likely continue to improve, there will be just as much or more "bang for the buck" in stimulating futures change from the bottom-up, beginning with project level teams. As we build this capability, we'll find that we can adapt these adaptations for use with small firms. These developments in turn imply a boutique-ish orientation for FS consulting firms. I see lots of small, nimble uniquely positioned firms of three, six, twelve, or twenty-four, rather than just a few larger ones of eighty to one hundred.

To think more deeply and systematically

FS has been poised to deliver more deep and systematic insights, but has not found organizations particularly receptive. As organizations look for competitive advantage in

the future, I think we will increasingly see multi-level analysis as a regular feature of our work inside organizations. The driver from the organization side will come from the organization's need to become more innovative, which will in turn drive a need for greater insights. My sense of today's approaches to innovation and foresight within organizations is that they are increasingly stale and producing more of the same old stuff. It is in this area where I think FS itself will be challenged, as we too will have to adjust our tool kit away from the familiar, well-respected tools we have been [overly] relying on for the last twenty years. (More on this below)

A nice explanation for the rut we find ourselves can be derived from Rick Slaughter's work, based on his handy typology of futures work operating at four different levels.⁶

- *Pop*: the marketable, media-friendly sound bite approach
- *Problem-oriented*: the more serious, practical approach of looking at the ways that societies and organizations are responding, or should respond, to the near-term future
- *Critical futures studies*: probes beneath surfaces to discern deeper processes of meaning-making, paradigm formation and obscured worldview commitment
- *Epistemological futures work*: goes deeper still for the systematic rethinking, revising and recovery of the foundations of the social order

FS in the organizational context has clearly been stuck in a pop and problem-oriented mode. The great potential for the next 20 years is a move into the deeper levels of critical and epistemological levels. Slaughter has made the additional significant contribution of bringing the provocative philosophical/worldview work of Ken Wilber into this 4-level framework.⁷ While Wilber's work is prolific, if not monumental, a key point to focus on here is his four-quadrant matrix (see appended Figure 1) that suggests four primary ways of knowing, or looking at the world. Humanity has basically been stuck in the two right-hand quadrants – the external, empirical, objective approach that he dubs flatland. And FS is not exempt from this charge. The challenge for humanity and FS is to tap into the internal, intuitive, subjective ways of knowing suggested by the two left-hand quadrants, ultimately integrating the four quadrants into what Wilber calls an integral worldview.

The good news here is that the critical and epistemological approaches of FS are well suited to tapping into the left-hand quadrants of the model. Many have already been doing important work in this area, but haven't had much luck cracking into the organizational world. But as organizations look for deeper and more systematic insights, we have the opportunity to use these newer approaches to make inroads.

To be more creative

Creativity and innovation are essential to FS. Upon entering the "inside" of the organizational world from the comfort of the consulting world about four years ago, I was tasked with looking into the tools of creativity and innovation. Happily, a lot of the

tools we had been using in my FS consulting work with Coates & Jarratt, Inc. were very much the same, if not in name, then in essence.

As I've gone deeper into creativity and innovation, I see tremendous synergies with FS. There is nary a subject more "hot" inside the organizational world today than being more creative and innovative. And organizations have just begun tapping into what's available, suggesting this issue will be around for some time yet. Since creativity and innovation are more palatable "inside," I have often used them as cover for FS tools and concepts. For instance, I put together a course on creativity and innovation that surveys the key principle, approaches, and tools, and have included tools such as trend analysis, roadmapping, and scenarios under this rubric. In the future, we'll see more "out-of-the-closet" approaches in which it is routine to offer a course dedicated to FS inside an organization.

There may be some potential in exploring the links between creativity studies and FS more deeply. Perhaps creative problem solving approaches and tools could become part of the curriculum for FS. Not only would this improve our FS tool kit, it could also provide a useful cover under which to slip in some of our futures work.

The only red flag here is that creativity and innovation appear to be victims of the same cyclicity of FS. The hope here is that a more integrated approach involving creativity, innovation, and FS together will sink some roots not easily uprooted.

To better deal with change

As my former professor Peter Bishop of the UHCL Futures program⁸ is fond of saying, "FS is really about understanding change." Here again, we have expertise in a topic that will dominate organizational agendas over the next 20 years.

The three levels of change we can help organizations with are on the personal, organization, and social levels. Assuming the reader is familiar with the basic challenges of change at these levels, I'll offer a few challenges to improving our ability to help our organizational colleagues deal with changes at these levels.

At the personal change level, there is a lot we can read about, and an increasing array of personal transformation workshops, seminars, and experiential learning approaches. At the heart of our challenge is changing the minds of individuals. We must really understand why people are resistant to change, and why that is really the "normal" approach – our receptivity change is not typical. And we need to understand how we might address these resistances and offer positive suggestions. This is no simple task, as anyone familiar with the subject in any depth understands. I might bold suggest that futurists might find it advantageous to go so far as to undergo a year of personal therapy themselves in order to be more fully equipped to deal with the challenges we'll encounter.

At the organization level, there is probably even more readily available reading and course material, and the FS field itself has paid more attention here as well. The most fascinating phenomenon here that I've observed is the "them" phenomenon. As I've dealt with groups at different levels of the hierarchy, each level blames "them" for resisting change. What's fascinating is this occurs at every level -- even the top. One wonders, who is them? Clearly, there is an element of "us" in them, which we'd rather not confront. The tools of FS could bring immense value in confronting this phenomenon. As a bolder suggestion in this arena, perhaps futurists should participate in group therapy or some kind of support group in order to more deeply understand the relevant issues here.

And finally at the social level, we too have an existing body of literature, though perhaps less in the form of courses and experiential learning. The challenge here is to move away from the confrontational, finger-pointing approach that labels organizations as bad, and to re-purpose the message in a way that gets it a more serious hearing inside. There is certainly a role for directly and aggressively confronting bad organizational behavior. What's been missing is a less strident approach that gives organizations a way to engage controversial issues in a positive way. So many times, the message falls on deaf ears because of who's giving it and how they give it, rather than the message itself. We need to be more sensitive here to how we bring difficult messages, if we want to get them the hearing they deserve. A bold suggestion here could be to have futurists participate in an NGO to get our arms around the difficult issues here.

Methodological challenges

FS is something of a "way of life" or a "way of thinking" and this is more important than any specific tools or techniques we use. I get a little concerned about over-emphasis on methodology. The more desirable future state is one on which we come into any particular situation with no predisposition whatsoever to a particular tool or methodology.

In my current work, I promote a tool kit approach. I advise prospective internal clients that we together design a customized approach and set of tools that fits whatever we learn are the specific needs of the situation. This costs me some "business", as many folks simply want "the answer." And while it would be easy to bluff "the answer," in the long run our credibility is worth more than taking an individual project that is likely to fail anyway using a quick-fix approach. A particularly regrettable development in some FS circles, is a one-tool-fits-all approach that some individuals or firms seem to have adopted. Thus, I couch my methodological suggestions in this framework of customizing to every client situation.

A second challenge when looking at tool development is that so much of what we do is internalized and applied as a normal part of what we do, rather than as an explicit method. The danger here is that our work is viewed as the result of the practitioner's particular genius, rather than the method or tool. It often looks as if we are purveying a form of magic, since our approach may appear invisible to our audience. Personally, I've seen this crop up in my own work, and recognize a need to be more explicit at how I've come to my advice. One concrete step I've taken to address this, is on our company

intranet site of trends most influencing the company, we added a page on “where the trends come from” that cites the key sources and how the collection was pulled together. Another suggestion in this area is to be more explicit about touting systems thinking as a tool -- it’s become so ingrained in our approach that we forget to mention it as a tool and offer our audience advice about how they too may develop the capacity to use it.

A third challenge is the arguably rather slow evolution of our tools. In fairness, I think this reflects more the receptivity of our organizational audiences than any inherent limitations to FS. The early tools were heavily quantitative, which was very appealing to organizations that much prefer “the numbers” to the squishier insights. While the quantitative tools have their use, one could argue their benefits were over-sold and their ultimate inability to deliver tainted their use inside organizations, thus their fall from favor. The current tool kit emphasizes the qualitative, such as including systems analysis, strategic planning, scenarios, forecasting, stakeholder analysis, visioning, idea generation, trend analysis, and issues identification and management⁹. This list looks like similar lists that have been generated over the last 20 years. The emerging tool kit, for want of a better term, we might dub the integral. As a starting point, we can refer back to Slaughter’s piece that suggests “we have overlooked the rich possibilities for “hermeneutics, critical theory, semiotics, post-structuralism, multiculturalism, and the transpersonal realm.”¹⁰” Some other tools that we should expect to see play a greater role in our future include those involving multi-level analysis such as causal layered analysis¹¹, tools involving complexity sciences, computer tools for data mining¹², pattern recognition and the like, greater use of gaming, systems dynamics, simulations, and more visioning¹³.

Professional challenges

I think there is general agreement in FS that current organizational approaches to futures thinking are inadequate -- that organizations are essentially doing a poor job vis-à-vis the future. One could categorize approaches to dealing with situation along a continuum. One pole I’ll term “constructive engagement” and the other “confrontational.” Constructive engagement refers to the US policy position toward South Africa in the days of apartheid that remained a working relationship with that government in hopes of influencing it to change, rather than boycotting it. Those near the constructive engagement pole believe the best way to change organizations is by working from within. The price of constructive engagement, however, is that FS has often had to water down its methods to make them palatable to the organization. This has led to the “flatland approach” brilliantly chronicled by Slaughter.¹⁴ Those near the confrontational pole have been arguing for a deeper, integral approach and have tended not to compromise, thus have had less luck in getting inside organizations.

A key gap in FS is the lack of an institutional center to FS that could serve as a neutral meeting-place for the two sides to get together and engage in much-needed dialog. One could argue that members of the two principal FS organizations today, the World Future Society and the World Futures Studies Federation have tended toward the “constructive engagement” and the “confrontational” pole respectively, neither being quite able to

capture the middle ground in sufficient number. And in fairness to both, it may be that futurists themselves polarize and there really isn't much of a middle ground. I'm arguing that the future of FS will be one of integrating the best of the two poles, that is, bringing in new, integral approaches but in a way that organizations can handle. This will be a huge task, but one I'm arguing that will be achievable over the next twenty years.

There are also some more practical areas where we could use improvement. For instance, we could make much greater use of thinking style assessments. Three common instruments currently used fairly widely in organizations are the Meyers-Briggs¹⁵, the KAI¹⁶ (Kirten Adapter-Innovator), and the HBDI¹⁷ (Hermann Brain Dominance Instrument). While each has its particular strengths and weaknesses, use of any one in the beginning of a project lends team dynamics insights that could help us in our role as change agents. A second practical area where organizational futures could benefit from skill building is in facilitation techniques. Working inside organizations demands a great deal of group work, and being skilled in facilitation greatly enhances our ability to spread the futures message.

There is a need for a greater professionalization of FS. We are likely to see a code of ethics or professional standards emerge for the field in the next twenty years. The early development of the field has in some ways favored a "cult of personality" in which the best way to make a living in lean times was to guard your knowledge closely so you could sell it in books and lectures. As the field has matured, the emerging new generation of futurists finds itself more secure and less beholden to personality-driven approaches. We are at the early stages of professionalization in which increasing numbers of practitioners choose FS as their primary profession and seek professional training from handful of universities or consulting firms offering training. This more professional approach is more conducive to information sharing, but we still have a ways to go. And a potential pitfall is for a new kind of intellectual property protection coming from organizations seeing FS as a competitive advantage, thus inhibiting cooperation, although, on balance, it appears that we are indeed moving toward greater openness and collaboration.

In many conversations with colleagues, a common theme that emerges is a need for the field to move more toward "applied futures." This topic most often comes up in the context of what we should be teaching students in FS programs. The "marketplace," which today is primarily the consulting futurist firms, suggests we need to emphasize the more practical aspects of FS in order to meet the growing market demand. While I agree with this, I would at the same time argue that we need an equivalent effort at the deeper foundational level. Much of our current emphasis is somewhere in-between the poles of the applied and foundational. We need more foundational work to generate the deeper insights we'll be asked to provide and we need more applied work to generate the approaches and tools to get those insights adopted. Currently, we're stuck in something of a middle ground that isn't meeting the needs of either end.

A self-actualizing FS?

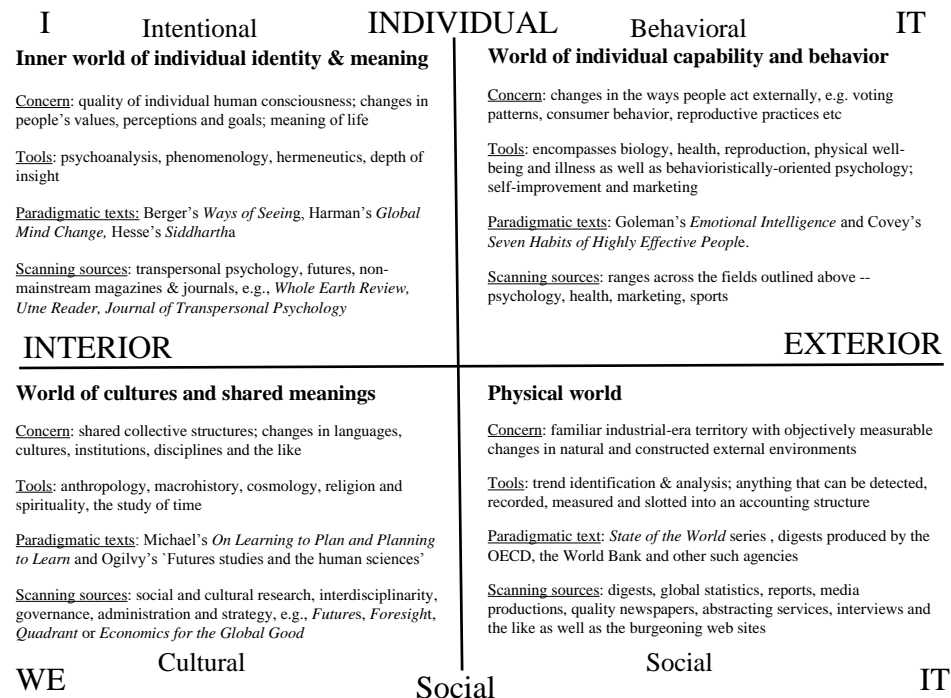
A half-empty perspective could look at this situation and paint a much gloomier picture. I admit, even in my most sanguine moments, I feel as if FS is on a teetering on a precipice, ready to crash.

But to stick with our theme of a preferable future, let's look at some other promising developments. There are a growing numbers of trained professional futurists. We are in the early stages of students going to graduate school with the explicit desire to become professional futurists. Most earlier futurists had a previous career and then changed or evolved into the futurist role. This still accounts for most of us even today, but we're seeing some, like myself, whose only professional career is that of futurist. This growing cadre of trained professional futurists will help strengthen the field in the eyes of our customers.

While the few educational programs devoted to FS are not without their struggles, they are likely to be met with a growing demand that should enable them to flourish. While it may not be in the traditional university format, FS should be open to different ways of earning accreditation. My chief concern over the next generation is that there won't be enough trained futurists to meet the demand, which means less-qualified people will be forced to fill the gaps, in turn risking the credibility of our enterprise.

As we sink our roots deeper into organizations, the word "futurist" may become anachronistic, along the lines of "social scientist." It will be overly generic. We may have organizational futurists, creative futurists, personal futurists, and transformational futurists. The word could even gradually disappear. At a recent meeting of the Michigan Futurists, a network of futurists from seven different organizations in the Michigan, none of us had the word futurist in our title.

Think of the first several decades of futures as being in Maslow's survival mode. I'll argue that we are emerging from this survival mode and moving into the quest for Maslow's belongingness over the next twenty years. FS will be looking to assert and solidify its place in organizations and the world. By 2020, we may say the beginnings of a self-actualized FS that, secure in its place in the world, begins to really deliver on the promise that many have been hoping to see since its inception.



Source: Based on R. Slaughter "A New Framework for Environmental Scanning" *Foresight* Oct 2000 drawing on work of Ken Wilber

Figure 1. Wilber's Four Quadrants

¹ For example, see one of the many web sites on the topic called Green Money Online Guide <http://www.greenmoney.com/gallery6.htm>

² For example, see Willis Harman, *Global Mind Change: The Promise of the 21st Century*, 2nd edition, Institute of Noetic Sciences, 1998.

³ The best place to become acquainted with Inglehart's work is at <http://141.211.126.166/> or in text try Ronald Inglehart, *Modernization and Postmodernization*, NJ: Princeton U Press, 1997.

⁴ Mark Goyder, "Connected Economy – Disjointed Society," *Foresight*, October 2000.

⁵ Tom Peters, "The Wow Project," *Fast Company*, May 1999.

⁶ Richard Slaughter, "A New Framework for Environmental Scanning," *Foresight*, October 1999.

⁷ To become acquainted with Wilber's work, visit <http://wilber.shambhala.com>

⁸ See <http://www.cl.uh.edu/futureweb/>

⁹ This list comes from a 1999 World Future Society Professional Member's Forum of organizational futurists in which we generated a list of the most common practices we employed. See Andy Hines and Louise Trudeau, "Futurists on the "Inside:" The State of the Practice of Organizational Futurists," *Futures Research Quarterly*, Winter 1999.

¹⁰ Richard Slaughter, "A New Framework for Environmental Scanning," *Foresight*, October 1999.

¹¹ Sohail Inayatullah, "Causal Layered Analysis. Poststructuralism as Method," *Futures* 30, 8, 1998 pp. 815-829.

¹² For example, see the excellent work of Alan Porter with Technology Opportunity Analysis at <http://www.tpac.gatech.edu/toa/>

¹³ For an example of visioning, see Oliver Markley, "Virtual Time Travel," *Fast Company*, October/November. See it online at www.fastcompany.com/online/18/visioning.html

¹⁴ Rick Slaughter, "Transcending flatland: implications of Ken Wilber's meta-narrative for futures studies", *Futures*, August 1998, pp 519 ±34.

¹⁵ An online test for the MBTI (Meyers-Briggs) is available at <http://elvis.rowan.edu/~cusumano/MBtTest.html>

¹⁶ The KAI (Kirten Adapter Innovator Inventory) test must be administered and scored by someone certified in the techniques. See

http://ourworld.compuserve.com/homepages/orc_kai/homepage.html#homepagethingy

¹⁷ See <http://www.hbdi.com/>

An audit for organizational futurists: ten questions every organizational futurist should be able to answer

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Keywords Organization, Strategic planning, Culture

Abstract *This paper is intended to provide a guidebook for organizational futurists in building a foresight function inside today's organizations by suggesting ten questions that ought to be answered. It addresses how to start from a blank page, but can also offer help to those who have already established a function by suggesting additional questions to think about. It is intended to give auditees a sense of the key issues and challenges they will face. Managers may also find this audit useful in giving a sense of what an organizational futures function can deliver and the skills required of a prospective organizational futurist. A key assumption here is that while there is a growing demand for organizational futurists, the role is evolving to more of a broker function than the building of a staff function more typical of the past.*

Introduction

A subtitle for this piece could be "how to institutionalize futures thinking without being institutionalized." Futures work in the organizational setting is very demanding – at its worst it is maddening and at its best it is rewarding. The paper starts from the question of "what do you need to think about to create or build a futures[1] function inside today's organizations?" A ten-question issue audit for futurists is proposed to prepare for the key issues and challenges that will likely be ahead, and offer potential responses based on my

own experiences and those of colleagues in similar positions in other organizations. Ideally, it will give those presented with a "blank check" to create a futures function a place to start, if not a blueprint from which to build.

Five years ago, I went "inside" the corporate world. This followed a little over a half-dozen years as a consulting futurist with Coates & Jarratt Inc., and earning an MS in Studies of the Future from the University of Houston – Clear Lake. My decision to go inside was largely based on the fact that in our consulting work, we saw again and again how our corporate clients struggled with implementing our work. I thought, "Wouldn't it help if someone on the inside understood what these futurists on the outside were talking about and trying to achieve?" I have had the good fortune to interact with many people in positions similar to mine to achieve similar goals. While some are trained professional futurists, most are not. And I have had the opportunity to write about my experiences in my Hinesight column in the



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journal *foresight* for the last few years. And I might add, the practical application of futures thinking and tools is never very far from my mind.

Today's organizational context is different from the 1980s and early 1990s when futurists were often employed in organizational planning functions. Those positions have largely been "re-engineered" out of existence. Most of what passes for strategic planning today is little more than number crunching and spreadsheet manipulation. Futures in the organizational context has been slowly re-appearing, but in non-traditional places, such as market research and new business development. And more happily, a couple dozen organizations have established small "foresight" groups (see Coates, 2001). Again, sometimes with professional futurists on staff, but more often not.

An important cautionary note is that this re-emergence in new places and new forms is more often the result of the efforts of enlightened individuals rather than a serious organizational commitment to future. Either an enlightened manager sees the need and has the freedom and power to make it happen, or a futurist sneaks under the radar or emerges from the inside. Most likely, senior management blesses or at least tolerates the function, but with a few exceptions, it is typically not initiating it.

So, five years after going inside, I can confidently say that having an organizational futurist in a broker role between the inside and outside works. It helps not only the organization itself, but also the consulting and educational futurists as well. While there could be a competitive dynamic between in-house and external consulting futurists, experience suggests that the two be best friends. This partnering presents the opportunity to test and apply theory and research directly on the field of play. While most often the educational futurists work will first collaborate with the consulting futurist to do a translation activity to make it more palatable for the organizational world, there will likely be more and more cases of leapfrogging from the university to the organizational setting.

The approach advocated here could be called "permission futuring," which borrows from Fast Company columnist Seth Godin's superb book called *Permission Marketing*. The premise is to think of our work with internal clients in terms of dating or courtship. We hope to attract our internal customers enough such that they say "yes" when we ask them for a first "futures" date. If we perform well on this first date, analogous to going for a cup of coffee, we can then ask permission for a second date, perhaps the equivalent of dinner. If we perform well on that . . . We get to do progressively deeper and more interesting work, provided we "deliver the goods" of the early simpler dates or tasks. Experience suggests this approach is a viable one – my own tasks have generally become more involved, interesting, and futures-oriented over time. A key dynamic that makes this especially suitable for the organizational world is the need that internal clients have for saving face or maintaining credibility. It will almost always be politically wiser not to take

the risk of doing a futures-related project. So our sponsors will look for a track record to back them up as they insert their necks in the political noose. The risk of this approach is that we get caught up in "delivering the goods" and lose focus on the futures agenda. Constant checking in with ourselves and our work is the best way to avoid this trap.

Finally, a key assumption made here is that there is lots more futures work available than there are futurists to do it. Unfortunately, some of our colleagues see a small pie and guard their knowledge closely. Yet there is a much larger pie out there for the taking if we can demonstrate our worth in the organizational context. Our expertise could be much more widely applied, in areas that today are dominated by the mainstream consulting firms. It will take more effort and creativity on our part to forge into new areas where our expertise is sorely needed – the organizational context being one of the key fronts in this battle.

So let us get to it. Here are the ten questions every organizational futurist should be thinking about and, sooner or later, able to answer.

Q1: How are you going to spend your time?

Three categories are proposed for how we can think about spending our time on futures work within the organization:

- (1) Process work – approaches and tools for interacting with futures work.
- (2) Content work – generating knowledge and insights about the future.
- (3) Culture/mindset change – influencing mental models, aka changing minds, regarding the future.

There is overlap, but there is value in having a rough sense of how we are or would like to be spending our time, and how we should like that to evolve. In my first organizational role at the Kellogg Company, I estimated that my time was 70 percent on content, 20 percent on process and 10 percent on culture/mindset change. At Dow Chemical, I have switched the emphasis on process and content at Dow – so it is now roughly 70 percent process, 20 percent content, and the same 10 percent culture/mindset change. The numbers will vary depending on the company, the management, and the needs of our clients. But I am prepared to offer a preliminary conclusion that the organizational futurist role should be primarily about process rather than content. Most of us do not have the luxury of a large staff – in many cases we have none. Given limited time, we are better equipped to focus on process, where we can "deliver the goods" of futures work. Our superior understanding of how our organizations work makes our consulting futurists brethren ideal team-mates in that they can be engaged to provide the lion's share of content that we will lack time to generate by ourselves.

Ownership of process and content is fundamental to today's audience. They want to participate in the creation of futures work rather than be handed tomes prepared by experts. Most no longer prefer to learn in the classic lecture

format. We are forced into the role of becoming process experts. This does not suggest abandoning our content role, but rather blending the two. For example, one approach I have used successfully has been literally stacking the “process” deck with “content cards”. I have developed a card game called trend poker that has participants examine and prioritize a large number of trends printed on index cards. They can add their own trends, but the list is comprehensive enough such that it is rarely necessary. This game has been a useful and fun way to get audiences interacting with futures content in a following a workshop format.

The culture/mindset change role is called out separately to remind us that ultimately our goal is institutionalization of a futures capability. And it is a long-term effort. Perhaps 90 percent of our effort should be focused on “delivering the goods”, while slowly, almost surreptitiously working to institutionalize our teachings via culture/mindset change. An example of how I have been working toward culture/mindset change is a creativity and innovation training course I created that is now globally available to employees and includes some futures concepts and tools.

Figure 1 shows an example of how I used to spend my time with examples of the types of activities in each category.

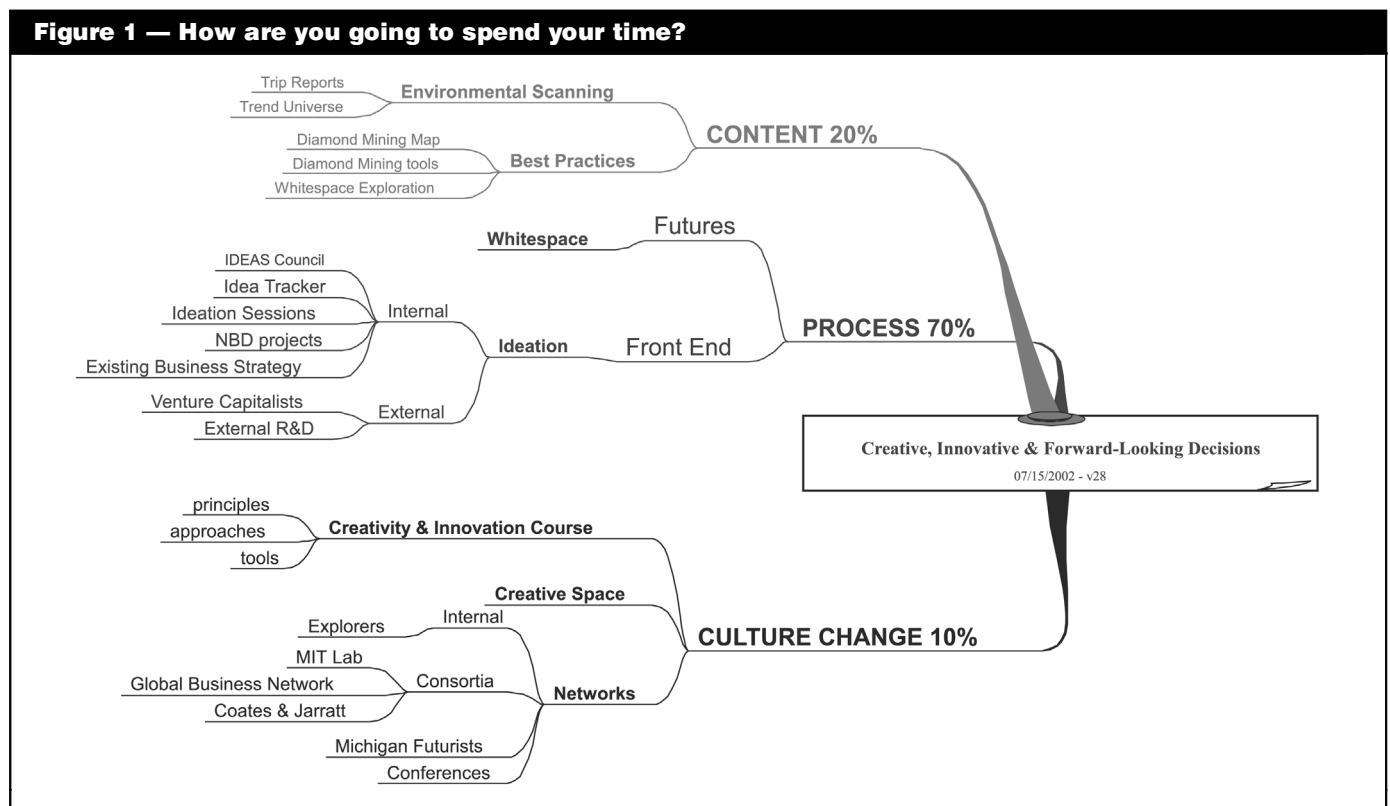
Implications

Note the choice of “viral strategy” as the guiding principle of the overall approach – borrowing from the popular “viral marketing” concept. Our role here is one of spreading a

message through continually “infecting” new messengers, in hopes that they will in turn infect others, and so on, until a critical mass is built. It is not clear yet how long this will take. It will certainly vary according to the particular situation. But it is safe to say we are talking about years, not months. A secondary point is that the use of popular business terms is often an effective “cover” for futures work. It serves a translation function that helps those not familiar with futures jargon.

Moving to a more nuts-and-bolts level, we need to balance our process/content checkbook, both personally and organizationally. The easiest way to achieve balance is to bring in another person with complementary skills. I had the great fortune of developing a terrific de facto partnership with a colleague at Kellogg’s. While I focused more on content and she on process, we often switched roles, and I think kept the distinction clear for our audiences, and kept a check on one another to maintain this clarity.

Next, develop a strategy for building process skills. An easy way is to “get certified” or at least trained in futures tools. This may come from conference, consulting firms, or educational institutions. For example, a recent survey of futures courses around the world identified 50 universities offering futures course and roughly 14 offering degrees in futures studies (see Ramos, 2002). It is amazing – if not a bit disheartening – what a credential can do. For example, I had helped write a book of scenarios, taught a course on scenarios, and used them frequently, but these credentials paled in comparison to a week-long scenario training course



that I took from the Global Business Network. I came back with a “diploma” and thus had the paper credential. So do not be proud – even when you are already an expert, do not underestimate the value of getting certified.

Finally, a strategy for maintaining or enhancing our content skills is to keep active on the outside – keep presenting at conferences and publishing and networking. This can be tough to position with our internal colleagues, because we can be viewed as self-promoting when we should be “working”. We can cite professional development, but in addition we need to be disciplined about bringing back insights and making them available, even if just a simple trip report. It is also useful to bring back concepts and terms from the “outside”, when we are at these events. It demonstrates that we are out there scanning the world for our colleagues.

Q2: What is your positioning?

Five major positionings of organizational futurists’ work seem to be in play. They are placed along a continuum emphasizing inside to outside focus (Figure 2).

The evolved

Many organizational insiders have been dutifully subscribing to futures publications, going to futures conferences, and working with consulting futurists for several years now. Increasing numbers of these insiders are now realizing that they are fairly well trained in futures themselves. So they are positioning themselves more or less openly as futurists in their own right. Naturally, these folks are likely to be high on political savvy based on their roots in the organizational setting. But this is also the potential weakness of this positioning, in that it may be tempting to see the future only through the organizational lens, missing the more “out-of-the-box” type of thinking characteristic of the more “pure” futurists. It may be that teaming the evolved with an inside-outsider would be quite a dynamic duo.

The planners

Let us not forget the standard planning role. There are still strategic planning and other planning functions left after the downsizing massacres of the 1980s. While these functions may be holdovers from the past, they nonetheless can be reinvigorated and even reinvented with a fresh injection of futures thinking. This positioning should not be overlooked for its potential as a launching pad for a more full-blown futures activity. While the planning goes on, opportunities for

other kinds of futures, such as new opportunity for development or even scenario planning, can be concurrently developed and linked back to the plans.

The stealth

A lot of us organizational futurists are still “in the closet”. This may be a very savvy positioning for organizations populated by those who still think that futurists are fortune-tellers and make cracks about crystal balls. There is still baggage associated with the term futurist. So many of us have created other ways of characterizing ourselves. One colleague dealt with this by positioning himself in charge of “special projects”. Under this rubric he has been successful in introducing futuristic thinking and projects. If it works . . . I was at a meeting of a dozen organizational futurists, part of the Michigan Futurists Network, including reps from Ford, GM, Kellogg’s, and Alticor among others, and nobody had the word futurist on their business card.

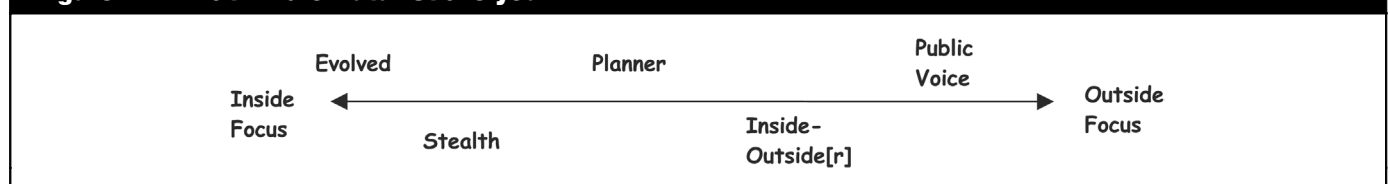
The stealth positioning may also be sensible to start from if you are unsure of the lay of the land. I have direct experience with this, although my stealth was never very stealthy. It consisted of not calling myself a futurist, rather using the more palatable “trends manager”. Everybody is familiar with trends, right? As I built my credibility in the organization, I became comfortable using the term futurist to describe myself. In fact, more and more colleagues referred to me that way anyway. Thus, I came out of the closet and became a full-fledged inside-outside[r].

The inside-outside[r]

This role ranges from “bringing in fresh thinking” for the politely inclined to “shaking things up” for the more confrontational. The organization senses danger. Most often, some kind of crisis jolts it into awareness that something needs to be done. Or, it may be that complacency has led to a gradual slippage that has become unsustainable. Present thinking and strategy is not getting it done. So in come new people and new ways of thinking, which often includes new or renewed emphasis on futures. The futurist here is clearly in a “change agent” role. Most people in the organization probably do not see a problem, and it is our job to raise this awareness.

This task requires certain personality traits in order to survive and be effective. First, the inside-outsider must be provocative and not shrink from conflict. Those choosing this positioning should like a good fight. Of course, this does not mean a deliberate strategy of making enemies, but it means that given a choice between “the truth” and political

Figure 2— What kind of futurist are you?



expediency, it must be the truth. The good news is that despite being high on many enemies' lists, our credibility is established and you have become a trusted source of information. In the organizations of the future, power increasingly flows to those with knowledge over those with position (okay, we are not there yet!). The inside-outsider must be mobile and not place a high value on having a long-term career in the organization, because to be most effective you must be willing to commit career suicide on a regular basis. The harsh truth is that the initial revolutionaries never succeed in running the new regime they enable. So we must incite the revolution and bring in a successor more suited to running the new system.

The public voice

This extremely rare positioning may be the most highly evolved form of organizational futures activity. The only example I am aware of is foresight board member and BT futurist Ian Pearson. Visit his Web page and you will see the long list of public presentations. It is truly brilliant. BT develops a vision of the future, and sends Ian out to tell the world about it, in effect, gaining, if not adherence, at least awareness of BT's visionary work. So tomorrow's developers of products and services will implicitly or explicitly be working toward a vision of the future put forth by BT. One wonders why more companies are not doing this?

Many of us practitioners admire, if not envy, the public voice role. We are often forced to keep a very low public profile. We do not want to get caught "on the record" lest we get a call from the corporate public relations police. More than once I have heard, "if they ever knew what I was doing . . ." As organizational leaders become increasingly aware that guiding the organization into the future is their key responsibility, we will see more futures practitioners with a public voice, promoting the vision of futures that they help generate.

Implications

We overlook the positioning and selling of futures at our peril. The categories above give us some examples of positionings in practice today. For those about to embark on an organizational futures odyssey, it behooves you to spend some time thinking about positioning up front. Probably the two key factors to consider are the needs of the organization and the personality of the practitioner. Some organizations really need a wake-up call. Those consciously seeking it may be inclined to bring in an inside-outsider. Those who need it, but may not know it, are probably better approached stealthily. Others in less of a crisis mode are better approached through an evolved or planning approach. The public voice approach may be ideal for an organization already doing great futures work that would benefit from sharing that vision with customers and collaborators.

Practitioners will be better suited personality-wise for some roles over others. The inside-outsider is probably the most connected to a personality type – either we fit the role of *agent provocateur* or we do not. *The public voice, of course,*

requires great presentation, networking, and media skills. The others are for those more politically inclined, those who prefer working within the system. So if you are new to the game, think about how to start. If you are already there, have some fun seeing where you fit in and, maybe, think about a repositioning.

Supplemental: are you planning to describe yourself as a futurist?

Q3: What is your leadership style?

I will argue that organizational futurists must accept a leadership role in order to be effective. This may not be comfortable for many of us. We may be more comfortable in the role of provocateur, sitting on the sidelines and lobbing in our bombs of wisdom. Implementation is often seen as something that "they" do. I say, not so for organizational futurists. Our value-added is in the translation of these wisdom bombs in a way that our internal clients can act upon – we can't leave it to them.

If we accept this, we must be prepared to accept a leadership role. We will find ourselves working more and more with groups, more and more with process, and less and less alone, working on content. Influencing people requires leadership. Thus, we need to think about our leadership style (see Figure 3).

I borrow from the excellent work of Daniel Goleman to give us a framework of leadership styles. What could be an interesting research opportunity – as more of us move into organizational futurists roles – is to customize this collection of leadership styles particular to organizational futurists. Here is a very brief summary of Goleman's styles:

- Coercive leaders demand immediate compliance.
- Authoritative leaders mobilize people toward a vision.
- Pacesetter leaders expect excellence and self-direction.
- Affiliative leaders create emotional bonds and harmony.
- Democratic leaders build consensus through participation.
- Coaching leaders develop people for the future.

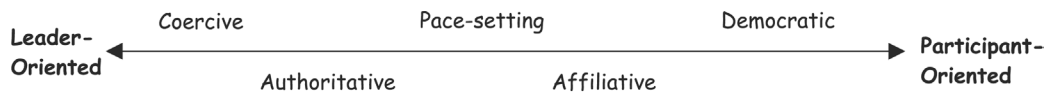
Implications

Quite simply, we must accept the leadership challenge.

An interesting twist particular to futures is the question of reliance on personality versus methods. The early story of the futures field is heavily tied into personality. In effect, we got onto the map due to the brilliance of the field's pioneers – the Kahns, de Jouvenels, Tofflers, Gordons, Sarkars, Harmans, Masinis, Dators, Jungks, Hendersons, Coates, Schwartzs *et al.* *Without their strong personalities, we would not be* having this discussion today. Put more directly, I am not trying to take potshots at the personality-based approach, but rather recognizing it as a necessary and vital stage of the field's evolution. Though we may have fewer superstars, in the long run, we will be healthier and better off for it.

The rub is that the futures message often gets so deeply intertwined with the personality that the discipline suffers.

Figure 3 — What is your leadership style?



Source: Goleman (2000)

To me, this suggests that transition away from the personality-based to a more futures-discipline-based approach is vital to our long-term health. We need to sink roots such that our work lives beyond our individual contributions. Unfortunately, we have all too many times witnessed the withering of a futures activity when the charismatic pioneer involved moves on. This gets us into a vicious circle of having to continually re-sell and re-establish our value, or more simply, re-invent the wheel.

And lest we new generation relax, let us recognize that we are not immune to the personality phenomenon. I may be being optimistic in suggesting we are moving beyond the cult of personality phase. There is evidence to suggest that we are not quite there yet. I wonder how much of my own tenure at Kellogg's was personality-based as opposed to discipline-based. In that position and my current one at Dow, I have found myself leaning on my "personality" more than I would like to get the message across. I think we who have been struggling long and hard tend to develop a personable, marketable approach – or we do not survive. Yes, we understand all too well the challenges of the pioneers! I am hopeful in that my (hand-picked) successor at Kellogg has been able to carry our work forward, despite often challenging circumstances. I also feel I am being a bit wiser this time around in more quickly and extensively engaging others in the futures work.

Q4: What is your framework?

The essence of what organizational futurists deliver can simply be divided into three main buckets:

- (1) The strategic entails bringing a greater understanding of the future to bear on current decisions. Herein lies strategic planning, scenarios, forecasting, technology assessment and the like.
- (2) The creative entails bringing fresh thinking to businesses stuck in their self-constructed "boxes", and generating new ideas and business opportunities. For this, we have environmental scanning, trend analysis, cross-impact matrixes and a host of creative thinking tools.
- (3) A general educational role regarding the future, for those within the organization at large, could be broken out separately, but really is a means for improving either the strategic or creative.

To further help us frame these buckets, let us overlay them on the widely-used McKinsey Three Horizon's framework

(see Figure 4), where Horizon One focuses on executing the core business, Horizon Two focuses on lines extensions off the core business, and Horizon Three brings us into new territory.

The figure suggests that:

- Strategic challenges focusing on current decisions tend to be closer to Horizon 1.
- Creative challenges entailing fresh thinking tend to be closer to Horizon 3.
- The educational challenge underlies all three horizons.

The strategic project involves helping the organizational client answer a known question or address a known issue. There is an answer or solution to this project – we help find it. For instance, the decision could be to either buy company XYZ or not. These types of projects typically have management buy-in and resources at their disposal. This is the comfortable bailiwick of the big six management consultant firms. When we get the opportunity to play here, where we often "go wrong" is in the endless generation of alternatives, new questions and new issues. The organizational client is frustrated because we never get to a solution.

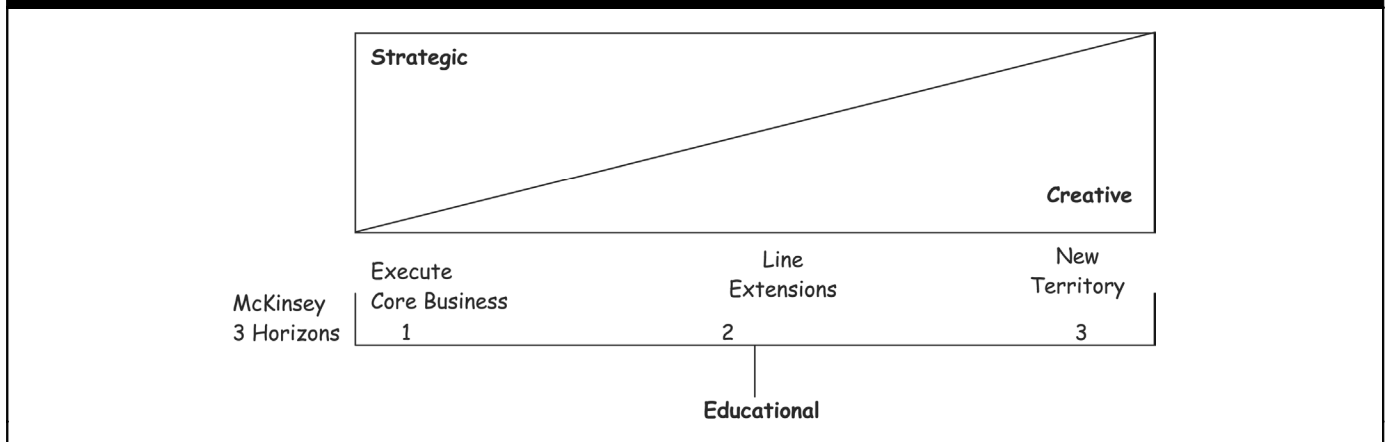
The creative project involves discovering and raising new issues, or coming up with new options or alternatives. There is no single answer or solution. These projects are essentially about helping the organization think differently, and it is up to the organization to decide what to do with this thinking. The trap here is in trying to prescribe solutions. I am grateful to a former client from my consulting days who once gave us a "no solutions" directive. This truly freed us up to be more creative – try it some time!

The educational challenge is to plant seeds of futures thinking in order that they may later take root and eventually flower. This will involve a "push" approach – perhaps a newsletter, lecture, trip report workshop – in which you are delivering a futures message that people are not necessarily asking for. The goal is to get a few people excited about futures work and others at least exposed to it, so that it will later seem less foreign when it comes time to do a futures-related project.

Implications

A key principle of how we can better deliver our insights is to frame our client's request appropriately. While there is, and ought to be, overlap between the strategic and creative, unintentionally mixing them, or delivering on one when the

Figure 4 — What is your framework?



other is really what was asked for, is a key delivery problem. Keep in mind that it is not always going to be crystal clear whether the project needs one or the other. It may start one way and veer another. In fact, a good futures project will often uncover the “real” problem that is quite different than the officially stated one. This phenomenon suggests “checking in” throughout a project and making sure the team is still on the same page about the nature of the problem. How often do projects change in the middle, but half the group never makes the transition?

In my opinion, futures is ideally positioned for the creative Horizon 3 challenges. But we must develop “translation” steps that enable our organizations to see the path to Horizon 3 from Horizons 1 and 2. Organizations have great difficulty in getting there from here, thus the need for us to lay out a pathway.

Of course as futurists we will be deeply concerned about the educational role – it is typically why we entered futures work in the first place. I think we need to be very thoughtful and oftentimes subtle about how we go about it. We do not want to be labeled as “crusaders” or “preachers”. This turns too many people off. Rather we should strive to be seen as useful. This is not suggesting we abandon our idealism, but that we temper in a way that better enables us to be effective.

In practice, my role – based on my particular context – has been more creative than strategic. And I have perhaps been overly cautious about not being too over-bearing with my futures message. I suspect this balance will vary depending on the company and the industry. In any case, it is very important to “take the temperature” of the organization and see what is needed, rather than try to force-feed our preconceived ideas. Although we want to bring in our own ideas about what is needed, this is best done from an informed point of view.

Q5: Who is your audience?

One of the first commandments of organizational futurists is “Know Thy Audience!”.

Figure 5 depicts:

- True believers can be thought of as lemmings who will follow us (almost) blindly.
- Bridge builders are amphibious; they are the frogs that can live on the land of corporate politics and the sea of futures work.
- Fence-sitters are akin to rats who will come if they smell the cheese or abandon ship if things appear to be going badly.
- Laggards are the vultures who will never like our message and are circling around and waiting for us to fail.

True believers

Our message of change and thinking differently about the future will be music to the ears of a small segment in our organizations. We will be seen as a breath of fresh air. They will want to help and in many cases will help spread our message. They will help us through the tough times if we get down. They are good loyal friends.

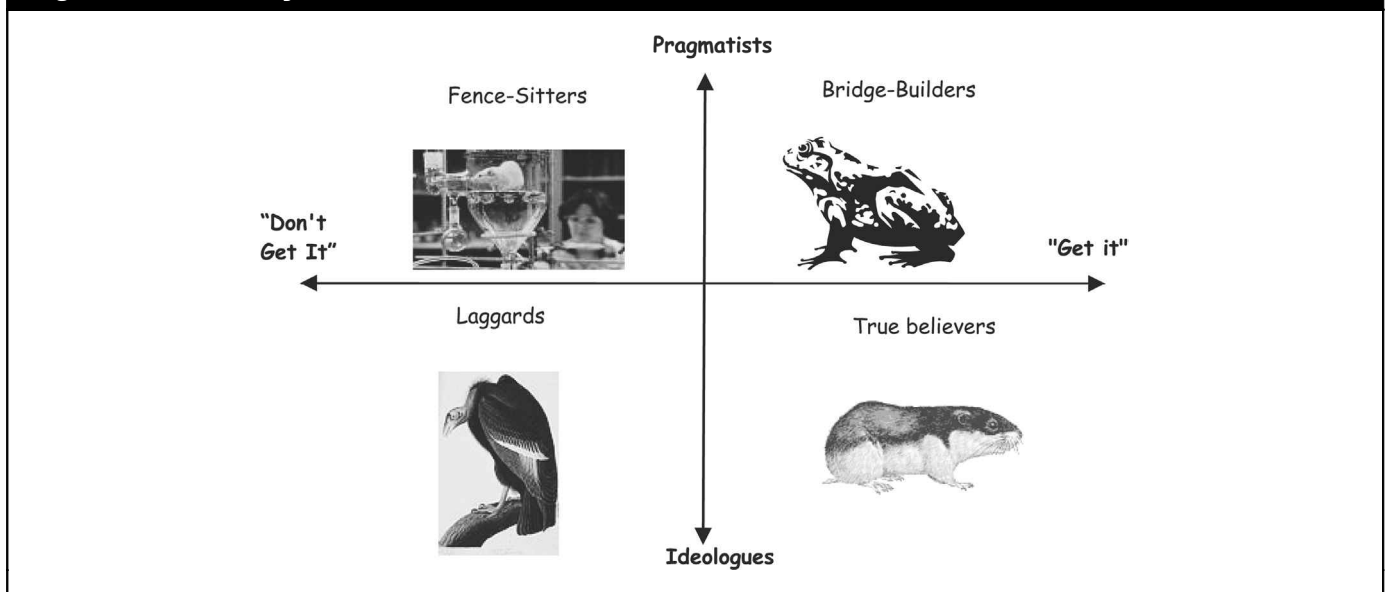
We need to nourish our true believers and go into battle side-by-side with them. But we must be careful not to mistake their voice or views for that of the mainstream organization. They are often the fringe players, and if we are not careful, our lemmings will take us over the cliff with them.

Bridge-builders

These are our most valuable friends – we must kiss our frogs! Without them, we will have a very hard time. They are our translators within the organization – keeping in mind that we are translators between the future outside the organization to inside it. They can take and re-package our message in a way that gets it to the organization power brokers and movers-and-shakers. It is a rare breed that has the political and ambassadorial skill to successfully position our message with the “suits”.

The first challenge is in finding them. Building on the frog metaphor, we must kiss a lot of frogs to find the prince. Once found, we must be prepared for them to occasionally sell us

Figure 5 — Know thy audience



out. While they believe the message, their survival instincts will tell them when to compromise or back down. And they will do it, and we must accept that, and not take it personally. Sure, we wouldn't compromise – which is precisely why we need them. They have a finely tuned sense of which battles to fight and when.

Fence-sitters

The tough news is that our biggest audience sits on the fence. Thus, our message must primarily address them. For the most part, they will go about their business and ignore us. So our message to these “rats” must be appealing enough that it smells like cheese and they come. It must not be off-putting such that they abandon ship. Very few will convert to true believers or fall back to laggards. They will remain opportunistic and tend to judge our work on a case-by-case basis. The good news, however, is that if we “deliver the goods” we will earn some loyalty.

Laggards

There will always be vultures hostile to our message under any circumstances. We are marked from the get-go. Our message about change and thinking differently will be seen as hostile and threatening. The suggestion here is to ignore them. They will not convert and cannot be persuaded. So let us not waste our time. Happily, they are a relatively small number.

The bad news is that while some will just ignore us, others will circle around us like vultures waiting for a sign of weakness. And when that moment appears they will strike. In our line of work, we must be prepared to be sacrificed. They typically can wait us out, and will likely prevail in the end.

Implications

Where possible, we should tailor our messages in terms more palatable to the organizational mainstream – the fence-

sitters. We must translate our message into business terms to the fullest extent possible. Numbers are always comforting. By all means, avoid the Siren's song of damning “them” as short-sighted, hard-headed, or whatever terms we use when frustrated by our clients' inability to see what is plainly clear to us. Understand that these differences are natural, accept them, and move on.

At the same time, we must build our army of true believers to help us spread our message and go about the difficult search of finding-bridge builders. The organization futurist role is not one of a lone ranger, but rather of a coalition-builder – is politician too unpalatable a term? And by all means, do not try to convert everyone. It is impossible and distracting. We must do our best to stay clear of the laggards, who have it in for us anyway.

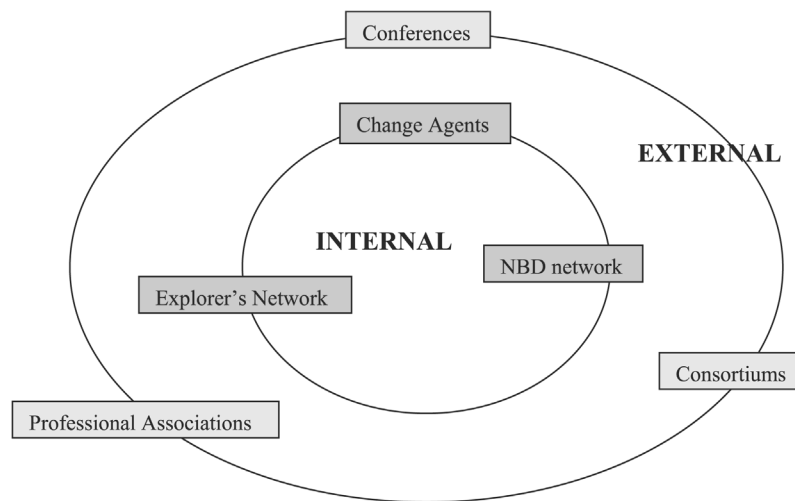
Q6: Who is in your network?

It is difficult to over-emphasize the importance of internal and external networks for the organizational futurist (see Figure 6). Networking really must be in our skill set to be effective in this role. We must think of ourselves in terms of brokers between the larger futurist community and the inside. This may result in occasionally making us long for the days when we did “real” futuring, as we will have little time for environmental scanning and content generation — this we must leave to our external partners, as we focus on translating the futures message for those on the inside.

The internal network is all about getting our work implemented and is pretty straightforward (albeit not easy) stuff once we understand our audience. Figure 6 shows an example of a few internal networks I have either created or participate in.

The external network is what we must pay strict attention to. The assumption here is that the days of empire-building

Figure 6 — Who is in your network?



are out and that our futures function is likely to stay lean-and-mean. We are seeing three- to five-person teams re-emerging as a futures function, since the re-engineering of the 1980s and 1990s wiped out many organizational futurists, particularly those in some type of planning role. Thus, we will have to rely on our networks, not a big staff.

The good news is that there is an increasing emphasis on networking and institution building with the field. The World Future Society and World Futures Studies Federation continue to attract a steady membership. A new Association of Professional Futurists has recently been formed to focus on the needs of the professional futurist and the futures profession. Many of the established futures consulting firms offer consortium projects that focus on a particular subject and provide a forum for people from different organizations to discuss the topic and network. More and more traditional conference venues are offering topics that have a futures bent. An increasing number of futures courses are being offered around the world, as noted above. And these are just the formal ones – as we get on “circuit” we learn of even more informal networks and events that take place.

Implications

There are several reasons for networking. First and foremost is for our own knowledge. We are brought into an organization to provide a fresh perspective. At the same time, it will likely be very difficult to keep up a robust environmental scanning approach, as we will be dealing with all the organizational stuff that hungrily devours our time. Our external network provides a cost-effective way to keep current, or at least not fall too far behind.

Second is that they provide content and tools for us to use with our internal audience, providing the fresh perspective that is part of our value proposition.

Third, is providing our internal clients access to the external world. For me, this is when I started to feel like I was making a more permanent impact on the organization. When our clients want to experience it themselves, we’ve really got them hooked.

Q7: What is in your tool kit?

Our brokering and translation role of bringing the future inside will require us to have a set of tools. So let us be up-front and aware of what is in our tool kits (see Figure 7). What will we use to deliver our message? I confess to not having an organizing scheme for my tool kit that is entirely satisfactory. I have fallen back on organizing them by the length of time for which they are employed. Project-length tools can guide an entire project from start to finish. Workshop-length tools direct anywhere from a half-day to two-day workshop. Exercises are complementary tools that plug in to either a project or workshop for a relatively brief period of time. In the example below, my tool kit is a mix of creativity, innovation and futures tools.

While I have generally found broad agreement on the questions discussed so far, my colleagues are more split on this one. In particular, the issue is to what extent we should emphasize a tool kit. Some advocate that we should put more emphasis on outcomes than tools, arguing that internal clients do not really care about the tools – they just want the job to get done. I find this a perfectly reasonable case, although I am in the other camp that puts more emphasis on leading with a tool kit. I am certainly not arguing that tools are more important than outcomes, rather it is a matter of emphasis in marketing our work.

My experience is that internal clients tend to view futures work as something almost akin to wizardry. At the very least, they have very little sense of how we do futures work. They will typically be a bit reassured when we refer to mainstream

Figure 7 — What is in your toolkit?

PROJECT TOOLS	EXERCISES	OTHERS
• Scenarios	• Know Your Brain Game	• _____
• Lead User	• Trend Poker	• _____
• Roadmapping	• Mind Mapping	• _____
• Ideo Deep Dive	• Six Hats	• _____
• Innovation Landscape	• Brainwriting	• _____
• Strategos Lenses & Action Lab	• The Usual Suspects	• _____
	• Futures Wheel	• _____
WORKSHOP TOOLS	• Uncovering Assumptions	• _____
• KAI, MBTI, HBDI	• Idea Recycling	• _____
• Bottom Line Innovation	• 10 Years Ago	• _____
• Knowbrainer	• Social Change	
• Critical Methods	• Visioning	
• Causal Layered Analysis		
• Trends-to-Opportunity		
• Learning Journeys		
• Open Space		

tools such as trend analysis, forecasting and scenarios – but still not very comfortable. Thus, we need to be very explicit about what is in our tool kit to help provide reassurance that we are not wizards.

I address this in part by having a “one-pager” that lists some of the tools that I like to use and am competent with. On the other side is a summary of the generic approach I use in approaching problems and opportunities. I have found this to be invaluable when meeting with a potential client for the first time. It gives us something to frame our conversation around, and something tangible for the client to work from. I find it far more useful than a completely open-ended discussion.

A second benefit of emphasizing our tool kit is that it demonstrates that our approach is different than the typical organizational one. Most organizations like to standardize around one “right way” of doing things. They like to believe that there is one best tool for a particular problem, and it is simply a matter of identifying the best tool and applying it to every situation. As futurists, we know that “it depends”[2]. Some tools work better for some problems, depending on the particular context at a particular time. We are very wary of

having one-size-fits-all answers. But this runs counter to organizations that prefer to standardize and achieve economies-of-scale. Almost monthly, someone asks me to create a matrix of my tools compared with the types of problems, so we can devise the “right” tool for every problem. I have resisted this at some cost, because I feel it violates the rule of “it depends”. A big value we bring to our organizations is our emphasis of a flexible, customizable tool kit and approach.

A caution regarding tools is to not get overly enamored with them. They are a means and not an end.

Implications

The first step is to figure out what is in our tool kit. What are we skilled at doing, or what can we gain or provide access to? It is not necessary that we be a master of every tool in our kit, but we should know where to get the expertise if it is not us. In the organizational role, we will be subject to the fate of being a “jack-of-all-trades and master of none”. It is almost inevitable. We may start our job as a world-class scenarist. But after a year or two, if we are following a tool kit approach, we may have used scenarios once or twice and a dozen

other tools several times. Meanwhile, there are consultants out there using scenarios every day of the week. They are constantly improving the state-of-the-art. Eventually, we will fall behind. Accept it. It is not all bad news anyway. I now suggest to my internal clients that I can surely do a scenario project for them competently. But, if they really want the state-of-the-art, I can put them in touch with someone from my external network.

Again, I believe putting folks directly in touch with the external network is a big win for institutionalizing futures thinking. It starts to get beyond the whole effort being embedded in a person or two, who may eventually “get hit by a beer truck” or simply leave the company – leaving behind the whole effort with them. In what will be an increasingly common arrangement, the organizational futurists will serve as a virtual partner with the consulting futurist. It is a win-win. The consulting futurist needs one less person, and also gets the benefit of working with someone on the inside who can help get the work more effectively implemented – always the big challenge for the consultants. The organizational futurist gets to upgrade their skill set by working with the consultants. I will confess that I was astonished by how much I learned in this arrangement, just five years away from being a consulting futurist myself.

Another implication is to then actively build our tool kit. This is a place where our external networks can really help. We practically must be skilled in facilitation to be successful in the organizational role. The good news is that there is lots of training available in this area, and it is an area where practice pays off. I still vividly remember my horror at being in front of groups many years ago. Fortunately, my determination to improve overcame my fear, and after years of training and practice, I have become a capable facilitator. It is not magic, it is hard work.

A second area for tool building is the whole realm of creativity. There is a substantial overlap between creativity tools and futures tools. Often we use the same tools with slightly different intentions and different names. Futurists use a futures wheel, while the creativity community uses mind mapping. Not only will the creativity area provide us tools to use, it will help us develop the ability to improvise and customize. I have found one of the most interesting parts of my organizational work to be project and workshop design. I sometimes feel like a chef searching for the right ingredients and recipes.

Q8: What is your guiding orientation?

This question, like several others in the audit, should be answered both from our perspective and that of our audience. Hopefully, we have already been thinking about our own orientation, but it is good to refresh this upon preparing for organizational futures work. Diagnosing our audience is much trickier and more time-consuming work.

An orienting framework is presented here as an example, not as the “right” one. There are other ways to frame our

orientation. I have found this one handy. Nor do I want to go into great depth on it, rather refer to the great work of Rick Slaughter (1999) and Sohail Inayatullah (1998) in emphasizing the need for a layered approach to futures work.

For our purposes, here is a simple breakdown (see Figure 8).

For our purposes, the useful idea is to think of our work in terms of depth and layers. Some of our work will be relatively close to the surface and some will get deeper. We need to develop our sense of what layer or level of depth is required and likely to work with the audience in question. For an audience that is relatively unsophisticated in futures thinking, a pop or problem-oriented approach may make sense. Now, before you start writing angry letters to the editor about that statement, recall the “permission futuring” metaphor developed earlier. Sometimes the “first date” of futures work may need to be at a pop level. This is okay, as long as we are in the process of building a relationship, where we will come back and ask for a second date, at a deeper level of interaction. “Hard-liners” may feel this approach to be a sell-out. It can be dangerous, but my experience suggests that we simply cannot begin at a deep level with an audience not prepared for it. Critical futures studies and epistemological futures work will simply not work with audiences not ready for it. We need to educate and develop our audience over time and towards this direction. Put simply, and especially true for the organizational futurist, we must start from where we are.

Implications

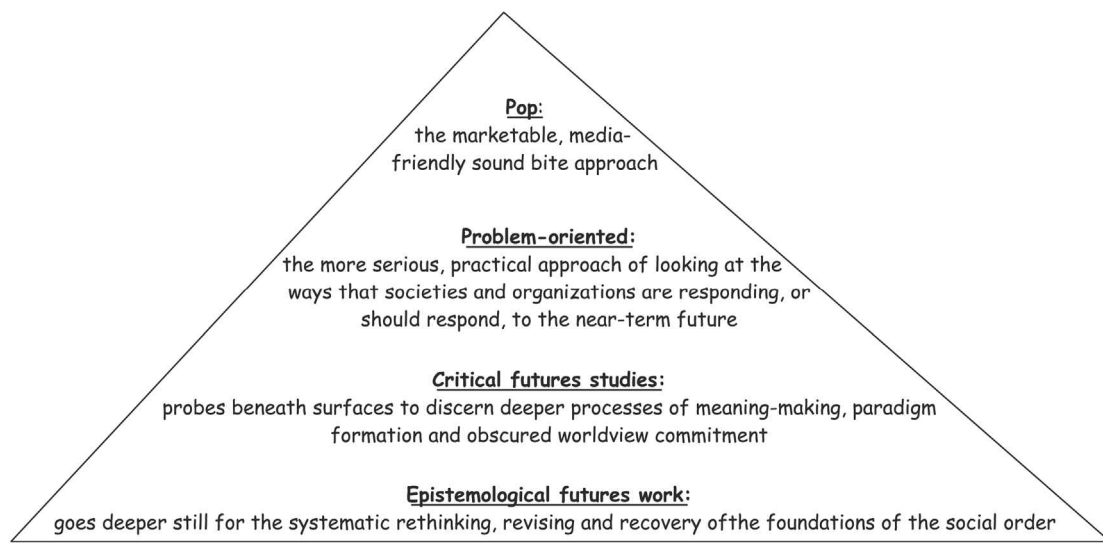
So perhaps we begin our endeavor emphasizing trends. The more clever internal clients will begin to learn that there are deeper insights to be had beyond trends analysis. And they will begin to ask for it, perhaps prompted by our efforts, perhaps not. Then we begin to introduce the notion of deeper and layered analysis.

Q9: What are your purposes?

This and the next question are intended as the most open-ended and least prescriptive of the audit. Your purposes are likely to be different from mine, based upon your philosophy and the nature of your particular situation. Nonetheless, some purposes seem to cut across a wide variety of situations, and at least to some extent have been battle-tested on the inside. In other words, this is not an invented list as much as the product of an iterative process between what is been tried and what has succeeded or seems likely to succeed. Four such purposes, drawing on a previous piece published in *Futures* (Hines, 2002), are:

- To be more future-oriented.
- To think more deeply and systematically.
- To be more creative.
- To better deal with change.

Figure 8 — Orientation framework



Source: Slaughter (1999)

To be more future-oriented

As the kids say in school, “duh!” While it is obvious to us, we should not take it for granted that our audiences will see it the same way. We are fighting enormous inertia. The knee-jerk inclination to approaching problems is to look for the precedent or the case history. The past is where organizational leaders made their careers. It is familiar terrain. The issues, the people, and the technologies of the past are comforting places to look for answers.

The future, however, is uncharted territory. It is often a scary place. It represents new challenges, new technologies and young, hungry upstart competitors for jobs. It may mean obsolescence. The payoffs are uncertain. This terrain is not only unfamiliar, but perceived as hostile.

In this context, the future is lucky to get a few sentences of discussion before the serious people point out the need to make “hard decisions”. The future is still seen as providing soft, nebulous information not appropriate to serious decision making. Again, this is an obvious but no means an easy purpose.

To think more deeply and systematically

As organizations look for competitive advantage in the future, we will increasingly see multi-level analysis as a regular feature of our work. The driver from the organization side will come from the organization’s need to become more innovative, which will in turn drive a need for greater insights. Today’s approaches to innovation and futures within organizations are increasingly stale and producing more of the same old stuff. The next arena is depth. Rick Slaughter and colleagues (see Voros, 2001) at the Australian Foresight Institute have initiated a move to “integral futures” based on

the bringing the provocative philosophical/worldview work of Ken Wilber[3] into his four-level orientation framework introduced in the previous audit question.

To be more creative

As has been suggested earlier, creativity and futures go hand-in-hand. From the beginning of my work inside organizations, I have (luckily) been tasked with building an understanding of creativity, due to my role in helping to stimulate new business development. Since creativity and innovation are more palatable “inside”, I have often used them as cover for FS tools and concepts. For instance, I put together a course on creativity and innovation that surveys the key principle, approaches, and tools, and have included tools such as trend analysis, roadmapping, and scenarios under this rubric.

To better deal with change

I firmly agree with my former professor Peter Bishop of the UHCL Futures program[4] when he says that “futures studies is really about understanding change”. Three levels of change we can help organizations with are on the personal, organization, and social levels.

At the heart of our challenge is changing the minds of individuals. We must really understand why people are resistant to change, and why that is really the “normal” approach – our receptivity to change as futurists is not typical. Change usually involves loss and we should be very sensitive to this, lest we be accused of being either cold-blooded or naïve.

Change at the organization level is the most obvious and is a relatively crowded field. Most organizations have some sort of OD (organizational development) function. While they

could be natural allies, be careful at the same time, as these groups have often been bureaucratized to an extent that has rendered them useless.

At the social level, the challenge is to move away from the confrontational, finger-pointing approach that labels all things organizational as bad, and to re-purpose the message in a way that gets it a more serious hearing. There is certainly a role for directly and aggressively confronting bad organizational behavior. Our credibility is at stake if we do not. What is tricky is employing a less strident approach for less obvious bad behavior that gives organizations a way to engage controversial issues in a positive way. So many times, the message falls on deaf ears because of who is giving it and how it is given. We need to be more sensitive here to how we bring difficult messages, if we want to get them the hearing they deserve.

Implications

Having a sense of purpose is useful in organizing our work as well as a communications device to our clients. This will be especially important when we have had a particularly trying experience, and we wonder “just what the _____ am I doing here?” A co-conspirator and me used to call it “taking a beating.” We would go into a meeting full of good intentions and future purpose, and our audience would subvert the message and often personally attack us. With experience we learn to take our beatings and get more skilled at avoiding them in the first place. But when it happens, we should fall back on our purposes and take comfort in them. Call a friend in our network and commiserate. We’ve all been there before and can sympathize. We often joke that we are closer to our contemporaries in other organizations than we are to those inside our organizations. Take comfort in that while the tough experiences tend to outnumber the great ones in quantity, the quality of the great ones brings a satisfaction that makes it all worthwhile.

For communication, when someone asks – and they inevitably will – what we are trying to achieve, it really helps to have a ready answer. Hopefully, we do not even have to think about it and it simply rolls off our tongue. If not, at least commit it to memory until we get there. Organizational types, especially senior managers, love to lob these kinds of questions at us when we are least prepared, be it in the lunch line, elevator or bathroom. So be ready!

Q10: What are your intended uses?

This last question relates to the first. It is intended to be more explicit and help bring together not only the first but other questions as well. It addresses the tactical or the “how,” and is translated in ways that an organizational audience can readily grasp:

- What is going on out there?
- Problem finding.
- Problem solving.
- Seed planting.

What is going on out there?

Our value is in bringing the outside in. As futurists we have been honing our ability to look at trends and developments and interpret them in a relatively sophisticated mental model of how the world works. This is a unique and valuable skill. This is what separates us from most of the organizational mainstream, where the focus of mental models is primarily on the particular industry or customer. We excel at making unexpected connections between seemingly disparate events.

Let us not forget this value proposition, because there will instantly be tremendous pressure on us to become an industry or market expert. The manuals and training courses and “must-reads” will start piling up on us, and if we waver, we will be sucked into the vortex of being an industry or market specialist. In the words of the British comedy Monty Python and *The Holy Grail*, “run away, run away, run away!” For example, if we are in the food industry, we will early on be asked something along the lines of “what are the trends in pizza consumption”. Less glibly than the Monty Python example above might suggest, there may be an opportunity for permission futuring and building a relationship such that working on this request makes sense. But if this is a simple industry trend data request, refuse to do it, explain our value proposition, and refer them to the appropriate number-cruncher.

Problem-finding

As mentioned earlier, ideally our work more often involves problem finding than problem solving. Problem finding is far more difficult. It involves the work of asking good questions. It involves understanding how the world works and what motivates people. It is indirect, intangible, and difficult to pin down. Organizations are full of problem solvers. It is full of people practically bursting with answers, and looking for every opportunity to share this wisdom with us. People bursting with interesting questions, however, are a rare and vanishing breed inside corporations. It is an unpleasant reality of organizational life that those who ask lots of questions, and especially lots of tough questions, are in a race with the executioner that they are doomed to lose. The more clever ones recognize the situation and voluntarily leave and become entrepreneurs.

We, too, inevitably have a limited lifespan inside. At least our roles are generally recognized to involve asking the questions and raising the issues that others cannot. We must be judicious with this license, yet we must also not refrain from exercising it.

Problem solving

Let us not stray too far from permission futuring. We must remember that getting permission to do the more interesting work often entails delivering on the less interesting work. Few things are more valued inside than being able to help people with their very real problems. Do this a few times, and watch how fast the word spreads. We can quickly become very popular. This is a good time to go back to the previous

question and recite our purposes, lest we lose focus and become pigeonholed as a deliverer of what we call less-interesting work.

Seed planting

Another use of our work is of the educational variety. While we are raising awareness, problem finding, and problem solving, we need to remember to plant some seeds for future harvest. To institutionalize our work, we will have to embark on a multi-year educational effort. We will never be sure which seeds will bloom, so we will want to plant as many as we can.

Yet this activity should not be our primary focus. I have seen or heard of too many efforts where a futures activity began with a focus around a big educational effort. They failed. The reason is that it simply takes too long to see the fruits of this labor. The bottom-line inquisitors will try to burn these efforts every time. The educational, seed-planting effort is a complementary one.

Implications

With this question we enter into the rugged terrain of “what is our impact on the bottom line?”. Our inquisitors will be looking for A-leads-to-B, cause-and-effect kinds of response. In our defense, the nature of the organizational world is such that it is hard to pinpoint anything as a cause-and-effect relationship. Put differently, there are so many factors influencing decisions, that it is often impossible to point to anything as the cause.

Perhaps a central principle of our work is that we not be worried about who gets the credit, that is, if we really want things to happen. We must smile cheerfully while an executive talks about his or her idea, that they “borrowed” from us several months before. I am not suggesting we become doormats. We need to be sure that our sponsors are aware of the value we are bringing. They should know about these “borrowing” instances, but mark it down as the price of getting action.

The hopeful news here is that there is increasing discussion about the need to measure the impact of futures work and some tentative proposals on how to do it. While I applaud these efforts, I suggest we do not hold our breath. It is going to be very difficult, if not impossible to arrive at an answer that satisfies the bottom-line inquisitors.

More recently I have shifted my focus away from the educational function and more towards big projects or WOW projects[5]. Part of my strategy is looking to score a big victory with a successful project that I can point to. It seems to me that success with a WOW project is worth a couple of dozen “raising awareness” successes. It remains to be seen how this strategy will play out.

Summary

The emerging brokering and translating role suggested here for organizational futurists requires us to develop a new strategy if we are to be successful. This ten-question audit is

proposed as a first step in getting us to think through this new role. It is hoped that it is a beginning of a much richer body of knowledge and practice in the arena.

In closing, let us review the ten questions:

- (1) How are you going to spend your time?
- (2) What is your positioning?
- (3) What is your leadership style?
- (4) What is your framework?
- (5) Who is your audience?
- (6) Who is in your network?
- (7) What is in your tool kit?
- (8) What is your guiding orientation?
- (9) What are your purposes?
- (10) What are your intended uses?

While it is suggested that we should be able to address the complete set, in practice some will be more useful than others. Each futurist, each audience and each organization is different. So when thinking through the audit, do not get overly enamored with any “right answer – remember, “it depends”.

Notes

- 1 The term futures is used here for consistency's sake, and to perhaps make a case for the use of that term to best describe our discipline – surely pork bellies are not the only futures that term can describe? One could also substitute the terms foresight, futures studies, or futures research in most cases.
- 2 I would like to acknowledge Jim Butcher of the Global Business Network for drilling home this idea to me. At a scenario training course, we had a running joke how the answer to every question really could be “it depends”.
- 3 To become acquainted with Wilber's work, visit <http://wilber.shambhala.com>
- 4 See <http://www.cl.uh.edu/futureweb/>
- 5 For an outstanding article on the importance of project work, I recommend Tom Peter's “The WOW project” in the May 1999 issue of Fast Company.

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Thinking about the Future: Guidelines for Strategic Foresight

Peter Bishop and Andy Hines, Editors

Foreword by Richard Slaughter

Chapter 6.0 ACTING

6.0 ACTING

“Forewarned is forearmed.”

The ultimate purpose of strategic foresight is to make better, more informed decisions in the present. Framing and Scanning establish the work context and knowledgebase to support this goal. Forecasting lays out a range of potential futures to consider. Visioning delineates the preferred future, and Planning lays out a path to that preferred future.

Ultimately, like any organizational activity, strategic foresight must demonstrate a link to the organization's mission, purpose, effectiveness, performance, and bottom line, or it will fall out of favor. Since the payoff for strategic foresight comes down the road, the analyst's challenge at this point is to convince the organization to devote precious resources to a payoff that may seem distant and uncertain. So Acting, the final phase, is largely about communication--making the abstract progressively more concrete. Assuming success and buy-in, the rest of the phase is about translating the plans into concrete actions.

This section also contains guidelines on how to institutionalize strategic foresight in the routines and processes of the organization. One of the traps of foresight is to do it only once, failing to leverage the learning and capabilities developed during earlier projects. An ongoing foresight capability can become an important asset for the organization. Strategic foresight can become a

fundamental element of a learning organization, which is essential to success in today's fast-changing environment.

The first set of guidelines, **6.1 Communicate results**, gets at the important yet often overlooked task of translating the forecast into terms the organization can understand and act upon. The message does not have to be favorable to the organization. In many cases, a challenging or threatening message is the best way to get attention. The key here, nevertheless, is for analysts to understand the organization so well that they can frame the message in terms its stakeholders understand.

The second set, **6.2 Create an action agenda**, lays out in concrete steps what the organization needs to do to avoid the undesirable futures and move towards its preferred one. The key here is mapping out plausible pathways so that the organization can see the way forward.

The third set, **6.3 Create an intelligence system**, begins the process of weaving foresight into the fabric of the organization. The guidelines speak to the fundamental necessity of continually scanning the external environment for indicators of change. Developing an appreciation and capability for continuous and systematic scanning is the fundamental building block of an organizational foresight capability.

The fourth set, **6.4 Institutionalize strategic thinking**, extends the capability of building an intelligence system to a wider foresight capability. The analyst here needs to make the case for continuing beyond the present activity, and to

convince the organization not only that it can but also that it should treat foresight as a required institutional capability--along with planning and even accounting and finance. A successful outcome to a specific foresight activity, of course, will speak for itself.

6.1 COMMUNICATE RESULTS

6.1.1 DESIGN RESULTS FOR COMMUNICABILITY

The findings of a strategic foresight activity must be communicated in a way that the organization can understand and act on. Careful attention must be paid to designing a communication plan that meets the organization on its own terms, and in a way that gains the attention of time-strapped executives.

The most important point for communicating a project's results is the final presentation, which needs to be kept in mind from the beginning. A sound communications strategy will be designed in the early stages of the activity. In particular, gauge the organization's communication style--how its members prefer to process information--and provide frequent feedback sessions. This will enable the analyst to test and refine communication approaches.

Key steps

Begin with a formal or informal "chartering" meeting with sponsors and decision-makers to kick off an activity. Chartering (Rosenau et al., 2002) involves specifying and clarifying the expectations of the sponsors and the analysis team about the focus of the activity, how it will be carried out, and what the final deliverables should look like. Going through this process will provide important clues for designing the communication of the ultimate results.

Next, the analyst should plan as many feedback sessions as practical. These sessions will not only allow stakeholders to give feedback on the content,

they will also provide further clues on how to design the communication of results in a way that ensures maximum effectiveness.

When the findings of the activity are in, it's important to develop a presentation strategy. The analyst should negotiate for as much--or as little--time as needed. While it will be typical to want more time to get across as much of the results as possible, it sometimes makes sense to tighten and sharpen the message in a shorter time period. Executives in time-stressed organizations will often be grateful for a shorter presentation.

When practical, negotiate the forum for the presentation. A typical boardroom presentation can limit the choices for communication formats, and sometimes it can be intimidating. Analysts who choose a more experiential means of communication, such as a group exercise or even a role-playing, should find more conducive settings that include tables for working, wall space for displays, or space to walk around.

Once the time and place for the presentation are set, spend time going over the communication style of the intended audience. Many analysts make the mistake of simply relying on the style they are most comfortable with, even if it is completely at odds with that of their audience. Analysts should seek to balance their personal style with that of their audience.

If PowerPoint is the required format for the deliverable, the presenter should try to enliven it. Sound or video clips might help bring it to life, for instance. Also, cutting down the number of slides by using handouts of particular details,

or even wall posters, will help avoid the monotony of endless slides. Also look for alternative formats, which can help gain attention. Alternative formats could include storytelling, role-playing, workshop activities, videos, simulations, or gaming. Specific mechanisms might include provocative news headlines or broadcasts, or play-acting a situation that forces the decision-makers to grapple with the issues raised by the activity.

Benefits

While it may seem overly time-consuming to spend time upfront chartering the activity, this investment typically reaps dividends during the communication phase. It clarifies the expectations of sponsors and decision-makers and yields insights into how they prefer to process information. Likewise, frequent feedback sessions may seem to chew up time better spent on the activity itself. But these interactions can offer clues to preferred communication styles, and also contribute to buy-in as the organization becomes more and more involved with the activity.

Designing a creative presentation of the activity's results helps cut through the challenge of gaining attention. Far too many well-executed activities suffer from a failure to gain the attention they deserve because the results were not communicated in a way the decision-makers could relate to or act upon, so their minds wander and they start looking at their watches.

Example

An example of designing results for communicability comes from an analyst who participated in a strategic foresight activity for a large science and technology company. In the first presentation of the results of the study, the organization reported back that they preferred to see recommendations in the form of options to consider and choose from. They felt the consulting firm was being overly prescriptive as to what the organization should do. After a few more iterations, the clients set forth a “no solutions” mandate that effectively barred the analysis team from offering anything that even resembled a solution. While this initially proved difficult for the team members, they adjusted, and in subsequent projects sought to determine upfront if this was a “no-solutions” project. They used this approach successfully with other organizations as well.

Further reading

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6.1.2 TAILOR THE MESSAGE TO THE THINKING STYLES OF THE AUDIENCE

Strategic foresight typically involves complex analysis of complex issues, which presents a communications challenge that should not be underestimated. Very often the thinking style of the analyst and the team is

different than that of the organization. Those drawn to strategic foresight and strategic thinking tend to have a mindset that embraces the complexity, ambiguity, and longer-term timeframe intrinsic to these fields. In most organizations, the prevalent thinking styles are concrete, detailed, here-and-now, and bottom-line, particularly among those in decision-making roles. This sets up an all-too-common mismatch between the analysis team and decision-maker.

Key steps

Begin considering the thinking styles of the organization when setting up and chartering an activity. While project negotiations can be very revealing about the organization's expectations, analysts should be careful not to take everything at face value. The organization is often not exactly sure what it wants, or may say it wants one thing when it really wants another. It might ask for the activity to be implemented in a particular format, but balk when it sees the results. It is up to analysts to do their best to understand what the organization really wants and anticipate the form of communication that will get the outcomes across most clearly. Understanding of the organization's thinking styles will evolve as the activity proceeds--it is especially helpful to interview the participants as part of the activity and look for style cues there.

The analysis team should start by analyzing its own thinking style (see **Guideline 1.1.2 Know your biases**). As team members become more comfortable and knowledgeable over time with their *self-assessments, they

can start to apply this learning in work with others, including in *stakeholder interviews and interactions with the organization. It would be ideal to be able to assess the organization's thinking styles using a formal assessment tool, but this is rarely practical. More common is making a best approximation of the styles apparent. A lot can be learned by paying attention to style issues during interviews or updates, attending executive speeches, or analyzing organizational documents for clues.

However gleaned, this information is then used to tailor communications. Using the Kirton Adaptor-Innovator Assessment, for example, if it becomes apparent that the organization is on the Adaptor end of the innovation continuum, it would be unwise to recommend tearing down the existing system and building a new one. While the analysis team might prefer to recommend this, the advice would run counter to the preferences of the "adaptor." But even if the team felt compelled to tear down and rebuild, it could tailor the message along the lines of "an adaptive approach was considered, but rejected for the following reasons."

An emerging best practice is to combine a style assessment with Spiral Dynamics, an assessment tool that gets at thinking "content." Simply being aware of style differences does not bridge all communication gaps; people with diverse styles will still often have trouble communicating with one another. One way to help is to profile the team's color tier on the Spiral Dynamics assessment, which measures worldviews or belief systems. As with differences in thinking style,

differences in worldview can manifest as communication gulfs that are not easily bridged without awareness of them. Someone with an “orange” preference for competition and victory may not understand someone with a “green” preference for participation and egalitarianism. The combination of understanding differences in both style and worldview suggests a powerful communication approach.

Benefits

Practitioners all too often bemoan the fact that a comprehensive and ultimately accurate analysis failed to influence decision-makers. Many times this is due to poor communication: excellent content delivered in a way that is either off-putting or misunderstood by the organization, thus limiting the influence of the study. The clear benefit is to avoid or at least lessen the chances of this occurring.

Example

Consider a hypothetical example based on a real-world experience of the author, and which will likely be familiar to many. A team of outside consultants arrives in the boardroom of a fairly straitlaced and conservative company, dressed in fashionable clothes and accessories and with a strut in their step. They are far younger than the client audience. Their presentation begins with a flashy and very loud video explaining what the organization needs to do. The subsequent presentation is almost pedagogical, with a tone of lecturing the organization about the mistakes they've been making, and

beneath a thin veil implying that creative work is best left to creative types like themselves.

The somewhat stunned audience has little to say. They sit back in their chairs with pained expressions. They've been afraid to ask questions for fear of being made to look un-cool. They politely thank the presenting team for their efforts, and when the door closes after they leave, the real discussion begins. Unfortunately for the presenting team, it focuses far more on their obnoxious style than on the content, which is actually well thought-out and worthy of consideration. In this case and many others like it, however, the delivery undid the content and the proposal was rejected.

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6.1.3 IMMERSE STAKEHOLDERS AND DECISION-MAKERS IN THE ALTERNATIVES TO INCREASE BUY-IN

Many strategic foresight activities miss the mark in presenting results that surprise the organization. Organizations, and especially senior executives, do not enjoy being surprised or put on the spot. Asking for their input beforehand gives them a stake in the activity and eliminates the element of surprise.

Key steps

Stakeholders and decision-makers should be involved throughout the activity. A chartering process upfront can set expectations and begin the buy-in process. Interviews during data gathering are another point for immersion. Workshops to create alternatives or options are useful points to involve these groups, as are follow-up sessions to explore implications and potential actions. Throughout the process, frequent feedback sessions can be scheduled to keep the analyst in tune with the expectations of the stakeholders and decision-makers.

Numerous points in a foresight activity are well-suited to the involvement of stakeholders and decision-makers. The situation will dictate whether or when to use a particular opportunity. Some decision-makers, for example, prefer not to be involved much. In this case analysts must make judicious use of whatever time they can secure with the decision-makers, by emphasizing how important it is to the eventual outcome. In other situations, stakeholders and decision-makers can be overly intrusive. They may seek to dictate the course of the activity, and even the findings. Here the analyst will need to look for ways to regain control of the activity and reset the relationship. As both cases above suggest, the rule of thumb is to strive for a balance between involvement, which helps with buy-in, and maintaining the integrity of the activity and the analysis team.

Benefits

The benefits of buy-in are virtually self-explanatory. Stakeholders and decision-makers commission an activity to aid their work and decisions. An activity that fails to address these needs has missed its purpose. If time is invested in immersing stakeholders and decision-makers in the process, the ultimate findings are more likely to be useful to them and less subject to rejection. That said, however, involvement is not a panacea for winning buy-in. Sometimes stakeholder groups will participate and go along with the analyst, without being forthcoming about their objections since they do not want to be seen as intrusive. The best the analyst can do is to encourage frank and honest feedback. This includes not becoming defensive in response to critical feedback, but rather seeking ways to improve the activity. If the analyst genuinely accepts and deals with feedback it will tend to encourage more, and benefit everyone by increasing the odds that the activity's outcomes will meet expectations.

A caution about buy-in is not to win it at the cost of the activity's integrity. The analyst should not get caught up in telling the organization what it wants to hear. While this approach may work in the short term, most stakeholders and decision-makers will soon realize that such analyses produce little value since they are merely confirming predetermined conclusions. The analyst needs to be both tough and diplomatic. If stakeholders are resisting findings that the analyst strongly believes in, those concerns must be addressed and the rationales behind the findings explained. While this may be uncomfortable for the analyst at the time, the demonstration of independent thought and openness to

contrary feedback will prove more useful to stakeholders and decision-makers, and make clear the analyst's value.

Example

A negative example of the failure to properly involve stakeholders comes from Shell's disposal of the Brent Spar floating oil-storage facility. Shell did obtain buy-in for its disposal strategy from the officials legally responsible for the disposal--which led it to ignore concerns from other stakeholders. Greenpeace, the environmental advocacy group, used the media to raise concerns and ultimately turn the public against the deep-sea disposal solution approved by authorities. (It is important to note that an organization cannot always choose its stakeholders). While involving activist groups in the problem-solving process would have been inconvenient and slowed things down, it would have brought their objections to light sooner, and provided more room for developing alternative options.

The good news is that more and more organizations have learned this lesson, and increasingly are involving potential opposition groups in strategic foresight activities and decision-making processes, including through mechanisms such as external advisory boards.

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6.1.4 BE PROVOCATIVE

Part of the role of strategic foresight is to make organizations think about their changing situation. This is often quite challenging. Being provocative makes the organization confront internal and external change instead of sitting on its laurels, and offending it slightly can force it to think about its counterarguments. Both of these help the organization take personal responsibility for its future.

When the mandate is to make the organization think, or get it out of a rut, provoking and offending can work very well. This is often the role of an opening keynote speech at a conference, and can be equally effective in kicking off a strategic foresight activity. It is a good mechanism for engaging the organization in the rest of the activity.

Provoking and offending are better tools for limited time engagements, such as lectures or workshops, than for everyday use--one would eventually wear out one's welcome. But when an organization invests in an activity, it often expects to have its views challenged. In negotiating the activity, it's best to learn the organization's views regarding provocation. Some organizational cultures are uncomfortable with provocation, and it is best to know this beforehand.

Key steps

A tried-and-true formula is to first shock or frighten the organization about its current situation, even suggesting that it will go out of business if it doesn't change. Show in some depth why this could be the case, and describe the threats it faces. After establishing the threats, introduce the opportunities. Suggest that if the organization acts on its foresight, it will be able to avoid the threats and seize opportunities.

Provoking should be done on a regular basis. By contrast, offending should be used sparingly and cautiously. If offending remarks are chosen carefully and leavened with humor, people will laugh and actually enjoy them, and the offense will be short-lived. But they will also be forced to defend themselves and identify counterarguments--which can be a healthy process. Pointing out obvious inadequacies in an organization is worthwhile if it leads people to some guidance about how to solve the problems or live with them.

Benefits

Provoking and mildly offending essentially mean challenging the organizations existing mindsets and value sets, i.e., intellect and emotions. Putting people in an uncomfortable situation for a short while harnesses their energy to relieve the discomfort. Using humor helps to get through a listener's resistance to attack, but people can take the points on board. Organizations tending to complacency often get into trouble gradually, like frogs in a slowly heating pot. They can be very resistant to bland messages, which they get all

the time, and let them slide off without impact. When the analyst says something provocative or offensive, they are forced to respond or engage in self-defense.

Example

BT's Ian Pearson is one foresight practitioner who has successfully played provocateur on innumerable occasions during his history of public presentations. Pearson promotes BT's vision of the future--which he and his team help develop--with a provocative multimedia presentation full of challenging forecasts. In so doing he spreads at least awareness of, if not adherence to, BT's visionary work. So tomorrow's developers of products and services will implicitly or explicitly be working towards a vision of the future put forth by BT.

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6.1.5 MODULARIZE OUTCOMES--KEEP THE GOOD AND DEAL WITH THE BAD

Throwing the baby out with the bathwater is a self-defeating reaction to negative outcomes. Organizations need to think in degrees of gray. They require an ability to sort thinking into modules, and know what to keep, what to get rid off, and what to deal with immediately. For example, when a product is launched and fails, the organization should aim to understand the components

of this failure. When the root causes of a failure, or a success, are understood, it becomes clear that what actually failed or succeeded were discrete elements of the process. This learning enables the organization to preserve and build on valuable information or experience--which is present even in a disastrous initiative--not throw it away because it was part of a larger failure.

Key steps

When assessing an activity, the first step is to identify and assess modules in the larger activity. What were the key elements or actions? Next, interview the decision-makers and other active participants representing each of the modules. The analyst can help build a constructive culture into the interview process by making clear how the information will be used going forward.

Next focus on the modules that appear to contain the issues, and build a deeper understanding of what actually happened. For example, was the market not mature enough? Were the technologies not mature enough? Which ones? Was this offering too much, too soon? Was the organization unprepared to support it? Was the ecosystem not ready for it?

Analysis of the interview results can be sorted into the “good” and “bad” modules, and communicated to the organization. Thus, the entire activity does not to be deemed a failure. Conversely, even successful activities will have their dysfunctional or “bad” elements that can provide opportunities for learning.

A better approach, of course, is to avoid getting into the situation in the first place through greater understanding of the market fundamentals of and

organizational readiness. What is emerging in the organization's external context? What is shifting in the ecosystem? How are technologies shifting? What else is changing? It is not as simple as knowing it all and hence making all the right decisions. It is more about knowing *more*, and hence making *wiser* decisions, about the key alternative directions possible and their potential outcomes.

Benefits

The benefit of “keeping the baby” is preserving the good and learning from the bad, which can help the organization gain benefits from good modules sooner than others do and avoid pitfalls that others may experience. The downside of not doing this well is that the repercussions tend to be huge. Misunderstandings abound, and people draw all kinds of wrong conclusions and use those in their decision-making, to the detriment of activities to come. The activity is forever viewed through a myopic lens of failure/success, which can kill benefits that would be clear to those with a broader outlook.

Example

An example is the Apple Newton. The Newton was a pioneer of the “do-it-all” personal digital assistant (PDA), and defined many aspects of future PDAs. Yet Apple stopped its production in 1998. Post-mortem, the market's actions and numerous articles on the event suggested that Apple made a huge deal of the failure internally, burning many of the people involved. Once burned, twice shy:

it became difficult for anyone at Apple to propose anything similar. The baby was tossed out with the bathwater!

What really happened? At Apple's core is a simple premise of user-friendly products, quality design (technical and industrial), and good purchasing experience. What was lacking in the organization's processes to enable it to understand the market better and handle the failure better? Judging by the "toss the baby out with the bathwater" framework, there was no module analysis designed to transparently keep the good from the experience and learn from the bad.

Now, the iPod brings new hope. The iPod represents many elements that could have been learned from the Newton project. Did Apple conclude that Newton was too much, too soon, not connected enough to the ecosystem providers, and based on immature technologies--and use that knowledge to strip the iPod down to a palm-size simple solution?

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6.1.6 BUILD AWARENESS OF CHANGE THROUGH EXPERIENCE, INSIGHT, AND REFRAMING

Facts and ideas alone don't convince organizations to address change. The case for understanding and addressing important change may need to be made with a range of techniques, to get through to the organization on its own terms. Sometimes that means giving the organization a new experience. Often it means finding ways to restate or reframe the issue in a way that enables the organization to see the need to avoid a threat or take advantage of an opportunity.

Key steps

It is standard practice in foresight activities to immerse the organization in the issue at hand in order to help it think differently, freshen its perspective, and get it away from preconceptions and biases. To do this, it is crucial to bring in new ideas and connect them to the organization's interests. So the first step is to reach outside for new information and insights that the organization is not receiving through its usual channels. That means carefully selecting trends and insights that are relevant and impactful, while avoiding too much filtering, which may eliminate interesting ideas that could prove useful as more is learned about the situation.

With this pool of information, the analyst then needs to find ways to make the fresh insights relevant and meaningful to the organization. This is thoughtful, analytical work. Some people in the organization will be more naturally inclined to help with this activity than others. Find those people who think creatively and broadly, and tap their skills for these strategic conversations. Once the

approach is decided, it is often useful to have organizational insiders themselves share the insights with the organization. The idea is to spread the ideas throughout the culture, so they will not seem shocking when they appear in the conclusions of the activity.

Finally, to get through to skeptics in the organization, here are some suggestions to make the insights compelling and memorable:

- Use images--The more powerful and colorful the presentation, the better. Photos, cartoons, and video may all be useful. A picture may be the most effective way to get some ideas through to the visually inclined.
- Use experiences--Where practical, experiential presentations are best: traveling to locations where relevant change is most visible, or where new opportunities may lie, such as in new markets. But relevant experiences can also be brought home, via multimedia or role-playing.
- Use tools that promote in-depth thinking--Creative problem-solving techniques, used in ideation sessions or scenario building, can open people to new perspectives.

Benefits

For most organizations, certain kinds of intelligence flow in regularly. Usually these are framed in the language of the organization's business or sector. And usually they originate within that sector. The organization has access to an ongoing stream of conventional wisdom and voices from that field or sector. Usually such information also has a short-term focus--the content in industry

newsletters and emails is typically about the current year or even the current quarter.

The organization needs fresh insights from outside this stream of routine intelligence. The analyst can break through by highlighting new, or newly important, changes that may not be on the organization's radar, and make those new insights compelling and relevant.

Example

A select group of executives at a high-tech company needed to rethink their marketing and strategies to tap into new opportunities around the world. A futurist with whom they consulted raised their awareness of potentially huge opportunities for their business in emerging markets, even in resource-stressed poor countries. To convince their colleagues of the wider global market of opportunities, the team decided to stage an experiential event with colleagues and senior executives. They focused on water issues in the poorest parts of the world, assigning participants to role-play people from poor countries, emerging markets, and rich countries. The poorest got "dirty" water and plain rice for lunch. The experience was a hit, and effectively raised consciousness among the leaders of the organization about new challenges and opportunities in the global marketplace—including about water resources and water quality, a key area of opportunity identified by the analysis team.

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6.2 CREATE AN ACTION AGENDA

6.2.1 CREATE A SENSE OF URGENCY

According to John Kotter (1995), successful change efforts begin with a leader communicating a sense of either crisis, potential crisis, or great opportunity. Kotter maintains that executives often underestimate how difficult it can be to move staff out of their comfort zones. He believes that in some instances, it may be necessary to generate an apparent crisis. However the sense of urgency is established, it needs to be felt throughout the organization. The majority of those in management--Kotter suggests 75%--need to be convinced that the organization can no longer operate as it has.

Key steps

How the analyst goes about creating a sense of urgency will vary by organization. Start by assessing the organization's culture: Is it very hierarchical? Is most communication formal or informal? Is there a feeling of pride? Do people seem to enjoy coming to work? Is there a willingness to try new ideas? Are people open and honest with one another, or are there constant turf battles and hidden agendas?

Knowing the culture of the organization will inform the decision of how to proceed. It may involve getting the attention of the CEO. It may be pulling together what Tom Peters has called a "skunk works"--an informal group of people who dare to dream, to confront the status quo, and to think outside normal constraints.

The analyst also needs to determine the best communication strategy to spread this sense of urgency. For an organization whose workforce is distributed geographically, the analyst may need to travel to various sites. Whatever approach is taken, it is essential that those viewed as leaders in the organization, whether by virtue of their position or their knowledge or achievements, come aboard early on.

Benefits

Evidence is ample that many change efforts fail--or at least fail to fully reach their goals. One study (Beer et al., 1990) of six large companies that undertook change initiatives found that only one of the six had substantial success, three made some progress, and two actually experienced decreased performance. Another study (Conference Board, 1994) of over 160 companies in the United States and Europe found that only a third were able to report success in their change efforts.

Failure to establish a sense of urgency is one of the four key reasons that change efforts fail, suggests Kotter (1996). Organizational cultures become complacent, mired in the "same old, same old." Creating a sense of urgency challenges complacency--and also helps to address the other key reasons for failure:

- Failure to establish a coalition of persons supporting the effort
- Under-communicating the vision
- Neglecting to connect changes to the organizational culture

In government, more than one president--for example, Jimmy Carter--has run on a platform of "cleaning house." But government employees are protected by civil service regulations. Many have seniority. Some are represented by powerful unions. During Carter's administration a prevalent attitude among bureaucrats was, "I was around before him, and I'll be around long after he's gone." What government leaders such as Carter failed to do was to put forth a compelling reason why the proposed changes were vital for the organization, thereby overcoming complacency, building support, and galvanizing people around a common vision. Carter never articulated a sense of urgency, and so his change efforts never materialized.

Example

Chrysler Corp.'s bailout by the US government in 1979, and subsequent revival, is an example of how creating a sense of urgency enabled a major change effort. CEO Lee Iacocca set an ambitious goal for Chrysler: not only to pay back the loans provided by the government and the banking industry, but also to reestablish Chrysler as an auto industry leader. Recognizing that some of his senior staff were part of the problem, Iacocca fired many executives. He also personally bargained with the union for cuts in wages and benefits. And he reduced his own salary to \$1 per year, to model sacrifice in the name of worthwhile goals. Iacocca appreciated the importance of taking action. As he put it: "The trick is to make sure you don't die waiting for prosperity to come." He followed up his early steps by quickly introducing the enormously successful

minivan. That success allowed him to garner support, attract financial backing, and build a climate of accomplishment.

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6.2.2 REINFORCE WHAT THE ORGANIZATION IS ALREADY DOING AND BUILD FROM THERE

Long-term, complex, contingent thinking is an acquired skill, one which few people have had the time or the need to practice consistently. Therefore, it is understandable that some analysts believe they have to start from scratch in explaining their approach or their deliverable. But that would be a mistake.

People think about the future all the time, and sometimes in quite sophisticated ways.

Typical customers for strategic foresight plan their holidays, save money for their kids' college, buy insurance, change the oil in the car, bring an umbrella on a rainy day. While hardly unusual, all of these behaviors represent an understanding of a contingent future. The analyst, therefore, needs to simply move this thinking into the strategic environment of the organization in order to show it how to think about the future in a productive and systematic way.

Key steps

Most organizations have an almost automatic evaluation of whether a particular change is good or bad for it. Such evaluations, however, are based on underlying *values*--the root of *evaluation*. Identifying those values makes the basis of such judgments explicit and therefore more conscious and defensible. At the same time, the analyst can also point out other, sometimes competing, values that are not served by that change. Acknowledging those competing values usually does not alter the clients' evaluation of the change, but at least they now know that the change involves a tradeoff: some things get better, but others may not.

Begin by assessing what people in the organization already "know" about the future. Most are quite aware of the change going on around them. They have expectations about where that change is leading. And finally, they usually have an opinion or attitude about whether the change is good or not. The job

of the analyst is to begin with this input and then expand it in particular directions. Identify changes the organization is not yet, or not fully, aware of. These newly identified changes don't replace or discount the ones the organization is already concerned with, but they add to the list. The analyst needs to be careful, however, to go beyond what the organization already knows without drowning it in an ocean of new information. Organizations can absorb and retain new knowledge, but the quantity of new knowledge and the rate of absorption are both limited.

Next, challenge the assumptions that underlie the organization's expectations. Most organizations expect the future to be like the present, only bigger and faster. That is real knowledge to build on, but the future can also be radically different from the present. As discussed in **Guideline 3.5.4 Emphasize plausible surprises**, change is rarely smooth and linear and some systems change radically, often with little notice. So taking into account the organization's expected or baseline future as one plausible scenario, the analyst shows how other futures are also plausible. For more on this, see **Guideline 1.3.2 Seek to improve the mental model of decision-makers**.

Benefits

This guideline reemphasizes the importance of understanding and starting with the organization's current mental model, recognizing its decision-makers' knowledge and experience in dealing with the future--and only then enhancing that knowledge and experience with the analyst's own knowledge about the

future and how to deal with it. Introducing an organization to the future is a matter of persuasion: not only of the analyst's competence, but also of the reality of change and the need to do something about it now. Those experienced in persuasion always begin with the organization, where it is coming from, its knowledge, experience, values, and needs--an approach intrinsic to being able to influence the organization towards healthy change.

Working with the future is hard. People make short-sighted, wrong-headed decisions every day. It is easy, therefore, to fall into the misperception that most people are clueless when it comes to dealing with the future. This belief breeds a defensive and know-it-all attitude that turns people off. The antidote is to respect the organization, what it knows, and what it cares about. The analyst's job is to serve the organization, and this requires a baseline of empathy and humility. This approach not only prevents incorrect assumptions about the organization's knowledgebase and values--finding out what it does know and care about can provide valuable information in building the analyst's case for how to deal with the future, as described in **6.1.1 Design results for**

communicability.

Example

Jack Welch, former CEO of GE, instituted an exercise called Destroy Your Business (DYB) in every GE business unit. DYB made unexpected future palpable by having participants grapple with the possibility of going out of business. Each

unit assembled a cross-functional team to benchmark competitors and examine the products and services they offered and how they operated.

In January 1999 Welch mandated that GE transform itself into an e-business, in response to the dot.com boom. The teams' goal was to present GE's top executives with a hypothetical Internet-based business plan that a competitor could use to erode GE's customer base. In addition, the teams proposed how they would change their existing business model in response to these threats. Today, GE is acknowledged as a leader in e-commerce.

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6.2.3 AIM THE ACTIVITY AT HELPING TO MAKE BETTER DECISIONS

Strategic foresight explores a wide range of trends that can affect an organization. At times, the activity may seem to raise a puzzling array of possibilities and options. Ultimately, however, to be useful it must help decision-makers make better decisions.

This guideline requires a shift of mindset from earlier phases, where keeping an open mind to the possibilities is paramount, to a “closing” mindset of prioritizing and making choices.

Key steps

A broad range of tools exists for making strategic choices, once the possibilities have been developed. First, however, ensure sure that the nature of the issue is fully understood.

Heifetz and Linsky (2002) make the important distinction between *adaptive challenges* and *technical challenges*. Adaptive challenges require new learning in order to be addressed, while technical challenges are those for which the necessary know-how already exists. The authors suggest that a key problem for organizations is confusing an adaptive challenge with a technical one--in other words, trying to solve a problem that requires new learning with existing know-how. The trick is that adaptive challenges can be very difficult to address, so organizations tend to have a strong bias towards technical approaches. The analyst, therefore, must first diagnose the nature of the challenge.

Once the challenge is identified, a number of tools are available for exploring options. The scenario-planning firm Global Business Network (www.gbn.com) has developed a useful framework for organizing options. Assuming there are four potential choices facing the team and clients, the options range as follows, from safest to riskiest:

- A *robust strategy* looks for elements common to all four options and focuses on these commonalities.
- A *hedge-your-bets strategy* gives equal weight to all four options; that is, it assumes all four are equally viable and divides the action equally across them.
- A *core-satellite strategy* emphasizes one option as the most likely and pays the most attention to it, but also pays lesser attention to the other options just in case.
- A *bet-the-farm strategy* selects one option as the best and invests all its energy in pursuing that option.

One way to help make this concrete is to imagine you have \$1 million and ten people to invest in your options. The robust strategy would first extract the common elements from each of the options, then allocate all the money and people to those. A hedge-your-bets strategy would allocate \$250,000 and 2.5 people to each of the options. A core-satellite strategy would invest, say, \$750,000 and seven people in the preferred option and spread the rest of the money and people across the others. A bet-the-farm strategy would invest all the money and people in the preferred option.

Benefits

Putting options in this format aids decision-making by making the future possibilities seem more real and concrete. It guides participants towards a preferred direction to embark on in the present.

This can sometimes be a difficult exercise for analysts, since by nature they will tend to want to develop more and more options and avoid committing to a single strategy and plan as long as possible. But delivering useful advice and options to decision-makers will make the analyst a vital partner for the organization. By using strategic foresight to solve real problems of concern, the analyst builds personal credibility as well as the credibility of strategic foresight in general.

Example

A classic example of a bet-the-farm strategy--and the risks it entails--comes from the former chemical company Monsanto. In the early 1990s, Monsanto made the tough strategic choice to sell off its chemicals businesses and focus exclusively on biotechnology. Unanticipated resistance to genetically modified foods, primarily in Europe, had disastrous consequences for the company. It was acquired by the pharmaceutical company Upjohn, and pretty much lost its identity for several years, until being cut loose by Upjohn and reemerging as a company specializing in agricultural products and solutions.

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6.2.4 MAKE DECISIONS WITHOUT ALL THE DESIRED DATA

No matter how hard one tries, no matter how many resources are deployed, no matter how deep the research--all of the information necessary to make perfect decisions is never present. At some point, long before all the facts are in, decisions must be made.

Like most processes, information gathering adheres to the law of diminishing returns. At some point the amount and value of information generated begins to diminish. The right point to stop gathering information varies from activity to activity, and depends on the value of the information and its related cost. Ultimately, however, deciding when to stop depends primarily on how much ambiguity and risk the organization is willing to accept. Being willing to make decisions without all the data has a major upside: it avoids "analysis-paralysis"--the habit of continually delaying a decision in pursuit of more information.

Of course, situations do exist in which it is possible to know "everything," but these are rare and typically artificial in nature. In the game of chess, for example, it is theoretically possible to consider every possible move and countermove. However, even in a simple game the computing power needed to evaluate every possible move is beyond the capabilities of either chess

grandmasters or the world's most powerful computers. Rather than examining all possible moves, both human and computer players reduce the complexity by considering only a partial set of strategies and moves. In order to make the game playable, they cut short the search for all available information.

In an ideal world, decisions would never be made without all relevant data. But as in professional chess, not only are key facts perpetually out of reach; it is impossible to know in advance with certainty which information is relevant to decision-making and which is simply noise. This revelation may frustrate the analyst--or offer some small comfort.

Key steps

A rule of thumb in making the decision about when to stop gathering information is to ask how much it would cost to acquire the next "important" bit of information. Would that information significantly increase the likelihood of arriving at the desired answer and is that increase in certainty worth the cost? If it would, then by all means make the additional investment. Otherwise work with what is available, and suggest moving to a decision.

To appreciate how important, or unimportant, increased amounts of information are to decision-making, it's instructive to start keeping track of how you would decide to resolve an issue during the various stages of data collection. At what point did the final decision lock in? Fifty percent of the way through data gathering? Seventy-five percent? Ninety percent? At what point did the organization become comfortable with its decision?

The biggest obstacle to this guideline is the illusion that the decision-making process is perfect and rational and the only right way to decide something is to gather all the facts. Another obstacle is that information is often gathered simply to “check a box” without any real intent of using it.

Benefits

While curtailing data-gathering may seem almost negligent, the reality is that decisions are typically made under the naïve belief that all the facts are in, when what's really happening is that preferred information-gathering resources have been exhausted or time has run out and expediency forces a decision.

Being conscious of the inability to gather and integrate all the facts helps to optimize decision-making. It also curbs spending before the costs of information retrieval and analysis outweigh the benefits.

Example

In the early 1980s, IBM would curtail its information-gathering and reporting processes via a very simple tactic. Each year at a certain point, the Information Technology department would stop distributing its management reports to all internal departments. The department would restart distribution of a particular report only if it received a complaint about its absence. While the percentage of reports that were permanently stopped varied from year to year, one account suggested that roughly 25% of monthly reports were no longer produced.

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6.2.5 CREATE MILESTONES ALONG THE PATH TO THE PREFERRED FUTURE, AND CELEBRATE SMALL SUCCESSES ALONG THE WAY

It is important to plant milestones throughout a strategic foresight activity. These not only keep an activity on track, they can also provide occasion to celebrate small successes along the way.

Analysts should seek out small “wins” early on to build momentum for the activity. John Kotter (1996) suggests that effective change requires “short-term wins.” Organizations are more likely to remain interested and supportive of a foresight activity if they can see clear progress that is unmistakably related to the goals. Failure to highlight such progress is among the key reasons why change efforts fail; see **Guideline 6.2.1 Create a sense of urgency** for others.

Key steps

Several steps will help establish milestones and small successes.

- First, define the milestones. Be sure they are realistic and doable.
- Next, ask those involved in the implementation to be on the lookout for indicators that the plan is working effectively, however small these might

be. Be sure to reward the change agents--those who are helping to make the plan a reality.

- Also be ready to make mid-course adjustments. If it becomes clear that a milestone is not going to be met, adjust the timeline well before it comes due.
- Finally, keep an eye out for naysayers. Where possible, meet with them to persuade them that: (a) the project is in fact moving ahead; or (b) their attitude is counterproductive to the goals of the organization.

Benefits

As Rosabeth Moss Kanter (1992) and others have observed, progress is often made in incremental steps that together result in major change. Analysts interested in achieving change need to be cognizant of the fact that many people resist change, especially large change. But those same resisters are less likely to hold back or thwart the effort if the change comes in small doses.

Establishing and reaching milestones, and celebrating successes, helps guard against complacency, one of the key reasons change initiatives fail. Moreover, individuals who are contributing to the goal are rewarded, which motivates them to help build a coalition of supporters.

Another reason it is important to establish milestones and celebrate small victories is that big change efforts, such as those aiming to change an organizational culture, take a long time. There is evidence that it requires up to seven years to effect a meaningful change in organizational culture. Setting

and reaching milestones, celebrating small (and then hopefully larger) successes are critical to sustaining a commitment to an improved culture.

Example

Bell Atlantic demonstrated the effectiveness of celebrating small successes under CEO Raymond Smith, who launched a change initiative by meeting with over 1,400 managers in small seminars in order to articulate corporate values. Smith made sure the managers were actively engaged in editing the values statement word by word. He recognized that in a large organization, the most important factor for success was the myriad day-to-day interactions among the workforce. If those contacts were argumentative, with people defending their turf, the organization would suffer, bureaucracies would develop, and internal competition will be rife. So Smith used these small, frequent interactions as a way of building coalitions, engendering support, finding common ground, and celebrating the small victories along the way.

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6.2.6 RECOMMEND INVESTING IN AT LEAST ONE UNLIKELY IDEA

One dimension of strategic foresight is challenging mainstream ideas and developing alternatives. Analysts should actively stimulate the exploration of unlikely or even seemingly impossible ideas. Going one step further, they should invest in at least one of them. This signals to the organization that considering and preparing for alternative futures is important enough to merit investment.

Key steps

Three steps will facilitate successful recommendation of unlikely ideas.

- First, the need for at least one unlikely idea should be actively promoted by making this explicit in the design of the foresight activity.
- Second, it is important to find one or more *relevant* unlikely ideas (not all unlikely ideas qualify for further analysis). After compiling this short list of unlikely ideas, the organization needs to make a selection.
- Third, since the analyst is dealing with an unlikely idea, sufficient time and effort must be spent developing it in order to make it credible. Furthermore, the potential consequences of the idea need to be explored and developed.

An unlikely idea can be addressed in different ways, but the following questions will help elaborate it:

- Why is the idea unlikely or impossible today?
- What changes are required in order to make the idea likely?
- How might this idea come to fruition?

- What would be the consequences if this idea did come to life?

It is important to present an unlikely idea in such a way that it may be seen as a serious alternative. If an unlikely idea is ridiculed, it will be counterproductive, strengthening conventional thinking instead of challenging it.

Benefits

One of the original aspects of exploratory strategic thinking is the emphasis it places on *alternative ideas*, *weak signals* (small developments with potentially high impact), *counterfactuals* (things that could have happened), and *counterintuitive* ideas (unlikely ideas). The task of the analyst is to make sure these types of ideas can be developed within the activity itself, in order to avoid the final strategy becoming just “today x 2.”

Although some people are naturally talented for this type of unconventional thinking, most people need some encouragement to move beyond what they hold possible. Therefore, analysts may include an explicit task in the process to develop at least one unlikely idea.

A common attitude towards the future is one of regret: “If we had known earlier, then we could have...” This guideline helps minimize the likelihood of this statement—even though it will never be possible to avoid missing some opportunities.

Example

An important example again comes from Shell, which once considered the fall of the Berlin Wall during a strategic activity. Although the idea was highly unlikely (even impossible, at that moment in time), it would have had important consequences for Shell's investment decisions since major Soviet oil and gas reserves could have become accessible on the world market, threatening profit margins. Although this option was finally abandoned in the strategic decision process, its inclusion helped widen the decision-makers' scope of what was possible. The fact that the Berlin Wall did fall is in that respect only an encouragement to continue developing unlikely ideas--they may be far more likely than they appear.

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6.3 CREATE AN INTELLIGENCE SYSTEM

6.3.1 CREATE AN INTELLIGENCE SYSTEM ALIGNED BY STRATEGIC FORESIGHT AND LINKED TO THE PLANNING PROCESS

Organizations should develop a formal, customized system for developing business intelligence. This system should be concerned with monitoring and reporting on the external business environment. It should take its tasking from key decision-makers and be designed to feed the formal planning process.

Organizations large enough to require a formal planning process deserve to have an appropriately modeled intelligence system for providing relevant and actionable information to the planning process and its actors.

Key steps

Analysts should first identify the key intelligence consumers. Typically these are senior executives, but they could easily be critical staff deep within the organization. Analysts should determine how these consumers prefer to receive and digest information used for making decisions. These preferences should inform the timing and format of the intelligence products.

This prescription contains a key assumption: that the organizational decision-makers are themselves in line with the formal planning process. If the planning process is nonexistent, or if decision-makers find it irrelevant, then this prescription must be tabled until a working planning process is put in place.

Analysts should then examine the organization's formal planning process. Critical points to look for include: official trends lists, data and information

pertaining to strategic goals (which themselves often revolve around customers, markets, and products), and environmental situations important for major initiatives and activities. Process and scheduling are also important: at what points during the year will decision-makers, planners, and other staff need timely and updated information? At what points in the annual process is intelligence most useful?

Once these needs are identified, the means for fulfilling them must be identified. Large organizations can afford entire units devoted to the production of business intelligence, while small organizations may need to create temporary or ad hoc assignments or outsource the intelligence function altogether. Whatever the situation, an explicit system or schedule for developing intelligence should be established.

Benefits

An intelligence system aligned with the formal planning process can provide not merely more information, but better and timelier information. Alignment with planning ensures that scarce internal resources are used to answer appropriate strategic and tactical questions--questions directly linked to official goals and interests.

An aligned intelligence system also directly informs planning. Strategic planners, and planning taskforces, receive relevant and timely information almost without asking. They will come rely on the intelligence providers who anticipate their information needs. An intelligence system ensures that planning

does not take place in an information vacuum, and that there is a standing, stable process for providing information.

A formal intelligence system also provides a common process for asking questions and receiving answers. Dedicated research staff, subject-matter experts, and other key analysts are known and available to produce actionable information. Planners and decision-makers know whom to contact to obtain actionable information. In turn, analysts and research staff have a shared understanding about standing information needs and priorities, relying on the planning process and its goals to prioritize requests and needs.

Example

A healthcare organization was experiencing significant internal growth and rising complexity. With the explosion of staff and information technology within a relatively short period, the amount of information and communications exploded, resulting in information overload and narrowed perspectives or attention deficit. As the company confronted the situation, contemplating issues such as organizational change, succession planning, and performance management, it was suggested that a formal intelligence process linked to the strategic planning process might improve the information flowing to senior decision-makers. This, however, would require dedicated staff time and the reorganization of a small corporate unit. Senior decision-makers declined to green-light the idea.

As a result, the amount of information flowing to decision-makers kept growing, with only a small percent related to corporate strategies and goals. Decision-makers experienced greater difficulty in processing and prioritizing the mass of information presented to them. The organization also failed to rationalize its internal research resources, which were seldom employed to provide intelligence on issues decision-makers recognized as truly strategic, instead focusing on operational and tactical questions.

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6.3.2 ESTABLISH AN EARLY WARNING SYSTEM TO DETECT WEAK SIGNALS

Establish a system that scans for possible changes in the context of the organization. The relevant fields of observation need to be defined, as do the questions that need to be answered and the people who will be the sources of information. An early warning system should be established when an organization is operating in a turbulent environment (which applies to most organizations today), and when seeking to detect early signals as precursors of opportunities and threats.

Key steps

First, identify the most important fields of observation. Find factors like organizational needs, competition, technological advances, legal issues, and the like.

Second, determine the pivotal questions about the future. These will be questions such as: How will the needs of the organization change substantially? What technologies will gain most in importance? How will the business or organizational models change?

Third, determine pivotal questions about strategic opportunities. Strategic radar should not only look into the future of the organization's contextual environment; it should also detect early signals for new or different ways to design strategy. Hence, define pivotal strategy questions such as: How can products, services, and solutions like ours be sold? How might the effects of our products, services, and solutions be achieved in different ways using substitute technologies? How can people be led to excellence? How can the efficiency of internal systems and processes be increased?

Fourth, determine your sensors. People are the sensors in your strategic radar system--automated search systems can provide raw material, but not analysis. Distribute questions about the and about strategy to team members, asking them to focus on just one. This is a good way to calibrate the strategic attention of the organization. By specializing on just one pivotal question, the

sensors will be able to see more of the future than colleagues with scattered attention.

Finally, pick appropriate sources. Reading and watching all the relevant sources for radar questions is one way, but a time-consuming one. It is much more efficient when sensors network with experts, in effect recruiting them as second-tier sensors outside the organization. These external sensors round out the worldview of the internals, who lack the time to keep up with the myriad trends and signals on the outer circles of their radar.

Benefits

The abilities to anticipate changes and developments, and to perceive and understand the resulting threats and opportunities, before competitors do--and before these changes have substantial impact on the organization--are key success factors. In turbulent environments, strategic radar systems help the organization see more of the future than their competitors--because in turbulent markets, there is already competition for foresight. Everybody is looking into the future, but those who do it more professionally, by delineating what strategic knowledge is most valuable and defining pivotal questions and establishing internal and external "sensors," have the capacity to be much more successful.

An early-warning system also buys time. Threats tend to grow and opportunities tend to shrink over the course of time; that is, failing to address a threat will magnify its consequences, while failing to address an opportunity will allow someone else to step into the gap. Organizations that have the tools in

place to detect weak signals are more likely to benefit from the threats and opportunities they herald, because these organizations have more time to think, to develop, and to act. A strategic radar system can also develop and update strategies in real-time. It keeps the organization informed about important future changes and developments at a very early stage of their emergence. This is a necessary prerequisite for developing a strategy and keeping it up-to-date.

Lastly, it makes much more efficient use of organizational attention. Environmental scanning can be very time-consuming, cost-intensive, and ineffective when carried out with the usual, informal approach of "I heard someone say..." or "I read somewhere..." When formalized and streamlined, it can substantially increase the efficiency and the benefits of corporate attention and intelligence.

Example

BASF uses a system called BASIKS to monitor and track information about key questions. BASIKS continuously scans about 60,000 internal and external sources and monitors some 100 subjects. It has some 2,500 users, and can be adapted to the individual information needs of researchers or branch managers. Hewlett-Packard uses a similar system, called ELMI-B.

BASIKS and ELMI-B are software systems that gather data about key indicators--but analysts are required to analyze the data to detect real threats and opportunities. Detecting the signals of the future is a necessary but not sufficient prerequisite. Many times relevant information was already available,

even within the organization, but either nobody was aware of it or nobody understood what it meant, so no action was taken. Therefore many companies have implemented simple radar systems that use human abilities to complement software support.

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6.3.3 LOOK FOR SOURCES OF TURBULENCE IN THE SYSTEM

Strategic foresight is often called up in response to turbulence. Systems research shows that rising environmental turbulence can stimulate higher-level failures in large systems, such as ecosystems, businesses, and other organizations. A lack of flexibility or preparedness can lead to a failure to accommodate the disruptions, which in turn can lead to serious problems. Environmental scanning for emerging sources of turbulence can be quite productive in avoiding these problems. As the old adage says, "It isn't the rattlesnake you see that bites you."

Key steps

Scanning for turbulence overlaps with trend tracking and environmental

scanning. Each seeks to identify emerging environmental patterns in order to encourage consideration of the broadest possible influences. While a combination of tracking emerging turbulence along with more solid trend extrapolation can identify potential sources of turbulence, scanning for turbulence shifts the focus to invite consideration of disruptive events and peripheral elements and issues that either exhibit, or seem vulnerable to exhibiting, turbulent behavior.

The analyst needs to identify agitating trends and events before these become a problem, so that alternative coping strategies can be identified and possibly developed before the turbulence becomes a significant problem. More complex systems or organizations that have higher levels of interdependence are more turbulent, because increased interdependency suggests the system is subject to disruption from more sources, which in turn suggests more disruptions. In scanning for sources of turbulence, consider not only trends but also sectors viewed with uncertainty, as they may be sources of potentially disruptive events.

Areas of increasing interdependence also serve as likely sources of turbulence, according to research by Stuart Kauffman (1996) into the evolution of binary networks and fitness landscapes. Recognizing potential sources of disruption stimulates the generation of alternative strategies and mechanisms for avoiding the impact of the disruption. From a practical viewpoint, the systemic response to increasing turbulence is to diversify sourcing in order to reduce vulnerability on single sources of information, energy, feedstock, etc.

Benefits

Turbulence can be disruptive at any phase of a system's maturation, but is particularly troublesome for mature systems and organizations that have optimized and streamlined operations for less turbulent conditions.

Environmental scanning should be an ongoing process for all organizations seeking to avoid surprises. Expanding scanning to include potential sources of turbulence or disruption is always appropriate, but is particularly important for more mature organizations.

There is a balance between the level of redundancy needed in an organization and the level of turbulence in its environment. One of the key characteristics of a mature organization is that it has pared away inefficient pathways and locked into efficient ones. This increased efficiency, however, comes at the expense of flexibility. The lack of flexibility causes mature organizations to become "brittle"--more vulnerable to failure under changing conditions. Perspectives tend to narrow, which can lead to pervasive denial of the pertinence of external events and trends. Getting organizations to consider factors beyond their normal horizons is often difficult, for doing so not only defies their sense of what is pertinent, but it also diminishes the efficiency that they grown comfortable with and value.

Even when mature organizations are severely struggling, they often retain a strong tendency to look deeper inside themselves, rather than more broadly outside--to be reductive rather than holistic. The application of critical thinking,

causal mapping, and scenario-style developmental logic to the sources and impacts of turbulence offers opportunities for the organization to recognize areas of strain, as well as possible strategies for avoiding traumatic impacts.

Experience with mature organizations is likely to reinforce the claim that they frequently deny the pertinence or significance of events or influences outside their traditional and artificially narrow scope of influence. A narrow, selective scope of awareness blinds the organization to pending disruption.

Example

IBM's failure to recognize the potential of small personal computers to totally redefine and reorganize the computer industry is a classic example of this problem. This guideline suggests something further--the anticipation of turbulence from a more generic perspective, with the associated implication of deliberately sacrificing some efficiency to establish more diversity of critical supplies, sources, and structures and gain increased flexibility and robustness for accommodating expected turbulence.

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6.3.4 LOOK FOR INDICATORS THAT SUGGEST A CRISIS MAY BE PENDING

Most of the important changes an analyst has to deal with will come suddenly and, to most, unexpectedly. But must organizations simply accept being victims of sudden change? Is there no way to receive indications of when such change might occur? It's common to go back over the record after the crisis and find the signs. This guideline suggests identifying those signs before the crisis occurs.

Key steps

Each crisis is unique; and the more severe it is, the harder it is to predict because it is so unusual. On the other hand, systems theory gives a clue to one type of crisis--a system break due to "far-from-equilibrium" conditions. Most system variables operate in range around some relatively stable equilibrium point. When the range increases (turbulence or volatility) or the equilibrium point shifts, the system can approach some boundary beyond which it moves to a completely different structure and equilibrium point. Moving to the new structure creates a crisis, because the organization is not used to working in that new

territory.

Beware, therefore, of far-from-equilibrium conditions. They may indicate a crisis is more likely. Far-from-equilibrium conditions are not hard to detect. They exist whenever system variables exceed their historical range of variation. What is hard to tell is how far from the boundary the system is. The system might be able to sustain the unusual conditions for a long time, or it might be on the verge of crisis. Being aware of the far-from-equilibrium conditions is better than not, and building contingencies against the potential crisis is better yet.

Maintaining the historical record of key variables is the basis for noting far-from-equilibrium conditions. That much is mathematical. Judgment comes in when deciding how far “far-from-equilibrium” needs to be in order to start mentioning the possibility of a crisis. Analysts will do well to treat all major system transitions as a crisis, even the beneficial ones, because they all entail a new perspective and a new way of being successful.

Benefits

The Corporate Strategy Board (2000) found that “identifying discontinuous change” was one of the five most important skills their member analysts needed to be successful in their positions. Furthermore, this skill was one of three that entry-level analysts did not bring from their educational training into the workplace.

Analysts need to be on the lookout for discontinuous change more than anyone else in the organization. It is a tough position to maintain because most

of the crises they forecast will not occur, or will be averted before they occur. The analyst's credibility therefore rests on the support for the alert, not on whether the crisis actually develops. It is easy to see the signs of crisis in hindsight as well as the reasons that those signs are generally ignored.

Example

Much is written about major discontinuities after the fact, particularly about the signs that preceded the events. Nevertheless, these disruptions were a surprise to most people. For example, the Soviet Union had been the Western world's archenemy for so long that US intelligence agencies could not believe that its internal reforms in the late 1980s were anything but a ruse to lull the United States into complacency. And, perhaps more importantly, the intel agencies and the US military were reluctant to admit the defeat of their longstanding foe, because they did not know what their role would be after that.

Another example is the Arpanet (predecessor to the Internet), created in 1969. Thanks to Arpanet, email was common in scientific and academic circles by the 1980s. Therefore, why did it take so long for two of the world's leading businessmen (Bill Gates in 1995 and Jack Welch in 1998) to recognize the discontinuity represented by the Internet? The simple answers are (a) Gates already owned the desktop (his goal) and didn't want to relinquish that territory, and (b) Welch said he didn't want to learn to type!

One last example involves the dot-com bubble in the 1990s. Many, if not

most, people thought the run-up of tech stocks with no profits was unsustainable, but they told themselves that perhaps the “new economy” talk was actually true and a radically new level of productivity was driving the stock prices. They also didn't want to get out too early and miss the last phase of the boom.

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6.3.5 CHOOSE INDICATORS THAT ARE EASY TO UNDERSTAND AND COLLECT

“Once the different scenarios have been fleshed out and their implications for the focal issue determined, then it’s worth spending time and imagination on identifying a few indicators to monitor in an ongoing way.”
(Schwartz, 2001: 246 - 247)

Leading indicators are observable quantities or events that indicate whether the future is moving in one direction or another. But monitoring leading indicators is not a central task in most organizations. Therefore a monitoring program needs to be simple and easy to maintain. In fact, the best monitoring program uses indicators that are obvious, or at least so easy to understand and collect that it is obvious what is occurring as soon as the data appears. Otherwise the activity might be judged superfluous and will not--and should not--be continued.

The term “leading indicators” comes from economics, which monitors dozens of economic statistics to forecast the short-term (six- to ten-month) future of the economy. Economists use leading indicators the same way that foresight analysts do, but in the narrower context of monitoring basic, implicit scenarios: whether the economy will continue on its present course or not. Foresight analysts use leading indicators to monitor the occurrence of any alternative future, economic or otherwise.

Key steps

The first question is, “How will the organization know when one or another alternative is actually happening?” In other words, “What would happen first, second, and third were this alternative to actually unfold?” The answers are the raw material for leading indicators.

Leading indicators come in two types: *events* and *variables*. Events are discrete occurrences, the stuff of headlines and news items. Elections, legislation and court cases are political events. Announcements of breakthroughs are scientific or technological events. New products or services are economic events, and so on. Variables, on the other hand, are continuous quantities that vary over time, the stuff of trends and long-term changes. Population size and birthrate are demographic variables; economic growth and trade deficits are economic variables.

Events either happen or they don't--pretty simple. But variables can act in a number of ways. Variables that have been constant over the recent past can begin to change. Variables that have been changing over the recent past can level off and become constant, or their rate of change can change (speeding up or slowing down). And even more dramatically, variables that have been changing in one direction can reverse and start changing in a different direction. Any one of those movements could be an indicator that one or another scenario is developing.

The next step after identifying the events and variables is to identify where the information about the events and variables will come from. Events are

reported in some sort of media outlet (broadcast, print, Web, etc.). If the event is important, it will appear in the daily news, but some type of clipping service might be required for more obscure events.

Variables appear differently. Sometimes a report about the change in a variable will appear in the media, but these reports are unreliable because studies may go unreported or the news reports do not contain the exact values of the variable. Instead, one must go to the source of the variables--either government outlets or proprietary services. The latter can be expensive, but if it is important to know the future as soon as possible, the cost of the information is small compared to the financial consequences of not knowing the future soon enough.

The final step is to establish a regular monitoring program with defined responsibilities, such as who is responsible for monitoring each event or variable; the source of the information for each; how the information will be stored; and to whom will the information be reported?

Benefits

Getting an early warning about which alternatives are actually emerging can be extremely valuable, since they can point to the emergence of one or another scenario and allow decisions to be affirmed or revised depending on how the future is developing. Leading indicators, carefully chosen after the formation of alternative futures, are the means to monitor the future as it comes more clearly into view.

Another advantage of a leading indicators program is that it can focus data collection on the few indicators that are important for the development of one or another alternative. Monitoring leading indicators leverages the value of the scenarios by keeping them alive within the organization's strategic conversations and by providing the earliest possible information on how to influence the future in a timely fashion.

Example

Leading indicators were used in a study for a government agency on the long-term (30-year) impact of new technologies. The analysis team wrote nine scenarios based on technologies that they believed would significantly change the agency's operations in the future. Backcasting from those scenarios, the team identified three to eight scientific, technological, political, or commercial events (leading indicators) for each scenario that would indicate that the technology was developing faster than trends would indicate. The team then made recommendations on what the organization should do if and when any of these events occurred. The recommendations ranged from increased frequency of monitoring to full-scale deployment of the new technology.

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6.4 INSTITUTIONALIZE STRATEGIC THINKING

6.4.1 CHOOSE, DESIGN, AND MAKE EXPLICIT A CONCEPTUAL FRAMEWORK

Conceptual frameworks define terms, relationships, and a rationale for systems or processes. These assumptions also define the structure and process of the planning system. A well-developed and articulated framework provides a coherent structure and logic for aligning the elements of a planning process. Any organization that cannot quickly and clearly explain how and why its planning process works needs to assess its basic framework. New organizations in particular would do well to start off by defining an explicit planning framework.

Key steps

Most organizations have either an articulated planning process or an informal one. Rarely, they have none at all. Begin by articulating the planning framework as it currently exists. Review planning documents and the “calendar of events,” and talk with any units or individuals officially tasked with planning. Identify the number and type of management meetings that occur and help determine where the locus of decision-making resides for various issues.

Once the existing process is delineated, the next step for an articulated planning process is to compare it with the literature and make appropriate recommendations for change. For an informal one, make it formal by writing it down and then following the same procedure for the articulated process. In the case of no planning at all, it is best to do the necessary research, recommend a process, and then do the comparison suggested for articulate processes.

The second step is to conduct research. The point is to identify and become familiar with different planning frameworks, such as those of Collins and Porras (2002) and Kaplan and Norton (2000). This allows the analyst to find a framework that best fits the organization, rather than trying to fit the organization into a particular framework.

The third step is to determine how closely the organization's current approach aligns with established frameworks. If the current approach resembles an established framework, then the analyst should modify it to take account of a variety of internal characteristics, including organizational structure, decision-making customs, existing plans, and day-to-day operations.

Benefits

The main benefit of making a conceptual framework explicit is effectiveness. Making something explicit allows its assumptions to be tested and improved upon. When organizations fail to make important processes such as planning explicit, decision-makers and staff will have a variety of interpretations of what is important and what needs to be done. It is also difficult to bring order and consistency to decision-making itself when there is no explicit framework for planning.

An explicit and coherent planning framework improves the organization's ability to align staff actions with organizational priorities and provide an appropriate system of compensation and incentives. Everyone knows what the goals are, what methods for achieving the goals are acceptable, and why they

are being pursued. It is simply easier to consistently communicate something that is written down and well-thought-out than something that remains tacit.

That said, a smaller literature (Mintzberg, 1994) suggests that formal planning is not only useless, but might be harmful because it takes time away from actually learning what the truly effective strategies are. The main antidote to this claim is to be wary of making the planning process something that becomes an end in itself, rather than a means to an end. The planning process is a tool for better understanding, not a set of forms to be filled out or a list of boxes to be checked. If it starts to feel like the latter, reassess the conceptual framework.

Example

A healthcare organization with a successful history as a relatively small company experienced a period of fairly rapid growth, and was quickly seen by its competitors as the new 800-pound gorilla. The organization outgrew many of its internal processes, systems, and customs. Corporate planning was one of the organizational processes that showed its age, requiring considerable amounts of time to produce plans that were seldom read or used.

This explicit process fell by the wayside, until it became clear that the organization once again needed a formal planning process. The planning unit eventually adopted the Balanced Scorecard from Kaplan and Norton. Over the course of a couple of years, the terminology and construct of the new framework became well-known and accepted. A key measure of the success

of the effort was the commentary by management that for the first time in a long time, official planning-related meetings (now quarterly rather than annual) were productive and informative. Senior managers were enlisted to lead and take ownership of these meetings, and their interest and involvement in the progress towards the company's goals was key to the process' success, as well as a key indicator of its success.

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6.4.2 DEVELOP FUTURE CADENCE

Future cadence refers to a balanced, rhythmic flow in studying the future. It applies both to the analyst and the organization. For the analyst, studying trends and issues on a regular basis is a way to develop a gut feel for how the future is unfolding and changing. Regular study develops a discipline of understanding change, which over time fosters an intuitive sense for how the

environment is changing. Beyond the individual, persuading organizations to pay attention to the future on a regular basis will help them build a culture that is more attuned to change. Establishing a foresight system will likely be more successful after doing a strategic foresight activity that has turned out well for the organization, as it will be more inclined to follow the analyst's advice after experiencing success firsthand.

Key steps

While scanning for trends and issues is part of daily practice, analysts can also benefit from setting aside time on a weekly basis to reflect on insights garnered during the week. Setting aside a regular time will establish a discipline to ensure that this important activity does not get lost in the daily shuffle. This dedicated time can be used to incorporate the results of studying trends and issues into a framework (see **Guideline 2.3.1 Scan the environment for awareness of how the context is changing**). An upfront time investment is required to build this framework, but once it is established, the ongoing study serves to reinforce and enhance the mental model of the analyst. Eventually, the framework will be incorporated into the mental model, and lead to the intuitive sense of change that analysts develop over time.

While it is unnecessary, and can be counterproductive, to seek to make clients into foresight professionals (as **Guideline 1.2.3 Don't try to make clients into foresight professionals** advises), encouraging the organization to pay regular attention to the future is valuable. Its study of the future need not be as

deep as that of the foresight analyst, but some form of attention is useful in building a culture more comfortable with change. It could take the form of a monthly trends brown-bag luncheon, or some other mechanism for keeping the future alive between focused strategic-foresight activities.

The cadence or regularity of this study is important. Periodic explorations of the future followed by distractions elsewhere will not accumulate the knowledge and wisdom that regular study produces. An on-again, off-again approach creates a situation of continually getting-up-to-speed and relearning--increasing the organization's risk of being blindsided by unexpected events, a contingency that is avoided with regular study.

Benefits

Studying the future on a regular basis develops a robust mental model and intuition--valuable assets for the foresight analyst. These will come in handy during projects or conversations with the organization, when a problem or issue emerges and the analyst has a strong mental model or intuition to draw upon. Analysts will grow increasingly confident about their ability to think on their feet and handle situations that confound the less-experienced.

Similarly, the organization will develop increased confidence to deal with the future, as it studies trends and issues on a regular basis. Developments that once inspired fear or confusion will be met with a calm sense of understanding and an ability to respond positively.

Experienced foresight analysts commonly report developing an intuitive feel for dealing with the future as they gain experience from extended study. One of the somewhat unfortunate byproducts of this intuition is that, if it is not accompanied by “showing your work,” the organization may have difficulty following along. It can also lead to a perception that foresight is some sort of wizardry rather than based on sound methodology. Methods too can become second nature, to the extent that they may be obscure to the client. It is important, therefore, for analysts to support their intuition by outlining to the organization how their conclusions were reached and provide the supporting methodology and data.

Example

Kees Van der Heijden (2002) emphasizes how important intuition is to “get to scenarios that truly challenge the mindsets of the decision-makers.” Collyns and Tibbs (1998) recount the extraordinary intuition of the great scenario planner Pierre Wack, who actively cultivated this faculty throughout his career. Wack had been strongly influenced during his teen years by the philosopher Georges Gurdjieff, one of the 20th century’s preeminent mystics and spiritual teachers. Wack participated in a variety of rigorous, demanding spiritual exercises, including practice in “seeing the future” as clairvoyants do. This immersion enabled him to complement his own highly rational, logical style of thinking with an expanded sense of perception. The hallmark of his approach to scenarios was a unique blend of deep perception and intellectual rigor. Wack

later explained that scenario work was his special personal challenge of perception and mental acuity.

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6.4.3 REPEAT STRATEGIC FORESIGHT ACTIVITIES ON A REGULAR BASIS

While many strategic foresight activities are one-off, the quality of the process and outcomes--and the value-add--will grow when they are conducted more regularly. However, this repetition should not turn them into mechanical exercises, since the basis of an activity is to deal creatively with uncertain developments and events, and creativity is not a mechanical skill.

Key steps

An analyst challenged to move beyond a single strategy has two major concerns to deal with. On the one hand, every activity has to be sufficiently

unique to attract participants and to challenge them by placing them in a non-routine setting. On the other hand, repetition of activities may lead to a more experienced approach. In the most ideal situation an analyst is asked to design a repetitive process. More often, foresight activities are repeated for contingent reasons--mostly because an earlier approach was a success. In that case, analysts need to study carefully why the earlier activity was a success. Furthermore, during the design and implementation of any activity, it is important that the analyst keep track of its evolution--perhaps through a personal journal--so the details of the experience will be available for later activities.

Benefits

There are three important reasons why foresight activities need to be repeated. First, like any skill, thinking about the future is something one has to learn, both individually and in group settings. Especially in a group learning process, it is very unlikely that the first activity will be flawless. Thus it is important to underscore the possibilities for improvement at the end of a process.

Second, repetition teaches the analyst to recognize earlier in the process which variables and trends are to be watched or worked out. Although one has to remain vigilant for new or unexpected variables, experience shows which variables are undoubtedly to be included--and this also allows more sophisticated kinds of preparation.

Third, the value of a strategic claim is time-bound. External and internal events and trends will impact the ideas explored in an activity. As a consequence, merely updating an earlier strategy is rarely effective, as if there were flaws in yesterday's strategy that could be repaired with today's knowledge. A strategy is not a bicycle tire that can be patched. Every strategy reflects the strategic balance of the moment of its creation. Evolution and time will necessitate new strategies, which can only be developed through new foresight activities.

Although repetition is needed, foresight should never become a mechanical activity. Each activity should bring sufficient surprise in its architecture to trigger creative thinking. In practice, foresight activities are often standalone. Practitioners will find it much harder to arrange the right setting more than once than to avoid structural repetition. Since people and issues change, strategic activities are likely to be different anyway.

Example

Several approaches have benefited from repetition over time. The first and most important example is undoubtedly Shell's experience and the many generations of scenario methods that have flowed from it and been applied in boardrooms around the world. Another example can be found in the UK's technology foresight programs, which have evolved through three generations to meet changing requirements and growing experience (Miles and Keenan, 2003).

In May 1993 the UK government launched the Technology Foresight Program to foster closer interaction among scientists, industry, and government through a program to identify future opportunities and threats for science, technology, and engineering. Three rounds of foresight studies were launched, each lasting three to five years. The first two took slightly different approaches to identifying likely social, economic, and market trends over a future timeframe of one to two decades, and the developments in science, engineering, technology, and infrastructure that would be required to best address these future needs. The third reviewed the first two and shifted the program to refocus on science and technology. In this round, the analysts sought to be more flexible to take account of emerging developments and to focus resources more clearly on where they could add the most value. Instead of the longer three- to five-year study period, a more fluid, rolling program of projects was established in 2002 in order to target emerging issues more quickly. This program has become well-regarded as an excellent example of government foresight.

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6.4.4 DEVELOP TRAINING PROGRAMS TO INSTITUTIONALIZE STRATEGIC FORESIGHT

Unfortunately, simply performing a successful strategic foresight activity is rarely enough to inspire an organization to embrace foresight. The analyst needs to follow up on activities with dedicated training programs and other efforts to instill strategic thinking and foresight into the organization's culture. Proposing a foresight training immediately after a successful activity is a good idea. In fact, if several projects are successful the organization is likely to ask for training. Nothing inspires interest in new ways of doing things like successful results. It will also strengthen the training if examples are drawn from the organization's own practical experience.

Key steps

A common mistake is to seek to educate first, then do project work. While education is a sensible and even noble goal, new training programs tend to be met with skepticism. People in today's lean organizations are time-pressed and reluctant to dedicate time to any activity unless it can clearly be shown to benefit their personal bottom line.

Prepare for such requests in advance. Have the program developed, or at least outlined, in order to be ready when the opportunity arises. If the program is not ready, interest may fade or someone else will be asked to do it--

even if they are less qualified. And if this happens, it could lead to a case where someone else introduces approaches or tools that run counter to best practices, thus creating the potential for damaging the credibility of foresight or creating confusion about the best ways to do it.

During a foresight activity, begin sketching out ideas on how to teach others to do it. Keep notes during project work and observe what works and what doesn't. Debriefing and making these notes after each activity is a good practice.

An interesting dilemma in thinking through the purposes of a training program is whether it should be designed to teach others how to do the work themselves, or should simply train them to apply foresight in their daily work. In most cases, opportunities for many people in the organization to become foresight analysts themselves are limited. But opportunities to apply the principles behind strategic foresight are abundant. Thus, the recommendation of this guideline is to focus the training program on teaching the organization when to use strategic foresight and how to apply it, and to teach the underlying principles in ways that can be useful in daily practice.

When developing the program, illustrate the ideas with real-life examples from work with the organization, wherever possible. This establishes credibility. Bringing in outside examples also helps. Organizations often recognize their own tendencies to become inbred, and analysts can boost their own credibility by showing how other organizations have successfully applied the principles and

tools being taught. Also show examples of failure: in organizations, fear is often a greater motivator than success.

The training program itself should follow standard best practices for designing learning experiences, such as employing multiple learning styles. It is particularly important in teaching strategic foresight to have participants work with the ideas themselves as much as possible. Since strategic foresight is highly conceptual and often abstract, it can be easy to get overly theoretical and lose sight of the practical. Look for opportunities to quickly demonstrate how to apply the ideas in practice. Design lots of exercises and activities. It is also an excellent idea, where practical, to have the participants bring a real-life work problem with them to work on as an example throughout the training.

Benefits

Developing training programs is a key step in institutionalizing strategic foresight in the organizations you work with. Project work is valuable, but typically will not be enough to influence and ultimately change the culture. Training programs instill the principles in the organization and build a wider audience, in essence creating a positive feedback loop, where successful projects generate demand for training which in turn generates demand for more projects. Eventually, critical mass builds such that strategic foresight becomes a routine process and is embedded in key work processes throughout the organization.

Example

An analyst at a Fortune 500 company described how his initial work in strategic foresight inspired demand for two different kinds of training. The first centered on teaching participants how to be more creative and innovative in their work. He developed a day-long training course that provided an overview of key concepts and tools, and also introduced an external trainer who provided instruction in a specific technique. Later in his work, demand emerged for a more practical, “how-to” workshop aimed at applying the practices of strategic foresight to new business development. This led him to create a two-day workshop which became a standard part of the training curriculum for new business development. In both cases, the training was requested as a result of word-of-mouth that the techniques provided useful results in the day-to-day work of employees.

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6.4.5 REINFORCE THAT LEARNING IS THE BEST APPROACH FOR ORGANIZATIONS IN COMPLEX AND UNPREDICTABLE ENVIRONMENTS

Alongside the specific tasks and goals of a strategic foresight activity is the long-term goal of promoting learning and helping the organization to become a learning organization. Learning organizations, according to Peter Senge, are “organizations where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together.” Incorporating opportunities for learning not only improves the prospects for the task at hand, but stimulates interest in learning and foresight.

Key steps

The design of an activity should incorporate opportunities for learning, such as interviews, workshops, and frequent feedback and review sessions. The analyst should aim for an iterative relationship with the organization, continually sharing information back and forth, thus stimulating interest in the learning from the activity as well as in the activity itself.

Senge et al. describe five disciplines of organizational learning in *the Dance of Change* (1991, 32). The first, *personal mastery*, involves formulating a coherent picture of the results people most desire to gain as individuals (their personal vision), alongside a realistic assessment of the current state of their lives today (their current reality). Learning to cultivate the tension between vision and reality (represented by the icon of a rubber band) can expand people's

capacity to make better choices, and to achieve more of the results that they have chosen.

The second, *mental models*, is the discipline of reflection and inquiry. Skills are focused on developing awareness of the attitudes and perceptions that influence thought and interaction. By continually reflecting upon, talking about, and reconsidering these internal pictures of the world, people can gain more capability in governing their actions and decisions. The icon here portrays one of the more powerful principles of this discipline, the “ladder of inference”-- depicting how people leap instantly to counterproductive conclusions and assumptions.

The third discipline, *shared vision*, establishes a focus on mutual purpose. People learn to nourish a sense of commitment in a group or organization by developing shared images of the future they seek to create (symbolized by the eye), and the principles and guiding practices by which they hope to get there.

The fourth discipline, *team learning*, is about group interaction. Through techniques like dialogue and skillful discussion, teams transform their collective thinking, learning to mobilize their energies and abilities to achieve results greater than the sum of the individual members' talents. The icon symbolizes the natural alignment of a learning-oriented team as a flock of birds in flight.

In the fifth, *systems thinking*, people learn to better understand interdependency and change, and thereby to deal more effectively with the forces that shape the consequences of our actions.

Throughout any foresight activity, the analyst should continually search for ways to promote the value of strategic foresight as a tool for learning about how the world outside the organization is changing, and how that will in turn influence what happens inside.

Benefits

Management guru Donald Schon (1973) notes, "The loss of the stable state means that our society and all of its institutions are in *continuous* processes of transformation. We cannot expect new stable states that will endure for our own lifetimes. We must learn to understand, guide, influence, and manage these transformations. We must make the capacity for undertaking them integral to ourselves and to our institutions. We must, in other words, become adept at learning. We must become able not only to transform our institutions, in response to changing situations and requirements; we must invent and develop institutions which are 'learning systems,' that is to say, systems capable of bringing about their own continuing transformation."

Example

Hanover Insurance was widely regarded as a paramount example of a learning organization. Between 1969 and 1991, when Bill O'Brien was vice president of marketing and then CEO, Hanover went from the bottom of the property and liability insurance business to the top quartile. Senge (1994) described O'Brien's work as "the most dramatic, sustained corporate renewal I know of." O'Brien himself spoke of a twenty-two year transformational journey

and was proud that “our people had an opportunity to learn and mature.” He focused his attention first and foremost on helping people grow, and sought to support and foster that growth.

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6.4.6 SHIFT ATTITUDES TOWARDS RECEPTIVENESS TO CHANGE

George Bernard Shaw said, “You see things and say ‘Why?’ But I dream things that never were and I say ‘Why not?’”

It is important to cultivate receptiveness to the new: “Let’s try and understand this better.” The new disturbs existing comfort zones and positions and as a consequence is often dismissed or challenged--it just does not fit with the established order. It is important to recognize this behavior and to educate

the organization on its potential consequences, and to give specific ideas for better ways to deal with the new and surprising. In an organization this requires some investment in thinking. If the organization is in a hurry to get results, encourage it to invest twice as much--this is the wisest investment it can make.

Key steps

Executives who have grown up in one kind of organization or in one industry are often firmly invested in their opinions. Eventually many of their views become hard-wired into the organization as conventional wisdom. The more firmly invested in these views an organization is, the harder it is for the analyst to help it let go and explore new ideas.

A simple starting point and approach is to gain agreement that it is important to the organization to improve its receptivity to the new. Model the causes and consequences of behavioral differences towards new information and ideas.

Next, research and understand the key areas where the organization is concerned with the new. These might be about industry growth or decline, as an example of areas where blinders are the most expensive to the organization.

Armed with this knowledge, create a few workshops specifically about highlighting the meaning of the program and the methods to get to some change--focusing on the behavior and the selected content elements. If possible, connect this goal into a leadership development program or other similar programs. Push participants to "lead by example," and model it yourself.

Be sure to connect the behavior-oriented push to a programmatic approach to foresight. Make a concerted effort to show the value. Measure the impacts of these programs through employee interviews, such as a 360-degree assessment specifically on how the key areas of the business are being improved by this.

Benefits

Encouraging receptiveness to the new is a good practice in general, but will likely “stick” better in an organization when change is imminent or taking place. Many organizations recognize the value of strategic programs, which aim to sensitize their people and approaches to the shifts in markets and industries and to better understand the meaning of those shifts. In periods of growth, organizations may try to build innovation programs, strategic foresight programs, or ideation programs, or at minimum try scenario planning. Often the early attempts are sub-optimal in that they lack a programmatic follow-through activity, and thus fall short of the broad impact they could have.

Also, many organizations have established some means to track trends in their environment. If these rely on classical market-research methods alone, the foresight generated tends to be a linear extrapolation of today's impacts--and hence will most likely miss the opportunities and risks that a strategic foresight program would be able to identify.

Example

Adam Kahane (2002) tells a remarkable story of transformation in Guatemala. The country has the dubious distinction of having had one of the longest-running and most brutal civil wars in Latin America, from 1992 - 1996. More than 200,000 people were killed or "disappeared." After a truce, the Vision Guatemala project was formed to help vision a new future for the country. A team of forty-four--including political leaders, academics, business and community leaders, former guerillas and military officers, government officials, human rights activists, journalists, indigenous people, national and local politicians, clergy, trade unionists, and young people--were led through a scenario process by Kahane. The key attraction of the exercise was the process of deep dialogue among people who had previously never spoken with each other. It led to the team enrolling sixty "multipliers," or grassroots leaders, who worked not to disseminate the scenarios but to replicate the dialogue process in local initiatives. This process of dialogue was instrumental in producing the visioning effort's successful results.

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Technological Forecasting: 1970-1993

JOSEPH F. COATES, JOHN B. MAHAFFIE, and ANDY HINES

Introduction

Under the sponsorship of 18 large organizations, Coates & Jarratt, Inc., conducted *Project 2025*, looking to how science and technology will affect the United States and the rest of the world over the next generation. In the first phase of that project, we collected all the science and technology forecasts we could find done since 1970 and projecting any time forward from that year. The search was organized in 54 scientific and technological areas in order to cover forecasting in all of science and technology. In a second phase not reported on here, we created our own forecasts of the year 2000.

The results were presented in 41 reports, each of which defined the principal anticipated outcomes and the capabilities which were anticipated to be delivered to society. We identified gaps and points overlooked in the forecasts. This was easier to do with regard to the earlier forecasts. We also identified the scientific, technical, and social assumptions underlying the forecasts. It came as no surprise that little by way of assumptions was explicit in the forecasts. We often had to impute assumptions that must have been made in order to come to the forecasted conclusions. Our work then proceeded to identify both business and public policy implications in each of the reports. Finally, we presented a digest of the main forecasts and our pithy evaluations of them.

The undertaking was global in scope, that is, not limiting us to the United States or English language forecasts. It quickly became clear that we could not accomplish our task by limiting the search to formal forecasts. We had to expand the search to include two surrogates for forecasts. One was research agendas. This is based on our assumption that if there is a research agenda, that research will get more attention than other topics and hence will lead to more practical or applied results. The second surrogate was critical technology agendas, again operating on the assumption that what is identified as critical is likely to get more attention than other subjects in the same field.

We also augmented formal forecasts with a large number of more or less incidental forecasts often made in connection with a speech, a journal article, or a semi-popular publication.

The State of Forecasting

Overall, we see forecasting as underdeveloped. It was better developed in the 1960s and has decayed in methodological quality and substantive content. The more recent

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forecasts are more often informal, side commentaries, or poorly defined and executed without much attention to assumptions, time horizons, or the author's intentions.

On net, all too often the forecasts we examined did not give their rationale and did not explain their assumptions well. They often did not identify the time horizon at all. They were not good about explaining the capabilities at the core of the technological development, i.e., at defining what the technology would allow us to do.

In setting out to do this project, we thought that it would be a daunting task. It was. But daunting for the wrong reasons. There were far fewer forecasts than we expected to find. That was not an artifact of our approach. There had not been the flowering of forecasting in the 1970s and 1980s we thought there had been. The quality of forecasting is very, very mixed. There are fields with next to no forecasts and others with rich, regular, frequent, formal, rigorous, quantitative forecasts. In aerospace and information technology, there is widespread industrial and governmental emphasis on forecasts. They do a great job at it. In other fields, such as economics and basic mathematics, there is little or nothing.

Sometimes people outside a field have more interesting things to say about the field than the insiders do. Sometimes the visionaries are not in the center of the field but people who look across all science and technology and think broadly and liberally about what could be. Those visionary forecasts are not necessarily always rigorous or quantitative, but often are more interesting and useful than institutionally-based forecasts.

We often found less formal forecasting interesting where people comment on the direction of technology in the context of some other thing that they are doing. A common example is people who are looking at the future of a profession from the point of view of the supply and demand for the professionals. They sometimes turn to thinking about where their science is headed. An undeveloped aspect of forecasting is putting expectations about a profession together with the forces inside and outside the profession that are shaping it.

Some fields have done more with forecasting the future of the profession than they have with the future of the science and technology. An example is architecture, where there are many forecasts about the fees, business opportunities, and ways of keeping the architect's grip on the action in the face of changes like CAD/CAM.

Technology forecasts that are very specific about some aspect of a technology, e.g., the number of transistors on a chip, are common. Less common are broad-based looks at a whole field, its related fields, and the social contexts surrounding them. These minutia forecasts are often at the expense of a careful look at what might completely upset the whole field. The concentration in forecasts is most often on marginal or incremental changes.

In close-knit fields forecasts often show a great deal of consensus. They forecast the same thing down through the years. So there is some danger that a tightly-knit field misses the broader possibilities because they only read each other's work. Forecasts in food science are an example of this. If one changed the dates and a small amount of language of many forecasts made 10 or 15 years ago, they would have a striking resemblance to more recent forecasts. On the other hand, this may not reflect exceptional narrowness coming from merely talking to one's self. It may also reflect the slow and steady pace of a large sector of the technologically-based economy.

Regrettably, there are a lot of things posing as forecasts that are not forecasts. Numerous journal articles have a catch phrase, such as "past, present, future" or "yesterday, today, and tomorrow." All too often they deal with past and present but offer little or nothing about the future. We conjecture that these misleading articles are often done by

specialists in the field who implicitly have a model of continuity, a model of technological momentum in which continuity dominates over change. Furthermore, many of those articles are written by people who had little opportunity to formally explore a futures paradigm and, hence, just do not know how to approach the forces and factors shaping the future of the subject of their concern. It surely suggests some interesting opportunities for professional societies in almost every field to educate their members on how to think about the future.

Technology enthusiasts and visionaries often see their technology as the one that will be the hottest new thing in the years ahead.

In contrast to the Japanese who make a crucial business point of normative forecasts in setting goals and direction, the publication, celebration, and policy use of normative forecasts in the United States is extremely limited. The Department of Defense, as well as NASA, has for years used normative forecasting to help shape the next wave of technological development. Aside from that, relatively little forecasting occurs as a conscious social steering mechanism in the United States.

Forecasting too often mixes technological and market forecasting. People who have a particular product to market may steer themselves down the wrong path because of their overwhelming interest in the market. They in essence let market expectations drive expectations for the technology.

In reviewing the 54 areas in which we gathered forecasts, four clearly stood out as the best: aerospace, information technology, manufacturing, and robotics. Similarly, six areas were conspicuous for the paucity of forecasts and their general poor quality. Economics, as well as most of the rest of the social sciences, was very weak, as were physics and basic mathematics. It is interesting to note, in sharp contrast to basic mathematics, people in statistics have a good history and pattern of forecasting. Zoology and botany, that is, general biology, were weak in contrast to modern molecular biology and genetics. Finally, geology and soil science and related areas were also relatively uninteresting.

Why Is Forecasting So Uneven?

While it would be difficult to be definitive about the reasons for these clear patterns, there are some suggestions. First, when there is a technologically oriented sponsor who has a strong economic interest in the subject, there tends to be a good bit of forecasting. This would surely characterize the four leading areas we have noted. On the other hand, when the issue is politically charged or when no one has a particularly strong economic interest in forecasting, there are few forecasts.

However, there are ironies. Economists who forecast all the time have fairly consistently avoided forecasting about their own field. Basic mathematics and physics are extremely esoteric fields pursued by a relatively small coterie of extremely intelligent people. We suspect that there is some arrogance as well as a degree of intellectual caution that retards forecasting for them. There seem to be no obvious reasons for the dearth of solid forecasting in the social sciences. They do, however, seem to be increasingly driven by ideological and political concerns, as well as a hefty move toward social action agendas. These trends discourage forecasting. The four other sciences weak in forecasting comprise the routine core or background to applied areas and, hence, have no particularly strong clientele. For years, we have tried to get the US Geological Survey interested in a forecast of the geological sciences and have consistently come up zero on that. Perhaps it is a case of what difference would it make? As the nation moves more and more toward an agenda of competitiveness, as government becomes more and more concerned about

supporting the obviously central role of science and technology in our future prosperity, it is ironic that there is no clear government agenda and virtually no agency champion of a systematic approach to forecasting. This is in striking contrast to the situation in Japan.

Applied science fields forecast things more often and probably with better results than pure science fields. That is a shame because basic scientists need to know where they may be going in a world of increasing cross-disciplinary work. They know rather well what is happening around their immediate interests, but they do not necessarily think about what will happen in five, ten, or twenty years to reshape their field or the consequences of what will result from their research.

We have not been able to figure out why the basic sciences seem to be so resistant to forecasting. Possibilities include a fear of tipping one's hand, that is, revealing one's own research agenda, or maybe a fear that legislators or other sources of funding may find the anticipations uncongenial. Or, it may be an ironic anti-intellectual arrogance that leads basic researchers to believe that their fields cannot be forecast. A striking example of that is the difference between applied mathematics and pure mathematics. We found nearly no forecasts in pure mathematics. In a couple of interviews to search out forecasts, we got the foolish response that we did not understand that basic mathematics is so creative that one simply could not forecast it. On the other hand, the applied mathematicians, particularly in statistics, have a good record of forecasting.

The Four Enabling Technologies and an Enabling Issue

Four enabling technologies turned up over and over again in the forecasts in many fields. First is the broad family of information technologies. For obvious reasons, computers, computer networking, data, data gathering, telecommunications, and sensing are influencing every field. Forecasts in most fields saw information technology as shaping their fields.

Second is genetics and related biotechnologies which are increasingly prominent in forecasting. We saw a changeover in the late 1980s with more forecasts finding genetics relevant to their field. While not every field identifies genetics as relevant, a majority do.

Third is materials science and technology, which is critical to any field that manipulates things. Most of those fields recognize an emerging revolution in the materials entering into all structures, devices, and artifacts.

Fourth is energy technology. Behind a lot of forecasts, in many areas, is the expectation that we will have the energy we need in the form we need it at the price we can sustain for that technology. While many people see a need for radical transformation in the energy base of the United States and the global economy, there is surprisingly little by way of radical forecasting. Equally surprising is the relatively little systematic, comprehensive, in-depth, normative, i.e., goal-directed forecasting of the energy future. On the other hand, there is a great deal of emphasis on the forces and factors leading to new energy arrangements.

A fifth area, not so much an enabling technology but an enabling issue, is environmentalism. Nearly every science and technology field at some point recognizes the environment is critical to its future. There may be some that have not woken to that yet but they will.

By an enabling technology or an enabling issue, we mean one which has effects not only in the area to which it is immediately directed but one which brings about basic changes in many other areas. The electric light turning night into day had radical effects on the way we use time and space. Similarly, the automobile did not just substitute for the horse and buggy but spawned effects that created 10% of the national economy.

Problems in Forecasting

A curious finding all too common is that experts in a field often do not know about the forecasting in their field. For example, in a typical field, to find forecasts, we contacted between 15 and 40 people. At the same time, we did electronic and library searches on the future of the field. Between the experts and the fields' databases, we had the best possible coverage. It is surprising how quickly experts in a field can forget what somebody wrote about the future five, much less ten or fifteen, years earlier.

There definitely is a database search and nomenclature problem in identifying forecasts and futures research across the whole scientific enterprise. Bibliographers should be paying much more acute attention to the subject of the future. Often, forecast and future are not even used as key words and descriptions in the coding of literature for electronic databases.

Characteristics of the Forecasts

In our review of over 1500 forecasts we did not attempt to evaluate their reliability, that is, to what extent what they forecast and occurred. That, in itself, would have been another major project. However there are grossly visible patterns about the reliability and effectiveness of the forecasts. Perhaps the most common characteristic of forecasts in science and technology is incremental change. Incremental change did pretty well because within many fields, people know their business and their technology, and they know the possibilities a few years or a decade out. So forecasting from within a field taking into account what is going on in the field is probably the most successful form of forecasting in the relatively short-term, except where something external comes along to upset the apple cart.

An interesting example of combining continuity and change are the forecasts in microelectronics. They are numerous, frequent, and highly quantitative, and yet as new scientific and new technological developments occur as they have over the last 20 years, they have been effectively integrated into the forecasts. The forecasts in the field of microelectronics tend to reflect steady, rolling change, and because of the large number of forecasts and the continuity of forecasting, the evolution in anticipations shows up distinctly. On the other hand, in fields in which forecasts are incidental or spotty, the discontinuities, in the form of new developments, do not show up clearly or get effectively integrated into forecasts.

There seems to be an implicit view in many of the forecasts we looked at that forecasts are attempting to give a right answer or to correctly describe some future situation. Certainly among most futurists, this is not the intention of looking to the future. Rather, futurists try to define a range of alternative futures and to use that full range of alternatives as the basis for planning. We found very little laying out of alternative developments in the forecasts that we reviewed. Surely the most important measure of a good forecast is not whether it is right or wrong, but whether it pushes developments in a useful direction. Because we chose to avoid all proprietary forecasts, we may be missing a lode of highly successful forecasts. Unfortunately, we have no way of evaluating that situation. Apparently, most organizations choose not to encourage publication, even after years or decades, of their forecasts.

In some areas there is a kind of long-range optimism which never seems to be fulfilled so that the forecasts of 25, 20, 15, or 5 years ago all look the same. A most interesting example is that of fusion energy, which for the last quarter century has been always 50 years in the future.

Forecasting Around the World

Searching the world outside the United States for forecasts was disappointing. The futures community was not forthcoming. For example, we wrote to close to 200 fellow members of the World Future Studies Federation, which is the most broadly based futures society in the world. Its membership is carefully self-selected so that everyone is a legitimate futurist. From that total inquiry we got 3 responses, one of which was interesting and useful and another that was a plea for money. This weak response reflects a melancholy situation with regard to the systematic study of the future, namely that people are reluctant, even unused to cooperation. They do not approach their work on a professional basis with a sense of professional exchange. The lack of response to our project was equivalent to "I couldn't care less." Incidentally, one of us is a member of the Federation, so we were not approaching the other members as an outsider.

Most of the forecasting done regularly and in some detail is in the U.S., Japan, and Europe. We did not get anything from the Third World. To some extent, Eastern Europe and China and Russia also do forecasting.

With regard to the EC activities, there is a complex, interlocked, cascading collection of materials. The European Commission has a number of offices that are charged with forecasting technology and with tracking forecasts in technology. One of us (J.M.) visited there and beat on doors all up and down the hallways. They have not gotten very far with science and technology forecasting. They have nice names for their various institutes and commissions, but they have quite a way to go. They have the resources and the people-power. They just have to get on with it. We do not believe that we were in any way excluded or denied material. Rather, what we think is that the system is not yet effectively organized to produce reliable, high quality forecasting products that the EC community has every reason to expect if not demand.

The OECD has resumed its considerable interest in the exploration of the future. Its work, however, is relatively new and started up too late to provide a significant input into our *2025* project. The OECD Future Studies Information Base is putting out occasional papers under the title *HIGHLIGHTS* with such subjects as world population, water, and other topics of general interest to the OECD. These are outstanding interpretive summaries of current literature, including forecasts and futures analysis with regard to each topic.

The Japanese forecasts are, without question, the most comprehensive, systematic, long-range, and sophisticated. Their commitment to forecasting began about 1975, and they have made particularly effective use of broadscale, well done Delphi surveys. They enjoy a great deal of continuity and overlap from one study to another, and the studies are sponsored by organizations which are prepared to think about them and act upon them. The futures work has also begun to systematically permeate the Japanese professional literature. While a large amount of material is available in English, there was for us a substantial language barrier, so that we did not extract as much of the gold from the mine as we could have, had we the language capabilities for more translation.

Limitations of Observations

The *Project 2025* material dealt exclusively with non-proprietary information, hence we excluded any discussion of classified government material, and we purposely avoided access to any internal corporate documents. Therefore, the extent of hard-core professionally excellent work may be greater than the above material suggests.

The Future as Pursued by Corporate and Government America

Technological forecasting is only one, albeit major, portion of the futures enterprise. There is therefore some value in looking at the larger pattern of trends in futures research in corporate and government America, to appreciate the shifting patterns of priorities and their wider embrace of a futures paradigm.

In several of our projects, including *Project 2025*, we have asked our clients what their experience had been with futures research and forecasting. To an overwhelming degree, we have found that they have been extremely dissatisfied with forecasts done 10 to 20 years ago. There are two separate but related reasons.

First, the users were often left unaware that there were fundamental scientific or technological assumptions made, which were unstated and hence unexamined, which turned out to be unstable. Second, and perhaps of even greater importance, the assumptions about the state of the society—the corporate external environment into which the new development would be delivered—was itself often unexamined. One incidental consequence of that is, in all our work, we have been made aware of the need to make contextual assumptions as explicit as possible.

The above are likely reasons why technological forecasting and a general interest in future studies declined in business in the late 1960s, through the 1970s. We attribute the revival of interest in the future coming from two separate factors. First is that the corporation, whether American or foreign, is now caught up in an unprecedented degree of competitiveness. As a result, there is a widespread interest in virtually any technique or approach which promises to give insight into that competitive environment. The interest in the future is one of several areas that are prospering as a result of that concern. Separate, and distinct from that, is what we have come to call the “magic of the millennium.” As the new millennium approaches, many people and organizations are behaving as if they feel that we are at an objective branch point, that at the millennium we will know whether America is on the right road or whether a particular corporation will succeed or fail.

Accompanying the revived interest in the future in the 1980s and early 1990s is a broad commitment to the communication of results. That is partly recognition of the need to tell the story well and partly a way to achieve more effectiveness in futures research through a greater commitment to client involvement with the study itself. The day is past in which a study will be completed, presented, and that is it. The best of work is done with extensive interaction with the client and with relevant parties at interest to assure maximum utility.

There is also a gratifying increase in the time horizon of futures research. In the early 1980s it was difficult to get anyone in business or government interested in more than three or four years because of the tremendous pressures for short-term return on investment. This was reflected in the foreshortening of the time horizon of much of corporate planning. We find more recently, as reflected in our *Project 2025* and a current project looking at American business out to 2020, that it is no longer impractical to find active interest in the 24 and 30 year future.

There also is a general awareness in large organizations, both public and private, that the study of the future does have something to tell them. Accompanying this general awareness of the potential value of looking to the future is a melding or blurring of technological forecasting with a more general and often less quantitative look at forces and factors shaping any particular field of interest.

At the corporate level, we find the interest in the future not particularly high in strategic planning units, but we are finding interest in R&D, in advanced market research, and in human resources. We also find growing interest in the exploration of the future

among the best of companies, which fear that they may have been talking to themselves too much to the exclusion of messages from the outside. There is a growing interest in outside inputs into their planning and strategic thinking.

This broad, diffuse interest in the future is nicely illustrated by a quotation from one of our clients in the utility industry,

Knowing our customers has always been important. Now it's becoming absolutely crucial for us to understand their wants and needs. Tracking and studying established trends helps us think through the real needs and preferences of today's customers and anticipate future changes in customer attitudes and perceptions.

A human resource executive in one of the Baby Bells reports:

Forecasts and futures research have proved to be the stimuli needed to get us, as an organization, to look beyond our own view of the world. All too often, we see our world with the bias of our problems, our industry. Forcing us to look beyond that bias causes us to challenge ourselves and our assumptions. There are few answers out there; however, there are tools that help get you closer. That is the role for forecasts and futures research.

A project manager in a manufacturing association finds:

The use of futures forecasting is a key methodology for identifying long-term strategic thrust areas, which in many cases may be direct threats to existing businesses. As such, they provide direction for, and a sense of urgency to, longer-term research and manufacturing efforts. They can also help shape the types and backgrounds of people an organization hires over time to help lead it into new paradigms.

By no means, however, are these good feelings about the use of futures research universal. They vary not only by company within business sectors, but they vary by business sector themselves. The unpleasant reality is that some business sectors are tuned out of the need to look to the future.

A senior analyst in an energy corporation reports the following:

With regard to the energy industry and forecasts, the tendency is very strong to look at the short-term forecasts of price and demand. There is, however, growing dissatisfaction that the users of those forecasts are not getting what they are buying. Futures research, except for E&P, in the energy game is unfamiliar. Essentially it is an atechological business, and so technological changes always come as a surprise. It is basically only those related to geology and more recently those connected with environmentalism who are beginning to look at the future. In summary, the industry just does not understand futures research.

A different realistic look at the use of futures work, given by a senior executive in a chemical company:

The largest potential to use a long range futuristic forecasting of science and technology in the *industrial* community comes from a technology-oriented company that is committed to growth by finding and developing business opportunities for new and advanced products or services. Project reports are useful in brainstorming and planning activities to select opportunity areas for a limited amount of long range corporate R&D.

Another factor which probably applies more specifically these days to the chemical industry than to others is the effect of environmental issues. An increasing share of capital investments and R&D budgets are used to address environmentally-related issues which leaves fewer financial resources to support research for other new product and processes. But the latter are a key to repositioning companies into new business areas that are being spawned by these forces. To this end, *Project 2025* has offered valuable exposure to issues and opportunities in some fields that were relatively unfamiliar to us, and the potential to continue to use it this way remains.

The box summarizes the applications of futures research in one important component of a chemical company, Dow Ventures. The material is a direct quote from our client at Dow, Kerry Kelly. The material illustrates the importance of communication, the need for extensive and continuous client or user involvement with the work, and the problems and opportunities associated with broad dissemination of futures material in a very large

organization. It also illustrates the requirement that information with implications for change come from multiple sources if it is to be credible.

Using Futures Research at Dow Ventures

We find most forecasts to be vague and supported by specific examples which may or may not be indicative of trends, rather than projections from statistical data which integrate many examples. As a result, it is difficult to build credibility in the organization for futures work. Consequently, the information is not integrated into the planning process. One of the best works we have seen in the future studies was *Project 2025*, which did a thorough map of several technologies and integrated them into a few functional scenarios.

We put copies of the reports into our Business Information Center with appropriate key words so anyone doing a literature search would find the appropriate reports. When we received the assumptions for phase II of the project, we began an e-mail survey by sending a few (2-3) of the assumptions at a time to over 100 R&D and Ventures personnel. The purpose of the survey was to test the believability of the assumptions and to begin to distribute the information more broadly and begin to get the organization thinking in future terms. This was very successful. The response rate was high and informal feedback indicated that people were integrating the ideas into their thought processes which then became integrated into the business strategies and R&D programs.

When the phase II reports were completed, we distributed them to the business teams and Ventures groups which were most directly aligned with the reports. They were asked to distribute them within their groups. In some cases, we had the authors review the reports with top Ventures management and lead a brainstorming session with a cross-functional and cross-business group to generate new business ideas. In some cases, phase II reports and some phase I reports were used as prework for brainstorming sessions conducted by our Chemicals New Business Development Group.

All of the *Project 2025* materials are in our Business Information Center in Midland, Ventures, Chemicals & Performance Products New Business Development, Plastics New Business Development, and Dow Europe. These reports are used as reference materials when we begin work in new areas and as an input into business strategies for our new business development activities.

We will also be using future studies to identify new growth business areas for Dow to study. The *Project 2025* reports will be reviewed later this year to find additional business opportunities to study.

On a different line, the results of a proprietary study for Dow to identify potential areas for further study reported on 15 possible business areas. This led to an afternoon of focused brainstorming in these areas. The results of the brainstorming and the summary reports were distributed to the participants and the Ventures Leadership Team. Some of the ideas are being integrated into our formal process for opportunity assessment or are being used as support data for projects which are already underway.

About two years ago, we conducted two other future-based issue analyses. One was a survey of literature from which we extracted pertinent trends or possible events which could affect current Dow businesses or may create an opportunity for a new business. This work was written in a report and distributed to top Ventures and current business management.

The second study was a survey of several top managers in all functions and all geographical areas within Dow. We asked them to work with their staffs to list the most important technical, political, and social trends or issues which would affect their current business or create new opportunities. This report was then recirculated back to them after the data was compiled. We used this as an input into our search for new business opportunities, and presumably they used the results in their strategy development.

In all of these studies we have sponsored or conducted in the past three years, we have found considerable consistency. I believe that the information we collect in these processes is being better used today than ever before and is having a profound effect on our new business development programs. We expect to continue to conduct future-based activities to keep business management aware of trends and events which may affect their areas.

Futures in Government

The story of futures in government is complex and checkered. Ironically, the Reagan administration, with its very unequivocal and strong antibureaucratic sentiments, was a strong stimulus to futures research in the federal government. The administration's position was that the bureaucrats should behave more like the big boys in business. When the bureaucrats looked around they found that one of the things the big boys did was

strategic planning and futures research. More recently, with the approach of the new millennium and with the vigorous activity directed at reinventing government, almost all agencies have developed some kind of year 2000 initiative. Unfortunately, as near as we are able to tell, most of them are winging it, that is conducting their studies as internal activities with their own staff largely free of professional input from the futures research community. However, the story is mixed. Many agencies are using professional futurists, and some agencies have fully qualified and competent futurists on their staffs. The overall effect is that government at the federal level is steadily moving toward a greater awareness of the value of the systematic exploration of the future. The FBI and the EPA have done, or are engaged in, futures studies and programs.

The quasi-governmental bodies present a mixed picture. At the time of this writing, the Smithsonian Institution has a Commission on the Future of the Smithsonian made up largely of people in or peripheral to the museum field. On the other hand, the National Academies have been adamantly resistant, with few exceptions, to a serious and systematic embrace of the future. This is ironic since almost everything that the academies touch are important not because of the past or the present, but because of their implications for the future. For honorific organizations, a firm grasp of the future can be threatening.

Action Implications

To sum up with some of the operational implications of our look at the last quarter century of scientific and technological forecasting, we suggest actions that would be appropriate for government, trade associations, large corporations, users or consumers of forecasts, and for the think-tank and academic community.

- Almost every field would profit from upgrading its skills and commitments by sponsoring its own forecasts and by orienting its members, whether professional or business, to the value of forecasting.
- Forecasts, to a striking degree, have an amateurish element to them. Key components of an effective forecast are often ignored. Among these components are scientific and technological assumptions, economic, social, and political assumptions, the time frame of the forecasts, method or techniques used to generate the forecasts. We found surprisingly little application of such standard tools as cross-impact analysis or scenarios. The distinction between extrapolative and normative forecasts is often blurred.
- The formal quantitative tools of forecasting are terribly under-used.
- There is almost no critical review of forecasts anywhere. It may be a combination of politeness or indifference, but the absence of critical feedback on forecasts surely cannot be good for either the field or for the practice.
- There is strong value in bringing outsiders into a forecasting activity in order to avoid the risks of group-think of the insiders talking to themselves.
- Discontinuities, that is sharp disruptions in trends, unexpected events, whether for the good or bad, are a prominently neglected area in the forecasts that we reviewed.
- In looking at the institutional bases of the people who produced most of the forecasts that we reviewed, we found that few of them reflected the names prominent in the futures field. There seems to be something of an intellectual rift between many professional futurists and the forecasting community. Obviously, bringing those two together would be an enormous benefit to each. Futurists could bring to the game a broader sense of possible developments and a clearer sense of the social, economic, political, and institutional implications. On the other hand, a

closer linkage to formal forecasting would surely benefit much of contemporary futurism, which is all too qualitative.

- American forecasts, in contrast to those in Europe, tend to pay too little attention to the social consequences of technological developments. However, throughout European forecasts, there is, if anything, an emphasis in the reverse direction, overbalancing concern and attention to social implications and a relative under-treatment of the formal side of technological forecasting.
- As far as the Third World is concerned, encouraging formal forecasting there would have some value in opening up potential research opportunities, but far more important would be better insights into future markets and potential businesses for local development.
- We have a clear need and a tangible market for public service forecasts, that is, forecasts which could relate explicitly to policy-making at local, state, and federal government, and for corporations and the rest of institutional America.
- Formal forecasting has the potential to become an active, lively, and potentially entertaining component of public discussion. We have not found a formal forecast developed and presented for radio or television.

The futures of futures: a scenario salon

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Abstract *The Association of Professional Futurists (APF) recently held a scenario salon that explored the "Futures of futures." The centerpiece of the findings was the identification and implications of four critical uncertainties affecting futurists and the futures field. First, is addressing the extremely fragmented nature of the field. Futurists must get better at working together more closely as a field to be successful. Second, is the need to confront our aging tool kit. It is not as if methodological innovation has stopped, but it is seen as largely incremental. Third, is the need for futures to create a unique value proposition that distinguishes futurists from mainstream consultants. Finally, there is the poor public image of the field. This suggests that there is a long-term task ahead of careful rebuilding the brand of futures through a more sophisticated engagement with the public, especially the media. The APF has formed working teams around these issues. The APF sees a generation task ahead, but is confident that together with our futurist colleagues, we can achieve our goal of a "credible profession, thriving professionals."*

A total of 40 members of the newly minted Association of Professional Futurists (APF) gathered in Austin, Texas from February 28-March 1, 2003 for a scenario salon to explore the "Futures of futures." This was APF's first topical conference and was something of a test as to whether the ten years talking about forming something like this organization, the two years preparing for it, and the one year actually building it, were worth it. Happily, the overwhelming sense of the participants afterwards was "yes." Already some members have reported that the salon and the report that followed have influenced their work. One member reported, "I have been more conscious of the future of the field, the future of the APF, and ways to lift both in esteem and relevance."

Some groundwork for the formation of the APF and the "Futures of futures" meeting was laid in Seattle two years ago by an event called the "Applied futures summit." This weekend-long open-space meeting was organized informally

by a handful of futurists to beta test the idea of more formal and regular networking for the growing body of futures professionals. A key theme emerging from this meeting was the need to improve the image of the field in order to improve the prospects of the futurists within it.

Another actor galvanizing the APF around the futures of futures topic was a then recent *Newsweek* article proclaiming the demise of futurists. When this piece came out, we asked our members to send in their thoughts for a collective response to the editors. We were stunned when almost the entire membership at the time responded. Clearly, the issue struck a chord. We also felt that as futurists forming a professional association, we ought to practice what we preach and thus chose to look at the long-term future of our enterprise.

The focal issue

While many essays have been written around the topic of the futures of futures, to our knowledge there has not been a large group of futurists gathered together to specifically address the topic in a scenario setting (Appendix). Thus, our focal issue was "what will the field of futures and the role of the futurist look like in 20 years?" This reflects the two central concerns of the APF:

- (1) How do we improve the image and performance of the futures field?
- (2) How do we improve the prospects for the futurists working in it?

Four specific objectives for the meeting were agreed on:

- (1) Build the foundation for shaping the futures of the field.
- (2) Imagine, explore and identify our professional future.



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- (3) Identify activities for future APF events benefiting both members and the field as a whole.
- (4) Network and enjoy the company of our colleagues from a variety of organizations.

The participants

Almost 50 percent of the APF membership attended (41 of then 87 members). There were 12 women and 29 men from the USA, Canada, Europe and Asia in positions ranging from small to bigger consulting firms, organizational futurists inside corporations and government, and future educators and students. The breakdown follows:

- a total of 16 participants worked in firms of less than six people;
- eight were soloists;
- five were in partnerships;
- five were in firms of larger than six people;
- five were in government or corporation;
- four were in NGOs; and
- four were students.

It is worth noting that the meeting and the Association itself is heavily represented by small futures consulting firms. To date, the larger consulting firms have been “interested” but have not yet chosen to participate. They appear to be adopting a wait-and-see attitude. It is our hope that the success of the Austin meeting and future ones will attract them into the fold.

It is also true that the organizational futurists, be it corporate, government, or educational, are also somewhat under-represented. Here, we believe, we may face a steep challenge in that many of those in the organizational role are less likely to identify themselves as professional futurists. Very often they have evolved into their futures role from some other background, often without any formal training. While our position is that those earning a living doing futures work are most likely qualified, there is likely an educational role we will need to assume to demonstrate the benefits of identifying as futurists and participating in the professional association.

Finally, we noted the generally small size of the working groups, which will later appear as one of the key issues for the field. Another interesting learning was around how participants became futurists. A total of 18 participants had degrees in futures studies and 14 developed into futurists on the job. A generation ago before the academic futures programs emerged, all futurists were self-taught. Clearly some progress has been made in laying the groundwork for a credential-based profession.

The interviews

A total of 12 members helped with the pre-workshops interviews of nearly all participants. The interviews produced over 30 pages of data, which in itself will be useful as we move forward. The primary task of the analysis was to extract

critical uncertainties around the focal issue. A small team did an initial sort to five categories with 72 potential critical uncertainties. The categories of uncertainties were about:

- (1) who we are;
- (2) what we do;
- (3) how we are value;d
- (4) how we do things; and
- (5) where we work.

Further analysis boiled this down to the 32 that we used in the meeting (appended). We extracted some of the more provocative quotes and compiled them into a three-page pre-read that we sent to participants a week before the meeting (see Appendix). We deliberately chose the more provocative quotes – hoping that people would challenge them. They did. Some participants commented on the seeming negative slant of the interviews. Our response was that we deliberately highlighted the more provocative quotes. We were struck by how respondents that were negative about the futures field were often highly positive about their personal prospects as futurists. During the meeting we learned that pessimism about the field and optimism about their individual futures practice seemed to be characteristic among many participants. Perhaps futurists have learned to develop a thick skin due to encountering and overcoming resistance, which makes us confident that we can prevail. But at the same time, we do recognize that resistance continues to be the norm.

The workshop results

One thing became immediately clear regarding the participants: they thoroughly enjoyed one another's company and had an almost ravenous appetite for discussion and networking. The futures profession can sometimes be a lonely one in which we often typically find ourselves delivering a message that our clients find difficult to receive. Sharing our professional experiences in this regard – what works, what does not, what might work – has immeasurable value, and there simply are not enough forums available to cultivate this exchange. Fortunately, even though we had a great deal of structure to the meeting to maximize the odds of creating the work product that this article reports on, we also built in several networking breaks during the meeting and kept the conversations going at dinner and, in some cases, well into the Austin night.

As we reflected on the results of the meeting, we felt that the identification of the key critical uncertainties affecting the field and futurists to be the most useful learning. They provide an agenda for the field as well as APF. The scenarios themselves were useful to the extent that they shed some light on the critical uncertainties, and gave us some help in illuminating their implications. The robustness of the output is holding up among participants as well. One observed that, “putting some time and distance between myself and the salon has been a good thing. My conclusions about the

event are different now than immediately following. The experience makes more sense now, and the outcomes seem more valuable than they did the weeks immediately afterward.”

Prioritizing the critical uncertainties

We worked from the pre-work list of 32 critical uncertainties, and after clarifications, additions, and discussion, we got the list down to the dozen, and finally to the four we used. Interestingly, there was a balanced mix from four of the five buckets, with the exception of “who we are” that concerned the identity of the field and futurists. This likely reflects the fact that the “who we are” uncertainties were perhaps closer to outcomes than drivers, that is, the image of the field and the professional will largely depend on what we do, how we do it, where we do it, and how it is valued by others. The facilitators did not steer the group in this or any direction. On reflection, the fact that the group saw critical uncertainties coming from a range of areas lent some useful balance to the scenarios. The four we settled on are shown in Figure 1.

The scenarios

We used these four uncertainties and set of predetermined elements we generated during the meeting to build scenarios with four small teams. Each was given a different set of two uncertainties to work with. This led to 16 potential scenarios. We asked each team to pick the two that they felt were the most interesting. During a break the facilitation team reviewed the first and second choices and was able to pick four that best balanced the uncertainties and gave a range of positive and negative futures. We deliberately chose not to flesh out a doom-and-gloom scenario, although we generally agreed this was quite plausible. Rather we focused on a

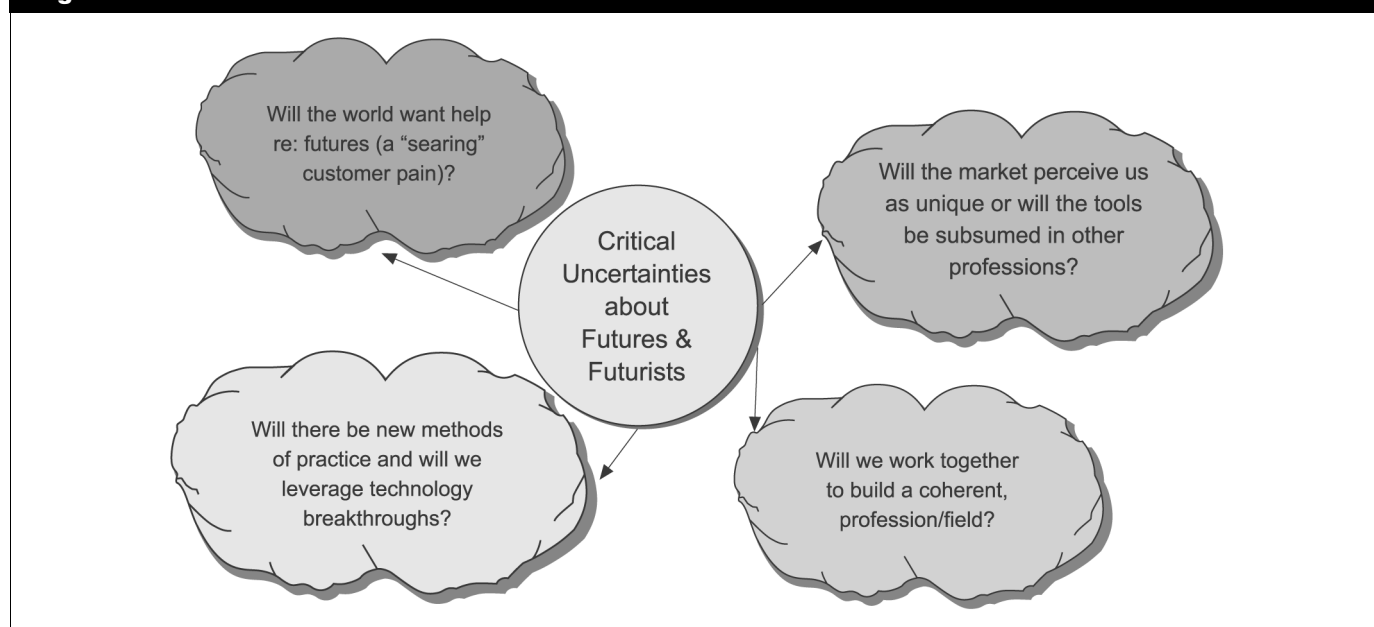
positive scenario and three others that were a mixed bag of positive and challenging aspects.

“Nirvana” is a positive aspirational scenario framed by highly differentiated futures offerings and high marketplace demand for futures work. Futurists are a distinct profession in high demand. One way that could be achieved is by successful branding through a unique code of ethics and well-established metrics, as well as methodology improvements. Futures work is credited for huge business and social gains. Five *Fortune* 100 companies have “Chief futures officers.” Futurists are recognized for their unique tool kit, including new tools such as complexity-based simulation models, and for their ability to interpret and reply to the results.

“Lifeboat” depicts a scenario in which futures products are commodities, but futurists band together and cohere as a field. The challenge here is that everyone and their brother offers futures work. Futures courses are required of every undergraduate and are integrated into the MBA curricula, but are not taught by futurists or recognized as coming from the futures field. The rub, however, is that this widespread use of futures tools is often sloppy and inadequate. Already today, for example, scenario use has become widespread and a great proportion of that work is clearly amateur and useless if not harmful. The good news is that futurists recognize the challenges and band together. The cooperation could go a few different ways. One is to promote a brand or certification approach to help futurists differentiate their offerings from mainstream consultants. Another would be to cooperate in developing new offerings that helps differentiate the work of futurists.

“Rolling Their Own” and “All Dressed Up and No Place to Go” are scenarios in which the field has exciting new tools,

Figure 1 — The four critical uncertainties utilized



but struggles in taking advantage of them. It was something of a surprise that two of the scenarios contained tool and methodological breakthroughs, reflecting some off-line conversations about the “aging” tool kit. In *Rolling Their Own*, futurists fail to come together as a group to take advantage of the new tools. Instead they focus on protecting their own piece of the pie. Unfortunately, non-futurists begin to take bites out of the pie. In *All Dressed Up*, the tools are perceived as so good and user-friendly that futurists are not needed. Our expertise in interpretation loses out to more quantitative forecasting tools. In both scenarios, something of a “star system” prevails – a few big names do well and the rest toil anonymously.

Note that the scenario matrix (Figure 2) is not a classic 2×2 that crosses two uncertainties. Rather we have highlighted the uncertainties that frame each of the four scenarios, with the “extremes” of the axes noted. This approach gives you a wider range of possibilities, but trades off some of the coherence that you get in using a classic 2×2 .

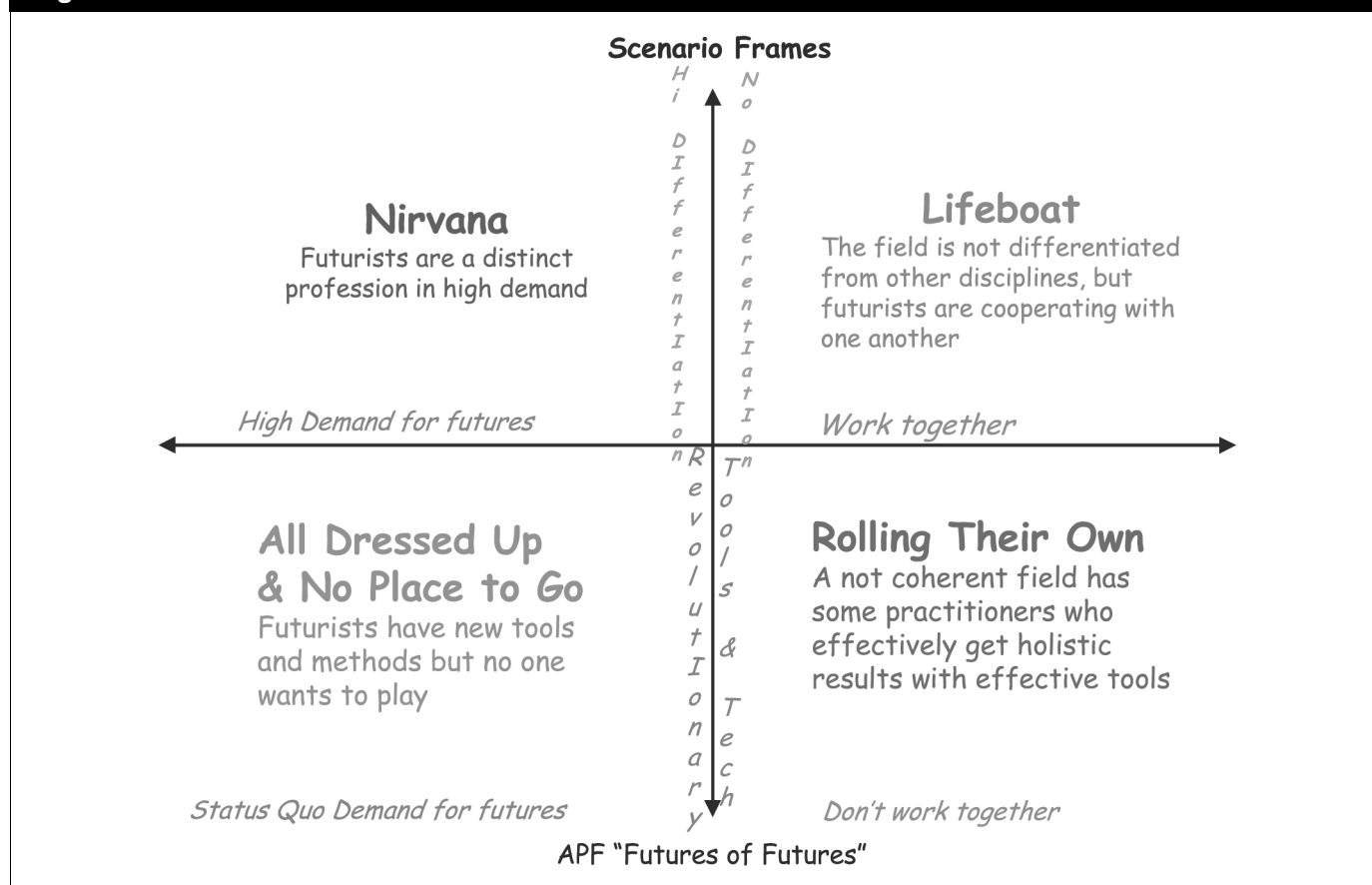
Key implications

While there are many implications, let us focus on the implications around the key uncertainties. Perhaps an

overarching implication of the scenarios is that there is lots of work ahead to avoid the pitfalls and capitalize on the opportunities. This will be no easy task, especially given the extremely fragmented nature of the field. It is fair to say that we have not been very good to date at cooperating on issues affecting the field as a whole. By nature futurists tend to be somewhat non-conformist and iconoclastic. Independence is a strength to persevere with our sometimes unpopular message, but it also tends to make us cats that are difficult to herd for the common cause. One of our key concerns in planning the meeting was that our 41 independent-minded participants would each argue for their particular way to run the meeting. The good news is that participants were able to go with the flow and confine their ideas on how to run the meeting better to side conversations. The better news is that the salon agreed that we must work together more closely as a field to be successful.

A second key implication is the need to confront our aging tool kit. A quick caveat is that some argue that this is something of a false issue. The really important matter is to improve outcomes, and tools are just the means to this end. Over-emphasizing tools could lead us to take our eyes off the ball of helping our clients to better understand and act on the future. We are all seeking better ways to engage our

Figure 2 — Scenario matrix



clients, and believe there must be alternative approaches that will reach them in a way that our current tools are not. While we can debate the relative importance or degrees of emphasis to our tool kit, it is worth paying attention to the fact that this emerged as a key theme at the salon.

It is not as if methodological innovation has stopped, but it was seen as largely incremental. We have been continuously improving the current tool kit. As mentioned above, many members have been tweaking the tools and have evolved their own unique approaches to using standard tools such as scenarios. The most common explanation was that those in the applied space simply lack the time to really develop new methodologies. The paucity of academic research programs that typically supply theoretical and methodological advances was cited as another important contributing factor. A hopeful development is that a recent survey of futures programs around the world identified an increasingly robust set of courses and programs. And there is the very encouraging development of the Australian Foresight Institute under the tutelage of Professor Richard Slaughter that has taken on several doctoral students and has begun methodological development around critical and epistemological lines.

A third implication centers on our need to create a unique value proposition. In new business development, a central question that one always answers is “why us?” There is always competition for any idea or proposition, and if you cannot figure out why you instead of someone else, you typically had better head back to the drawing board. We believe that we futurists must ask ourselves the hard question of “why us?” We are already seeing the creep of mainstream consultants into what used to be exclusively our space. This relates in part to the issue of the aging tool kit. An obvious candidate is our competency in interpretation based on a sophisticated mental model of the future.

Finally, we need to address the issue raised by the *Newsweek* article that in part inspired our meeting: why has the public profile of the field been fading? There have been some solid publications, but no recent blockbuster that has captured the popular imagination. Futurists are rarely sought for commentary on public issues, with the exception of a small number of “stars.” Surely lots of solid futures work is going on, but it is often unnoticed or at least under-publicized. This suggests a long-term task ahead of careful re-building the brand of futures through a more sophisticated engagement with the public, especially the media.

Moving forward

The final module of the workshop centered on the value proposition for APF. Of course, we hope that one outcome of this salon and the promotion of its results will provide a boost to the field and catalyze greater cooperation. So, while we suggest some of the specifics our organization will tackle, we

are hopeful other strategies and approaches will emerge from other groups.

While APF is firmly committed to delivering benefits to its members right away, we also realize that building the long-term image of the field, as well as improving the long-term prospects of its professional members, is probably a “generational” task, hence our choice of scenarios looking out to 2020. We believe we have a rich body of material on which to build long-term planning. The workshop results are already being used internally to drive the APF’s agenda. Our immediate plans for moving forward are re-framing the critical uncertainties we identified as strategic issues to be managed using an issues management approach. We are forming teams around aspects of these strategic issues. For instance:

- a community of practice team is exploring ways to encourage greater cooperation among futurists within the field;
- a best practices team is exploring ways to improve tool and method development;
- a branding team is exploring ways to improve the differentiation of the field in the mind of customers and society; and
- a publications team is exploring ways to improve demand for futures work in the marketplace and society.

A “sound-bite” goal for the association emerged from the meeting: “credible profession, thriving professionals.” We also see that the workshop gave us strong guidance on the benefits we should be providing. Again, networking comes out as a response to the coherence/fragmentation issue, but it also came through as a key theme before the meeting, during the meeting, and after-hours. Morning-after reflections suggest that perhaps in time we shall see the main benefit of the meeting being enlisting participants in a common cause and building a sense of community and shared responsibility, along with a desire to expand both in the years ahead. An idea that we have been toying with is re-creating the salon with a different group of futurists in a different geography, and seeing how the results compare. We would like to hear your feedback on this idea as well as any other comments you have about the salon or the APF.

Futures is in something of a half-empty, half-full mode. Poor public relations, fragmentation, an aging tool kit, and encroachments into our realm provide plenty of fodder for half-empty. A growing critical mass of professionals, a global flowering of futures movements and institutions, and several initiatives arising to address the challenges for the field are solid reasons for half-full. I am confident that I speak on behalf of my Austin salon colleagues in recognizing that the many of us in different geographies, institutional settings, and intellectual persuasions are all aiming at the same goal – a healthy futures field that helps make the world a better place – and that we are willing and hopeful that more and more join together in this common cause. ■

Appendix

Candidate critical uncertainties

(No. of times somebody mentioned an uncertainty, typically in different words – is in parentheses.

About who we are

1. Will futurists work together more closely, effectively, and globally? (22)
2. Has futures bottomed-out after a two-decade decline, or is the "bottom" yet to come? (16)
3. Will the field attract a new and diverse group of professionals? (12)
4. Will futurists continue to talk among ourselves or more effectively reach out to other organizations? (6)
5. Will we find the right balance between professionalism and making everybody a futurist? (6)
6. Will we describe ourselves as futurists? (4)

About what we do

7. Will futures move beyond just outlining possibilities and empower people to make better decisions and take action? (31)
8. Will futurists work together to build new approaches and methodologies? (19)
9. Will we have the courage to look out far, to even appear ridiculous? (8)
10. Will we take advantage of new technology to improve futures practice? (6)
11. Will futurists provide images, ideas, and visions that people can hold onto? (6)
12. Will "depth futures" (critical and epistemological) emerge as a complement to empirical futures? (5)
13. Will futurists have anything new to tell people about? (4)
14. Will the world become so complex that it makes useful futures work impossible? (4)
15. Will futures learn to blend pop and more substantive approaches? (3)
16. Will futurists miss something big because they didn't see what they didn't want to see?
17. Will futures embrace content and move beyond just facilitation?
18. Will there be money to fund futures research?

About how we are valued

19. Will government, business, and educational leaders ever believe they can't effectively function without futurists? (39)
20. Will our offerings be seen as unique? (18)
21. Will the field of futures be a respected one in society in 20 years? (16)
22. Will futurists get better at communicating their message, such as via the media? (10)
23. What percentage of people will know what a futurist is 20 years out? (9)

About how we do things

24. Will there be workable and respected standards for professional futurists? (14)
25. Will futurists report successes that have had impact on an organization? (7)
26. Will we find a way to get credit for the wins of our clients? (6)

27. Will we build or validate a formal body of knowledge that we expect practitioners to know and understand?
28. Will the field become more introspective and self-critical instead of blaming others for our problems?

About where we work

29. Will futurists bring more clarity to the human endeavor and make a difference regarding global problems? (22)
30. Will futurists cultivate an appetite for change? (9)
31. Will we discover what products or services that futurists offer will be most in demand? (8)
32. Will futurists fill the need for futures thinking or will it fall to mainstream consultants? (8)

Selected quotes from interviews

About who we are

- We need the field to have an image – could add something to those in the futures business?
- Is this going to be a legitimate discipline in the future or not? Will we have a title in the Department of Labor *Handbook of Occupational Statistics*?
- We have an opportunity – if we speak with one voice – to create a strong branding message for the field that will be accepted in the popular media.
- We are living in critical times for our profession ... it's ours to envision the future of the profession.
- Will futurists call themselves futurists?
- Public perception of futurism is shaped by the most prominent futurists, who tend not to need any kind of professional grouping.
- The big question will be how we organize the futures field.
- Futurists seem to want to remain independent, not get it all together. But our weak performance is evidence that we're missing a big opportunity.
- A lot of the baggage will retire and create an opportunity to re-boot. Young people will make or break the field. New tools involved, such as computer gaming. It will be a different toolbox.
- Will the major established futures consulting firms find it in their interest to actively pursue development of the field?
- [We need to forget] the animosity between the often false dichotomy of – take your pick – academic/research/epistemological/critical futurists and the – take your pick – corporate/applied/empirical futurists.
- I believe the rate of change and complexity is so great that the practitioners trying to make sense of it will be extraordinary different people than today. Could become a real genuine profession due to rate and importance of implications
- Branding will become a key strategy, to the extent that almost every serious futurist will want to be associated with the professional organization in the field.
- Have we bottomed-out after a two-decade decline, or is the "bottom" yet to come? If the "bottom" is yet to come, where is the safe haven from which futures will re-emerge (academia, etc.)?
- Many individuals who used to call themselves "futurists" survived and remained successful by doing basically what they'd always done, but calling it whatever the whims of the business climate dictated.

- Forget about trying to get rid of the so-called charlatans. With the proliferation of information, we will not win that battle.
- Field reached its nadir in the late 1970s and became far less in demand; instead of asking “what happened” we shouted louder and didn’t become self-critical. The field has not been self-critical. We have not been introspective. We blamed others and not ourselves. It became irrelevant with a lot of angry people.
- How do we frame ourselves? How do we present ourselves to the public? How do we deal with the past images of futurists? What do you call it? The words matter! A lot of bias built into 30 years of history. Think about re-framing, grammar, word choices.

About what we do

- We helped transform mindsets so people wake up to their own creative potential.
- We need to forget the old methodologies of the 1950s and 1960s developed under a mechanical, top-down paradigm and are no longer relevant to a networked, systems view of the world. Solutions for the past aren’t necessarily solutions for the future.
- [We need] a real breakthrough in theory and methodology.
- [We need to] develop technical skills that are hard to learn and to do (i.e. beyond common sense) and produce value-added.
- We’ve relied for so long on existing tools and methodologies that we feel no real impetus to develop new ones.
- Where are the new tools and methodologies going to emerge from?
- The real need to strenuously embrace content – tools are not enough. Futurists are not simply facilitators.
- [A failure could be that] the world is simply too complex for futurists.
- We don’t seem to have anything new to tell people about. Nanotechnology is actually old news.
- Conceptually, growing interest in “depth futures” as a complement to an over-emphasis on empirical futures.
- We have to help clients do something different on Monday morning.
- Putting things on the radar screen that aren’t normally there.
- We need to define what we do better – we do so many things, give speeches, do change management, etc. Our offering as futurists is diluted by the many different kinds of offerings.
- One of the most important and neglected activities for futurists is to develop a range of credible visions of the future of the policy issue to inform the public dialogue.

About how we do things

- We missed something really big – a big wildcard happens that we missed, perhaps because we don’t see what we don’t want to see.
- To be professional enough and be perceived as people who can really contribute and not just interesting opinions?
- Nobody is paid full-time to do this research.
- We have an inability in tying futures work to an item on the budget. The value of the work is not easily tied to a dollar sign.
- [It’s] very important to have colleagues in the field to learn from.
- We need real courage to look out far, to even appear ridiculous.

- We must continually reflect on our practices, innovate, and then disseminate. We don’t do so now because we don’t take the time to publish and because there is not a good channel or “retail point” for that kind of knowledge.
- Will futurists adopt and enforce standards for membership in the profession?
- Too many of us talk the future; few really live it. The field needs both.
- I have heard futurists (some fairly well known) pan the work of others – not saying you can not disagree – but there are ways of disagreeing without – debate should be about options not factions.
- The profession ain’t gonna get there without some very advanced technology that allows one to make sense of the nature and dynamic complexity; using “post it” notes on the wall won’t cut it.
- Most professions rely heavily on their academics to provide new and better tools.
- People realize that it was stupid to fight for small pieces of the [futures] pie, and that by letting go of business “territories” and being protective, the field was able to grow and flourish.
- Another failure would be that professional standards are never developed, due to infighting, or perceptions about standards being so narrow as to be exclusive or so broad as to be insignificant.
- Be mindful of how destructive it can be to get stuck on a particular issue of debate within the field and endlessly pound it into the ground.

About where we work

- The President and his advisers are meeting. The President stops the discussion by raising his hand. “Okay, let’s stop and take some time to think about the long-term consequences for us all of this plan.” Pointing to the futurist in the room she says, “you take over this discussion and let’s be sure we have some alternative outcomes to present to the nation.”
- There’s more information available about the future in the mainstream media than ever before.
- Futurists were a decisive influence in getting the world to deal with the problems of the twenty-first century.
- A triumph would be that studying the future is as common as studying economics or history. There would be A Department of the Future – at the Cabinet level in the government . . . at a very high level . . .
- Connecting closer to other professions.
- Futures thinking has a wonderful role to play in the expanding number of organizations trying to become learning organizations.
- The work will be there, but under what kind of aegis?
- What will the other players in this area be doing? For example, the strategic consultants and ad agencies who increasingly do similar work?
- [A leverage point is that] everybody is thinking about the future.
- [Futurists] help the world find a way to find way to healthy future.
- Futurists cultivated an appetite for change.
- Younger people, ages 12 to 24 years, accept the perception that they are already living in the future, so why study it?
- Many of us in the profession are trying to put ourselves within knowledge networks and then to mobilize the expertise in those

networks to think about the future. On the edges of these networks, there are lots of other people biting off chunks of futures work—the risk management crowd, public relation issues managers, scanners. Increasingly our job is to have an overview, to understand what tools are useful, to help manage and integrate the process so it produces a relevant and strategic product.

About how we are valued

- [The field could be] completely irrelevant; not exist anymore.
- What products or services that futurists offer will be most in demand?
- [An obstacle is] the public's inability to tell the difference between quality futures work and trash.
- Will the field be distinct or special or an ordinary technique of leadership and management?
- What good success stories will we have to increase credibility?
- Futures thinking was shown to be a fad of the late twentieth century and early twenty-first century. It was largely discredited as a business and organizational tool by the development of more efficient computer-based decision making and analysis, and by the failure of the field to maintain relevancy to the serious business of the day.
- The media routinely calls on futurists to provide context and commentary to explain world events.
- We've got to highlight good futures work.
- As professionals they are recognized (Nobel Prize perhaps?) for having addressed many world problems.
- Will the profession be so valued that people will pay the big bucks for our services?
- People are leaving money for funding future research because it makes a difference in people's lives.
- [We need to] communicate our value and successes.
- Futurists have had a hard time defining success. It is not clearly defined or visible – maybe the results come a year from now, or are not attributed to you.
- Do we know what the world wants from us?
- Futurists are accepted (not freaky, as today), get no strange looks, don't have to explain what the "F" word means.
- Futurists are looking for a home run – being the ones to change the course of an industry. But we won't get the credit, and probably shouldn't. Our work is a means to an end, not the end itself. We should not get caught in the trap of trying for this kind of win.
- What percentage of people will know what a futurist is 20 years out?
- Will futurists or their skills be needed as specialized and independent endeavors, or will the practices of anticipating change and the use of systems thinking be integrated into general decision-making process.

The History and Development of the Association of Professional Futurists

Andy Hines

Richard Slaughter, Knowledge Base of Futures Studies. CD-ROM Professional Edition. (2004). Order at <http://www.foresightinternational.com.au>

Introduction

The roots of the Association of Professional Futurists (APF) are in the oft-expressed need of practitioners for a forum for networking, best practices, and mutual support. These needs were the topic of many a conversation in the corridors of several of the World Future Society (WFS) annual conferences over the last decade. In these hallway conversations, a frustration emerged that the need of professional futurists were not being met by the current organisations in the field. This is not now, or was not then, a *carte blanche* attack on existing organisations; rather it was a sense that their priorities lay elsewhere and attention to the needs of the working professional – the backbone of any field – was lacking.

The hallway discussions were characterised by a mix of enthusiasm for professional networking and lamentation about its infrequency. It was great to hear what other people were doing, what they had tried, what worked and what didn't, what plans they had, and the like. There was also a comfort and mutual support in sharing the often difficult experiences we have in trying to bring a new way of thinking to those not always receptive to it.

True, the World Future Society had and has a professional members section that meets for a day following the general conference each year. But there are no criteria for professional membership, other than paying some extra money when you sign up. Thus, the professional members' session often consisted largely of participants who were not professionals, but simply those interested in attending and willing to pay a few extra dollars for the privilege. One can't blame the non-professional for taking advantage of the opportunity to mix with the professionals. But for the professionals, the opportunity to focus on their particular needs was watered down. In essence these meetings simply became an additional day of the general conference with a smaller group and a different format.

Feelings of isolation

From experience in consulting with Coates and Jarratt in the 1990s, this author can attest to the occasional feelings of isolation one feels in this realm. Isolation despite the foundation role this company has played over a number of years for futures thinking and content. It can also be difficult to network with other consultants and exchange best practices for competitive reasons. And a suitable forum for such meetings to take place was lacking. Professional exchanges need to be carefully managed or participation will either stop or not be meaningful. If too much is shared, competitive issues surface: if too little, interest wanes.

From experience as an organisational futurist, this author can further attest to a perhaps ever greater feeling of isolation in being the lone futurist. One learns over time that one has more in common with organisational futurists from other companies than with their non-futurist colleagues inside their own company. There is tremendous value from interactions with fellow futurists both for professional development and in directly applying lessons learned to your organisation. This value proposition may sometimes be difficult to prove to a suspicious supervisor in the process of approving a 'Futures of Futures Scenario Salon' invoice, but those who participate in this network are clearly convinced about its value and suggest the key need is to improve our ability to make the case to our sponsors.

The professional niche

It's probably a good time here to take a time out here and confront the potential perception that professionals may appear snobbish. The APF indeed has a sharp focus on the profession and on professionals. The point here is not for us disassociate from the field, but rather to simply have some dedicated time with one another to discuss issues unique to one another.

There is a strong democratic or egalitarian streak in futures that is suspicious of any activity that even hints at exclusion. There is a strong bias to include everybody in every activity. There are certainly times when open and free participation by all makes sense, but the fact that a part of the group wants some time for its particular needs does not mean it's anti-democratic or that it not longer wants to participate with the larger group. The American Bar Association does not invite the general public to its members meetings, although it often does sponsor forums for the public. The APF asks for the same freedom, to have its own existence and to also have its interactions with the larger futures community and the public. It's a both-and rather than an either-or.

Catalysing events

About four years ago, many futurists began receiving something called the *Futures Industry Research Report* by Randy Scheel. And many of them asked just what is the futures industry? and who is Randy Scheel? Scheel began bringing news about futures community and pushed forward the concept that the community needed to start thinking about itself as an industry or profession if it were to make progress and move forward. An early graduate of the UHCL (University Houston Clear Lake) futures program, Randy

had been active in issues management and had published a text on the topic. Over the years, he drifted away from futures work, but several years ago found himself drawn back into it, and determined to move it forward. Thus, he began publishing his electronic newsletter on the field, and a virtual community of readers began to take shape.

An early physical manifestation of the professional community took place under the auspices of a UHCL alumni retreat organised by Andy Hines, Senior Ideation Leader at Dow Chemical and Peter Bishop, Chair of the UHCL program. It brought together about thirty-five alumni of the UHCL futures program, facilitated by Jennifer Jarratt, Principal with Coates and Jarratt, in an open space forum designed to elicit topics that were on people's minds. Scheel was present and signed up on the open space bulletin board for a session on forming a professional association. This well-attended session brought together several of the eventual core members of the APF and was perhaps the first public forum to discuss the nuts and bolts of how to make this happen.

A second catalysing event was the so-called Applied Futures Summit in Seattle in April of 2001. The idea here was to quickly expand the professional association concept beyond the Clear Lake alumni. A core team of Hines; Michele Bowman, Senior Vice President, Global Foresight Associates; Christian Crews, Director of Futures Studies, Waitt Family Foundation; Sandy Burchsted, President of Prospectiva; and Richard Lum of HMSA Honolulu organised this gathering of two dozen or so professional futurists around various topics related to professional futures work. The success of this meeting convinced many of us that a professional association was indeed a potentially viable topic.

A key issue before, during, and even for some time after the summit was whether the professional futures community needed to go the formal route of forming a professional association or whether it could and should rely on informal activities such as the Seattle summit. Perhaps the turning point came near the end of the Summit, when the formation of a professional association – the proverbial elephant in the room that everyone saw but didn't feel comfortable acknowledging given the success of this informal event – was brought into the open for discussion. While arguments were made for both sides, enough support was registered so that Scheel and others began formal plans to make the APF a reality.

The formation

The Association of Professional Futurists was formed in 2001, but the tension between the informal and formal camps carried over into its formation. There was in fact a split among the core team soon after the APF was launched as an official organisation. The issue was whether the organisation should be a for-profit company that relied on paid staff or a traditional not-for-profit association that relied primarily on volunteers. Scheel first incorporated the association as a company on the assumption that the marketplace was the best place to establish a viable organisation, but he found little support among the other members of the core team for this assumption. In the end Tom Conger, Founder of Social Technologies, intervened to help the group reach a consensus that a not-for-profit

association was the model worth implementing. As a result Bishop, Bowman, Conger, Hines, Jarratt, and Scheel along with Mike DeBettencourt, consultant with URS Corp., and Herb Rubenstein, President of Growth Strategies formed a steering team to set up the infrastructure of the organisation and provide a spur to recruiting. The team agreed early-on that a hands-on membership was preferable and decided to employ a team-based approach to deal with the various tasks at hand. It evolved to the point where today thirteen teams are formed around:

- Benefits
- Branding
- Communities of Practice
- Fundraising
- Gatherings
- Governance
- Member Qualification
- Member Recruitment
- Networking for business opportunities
- Publications
- Professional Development and Best Practices
- Strategic Issues
- Professional Liaisons and
- Early Days.

Jennifer Jarratt headed up a nominating committee whose recruiting efforts attracted eighteen people to run for the first official Board. Information about each candidate was gathered and published on the website. Nine members were eventually elected to the Board in November 2002 by the founding members of the Association. Some of those elected had served on the initial steering team: Bishop, Bowman, Conger, Hines, and Jarratt. The new members were Sandy Burchsted, Bob Hahn, Director of Future Strategies at Pitney-Bowes, Dominique Purcell, Director at Visio, and Lee Shupp, Partner at Cheskin Research. The Board contracted with Randy Scheel to be the first director for the APF. Christian Crews took Bob Hahn's place on the Board in May of 2003 when Bob had to resign due to a change in job responsibilities.

The APF's first public get-together was a reception at the World Future Society's 2002 annual conference in Minneapolis. Here we got to put some names and faces together. It was important for the core team to move beyond just talking to itself and to see what was drawing the early members to the Association. As has been suggested repeatedly in this piece, we quickly learned that professionals wanted to meet other professionals and to get a sense of the best practices in the field. There was a sense of excitement and possibility of being present at the beginning of something that might one day be special. It carried over into the rest of the conference.

Primary purposes

One: networking

We began and continue with two primary purposes in mind. The first is professional networking. Years of conversation and numerous surveys have repeatedly hammered home the point that what the professionals want most of all is networking. Rarely does market research deliver such a clear message, but this is a case where we have it. This finding suggests to us that a primary activity has to be to facilitate networking. This requirement, in turn, puts the onus on the members themselves to act – networking doesn't work without participation. Of course, not everyone will be equally compelled by the networking proposition, and there are other things a professional association can deliver. But, again, our market research speaks very loudly and clearly about what our market wants.

Thus the APF has been relentless in its grass-roots and participative philosophy and approach, although some members still join with the expectation of a traditional association that delivers a set of deliverables roughly equivalent to the membership fee. You sign up for a couple hundred bucks and get a couple hundred bucks worth of stuff. That is not our approach, but we haven't always been successful in communicating it.

There is a strong emphasis that you get out what you put in, and that if you sit passively and wait for the benefits to show up on your desk, you'll be disappointed. In fact, after a year, we've had a few folks decide not to re-join for just that reason. There is a joke on our board that if a member indicates an interest in a particular topic, they immediately become the chairperson of the committee.

Two: improving the image and performance of the field

Our second primary purpose is improving the image and performance of the field. While not at the same top-of-mind level as networking, it becomes evident with very little prodding. One can adopt a half-full approach in looking at the prospects of the field – to wit, more futures professionals, more futures courses, and, one can argue, a growing interest in looking to the future.

One can also adopt the half-empty perspective. Our journalistic friends routinely paint a field that's had its day and is in decline. And there is some pretty convincing evidence for the half-empty version of events. Most often cited is a perceived lack of access to 'the corridors of power', as was more obvious during the heyday of Herman Kahn and Alvin Toffler. So unless rebuilding the image of the field is a key purpose of the Association, there's a strong possibility in twenty years that there won't be anything left, at least as a distinct field and profession.

If our members weren't fundamentally optimists, we wouldn't invest our sweat equity in something like APF. We believe in the usefulness of futures and its long-term viability. At the same time, we have our eyes wide open and recognise that we have signed on to what we feel is a least a twenty-year mission to build a solid field and profession. We're fairly certain that there will always be a tension between the tendency to focus on the networking aspects to help one's professional prospects versus the more altruistic and

longer-term need to preserve the field. But if anyone should be amenable to an argument to build for the long-term, it ought to be us!

Building critical mass

Critical mass toward the APF has been building for several years. Growing numbers began participating in the hallway conversations such that they increasingly moved to larger and more accommodating venues such as pubs and coffee shop. One contributing factor has been that the University of Houston Clear Lake and the University of Hawaii programs have been putting out more graduates who are practising in the field. We've also seen a growing cadre of younger professionals from overseas. While their roots seem more varied, there have been a handful of programs in Europe and across the globe that have also been producing graduates. In the last few years, for example, we've seen the very promising development of a futures program at the Australian Foresight Institute that has been nurturing a remarkable pool of potential futures professionals.

It is worth emphasising the importance of the education programs in developing a pool of professionals, especially when we here mixed news about the health of the various programs. The early days of futures were dominated by those who evolved into their role – there were no academic programs. Programs began emerging in the 1970s but have taken a while to attract and eventually graduate students. We're just starting to see them in significant numbers.

Austin scenario salon

We had about eighty members as we began planning our first conference in February 2002. The conference was something of a test of whether the ten years talking about forming something like the APF, the two years preparing for it, and the year actually building it, were worth it.

One key message we hoped to convey with this inaugural meeting – and we now consider this part of our brand essence – was that this was not going to be your typical talking heads affair. This meeting was to run by the members for the members and include lots of time for networking and interaction. In essence we wanted to carry forward the spirit of the hallway, pub, and coffee shop conversation, with just enough structure to lend purpose and focus.

We debated several topics; a key factor galvanising us around the eventual 'futures of futures' topic was a then-recent *Newsweek* article proclaiming the demise of the field. When this piece came out, we asked our members to send in their thoughts for a collective response to the editors. We were stunned when almost the entire membership at the time responded. Clearly, the issue struck a chord. We also felt that as futurists forming a professional association, we ought to practice what we preach and thus chose to look at the long term future of our enterprise.

We chose the scenario approach that Global Business Network designed since it provides lots of opportunities for small group work and discussion. The designers were nervous about whether anyone would come, especially given a topic that had been talked to death informally. These concerns were allayed as members not only signed up, but eagerly participated in the pre-workshop interviews.

Happily, the event was a great success. Members reported that the salon and the report that followed have influenced their work. One member reported, 'I have been more conscious of the future of the field, the future of the APF and ways to lift both in esteem and relevance.'

The strategic issues

Four strategic issues emerged from the Austin scenario salon that we believe form a solid basis for directing future work for the field in general and for the APF in particular. Our strategic agenda may well evolve – and probably should – but we felt like we needed to put a stake in the ground and start somewhere. The issues are:

- How do we overcome the fragmentation in the field and encourage greater cooperation among futurists?
- How do we enhance our aging tool kit?
- How do we differentiate ourselves from mainstream consultants in the minds of customers and society?
- How do we improve the image of the field and increase demand for futures work?

Futures has been an extremely fragmented field. It's fair to say that we have not been very good to date at cooperating on issues affecting the field as a whole. By nature futurists tend to be independent, non-conformist and iconoclastic. Our independence gives us strength to persevere with our sometimes unpopular message, but it also tends to make us cats that are difficult to herd for common cause.

One approach we're developing for addressing the issue is to form communities of practice (CoPs) around selected futures issues. Futures is of course a very large umbrella. At a high-level there are different kinds of issues faced by different types of futurists, such as organisational, consulting or educational futurists. There are also many different topics of interest. Our first CoP was a topical one around integral futures, which explored the implications of integral philosopher Ken Wilber's work for futures. While we had plenty of interest and enthusiasm, in hindsight we probably should have chosen a less complicated issue to start. It can take some time and reading to get up to speed on integral futures, which raises the danger of losing momentum in the meantime.

The second issue is the need to confront our aging tool kit. It is not as if methodological innovation has stopped but it has been largely incremental. We have been continuously improving the current tool kit. Most tweak the tools and have evolved their own unique approaches to using the standard ones such as scenarios. The most common explanation is that those in the applied space simply lack the additional time required to really

develop new methodologies. The paucity of academic research programs that typically supply theoretical and methodological advances is cited as another important contributing factor. A hopeful development is that a recent survey of futures programs around the world identified an increasingly robust set of courses and programs. And there is the very encouraging development of the Australian Foresight Institute under the tutelage of Professor Richard Slaughter that has taken on several doctoral students and has begun methodological development around critical and epistemological lines.

A caveat is that some argue that the aging tool kit is something of a false issue. The really important matter is to improve outcomes, and tools are just the means to this end. Over-emphasising tools could lead us to take our eyes off the ball of helping our clients to better understand and act on the future. We are all seeking better ways to engage our clients, and we believe there must be alternative approaches that will reach them in a way that our current tools are not. While we can debate the relative importance or degrees of emphasis to our tool kit, it is worth paying attention to the fact that this emerges as a key theme.

The third strategic issue we identified is our need to create a unique value proposition. In new business development, a central question that one always answers is 'why us?' There is always competition for any idea or proposition, and if you can't figure out why you instead of someone else, you typically had better head back to the drawing board. We believe that we futurists must ask ourselves the hard question of 'why us?'. We are already seeing the creep of mainstream consultants into what used to be exclusively our space. This trend relates in part to the issue of the aging tool kit. An obvious candidate is our competency in interpretation based on a sophisticated mental model of the future. It may be the artist aspect of futures that ultimately distinguished it from mainstream approaches that are often overly scientific in their approach.

Lastly, we need to address the issue raised by *Newsweek*, a recent *Wired* editorial, and other 'bash' pieces: why has the public profile of the field been fading? There have been some solid publications, but no recent blockbuster that has captured the popular imagination. Futurists are rarely sought for commentary on public issues, with the exception of a small number of 'stars'. Surely lots of solid futures work is going on, but it is often unnoticed or at least under-publicised. This suggests a long-term task ahead of carefully re-building the brand through a more sophisticated engagement with public, especially the media. A key challenge is how to better publicise great work that is now going unnoticed by the public.

We've put together a team around the branding issue, focusing first on our Association. It has the immediate practical purpose of telling the futures community and prospective members what we're about. As we get that established, we'll expand the scope beyond the futures community to the client community and beyond. Here we need to begin a long-term campaign that is on message about the futures field. We've been in the mode of responding reactively to the latest bash piece. We've done painfully little proactive public communication and certainly nothing about creating an image for the field. We

believe these are critical issues for us and ones that we can address, working with our sister organisations where possible.

Challenges in moving forward

There are plenty of challenges ahead. We do feel fairly confident that there is a niche for a professional association and that we'll be able to fill it. The membership reached a level we felt comfortable with and the renewal rate has been encouraging.

That said; it has been difficult to get many of the established players on board. There is no question that the field has simply 'lost' some people who could be a big help. They've become discouraged about the state of the field – or worse see it as a liability – and see no benefit in associating with it. They have walked away and several refuse to call themselves futurists. For many others it's been wait-and-see. While understandable it does put those taking the initiative in the precarious position of having to prove the merit of the enterprise without the benefit of many who could help.

The grass-roots approach itself will be a challenge to maintain over time. Volunteer time tends to lose out when the pressure to make a living increases. A key will be having a big enough pool of volunteers to keep the basic organisation operating and developing financial independence over time.

We choose to see the glass half-full. We're in it for the long haul, and we believe that more and more of the futures community will join us and create our preferred future together.

About the author

Andy Hines is a graduate of the UHCL program and worked for some years with Coates and Jarratt in Washington DC. Since then he has held senior positions at the Kellogg Corporation and at Dow Chemical where, most recently he is 'ideational leader'. He has been among the prime movers of the APF and is the author of a number of papers on the practical implications of futures and foresight.

The current state of scenario development: an overview of techniques

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Abstract

Purpose – *The paper aims to review all the techniques for developing scenarios that have appeared in the literature, along with comments on their utility, strengths and weaknesses.*

Design/methodology/approach – *The study was carried out through an electronic search using internet search engines and online databases and indexes.*

Findings – *The paper finds eight categories of techniques that include a total of 23 variations used to develop scenarios. There are descriptions and evaluations for each.*

Practical implications – *Futurists can use this list to broaden their repertoire of scenario techniques.*

Originality/value – *Scenario development is the stock-in-trade of futures studies, but no catalog of the techniques used has yet been published. This list is the start at developing a consensus list of techniques that can be refined as the field matures.*

Keywords *Futures markets, Research methods, Management techniques*

Paper type *Literature review*

Introduction

The scenario is the archetypical product of futures studies because it embodies the central principles of the discipline:

- It is vitally important that we think deeply and creatively about the future, or else we run the risk of being surprised and unprepared.
- At the same time, the future is uncertain so we must prepare for multiple plausible futures, not just the one we expect to happen.

Scenarios contain the stories of these multiple futures, from the expected to the wildcard, in forms that are analytically coherent and imaginatively engaging. A good scenario grabs us by the collar and says, "Take a good look at this future. This could be *your* future. Are you going to be ready?"

As consultants and organizations have come to recognize the value of scenarios, they have also latched onto one scenario technique – a very good one in fact – as the default for all their scenario work. That technique is the Royal Dutch Shell/Global Business Network (GBN) matrix approach, created by Pierre Wack in the 1970s and popularized by Schwartz (1991) in the *Art of the Long View* and Van der Heijden (1996) in *Scenarios: The Art of Strategic Conversations*. In fact, Millett (2003, p. 18) calls it the "gold standard of corporate scenario generation."

While the GBN technique is an excellent one, it is regrettable that it has so swept the field that most practitioners do not even know that it is only one of more than two dozen techniques for developing scenarios. There are so many approaches and techniques that go by the term scenario that Millett (2003, p. 16) says that "resolving the confusion over the definitions and

methods of scenarios is the first necessary step to bring the value of scenario thinking and development to a wider audience.” A number of overview pieces have been published recently that respond to Millett’s requirements. First, we will address the confusions and definitions, describe our research approach, then review the overview pieces, and finally move into the analysis of the specific scenario techniques.

Confusions

This section addresses three primary confusions in the scenario literature[1]:

1. Perhaps the most common confusion when discussing scenarios is equating scenario development with scenario planning. We suggest that “scenario planning” has more to do with a complete foresight study, where scenario development is concerned more specifically with creating actual stories about the future. Scenario planning is a far more comprehensive activity, of which scenario development is one aspect.
2. A more subtle confusion is equating the term “scenario” with “alternative future.” In other words, all descriptions of alternative futures are deemed to be scenarios. A more narrow definition of scenario would focus only on stories about alternative futures. With this narrow definition, other forecasting methods might produce alternative futures, but not scenarios. In practice, however, the broader definition of scenario as alternative future, whether they are in story form or not, has prevailed. Thus, the complete collection of methods for scenario development includes almost all forecasting methods since they also produce alternative futures. In fact, very little is said about the actual creation of the stories in most methods. More attention is paid to generating the scenario kernel or logic, which can be done by any number of methods. We decided that it does not make sense to fight the battle for a narrower definition, and thus our list of methods is based on current practice and includes the incorporation of forecasting methods whether or not they produce a story.
3. The third confusion involves equating the terms methods and techniques. These terms are used interchangeably in the literature and in practice. There are subtle differences in the terms, with method being focused more on the steps for carrying out the process and technique focusing more in the particular way in which the steps are carried out. As above, however, we bow to the practicalities that the terms are used interchangeably, and do not see it useful to try and make the distinction at this point.

Definitions

Being a new field, futures studies is blessed with an abundance of creative and entrepreneurial practitioners who develop excellent approaches and methods to suit the needs of their clients. After a while, however, the growth becomes chaotic. One solution, as noted above, is to focus on one technique and stick with that. While that solution does reduce the chaos, it does not make the best use of the techniques that others have created and are using.

However, even the most basic vocabulary is used every which way in this field. Therefore, before beginning our review of scenario techniques, we have to decide on what a *technique* is in the first place, as opposed to an approach, or a method, or a tool. Therefore, we offer the following (small) glossary to distinguish these terms from each other so the reader knows what we are talking about and in hopes that others might use the terms in a similar fashion.

We begin first with a *project*. The futures project is the largest unit of professional work. It includes the sum total of the objectives, the team, the resources and the methods employed in anticipating and influencing the future. Projects may be simple, involving just one product and technique, or complex, involving many steps each of which produces one or more products and uses one or more techniques.

The process that one employs in conducting a project is the *approach*. The approach consists of an ordered series of steps to accomplish the objectives of the project. Every project has an approach, whether it is explicitly articulated at the beginning or not. Some approaches are widely practiced, such as the approach to develop a strategic plan.

A generic approach to a comprehensive foresight project is outlined in the six steps shown in Table I.

This approach was used to classify best foresight practices in a forthcoming publication (Hines and Bishop, 2006).

There are many other examples of comprehensive approaches to foresight. At the Association of Professional Futurists' 2004 Professional Development Conference, two of these were described:

1. The Futures Lab in Austin, Texas uses an approach to product and business development that they recently described in *Futures Frequencies* (Woodgate and Pethrick, 2004).
2. The Futures Management Group in Eltville, Germany uses a "lenses" approach to strategy development, as described in *Der ZukunftsManager (The Future Manager)* (Micic, 2003).

In fact, most professional futurists and consultants use a favorite approach that they have honed over time.

Each approach produces one or more *products* or *deliverables* that satisfy the objectives of the project. The product is the final result of the work done in the approach – as a report, a database of trends, scenarios in various forms, a strategic plan and many more. Usually each step in the approach generates a product and together they form the deliverable from the project.

A *method* or *technique* is the systematic means that a professional uses to generate a product. We found that method and technique are used rather interchangeably in the literature so it is hard to pick just one. Method carries a solid, organized, even an academic connotation where technique seems to relate more to style than to substance. In a review of terms in articles about scenarios published in *Futures* over the last few years, authors used both terms although they used *technique* quite a bit more[2]. So we will go with that for this review.

A *tool*, another term often confused with method or technique, is more concrete. A tool is a device that provides a mechanical or mental advantage in accomplishing a task. Tools are things like video projectors, questionnaires, worksheets and software programs. By the same token, scenarios and plans are not tools. Some of the best known tools in the field are Godet *et al.*'s (2003) Toolbox and the Parmenides Foundation's Eidos tool suite – formerly Think Tools (Lisewski, 2002).

Finally, an *exercise* or *activity* is a unit of activity within a lesson performed for the sake of practice and to acquire skill and knowledge. It may be, of course, that the skill or knowledge is applied right away in the same workshop as part of project work.

Table I A generic approach to a comprehensive foresight project

<i>Step</i>	<i>Description</i>	<i>Product</i>
Framing	Scoping the project: attitude, audience, work environment, rationale, purpose, objectives, and teams	Project plan
Scanning	Collecting information: the system, history and context of the issue and how to scan for information regarding the future of the issue	Information
Forecasting	Describing baseline and alternative futures: drivers and uncertainties, implications, and outcomes	Baseline and alternative futures (scenarios)
Visioning	Choosing a preferred future: envisioning the best outcomes, goal-setting, performance measures	Preferred future (goals)
Planning	Organizing the resources: strategy, options, and plans	Strategic plan (strategies)
Acting	Implementing the plan: communicating the results, developing action agendas, and institutionalizing strategic thinking and intelligence systems	Action plan (initiatives)

So much for the general definitions; now we define the topic of this paper – the scenario. Despite its ubiquity, or perhaps because of it, we found more than two dozen separate definitions of scenarios in the literature, and that is probably not all. Suffice to say that a scenario is a product that describes some possible future state and/or that tells the story about how such a state might come about. The former are referred to as *end state* or even *day in the life* scenarios; the latter are *chain (of events) scenarios* or *future histories*.

Research approach

The starting point for this research was collecting descriptions of the methods we had amassed over the 30-year history of teaching scenarios in the Master's program at the University of Houston. We then supplemented our list with literature and web searches to identify methods that had escaped our attention.

Surveying the scenario development field is no mean feat, but we believe we have captured most of it. The literature contains overview pieces that review the field (e.g. Van Notten *et al.*, 2003; Bradfield *et al.*, 2005; Borjeson, in press) and methodological pieces that describe a specific scenario technique.

We began by scouring the key methodological publications in the field to see what they said about scenarios. Among the sources of this material were:

- Books – Schwartz (1991), Van der Heijden (1996), Ringland (1998), Bell (2003) and Cornish (2005).
- Collections – Fowles (1978), Fahey and Randall (1997), Slaughter (2005) and the Millennium Project Methodology CD and its Global Scenario collection (2003).
- Journals – *Futures*, *Foresight*, *Technological Forecasting and Social Change*, *Futures Research Quarterly*, *Journal of Futures Studies* and *The Futurist*.
- Abstract and citation indexes – Future Survey, Business Academic Premier and the Social Science Citation Index.
- The world wide web.

As one might suspect, this approach generated a number of additional methods, many of which were closely related to methods we had already identified. We revised our initial list and posted queries to several listserves that discuss futures topics, including those of our academic program, the Association of Professional Futurists, and the World Futures Studies Federation. We also asked for general advice about our project, and were very pleased to receive a great deal of helpful feedback and, of course, more methods to consider!

These sources yielded dozens of methodological pieces and cases in which a scenario technique was used and/or in which one or more scenarios were produced.

Overviews

Three articles have appeared recently with a similar purpose – to review the field of scenario development and, if possible, bring some organization and understanding to the field. They do an admirable and useful job of proposing different ways to think about scenarios at a high-level. Our purpose here goes a level deeper to provide further assistance by outlining specific methods/techniques that fit within the high-level categories. We summarize below the excellent contribution that each of these overviews has made to the literature, noting areas we will build on.

Van Notten et al. (2003)

van Notten and his colleagues from the International Centre for Integrative Studies in Maastricht have created a typology of “scenario types” (Van Notten *et al.*, 2003). In the end, they propose three major categories or overarching themes, based on the “why” (project goal), the how (process design) and the what (content). They identify 14 specific characteristics to characterize scenarios (Table II).

Table II Van Notten scenario typology

Overarching themes	Scenario	Characteristics
A Project goal: exploration vs decision support	I	Inclusion of norms?: descriptive vs normative
	II	Vantage point: forecasting vs backcasting
	III	Subject: issue-based, area-based, institution-based
	IV	Time scale: long term vs short term
	V	Spatial scale: global/supranational vs national/local
B Process design: intuitive vs formal	VI	Data: qualitative vs quantitative
	VII	Method of data collection: participatory vs desk research
	VIII	Resources: extensive vs limited
	IX	Institutional conditions: open vs constrained
C Scenario content complex vs simple	X	Temporal nature: clean vs snapshot
	XI	Variables: heterogenous vs homogenous
	XII	Dynamics: peripheral vs trend
	XIII	Level of deviation: alternative vs conventional
	XIV	

Source: Van Notten *et al.* (2003, p. 426)

Their contribution is notable, and it could well be used to study the field of scenario development further. Their attributes, however, relate more to the overall scenario *project* than to the specific scenario *technique(s)* used. Process design contains four attributes that are closer to the techniques employed, but they are general and do not call out the specific techniques. Characteristic VI data, for instance, classifies scenario designs as either qualitative or quantitative; but that is still very general since there are many ways to conduct qualitative and quantitative scenarios. They have created a comprehensive and useful mechanism for analyzing and comparing scenarios. As valuable as this contribution is, it does not review the actual techniques that futurists use to generate scenarios.

Bradfield et al. (2005)

Bradfield and his colleagues propose “to resolve the confusion over ‘the definitions and methods of scenarios,’” (Bradfield *et al.*, 2005) or at least begin to do so. Their approach is historical, tracing the evolution of three schools of scenario development from their origins to the present day. Two of these schools originate in Anglophone countries (US and UK) and one in France.

After describing how Herman Kahn originally introduced the concept of scenario development during his time at RAND, they describe two Anglo schools of scenario development with radically different approaches. The first is the “intuitive logics” school described above as the Shell/GBN method that now dominates scenario development in the USA and many other countries. The second is the “probabilistic modified trends” school, originated by Olaf Helmer and Ted Gordon. That “school” is actually an amalgam of two quite different techniques: Trend Impact Analysis that Ted Gordon used at The Futures Group and Cross-Impact Analysis that has been used in many different contexts. Both of these techniques are quantitative, as opposed to the Shell/GBN technique, and they were developed by the same people, but that is pretty much where their similarity ends.

Continental Europe uses a different approach originally developed by Gaston Berger and Bertrand de Jouvenel known as “La Prospective” and now carried on by Michel Godet among others. Godet *et al.* (2003) has developed a number of useful computer-based tools to analyze structural conditions and stakeholder positions. He also has two tools that generate scenarios – MORPHOL and SMIC PROB-EXPERT. MORPHOL is a computer version of morphological analysis (as described below), and SMIC PROB-EXPERT is a form of cross-impact with some variation.

So Bradfield’s analysis proposes a useful framework for thinking about scenarios at a high level. Van Notten’s taxonomy proposes attributes of scenarios where Bradfield propose

actual high level categories. Their three macro-categories are conceptually useful, but do not do justice to the range of techniques available for scenario development.

Börjeson et al. (in press)

The final review will be coming out in 2006. Börjeson and her colleagues from Sweden create a typology of scenario techniques based on Amara's classification of different types of futures – the probable, possible and preferable futures (Börjeson *et al.*, in press). Predictive scenarios answer the question: "What will happen?" Exploratory scenarios answer: "What can happen?" Normative scenarios answer: "How can a specific target be reached?" They divide each of these into two sub-categories to make six types of scenarios, as depicted in Figure 1.

Within their categories, they classify scenario techniques – the focus of our analysis – according to their purpose:

- Generating techniques are techniques for generating and collecting ideas, knowledge and views regarding some part of the future, consisting of common data gathering techniques such as workshops and surveys.
- Integrating techniques integrate parts into wholes using models based on quantitative assessments of probability or relationship, such as time series analysis and systems models.
- Consistency techniques ensure consistency among different forecasts such as morphological analysis and cross-impact analysis.

The latter classification comes closest to serving our purpose here since it identifies some specific scenario techniques although it treats them at a general level that does not allow an analysis of the advantages and disadvantages of each.

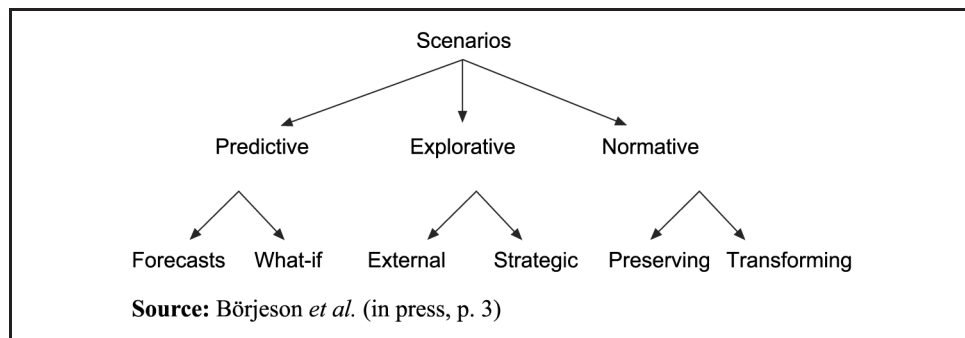
In the end, therefore, we still have more work to do, to identify the specific techniques that futurists use to generate scenarios and give some sense of their advantage and their use.

Scenario techniques

Now onto the key purpose of this article – the categorization and discussion of scenario techniques. While authors, such as the ones above, have characterized techniques according to some high-level attributes, none has actually classified the actual techniques in use. That is the purpose of this section. Based on our review of the literature, we have discovered eight general categories (types) of scenario techniques with two to three variations for each type, resulting in more than two dozen techniques overall. There are, of course, variations of the variations. Some techniques are also hard to classify because they contain processes from different categories. Despite these difficulties, we believe that having such a list is a good step toward alleviating the confusion over scenario techniques.

The rest of this section describes each of these categories and the specific techniques in it, noting how each one varies from the pure type.

Figure 1 Borjeson scenario typology



1. Judgment (genius forecasting, visualization, role playing, Coates and Jarratt)

Judgmental techniques are the easiest to describe and probably the most common since what most people, even professional futurists, generally assert what they believe the future will or could be without much if any methodological support. As the name implies, judgmental techniques rely primarily on the judgment of the individual or group describing the future. While they may use information, analogy and reasoning in supporting their claim, pure judgmental techniques have none of the methodological scaffolding that appears in the other categories. Unaided judgment is probably used most often, but judgment aided with some technique also appears:

- Genius forecasting comes from Herman Kahn, the original scenarist, is also the archetypical genius forecaster. Blessed with high intelligence, an assertive personality and the research capabilities of the RAND Corporation, Kahn (1962) was the first person to encourage people to “think the unthinkable,” first about the consequences of nuclear war and then about every manner of future condition.
- Visualization is the use of relaxation and meditative techniques to quiet the analytical mind and allow more intuitive images of the future to surface. Individuals typically use a calming narrative, called an induction, to promote relaxation and gently direct the mind to different aspects of the future. Markley promoted such techniques, first with Harman at SRI in the 1970s and then by teaching and practicing the technique for 20 years at the University of Houston-Clear Lake (see Markley, 1988).
- Role playing is a form of group judgment. It puts a group of people into a future situation and asks them to act the same as those in that situation would. The original role-playing scenarios were the war games conducted by the USA and (probably) the Soviet militaries in the 1950s, simulating the tensions and negotiations leading to a nuclear attack. Today role playing is common in emergency preparedness and for those preparing for dangerous technical missions, such as pilots, astronauts or nuclear operators (see Jarva, 2000).
- Coates and Jarratt shared the scenario technique that they used in their highly successful consulting practice. It contains elements of more formal techniques described below, but it is basically a more complex, but straightforward form of judgmental forecast. Briefly, the steps involve identifying the domain and the time frame, identifying conditions or variables of concern in that domain, generating four to six scenario themes “that illustrate the most significant kinds of potential future developments,” estimating the value of the condition or variable under each theme, and, finally, writing the scenario (see Coates, 2000).

2. Baseline/expected (trend extrapolation, Manoa, systems scenarios, trend impact analysis)

The second category produces one and only one scenario, the expected or baseline future. We call this scenario the baseline because it is the foundation of all the alternative scenarios. Futurists often discount the expected future because it rarely occurs in its full form. In fact, they make their living pointing out that surprising developments are common and are, in fact, more likely than the expected. Herman Kahn reportedly captured this principle in his often-quoted phrase, “The most likely future isn’t.”

Nevertheless, the expected future is a plausible future state, and so the description of this state qualifies as a scenario. In fact, it is the most plausible scenario of all because, even though surprises will surely change the future in some ways, it will not change it in all ways. In fact, one of the most surprising developments to futurists, steeped in change and uncertainty, is that things do not often change as fast or as surprisingly as they anticipate. One who takes stock of the world today must admit that it is more like the world of the 1950s than futurists expected, despite the appearance of nuclear power, spaceflight, cell phones and the internet.

The modal technique in this category is simply to measure existing trends and extrapolate their effects into the future. One can do this by judgment or, if empirical data is available, by mathematical techniques. Next to pure judgment, trend extrapolation is the most common

scenario technique – more people, more cars, more computers, more wealth, more liberties, etc. In fact, Kahn (1979) made the rather outlandish claim that he had identified the 15 trends that he believed drove most of human history. His multifold trends included such undeniable trends as the accumulation of scientific and technical knowledge, the greater military capability of developed nations and the growing dominance of Western culture throughout the world. Though surprises are perhaps inevitable, most trends will describe most of the future into the medium or even the long term.

We have identified two variations on trend extrapolation, one that elaborates the baseline scenario using futures techniques and one that adjusts it given the occurrence of potential future events:

1. The Manoa technique was invented by Wendy Schultz and other students at the University of Hawaii at Manoa while studying with Jim Dator. It is a concatenation of futures techniques to explore the implications and interconnections among trends. The technique requires an individual or group to work with three strong, nearly indisputable trends. Those trends are elaborated in two ways. The first way is to discover the implications of each of the trends separately using a futures wheel. (A futures wheel is essentially a mind-map where each trend forms the center and successive levels of implications are brainstormed from that.) The second way is to discover the interactions among the three trends using a qualitative cross-impact matrix. (A cross-matrix is a square matrix, in this case with one row and column for each trend. The cells are filled with the impacts or effects of one trend (the row) on another (the column).) After these exercises, individuals are left with a rich store of material from which they can answer specific questions about this future or even write a complete scenario. Schultz used this technique with the Hawaii Services Council in 1993 (see Schultz, 1993).
2. Two of Dr Schultz's students, Sandra Burchsted and Christian Crews, also developed a variation of the Manoa technique that they call Systemic Scenarios (Burchsted and Crews, 2003). Rather than use the cross-impact matrix as a way to identify the interactions among the trends, they show the relationships among the implications from different trends using a causal model which shows the dynamic interactions among the implications and hence the trends (see Burchsted and Crews, 2003).

3. *Elaboration of fixed scenarios (incasting, SRI)*

The third category begins the explicit consideration of multiple scenarios. Most scenario techniques develop the scenarios from scratch, but these begin with scenarios that are decided ahead of time. The intention then is to elaborate the scenario logic or kernel, the simplest statement of what the scenario is about. The advantage is that participants do not have to struggle with the uncertainties of the future. All they have to do is articulate the implications of given alternative futures:

- Incasting is a simple matter of having participants divide into small groups and read a paragraph that describes a rather extreme version of an alternative future. Examples would be a green future, a high-tech one, or one dominated by multi-national corporations. They are then asked to describe the impacts on a series of domains, such as law, politics, family life, entertainment, education, work, etc. One interesting variation during the debrief is not to tell the other participants the nature of the underlying scenario, but rather have them guess what is from its effects. Incasting is a good technique to illustrate how the world could be different given paths that the world could take (see Schultz, n.d.a, b).
- The SRI matrix was one of the first explicit scenario techniques following Kahn's introduction of genius forecasting and trend extrapolation. It was developed at the Stanford Research Institute (now SRI) and used by Hawken *et al.* (1982) in their late 1970s book *Seven Tomorrows*. The SRI technique also begins with a fixed number of scenarios, usually four, but they are not expressed as paragraphs. The scenarios are identified as titles to columns in a matrix, such as the expected future, the worst case, the best case, and a highly different alternative. The titles vary by practitioner and by engagement. The

dimensions of the world are then listed in the rows, such as population, environment, technology, etc., or other domains that are more specific to the engagement. Participants then fill in the cells with the state of that domain in that scenario. The whole scenario is elaborated in each column, and the differences for a specific domain across the scenarios are elaborated in each row (see Hawken *et al.*, 1982).

4. Event sequences (probability trees, sociovision, divergence mapping)

Most people think of the past as a series of events, in one's life or in history. So we can think of the future that way too, except that we do not know which events will occur and which ones will not. Each event then has a probability of occurrence. If a potential event happens, the future goes one way; if not, then another. The future branches at each of those points depending on whether the event occurs or does not. In fact, more than one thing can happen in which case the future has three paths from that point. String a number of those branches together, and one has a probability tree. Two variations of probability trees were discovered: one uses the branches to create scenario themes and the other builds the sequences after developing the events (Lisewski, 2002; Buckley and Dudley, 1999; Covaliu and Oliver, 1995):

- Probability tree has the same form as a decision tree, except the branches in a decision tree are not what could happen, but what decisions we will make at each branch. The tree ends at different future conditions depending on the path. And if one knows the probability of each branch, one can calculate the probability of arriving at that final state as the product of the probabilities of the branches that occurred along the way. Those probabilities sum to 100 per cent since one of them is bound to occur. Probability trees are used in risk management, particularly when risk managers and planners have to assess the probability of multiple risks happening in the same time frame. The Eidos tool suite from the Parmenides Foundation (formerly ThinkTools) contains a tool for building and evaluating probability trees.
- Sociovision begins with a standard probability tree. Examining the tree, however, may reveal certain branches that have a common character. Perhaps many of them are less likely or more preferred, or they may be driven by one particular stakeholder or condition. Gathering those branches together creates a coherent scenario of how the future might develop, complete with the events that make up the story. The probability tree then acts as an input that reveals some overall macro themes that might not be apparent to the participants at the beginning (see De Vries, 2001).
- Divergence mapping was described by Harman (1976) in his book *An Incomplete Guide to the Future*. It consists of brainstorming a set of events that could change the future. His "map" allows for up to 22 of those events, but more are clearly possible. These events are arrayed in a fan-life structure with four arcs, each of which represents a longer time horizon. Events from earlier time horizons are then linked with later ones in a plausible sequence that forms the storyline of a scenario (see Harman, 1976).

5. Backcasting (horizon mission methodology, Impact of Future Technologies, future mapping)

Most people think of the future as extending from the present, a natural extension of the timeline running from the past and through the present. But that perspective has its disadvantages, chief among which is the future then carries all the "baggage" of the past and the present with it into the future. The baggage limits creativity and might create futures that are too safe, not as bold as the actual future turns out to be.

An antidote to carrying too much baggage is to leap out into the future, jab a stake in the ground, and then work backward on how we might get there. The first step then is to envision a future state at the time horizon. It can be plausible or fantastical, preferred or catastrophic; but having established that state as a beachhead, it is easier to "connect the dots" from the present to the future (or back again) than it is to imagine the events leading to an unknown future. The technique is "backcasting," (Robinson, 1990) as opposed to "forecasting," for obvious reasons:

- *Horizon mission methodology (HMM)*. One of the most well-known and purest forms of backcasting was developed by the late John Anderson at the National Aeronautics and Space Administration (NASA). Anderson's technique was designed to help NASA engineers decide on R&D pathways that might yield some return. Forecasting from the present, engineers were often bound by their disciplinary backgrounds to recommend incremental rather than breakthrough research. To counteract that tendency, Anderson first had engineers envision a fantastical mission (a horizon mission), one that was completely infeasible given today's technology. A favorite of his was a one-day mission to Jupiter. That trip today would take several months by the fastest route using the most powerful rockets. So a one-day trip was fantastical indeed. Having overcome the "giggle factor," Anderson then asked the engineers to "decompose" that mission into its component parts. In other words, "Supposing that such a mission had actually taken place, what technologies would be required?" Given the components of the mission, he then asked them to decompose each of those components using the same question, "What technologies would it require?" Arriving at the present, engineers found that they had some near-term R&D opportunities that might not get them to Jupiter in a day, but they might create other breakthroughs in space exploration. Working backward got them out of the present and into the future in a big way! (See Hojer and Mattsson (1999).)
- *Impact of Future Technologies*. The IBM Corporation has developed and is now marketing a backcasting technique for the same purpose – making investment decisions in future R&D technology. The technique, called the Impact of Future Technologies (IoFT), begins at the same place that Anderson's does with a highly capable vision of the future. IoFT differs from HMM, however, in starting from multiple elaborated scenarios of the future rather than just one simple mission. Working backward from those scenarios, a team of knowledgeable scientists identifies signposts that are defined as scientific or technological breakthroughs that would be required for one or more of the scenarios to come true. IBM does not recommend that the client work to create the breakthroughs because they are so massive that even the most capable client would contribute little to their occurrence. What is more, breakthroughs are by definition unpredictable, particularly when they will occur, so that they recommend rather that the client monitor for the occurrence of the breakthrough and then deploy a contingent strategy during a subsequent window of opportunity for exploiting the capabilities of the breakthrough (see Strong, 2006).
- *Future mapping*. This was developed by David Mason of Northeast Consulting. It is a variant of the pre-defined scenario technique in which he pre-defined, not only the end-states, but also the events leading up to them. Participant teams then select and arrange the events that lead to each end-state. The technique offers participants a deeper understanding of how events can interact to create different futures and how different end-states can occur from the same set of events. (see Mason, 2003).

6. Dimensions of uncertainty (*morphological analysis, field anomaly relaxation, GBN, MORPHOL, OS/SE*)

The reason for using scenarios in the first place is the uncertainty inherent in predictive forecasting. We never have all the information; theories of human behavior are never as good as theories of physical phenomena, and finally we have to deal with systems in chaos and/or emergent states that are inherently unpredictable. Scenarios in this section, then, are constructed by first identifying specific sources of uncertainty and using those as the basis for alternative futures, depending on how the uncertainties play out:

- GBN matrix has become the default scenario technique since Schwartz (1991) published his best-seller, *The Art of the Long View*. The matrix is based on two dimensions of uncertainty or polarities. The four cells represent alternatively the four combinations of the poles of the two uncertainties, each of which contains a kernel or logic of a plausible future. Each kernel is then elaborated into a complete story or other presentation, and the implications for the focal issue or decision are discussed.

- Morphological analysis (MA), field anomaly relaxation (FAR) are more traditional versions of the same technique. The difference is that they contain any number of uncertainties and any number of alternative states for each uncertainty so that GBN is actually a subset of MA/FAR. The uncertainties are portrayed as a set of columns in which each column represents a dimension of uncertainty and contains any number of alternatives. One creates a scenario kernel/logic from the MA/FAR layout by picking one alternative from each column. Of course, that is easier said than done because a standard layout with five dimensions of uncertainty, each with three alternatives, generates 3^5 or almost 250 different scenario kernels. While MA and FAR are more complicated and hence less common, they do overcome the difficulty that it is devilishly hard to capture the uncertainties of the future in just two dimensions (see Coyle, 2003; Coyle *et al.*, 1994; Duczynski, 2000; Eriksson and Ritchey, 2002; Rhyne, 1974, 1981, 1995)
- Option Development and Option Evaluation (OS/OE) is part of the Eidos tool set distributed by the Parmenides Foundation that manages the complexity of morphological analysis. Option Development is the program that lays out the dimensions of uncertainty and the alternatives associated with each one. Open Evaluation uses a compatibility matrix of all the alternatives against all the other alternatives to calculate the consistency of each combination of alternatives. The program then ranks them according to their consistency.
- MORPHOL is a computer program that also manages the complexity of morphological analysis. Developed by Michel Godet, a prominent futurist in Europe, MORPHOL performs the standard morphological analysis, but it then reduces the total number of combinations based on user-defined exclusions (impossible combinations) and preferences (more likely combinations). It also provides an indicator of the probability of each scenario compared to the mean probability of all scenario sets based on the user-defined joint probability of each of the alternatives in the set (see Godet and Roubelat, 1996).

7. Cross-impact analysis (SMIC PROF-EXPERT, IFS)

One objective of identifying various future conditions, events and even whole scenarios is not just to identify their characteristics and implications, but also actually to calculate their relative probabilities of occurrence. One can judge the single probability of a condition or an event using judgmental means. But the more people making the judgment and the more expert they are, presumably the better their collective judgment will be.

Most analysts, however, are keenly aware that the probability of any one event is, to some extent, contingent on the occurrence of other events. Placing these events in a square matrix with each condition or event occupying one row and one column, one can display, not only the initial probability assigned to a condition or event, but also the conditional probabilities of the condition or event given the occurrence of any other condition or event. Using these estimates, a random number between 0 and 1 is chosen. Events with a probability above that number are said to occur; those below are not. The probabilities of all events then adjusted (up or down) based on the contingent probabilities in the matrix. Running the matrix many times produces a distribution of probabilities for each that can be used to estimate the probability of that event given the possible occurrence of the other events.

The most well-known use of cross-impact analysis was a program conducted called INTERAX, conducted by Enzer (1981) at the University of Southern California. Enzer constructed a cross-impact matrix of many global trends and potential events that participants would discuss at an annual workshop:

- SMIC-PROB-EXPERT is a cross-impact analysis developed by Michel Godet with an important variation. The cross-impact matrix of conditional probabilities is constructed by experts, but their estimates often do not conform to the laws of probability, such as $P(x)$ must equal $P(x|y) \cdot P(y) + P(x|\sim y) \cdot P(\sim y)$. SMIC adjusts the probabilities suggested by the experts so they conform to such laws. The PROB-EXPERT portion of this technique creates a hierarchical rank of scenarios based on their probability. Finally, it allows one to draw diagrams of clusters of scenarios and experts, showing which scenarios are most

alike, which experts judged the probabilities most alike and even which scenarios are most favored by which experts (see Godet *et al.*, 2003).

- Interactive future simulation (IFS) was developed at the Battelle Memorial Institute to calculate the quantitative conditions associated with different scenarios. IFS begins with a set of variables, called Descriptors, that are important for understanding the future rather than with events or binary conditions as the other techniques do. It divides the range of each variable into three alternatives – high, medium and low – and assigns an initial probability to each of those alternatives. It then constructs a cross-impact matrix in which the cells are the influence of each alternative on each other alternative on a scale from – 2 to +2. A Monte Carlo simulation runs the impacts many times over generating different combinations of scenarios with different frequencies of occurrence. The final probability of each of the alternatives (the ranges of the target variables) is then calculated based on the number of times that that alternative appears in the scenario combinations generated (see www.battelle.org).

8. Modeling (trend impact analysis, sensitivity analysis, dynamic scenarios)

Systems models are used primarily for baseline forecasting – i.e. predicting the expected future. Based on equations that relate the effects of some variables on others, the output is usually the expected value of target variables at the time horizon or graphs that show the change of those variables between the present and the time horizon. But any technique that can generate a single-valued prediction of the future can also produce scenarios by varying the inputs and/or the structure of the models that generate the prediction:

1. Trend impact analysis (TIA) is a method for adjusting the baseline trend given the occurrence of a potential future event. TIA was invented by Ted Gordon at The Futures Group. It involves a trend and a potential event that acts to perturb the original trend trajectory. Three different points of impact are identified and estimated – time to first noticeable impact (when the trend first departs from its original trajectory), time to maximum impact (when the trend is farthest from its original values), and time to steady-state or constant impact (when the effect of the event is fully integrated into the trajectory of the trend). The size of the maximum and steady-state impacts are also estimated. A new trend line is then calculated (an alternative scenario) and compared to the original baseline trajectory. TIA has been used by the Federal Aviation Administration, Federal Bureau of Investigation, Joint Chiefs of Staff, National Science Foundation, Department of Energy, Department of Transportation, the State of California, and other US agencies (see Gordon, 2003a, b).
2. Sensitivity analysis varies one of the three parts of a systems model that can be varied:
 - *The value of exogenous variables that drive model.* Exogenous variables, also called boundary conditions, influence other variables in the model, but they are not themselves influenced by those variables. In other words, they are set outside the model, in the model's environment. The interest rate set by the Federal Reserve and the tax rate set by the Congress are typical exogenous variables to the models of the US economy. One can vary each or both to see how they affect output variables like GDP or employment. The analysis then measures how "sensitive" the model is to changes in the boundary conditions. Each of those variations is a scenario.
 - *The parameters that define the effect of variables on one another.* The equations in the models that define future values of dependent variables (Y) are constructed from independent variables (X) adjusted by a coefficients (b) in the form, $Y = a + bX$. The value of the coefficient is based on the historical relationship of X and Y . But there is considerable uncertainty, even for the most well-supported coefficients. What is more, the value of the coefficient can change completely if the historical relation between X and Y changes. So one can vary parameters in the model to define different scenarios.
 - *The variables in the model itself.* Models consist of variables that represent the real world, but the choice of variables to include in the model is also a matter of some dispute. One can vary the actual structure of the model and its equations by adding or

removing variables to see the effects on the output variables. So each of these changes can produce alternative descriptions of the future – i.e. scenarios (see Saltelli, 2004)

3. Dynamic scenarios are a combination of scenario development and systems analysis, in that order. The first step is the ordinary process of generating scenario themes or kernels by clustering events of a similar type from a brainstormed universe of all plausible future events. Each of those themes then defined a system which is mapped using causal models. The variables that appeared in many different models were brought together in a meta-model that purported to map the whole domain. The individual themes were then elaborated using different values for the uncertainties in those models (see Ward and Schriefer, 2003).

Observations and evaluation

Having described the techniques individually, this section compares the scenario techniques with each other. Table III compares the starting point, process, and products of the different scenario techniques:

- The starting points range from completely open to beginning with draft scenario logics. The open approaches begin with an environmental scanning process to produce the raw material that will be crafted into scenario logics. The other extreme is to begin with scenario logics and either elaborate or customize them in order to explore their implications. In between are techniques that begin either with the dominant driving trends or with key uncertainties.
- The processes summarize how the methods are actually carried out. As expected, here is where we see the greatest distinctions among techniques. It is what separates one from another.
- Products also vary by technique. Most techniques produce different numbers of scenarios. Most produce kernels or logics; others produce probabilities of different alternative conditions, and still others produce elaborated stories or end-state descriptions. The common approach of about 20 years ago of producing best case, worst case, and a middle version is no longer used today. The problem with this approach is that clients almost always selected the middle ground, and were thus losing out on the value of expanding their thinking to consider a broader range of futures possibilities.

As described in the confusions above, however, some of the products are scenarios, but not stories about the future in the narrow sense. These range from probabilities of end states to adjusted trend values to ideas for investment strategies.

Table IV summarizes the attributes of the techniques, including their basis, perspective, whether done by a group or with a computer, and an estimate of the difficulty in carrying it out:

- The two bases are judgment and quantification. It should be noted that in some cases, such as with cross-impact matrices and IFS, the quantification is simply putting a number on expert judgment. It is safe to argue that judgment is clearly the primary basis for most scenario techniques.
- Perspective has to do with whether the technique begins from the present and moves forward into the future or starts from the future and works backward to the present. The vast majority of the techniques start from the present and work forward. It is perhaps easier for clients to work this way, and thus it is more popular. It may also tend to produce more conventional scenarios than working backward, which takes a leap of intuition to begin with the unknown future rather than the known present.
- The only technique that is not used in groups is the genius forecast, which of course relies on the genius to produce it. The others can be used by groups, with some specifically designed for that. It is safe to say that scenario development is primarily a group technique.

Table III Comparing starting points, process and products of the scenario techniques

<i>Technique</i>	<i>Starting point</i>	<i>Process</i>	<i>Products</i>
<i>1. Judgment</i>			
Genius	Personal information	Thinking, imagining	One or more scenarios
Visualization	Personal information, unconscious ideas, values	Relaxation, stimulation of imagination	One or more scenarios
Role playing	Personal information, unconscious ideas, values	Act out one or more pre-arranged conditions	One or more scenarios
Coates and Jarratt	Personal or team information	Define domain and time horizon, identify conditions or variables of interest, develop scenario themes, estimate values of conditions and variables under each scenario theme, write the scenarios	Four to six scenarios
<i>2. Baseline</i>			
Manoa	Dominant trends	Implications, cross-impacts, elaboration	Elaborated baseline scenario
<i>3. Elaboration of fixed scenarios</i>			
Incasting	Multiple scenario logics	Elaboration on specific domains	Elaboration of multiple scenarios
SRI	Multiple scenario logics	Specific domains in rows	Elaboration of multiple scenarios in specific domains
<i>4. Event sequences</i>			
Probability trees	Branching uncertainty or choice points	Sequence, assign probabilities	Probability of end states
Sociovision	Branching uncertainty or choice points	Cluster similar alternatives into macro themes	Multiple scenarios
Divergence mapping	Multiple potential events	Place on one of four time horizons, link events in sequence	Multiple future histories
Future mapping	Multiple end states, many potential events	Sequence events to create end state	Future history
<i>5. Backcasting</i>			
Backcasting, horizon mission methodology	One or more end states, can even be fantastical	Steps that could lead to that end-state	Ideas for near-term work or investment
Impact of future technologies	Technology themes	Highly capable scenarios, signposts leading to scenario, cost/benefit	Contingent strategies to pursue given the occurrence of signposts
<i>6. Dimensions of uncertainty</i>			
Morphological analysis, field anomaly relaxation	Dimensions of uncertainty	Multiple alternatives for each dimension, link one alternative from each dimension	Multiple end states as combinations of one alternative from each dimension
GBN	Driving forces, two dimensions of uncertainty	Select two most important and most uncertain, create 2 × 2 matrix, title and elaborate	Four mutually exclusive scenarios
Option development and evaluation	Dimensions of uncertainty	Multiple alternatives for each dimension, rate consistency of every alternative against every other alternative, perform nearest neighbour calculation	Ranking of combinations of alternatives from most to least consistent
MORPHOL	Dimensions of uncertainty	Multiple alternatives for each dimension, link one alternative from each dimension, excluding impossible combinations and rating more likely combinations more highly; can calculate probability of combination of probabilities of	Multiple end states as combinations of one alternative from each dimension, based on exclusions and likelihood of pairs of alternatives; can calculate probability of combination of probabilities of alternatives are known

(Continued)

Table III

<i>Technique</i>	<i>Starting point</i>	<i>Process</i>	<i>Products</i>
<i>7. Cross-impact analysis</i>			
Cross-impact analysis	Potential future events or end states	Initial probability of each, contingent probabilities of each given the occurrence of each other, Monte Carlo simulation	Final probabilities of each event or end state
IFS	Variables of future ends states	High, medium, low values of the variables, initial probability of each range, cross-impact of ranges from different variables on each other, Monte Carlo simulation	Final probabilities of each range of each variable
SMIC PROB-EXPERT	Potential future events or end states	Initial probability of each, contingent probabilities of each given the occurrence of each other, correction of contingent probabilities for consistency, Monte Carlo simulation	Final probabilities of each event or end state
<i>8. Modelling</i>			
Trend impact analysis	Trend, one or more potential future events	Estimate impact of event on trend – time of initial impact, max impact, time of max impact, time of final impact	Adjusted trend values
Sensitivity analysis	Systems model with boundary conditions	Enter multiple plausible values for each uncertain boundary condition, possibly Monte Carlo simulation	Range of plausible outcome variable
Dynamic scenarios	Dimensions of uncertainty	Build system model for each dimension, combine into one overall model	Dynamic behavior associated with each scenario

Table IV Attributes of the scenario techniques

<i>Technique</i>	<i>Basis</i>	<i>Perspective</i>	<i>Group</i>	<i>Computer</i>	<i>Difficulty 1-4 (4 hardest)</i>
Genius	Judgment	Forward	No	No	1.2
Visualization	Judgment	Forward	Optional	No	2.3
Role playing	Judgment	Forward	Required	No	2.2
Coates	Judgment	Forward	Optional	No	2.3
Manoa	Judgment	Forward	Optional	No	2.2
Incasting	Judgment	Forward	Recommended	No	2.5
SRI	Judgment	Forward	Optional	No	2.3
Probability trees	Quantification	Forward	Optional	Optional	2.5
Sociovision	Judgment	Forward	Optional	No	2.6
Divergence mapping	Judgment	Forward	Optional	No	2.2
Future mapping	Judgment	Backward	Optional	No	2.6
Impact of future technologies	Judgment	Backward	Optional	No	2.8
Backcasting, horizon mission methodology	Judgment	Backward	Optional	No	2.3
Morphological analysis, field anomaly relaxation	Judgment	Forward	Optional	No	2.3
GBN	Judgment	Forward	Optional	No	2.6
Option development and evaluation	Quantification	Forward	Optional	Required	3.0
MORPHOL	Quantification	Forward	Optional	Required	2.5
Cross-impact analysis	Quantification	Forward	Optional	No	2.5
IFS	Quantification	Forward	Optional	No	2.8
SMIC PROB-EXPERT	Quantification	Forward	Optional	No	2.3
Trend impact analysis	Quantification	Forward	Optional	Optional	2.5
Sensitivity analysis	Quantification	Forward	Optional	Required	3.3
Dynamic scenarios	Judgment	Forward	Optional	Optional	2.8

Table V Advantages and disadvantages of the scenario techniques

<i>Technique</i>	<i>Advantages</i>	<i>Disadvantages</i>
1. Judgment (Genius, visualization, sociodrama, Coates and Jarratt)	Easy to do Taps into intuitive understanding of the future Genius, Coates and Jarratt – requires no special training or preparation Visualization, sociodrama – can lead to novel insights and revelations	Difficult to do well Opaque, not transparent Genius, Coates and Jarratt – relies on the credibility of the individual Visualization, sociodrama – requires some training and experience to do well; clients may resist relaxation or dramatic techniques
2. Baseline (Trend extrapolation, Manoa, systems scenarios, trend impact analysis)	Easiest for client/audience to accept because generally expected already Manoa – highly elaborated, creative, lots of detail Systems scenarios – shows dynamic relationships among scenario elements Trend impact – links events with trends	No alternative scenarios proposed Manoa, systems scenarios – futures wheel, cross-impact, and causal models require some training and experience to do well Trend impact – requires judgment to estimate impacts, best done with group of experts, perhaps using Delphi
3. Elaboration of fixed scenarios (Incasting, SRI matrix)	Easiest for client/audience participation because scenario kernels/logics are done for them Provides in-depth elaboration of alternative scenarios	Generic scenario kernels/logics might not be relevant to client/audience; therefore less buy-in SRI Matrix – many have an intuitive sense of the best-case and worst-case scenarios already; filling in the cells of the matrix with many rows (domains) might become tedious
4. Event sequences (Probability trees, sociovision, divergence mapping, future mapping)	Tells the story in the usual way, as a series of events If probabilities at each branch point are known, can calculate the probability of end-states	Probability trees, sociovision – events/branch points usually do not follow each other in a fixed sequence Divergence mapping – events are not always easy to classify according to time horizon Future mapping – pre-defined end-states and events might not be relevant to the client/audience
5. Backcasting (Horizon mission methodology, impact of future technologies)	Creative because it decreases the tendency to extrapolate the future based on the past and the present; therefore can provide new insights Also results in a sequence of events or breakthroughs	Fantastical nature of the mission or end-state might reduce buy-in for client/audience Impact of Future Technologies – process for developing signposts and recommendations still opaque
6. Dimensions of uncertainty (Morphological analysis, field anomaly relaxation, GBN, option development and option evaluation, MORPHOL)	Best for considering alternative futures as a function of known uncertainties GBN – the right mix of technical sophistication and ease of use for a professional audience OD/OE – allows for the calculation of consistency among different combinations of alternatives (scenarios) MORPHOL – allows for the reduction of scenario combinations by the exclusion and likelihood of some pairs of alternatives; also allows for calculating the probabilities of different scenarios if the probabilities of the alternatives are known	Less creative because may not consider some novel developments that are not currently considered uncertain GBN – almost impossible to fully characterize the uncertainties of the future with just two dimensions OD/OE, MORPHOL – almost impossible to make valid estimates of the compatibility or influence of all alternatives against all other alternatives
7. Cross-impact analysis (IFS, SMIC-PROB-EXPERT)	Calculates the final probabilities of alternatives or end-states based on rigorous mathematical procedure SMIC – adjusts the matrix of conditional probabilities for consistency with the laws of probability IFS – allows for quantitative analysis of alternative future values of important variables	Almost impossible to validly estimate the conditional probabilities or impacts of all alternatives against the others
8. Systems modeling (Sensitivity analysis, dynamic scenarios)	Creates the best quantitative representation of continuous variables that describe the future state	Difficult to validate the models without complete historical data

- It is interesting to note that most techniques do not use computers to carry them out. Just a few of the quantitative methods rely on computers. It is perhaps an area of future opportunity to make greater use of software in crafting scenarios.
- The three authors ranked the difficulty in learning to do the technique and the difficulty in carrying it out well. We used a scale of 1 to 4, with one being easiest and four being most difficult. The number represents the average of the three author's combined judgments.

We initially included a column on whether the scenarios were designed for descriptive or normative approaches, with descriptive attempting to describe how the realm of possibilities, with normative focusing on how a preferred scenario could emerge. It turned out that each technique could be adapted for one or the other, although it is fair to say that most applications of scenarios in practice are descriptive rather than normative. A contributing factor is that the creation of normative futures most often is addressed through visioning techniques.

Table V summarizes the advantages and disadvantages of the techniques. It is intended to help both practitioners and clients choose techniques that best fit the situation. We are hoping to demonstrate that there is a wide range of available techniques and move beyond the situation today in which the very excellent GBN technique has come to dominate.

Conclusion

Scenario development is the heart of futures studies. It is a key technique that distinguishes the work of professional futurists from other professions who deal with the future. With its popularity, however, has come confusion about what exactly scenario development is, and how futurists actually produce scenarios. This catalog of scenario techniques is an attempt to lay some of that confusion to rest. We trust that it moves the discussion forward, but it does not end it by any means. In fact, we hope to be able to discuss scenario techniques in a new and more precise fashion. Eventually, we trust the field will settle on a consensus list that we can use to describe and improve our practice.

Notes

1. Thanks to the many members of the Association of Professional Futurists who participated in an online discussion of these confusions and offered suggestions for addressing them.
2. Many authors also used the term methodology in place of method. We are not going to use that term in this way since methodology, as we all know from the Greek, is the study of a method (or technique), not its application. So this article is a methodological study of scenario techniques, not a study of the scenario methodologies.

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How Accurate Are Your Forecasts? More Accurate than You Might Think

by Andy Hines

Futurists are frequently asked “How have your *predictions* turned out?” We quickly explain that we don’t make predictions, which are specific statements about whether something either will or won’t happen by a specific date. They are a yes-or-no proposition. Futurists, we say, prefer forecasting, which involves statements about the likelihood or probability of whether something will happen within a specified timeframe. Of course, if you make enough predictions, you’re bound to eventually get one right, owing to the laws of chance rather than any particular insight into the future. The predictor will often then complain that “I predicted xyz, and no one listened,” neglecting to mention that dozens of other predictions didn’t pan out. Most futurists would say “so what” to the argument of predictions made in a vacuum. Put another way, we avoid the fool’s gold of trying to make accurate predictions, but seek to inspire our clients to think and act differently about the future by offering “forecasts” instead.

Therefore, when a futurist is asked “How have your forecasts turned out?” the query is intended to get at how good or reliable we are as potential consultants — in short, what is our track record? Our first response is often to try and shift the conversation away from “accuracy of forecasts” as the standard by which to evaluate our work. We point out that forecasts are tools for stimulating thinking about the future. We explain that the future is so complex that trying to get it

right is futile. Rather, we seek to understand the range of possibilities and then monitor events as they unfold so as to determine in which direction the future seems to be unfolding. This sometimes satisfies the client, but often leads to a more polite restatement: “I understand, but could you tell us anyway?”

One might suspect that futurists ought to have no difficulty answering this question. But for several reasons, this is not the case. Per our attempts at redirection noted above, we often make forecasts as merely one way among many to indicate a broad range of possibilities, not meaning to imply that any single method is necessarily accurate. Second, our forecasts are often proprietary to the client and cannot be publicly revealed. Third, the passage of time makes many prior forecasts obsolete due to changing conditions — thus there is little incentive to go back and reexamine old forecasts. The fact is, clients act — or fail to act — on a forecast at about the time when it is made, so in a sense it doesn’t matter how the forecast turns out in the long run. For all these reasons, futurists often lack credible responses to the accuracy question.

Introducing the Forecasts

Clients do occasionally ask for our most probable or best-guess forecast, and this provides us the best avenue to address the accuracy question. For the purposes of this article I’ll use one

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of these from 1997: *2025: Scenarios of US and Global Society as Reshaped by Science and Technology*, spearheaded by Joseph Coates and assisted by John Mahaffie and myself. This book grew out of a three-year project exploring the future of science and technology, sponsored by 18 large organizations. The clients understood the principles of a range of forecasts, but nonetheless insisted that we “take our best shot” in describing how the year 2025 might look through the lens of science and technology. The goal for this project was to provide a set of ideas and concepts that would challenge our clients to think differently about the long-term prospects of science and technology in order to influence the R&D decisions they would be making in the present and near future.

The forecasts were presented as underlying assumptions that framed or provided the context for our specific forecasts for science and technology in the year 2025. These assumptions about the context of 2025 were grouped into the following eight categories:

1. Managing our world.
2. Managing human health.
3. Managing environment and resources.
4. Automation and infotech.
5. Population trends.
6. Worldwide tensions.
7. The electronic global village.
8. Public issues and values.

All of these assumptions are, in effect, forecasts. They were crafted as “highly probable statements about the future, forming a framework around which less certain ideas can be tested” (1997). In other words, to create science and technology forecasts for the year 2025, we first had to create a forecast of what the context would look like. The team originally came up with 83 of these highly probable assumptions or forecasts, and later added a set of 24 “additional, but slightly less probable” ones to get at more speculative possibilities in order to further stretch the clients’ thinking.

Evaluating the Individual

107 Forecasts

The evaluation of how these 107 forecasts are tracking today — roughly 15 years later — uses the following five-point scale:

1= **already happening**

2= **coming soon** — closer to today than 2025

3= **needs a boost** — not currently tracking, but still plausible

4 and 5 = **on track** are grouped together

Managing Our World

1. Movement toward a totally managed environment will be substantially advanced at national and global levels. Oceans, forests, grasslands, and water supplies will make up major areas of the managed environment. Macroengineering — planetary-scale civil works — will make up another element of that managed environment. Finally, the more traditional business and industrial infrastructure — telecommunications, manufacturing facilities, and so on — will be a part of managed systems and subsystems. Note that total management does not imply full understanding of what is managed. But expanding knowledge will make this management practical. Total management also does not imply total control over these systems.

Needs a boost: The George W. Bush administration slowed, if not reversed, a trend toward greater global cooperation, but there is still progress in this direction. Kyoto, for all its troubles, was signed, albeit without U.S. participation. There is still more talk and plans than action on global cooperation. A third cause for concern is the state of macroengineering. We haven’t seen much progress here, and there have been growing questions about whether this is a desirable strategy.

2. Everything will be smart — that is, responsive to its external or internal environment. This

will be achieved either by embedding microprocessors and associated sensors in physical devices and systems or by creating materials that are responsive to physical variables such as light, heat, noise, odors, and electromagnetic fields, or by a combination of these two strategies.

On track: There has been a lot of progress in sensing, but still plenty of work to do in terms of integrating it into smart systems — but this seems quite achievable by 2025.

Managing Human Health

3. All human diseases and disorders will have their linkages, if any, to the human genome identified. For many diseases and disorders, the intermediate biochemical processes that lead to the expression of the disease or disorder and its interactions with a person's environment and personal history will also be thoroughly explored.

On track: Substantial progress has been made in identifying the linkages, but there is still a way to go on the second aspect involving all the connections and interplay. This second element is turning out to be more complex than initially anticipated, but it still seems plausible that they will be “fully explored” by 2025.

4. In several parts of the world, the understanding of human genetics will lead to explicit programs to enhance people's overall physical and mental abilities — not just to prevent diseases.

On track: Tough call here. There is clearly a lot of discussion in the media about performance enhancement, but not at the level of genetic performance enhancement. It probably requires more sophisticated understanding of genetics, which is likely to emerge, and thus it is still plausible that attempts will be made in this area by 2025.

5. The chemical, physiological, and genetic bases of human behavior will be generally understood. Direct, targeted interventions for disease control and individual human enhancement will

be commonplace. Brain–mind manipulation technologies to control or influence emotions, learning, sensory acuity, memory, and other psychological states will be in widespread use.

Needs a boost: Approaching a tipping point here, as the discipline moves from understanding the structure of the brain to how it works. Early applications and experiments are emerging. “Needs a boost” is appropriate in terms of the interventions being commonplace, and manipulations being widespread, which does not appear imminent.

6. In-depth personal medical histories will be on record and under full control of the individual in a medical smart card or disk.

On track: The technology is already here, and the demand for control of medical history is growing. Political, organizational, and infrastructure issues abound and will keep this from happening sooner, but they seem resolvable by 2025.

7. More people in advanced countries will be living to their mid-80s while enjoying a healthier, fuller life.

On track: Progress in this direction is well under way, with 23 countries now possessing a life expectancy at birth of over 80.

8. Custom-designed drugs such as hormones and neurotransmitters (chemicals that control nerve impulses) will be as safe and effective as those produced naturally within humans or other animals.

Needs a boost: Tough call — human growth hormone is here, but evidence suggests that this area is going to be more complex than anticipated. Nature continues to amaze us with its complexity and surprises. Biological knowledge will need to ramp up faster for this to happen by 2025.

9. Prostheses (synthetic body parts or replacements) with more targeted drug treatments will lead to radical improvements for people who

are injured, impaired, or have otherwise degraded physical or physiological capabilities.

On track: Already seeing significant progress here. A case could be made for "coming soon," if the qualifier "radical" were replaced with "incremental."

Managing Environment And Resources

10. Scientists will work out the genome of prototypical plants and animals, including insects and microorganisms. This will lead to more-refined management, control, and manipulation of their health and propagation, or to their elimination.

On track: The inclusion of the qualifier "more-refined" in this forecast enables it to be rated "on track." Again, matters in the biological realm are turning out to be more complex than the team thought. There is an interesting, perhaps macabre, twist regarding "elimination." While that idea referred to pests, it may turn out that whatever traits a particular society judges to be undesirable might be targeted, and that an incomplete understanding in this realm could lead to unintended "eliminations."

11. New forms of microorganisms, plants, and animals will be commonplace due to advances in genetic engineering.

On track: This one seems to be on track, though more advanced with microorganisms and plants than with animals. It is difficult to characterize what constitutes a new form versus an enhancement. As with many of the biotechnology-based forecasts, there is a social dimension that could slow or stop the developments.

12. Foods for human consumption will be more diverse as a result of agricultural genetics. There will be substantially less animal protein in diets in advanced nations, compared with the present. A variety of factors will bring vegetari-

anism to the fore, including health, environmental, and ethical trends.

Needs a boost: A lesson the team perhaps neglected to learn from its exploration of technological forecasting from 1970-1993¹ was the routinely slow progress in the food arena. The forecasts of the 1990s looked much the same as those from the 1970s. Potential technical advances are slowed by social resistance to changes in food. Additionally, one could argue that genetics might have a better chance of reducing food diversity in the forecast period. The animal protein and vegetarian forecasts still have a chance, but progress to date has been slower than anticipated.

13. There will be synthetic and genetically manipulated foods to match each individual consumer's taste, nutritional needs, and medical status. Look for "extra-salty (artificial), low-cholesterol, cancer-busting French fries."

Needs a boost: The capabilities for a more tailored diet appear on track, but as noted in the analysis of Forecast 12 above, social acceptance is not there yet.

14. Farmers will use synthetic soils, designed to specification, for terrain restoration and to enhance indoor or outdoor agriculture.

On track: The unarticulated assumption underlying this forecast was that there would be a growing demand for agricultural land use that would in turn drive a need for restorative agriculture. This would in turn lead to greater use of synthetic soils. There is a lot packed into this one. Nonetheless, the emergence of the "land use" issue suggests this one is on track.

15. Genetically engineered microorganisms will do many things. In particular, they will be used in the production of some commodity chemicals as well as highly complex chemicals and medicines, vaccines, and drugs. They will be widely used in agriculture, mining, resource upgrading, waste management, and environmental cleanup.

On track: This one emphasizes industrial biotechnology, which is quietly making an impact. There is a lot more attention paid to health-related developments, and even agriculture-related applications, but industrial biotechnology continues to progress, albeit quietly.

16. There will be routine genetic programs for enhancing animals used for food production, recreation, and even pets. In less developed countries, work animals will be improved through these techniques.

Needs a boost: This strong interventionist approach will need a boost to become “routine” by 2025, and will have social issues to address along the way.

17. Remote sensing of the earth will lead to monitoring, assessment, and analysis of events and resources at and below the surface of land and sea. In many places, in situ sensor networks will assist in monitoring the environment. World-wide weather reporting will be routine, detailed, and reliable.

On track: Solid progress here. Interesting how Google Maps have really brought these capabilities to public notice and usage. It is perhaps risky, however, to suggest reliable weather reporting.

18. Many natural disasters, such as floods, earthquakes, and landslides, will be mitigated, controlled, or prevented.

Needs a boost: While prediction capabilities are on track, societies have not yet shown sufficient willingness to invest the dollars in mitigation, control, or prevention.

19. Per capita energy consumption in the advanced nations will be at 66% of per capita consumption in 1990.

On track: A tough call — if present trends continue, this will not happen by 2025. But clearly a sense of limits is emerging in public consciousness. Rising energy prices combined with ad-

vances in information technology could enable a conservation movement to bring this about. Thus, the stage appears to be set for significant change.

20. Per capita consumption in the rest of the world will be at 160% of per capita consumption in 1990.

On track: Paradoxically, in comparison with the previous forecast, present trends continued and this will happen. A key question is whether the conservation “turn” suggested above makes it to the emerging markets in time. Probably not.

21. Resource recovery along the lines of recycling, reclamation, and remanufacturing will be routine in all advanced nations. Extraction of virgin materials through mining, logging, and drilling will be dramatically reduced, saving energy and protecting the environment.

On track: Still a way to go to be routine, but steady progress here and a growing sense of limits suggest that more attention will be paid to resource management.

22. Restorative agriculture (i.e., “prescription” farming) will be routine. Farmers will design crops and employ more-sophisticated techniques to optimize climate, soil treatments, and plant types.

On track: Similar to #14 on the use of synthetic soils, the conditions promoting the need for this one are emerging, and thus this one can be judged to be “on track.”

Automation and Infotech

23. There will be a worldwide, broadband network of networks based on fiber optics; other techniques, such as communications satellites, cellular, and microwave, will be ancillary. Throughout the advanced nations and the middle class and prosperous crust of the developing world, face-to-face, voice-to-voice, person-to-data, and data-to-data communication will be available to any

place at anytime from anywhere.

Already happening.

24. Robots and other automated machinery will be commonplace inside and outside the factory, in agriculture, building and construction, undersea activities, space, mining, and elsewhere.

On track: Advances in robotics have been slow, steady, and almost quiet. After the hype about robotics failed to materialize in the past, there is perhaps reluctance in the media to get fooled again. But technical development has been proceeding and new applications continue to emerge.

25. There will be universal online surveys and voting in all the advanced nations. In some jurisdictions, this will include voting in elections for local and national leaders.

On track: The “hanging chads” in Florida hastened a move to electronic voting machines, laying the groundwork for online voting. Despite hiccups and protests, growing confidence in the online infrastructure positions this one well. Examples to keep in mind are all the similar concerns that were raised about e-commerce and online banking.

26. Ubiquitous availability of computers will facilitate automated control and make continuous performance monitoring and evaluations of physical systems routine.

On track: The capabilities are here, and it is just a matter of time for the applications to emerge. From a technical perspective, one could argue for “coming soon,” but social acceptance, particularly in the workplace, will likely push this out closer to 2025.

27. The ability to manipulate materials at the molecular or atomic level will allow manufacturers to customize materials for highly specific functions such as environmental sensing and information processing.

On track: Despite some exaggerated nano-hype, developments here are progressing and suggest this one is on track.

28. Totally automated factories will be common but not universal for a variety of reasons, including the cost and availability of technology and labor conflicts.

Needs a boost: The key word is “common.” They will likely be in existence, but it appears that there is plenty of “cheap labor” left to absorb in the emerging markets. While automation is likely to eventually be more cost-effective, it appears to be taking longer than anticipated. An interesting development to monitor here is whether a move to small-scale and local manufacturing will emerge within this timeframe.

29. Virtual-reality technologies will be commonplace for training and recreation and will be a routine part of simulation for all kinds of physical planning and product design.

On track: Virtual reality is another victim of hype. When the reality of VR turned out to be far less than the promise, it disappeared from the headlines. As with robotics, developments continue apace but outside the glare of the mainstream media.

30. In text and — to a lesser extent — in voice-to-voice telecommunication, language translation will be effective for many practically significant vocabularies.

On track: There has been significant progress in text translation, and some in voice. This one is close to “coming soon,” but that has been for a long time, and it hasn’t quite been able to get beyond the fringe.

31. Expert systems, a branch of artificial intelligence, will be developed to the point where the learning of machines, systems, and devices will mimic or surpass human learning. Certain low-level learning will evolve out of situations and experiences, as it does for infants. The toaster will

“know” that the person who likes white bread likes it toasted darker, and the person who chooses rye likes it light.

Needs a boost: Tough call. Low-level learning is on track, as is the ability to mimic human learning. The challenging word is “surpass,” which would “need a boost” for 2025. So, a split decision: mimic is on track, and surpass needs a boost, but to be on track requires both.

32. The fusion of telecommunications and computation will be complete. We will use a new vocabulary of communications as we televote, teleshop, telework, and tele-everything. We’ll e-mail, tube, or upload letters to Mom. We’ll go MUDing in cyberspace and mind our netiquette during virtual encounters.

Already happening.

33. Factory-manufactured housing will be the norm in advanced nations, with prefabricated modular units making housing more flexible and more attractive, as well as more affordable.

On track: Slow and steady progress here. This is another area that is always seemingly just around the corner.

34. In the design of many commercial products such as homes, furnishings, vehicles, and other articles of commerce, the customer will participate directly with the specialist in that product’s design.

Coming soon: Some of this is already happening, but it’s still more hype than reality. But clearly, it will be widespread closer to today than 2025.

35. New infrastructures throughout the world will be self-monitoring. Already, some bridges and coliseums have “tilt” sensors to gauge structural stress; magnetic-resonance imaging used in medical testing will also be used to non-invasively examine materials for early signs of damage so preventive maintenance can be employed.

On track: The challenge here is a general unwillingness to invest in infrastructure, but decay in affluent nations and development needs in the emerging market eventually turn the tide. Interestingly, the recession and the resulting stimulus packages could give this one a boost, but that is probably necessary to get this one on track for 2025.

36. Interactive vehicle–highway systems will be widespread, with tens of thousands of miles of highway either so equipped or about to be. Rather than reconstruct highways, engineers may retrofit them with the new technologies.

Needs a boost: Bits and pieces — isolated trials, emergence of GPS, and some early collision avoidance — are appearing here and there. On-board navigation systems are a positive step in this direction. But, as with #35, investing in infrastructure is not a political winner, and this requires a systems approach and infrastructure. Thus, developments lag, even with stimulus spending, which is likely to aim more at jobs than automation.

37. Robotic devices will be a routine part of the space program, effectively integrating with people. Besides the familiar robotic arm used on space shuttles, robots will run facilities in space operating autonomously where humans are too clumsy or too vulnerable to work effectively.

Coming soon: Some of this is already here, and current programs are heading in this direction.

38. Applied economics will lead to a greater dependency on mathematical models embodied in computers. These models will have expanded capabilities and will routinely integrate environmental and quality-of-life factors into economic calculations. One major problem will be how to measure the economic value of information and knowledge. A Nobel Prize will be granted to the economist who develops an effective theory of the

economics of information.

On track: While it may have looked like the laws of economics were about to be repealed during the dot-com boom, we've come back to earth and are still working out the economics of information. Data mining, micropayments, and other approaches will lead to lots of experimentation and trial-and-error, but progress seems likely on this front.

Population Trends

39. World population will be about 8.4 billion people.

Needs a boost: It appears that population growth is slowing faster than we anticipated. The most recent Census Bureau projections anticipate 8 billion people around 2025.

40. Family size will be below replacement rates in most advanced nations but well above replacement rates in the less-developed world.

Needs a boost: The UN has recently suggested that the globe will hit replacement level fertility by 2025. The forecast for below replacement in advanced nations is on target, but the less-developed world is reducing fertility rates faster than anticipated.

41. Birth control technologies will be universally accepted and widely employed, including a market for descendants of RU-486.

On track: Progress in slowing population growth suggests this is in play—though not the only factor. The component about the descendants of RU-486 is less clear, as it has diffused slower than expected due to political and social objections.

42. World population will divide into three tiers: at the top, World 1, made up of advanced nations and the world's middle classes living in prosperity analogous to Germany, the United States, and Japan; at the bottom, World 3, people living in destitution; and in the middle, World 2,

a vast range of people living comfortably but not extravagantly in the context of their culture. We use the terms World 1, World 2, and World 3 for the emerging pattern of nations that moves us beyond the post-World War II nomenclature.

On track: This taxonomy has proved useful in our work with clients. One could make a case for splitting World 2 into fast-growing and stable "worlds," as there are pretty significant differences between the some of the fast-growing Asian nations and the slower-growing nations of Latin America. Our firm has also added "World Zero" to account for the rapid growth of the virtual world.

43. The population of World 1's advanced nations will be older, with a median age of 42.

On track: The aging of World 1 is proceeding as anticipated.

44. The less-developed Worlds 2 and 3 will be substantially younger but will have made spotty but significant progress in reducing birthrates. However, the populations of these countries will not stop growing until sometime after 2025.

Needs a boost: As suggested in #39 and #40 above, the progress has been more significant than spotty, and it looks like the rates will need to accelerate again for the forecast to be on track.

45. The majority of the world's population will be metropolitan, including people living in satellite cities clustered around metropolitan centers.

Coming soon: The world just recently passed the 50% urban mark, and urbanization continues to grow.

46. A worldwide middle class will emerge. Its growth in World 2 and to a lesser extent in World 3 will be a powerful force for political and economic stability and for some forms of democracy.

On target: The global middle class is certainly emerging and is making progress toward

economic stability. But it will take some time to translate that into the political realm and into more democratic forms of government.

Worldwide Tensions

47. There will be worldwide unrest reflecting internal strife, border conflicts, and irredentist movements. But the unrest will have declined substantially after peaking between 1995 and 2010.

Needs a boost: Certainly, there is plenty of strife and conflict, but some progress in peacekeeping as well. While a decline may still take place, it is likely going to take longer than 2010, and it will likely be less "substantial" than anticipated.

48. Under international pressures, the United Nations will effectively take on more peacemaking to complement its historic peacekeeping role.

Coming soon: Substantial steps have already been taken in this direction and more are likely to come. International cooperation show signs of coming back in vogue, particularly with a new U.S. political administration.

49. Supranational government will become prominent and effective, though not completely, with regard to environmental issues, war, narcotics, design and location of business facilities, regulation of global business, disease prevention, workers' rights, and business practices.

Needs a boost: Less progress than anticipated here. The previous U.S. administration's anti-internationalist stance slowed the move in this direction.

50. Widespread contamination by a nuclear device will occur either accidentally or as an act of political/military violence. On a scale of 1 to 10 (with Three Mile Island a 0.5 and Chernobyl a 3), this event will be a 5 or higher.

On track: Unfortunately, this is on track, as controls over nuclear weapons loosened and nu-

clear technology has proliferated. Terrorist groups will likely get hold of a device. Nuclear power may enjoy a renaissance as an alternative to CO₂-producing fossil fuel technologies, thus providing more opportunities for an incident.

51. Increasing economic and political instabilities will deter business involvement in specific World 3 countries.

On track: This looks pretty clear on the face of it, with the possible wild card being a concerted effort on the part of the rest of the world to intervene at the "bottom of the pyramid," both for altruistic and/or economic/environmental reasons.

52. Despite technological advances, epidemics and mass starvation will be common occurrences in World 3 because of strained resources in some areas and politically motivated disruptions in others.

On track: Same as #51 above. Likely to be the case, unless a concerted intervention takes place.

53. There will be substantial environmental degradation, especially in World 3. Governments will commit money to ease and correct the problem, but many will sacrifice long-term programs that could prevent the problem from happening in the first place.

On track: Ditto with #51 and #52. One could argue for raising the profile of World 2 in this forecast, as rapid economic development at the expense of the environment is a fairly routine state of affairs.

54. There will be shifts in the pattern of world debtor and creditor countries. Japan's burst economic bubble, the ever-growing U.S. debt, and Germany's chronic unemployment problems are harbingers of things to come.

On track: Tough one to call. The shifts in patterns of debtors and creditors is tracking well. Even with the current global recession, the sec-

ond half of the forecast could be seen as overly harsh on the fate of the affluent nations.

55. NIMBY (“Not In My Back Yard”) will be a global-scale problem for a variety of issues, ranging from hazardous-waste disposal to refugees to prisons to commercial real-estate ventures.

Coming soon: A bit more precision would have helped here. Clearly this is happening in the affluent areas in all three worlds. On the other hand, less-affluent areas may actually seek these out in efforts to grow their economy and provide jobs.

56. Migration and conditions for citizenship throughout the world will be regulated under new international law.

On track: While not much positive progress to date on this — with the focus being on security issues and restriction of movement — the scale and intensity of the issue continues to build. It is plausible that it will become increasingly clear that only a systemic approach has a chance of working, as individualistic approaches simply shift the problem to someone else.

57. Terrorism within and across international borders will continue to be a problem.

On track: No explanation required.

The Electronic Global Village

58. Global environmental management issues will be institutionalized in multinational corporations as well as through the United Nations and other supranational entities.

On track: Sustainability has caught on in the business world, and although one could argue with the depth of the commitment, the trend is overall moving toward it becoming an important factor. Some progress on the supranational front with NGOs an indicator, and Kyoto, for all its faults, points in this direction as well.

59. A global currency will be in use.

On track: Despite struggles with the euro, it is a step in the direction toward a global currency. The growing integration of financial markets also suggests this forecast is on track.

60. English will remain the global common language in business, science, technology, and entertainment.

On track: Despite the rise of Chinese economic power, English continues to be the predominant second language, and it is difficult to see that changing in the next 15 years.

61. Schooling on a worldwide basis will be at a higher level than it is today. Education may approach universality at the elementary level and will become more accessible at the university level through distance education technologies.

On track: There is growing recognition of the vital importance of education, with distance education having huge potential to broaden access.

62. In the advanced nations, lifelong learning will be effectively institutionalized in schools and businesses.

Coming soon: This is clearly on pace, with perhaps some more time required to achieve “institutionalized” status.

63. There will be substantial, radical changes in the U.S. government. National decisions will be influenced by electronically assisted referenda.

Needs a boost: The component about electronically assisted referenda is on track, but whether that, or other factors, will lead to radical change remains to be seen — nothing has yet emerged to suggest this.

64. Throughout the advanced nations, people will be computer literate and computer dependent.

Already happening.

65. Worldwide, there will be countless vir-

tual communities based on electronic linkages.

Coming soon: Already happening in the affluent nations, and will like spread into World 2 closer to the present than to 2025.

66. There will be a worldwide popular culture. The elements of that culture will flow in all directions from country to country. In spite of the trend toward "demassification" in both information and production, the global links of communications and trade will ensure that ideas and products will be available to all whether they like it or not.

On track: We have identified "cultural multipolarity" and "cultural flows" as important trends today, and it is likely they will drive a move toward a global popular culture that is informed by a wide variety of cultural influences.

67. The multinational corporation will be the world's dominant business form.

On track: While one could argue that this is already here, this forecast suggests it will continue to 2025, and the evidence suggests this will continue to be the case.

68. Economic blocs will be a prominent part of the international economy, with many products and commodities moving between these porous blocs. The principal blocs will be Europe, East Asia, and the Americas.

On track: Smaller blocs are proliferating. This forecast suggests a consolidation of smaller blocs into bigger ones, which looks to be on target. Blocs are viewed as transition stages to a more unified global economic system.

69. Universal monitoring of business transactions on a national and international business basis will prevail.

On track: Current technological developments in transparency suggest the capability will be available, and citizen/consumer desires for openness of information are likely to overpower privacy issues.

70. Identification cards will be universal. Smart cards will contain information such as nationality, medical history (perhaps even key data from one's genome), education and employment records, financial accounts, social security, credit status, and even religious and organizational affiliations.

On track: Smart cards have made greater inroads in some places than others, but the trend toward more universal availability of personal information, driven in large part by security concerns, is well under way.

Public Issues and Values

71. Within the United States there will be a national, universal health-care system.

Needs a boost: The Clinton administration's attempt failed, but it is likely to be tried again, albeit in different form and with a different approach. Resistance has proven tough and the stigma against "socialized medicine" has proven effective in catalyzing resistance.

72. In the United States, the likely collapse of the Social Security system will lead to a new form of old-age security such as one based on need-only criteria.

On track: Unfortunately, the evidence suggests the U.S. is heading in this direction, unless a fairly dramatic intervention takes place. The move to individual responsibility for providing for one's retirement seems well under way.

73. Genetic screening and counseling will be universally available and its use encouraged by many incentives and wide options for intervention.

On track: Already happening to a limited extent, with it likely to spread as more becomes known, society gets more comfortable, and knowledge about genetics grows. This is clearly more advanced in World 1 and many World 2 nations, and it can be expected they will help spread the

information to the emerging world.

74. There will be more recreation and leisure time for the middle class in the advanced nations.

On track: This one routinely draws catcalls from audiences who feel that more and more is demanded of them from their organizations. There is a measurement issue here, as the line between work and leisure blurs with knowledge work. Overall, however, most measures suggest a decrease in the average workweek. It suggests people feel busier, as they multitask and continue to fill up their free time with new activities.

75. The absolute cost of energy will rise, affecting the cost of transportation. Planners will reallocate terrain and physical space to make more-efficient use of resources. In other words, cities will be redesigned and rezoned to improve efficiencies of energy in transportation, manufacturing, housing, etc.

On track: The first component about rising energy costs is clearly on track, but there is still plenty of work to do in terms of reallocating space along the lines of efficiency. The rise of green buildings is an indicator pointing in this direction.

76. There will be a rise in secular substitutes for traditional religious beliefs, practices, institutions, and rituals for a substantial portion of the population of the advanced nations and the global middle class. The New Age movement, secular humanism, and virtual communities built on electronics networking are a few harbingers.

On track: The trend in this direction is more advanced in Europe, with the United States lagging. Long-term values trends suggest an increase in spirituality, which includes traditional religion, but will also include a host of new approaches.

77. Socially significant crime — i.e., the crimes that have the widest negative effects in the advanced nations — will be increasingly economic

and computer-based. Examples include disruption of business, theft, money laundering, introduction of maliciously false information, and tampering with medical records, air traffic control, or national-security systems.

On track: This is on pace, with identity theft and computer viruses being among the many indicators. The range of socially significant crimes is likely to expand as well.

78. Tax filing, reporting, and collecting will be computer-managed.

On track: Computer-based filing and online banking are increasingly common and are setting the stage for complete automation. The technical capability will arrive sooner, but it will take some time for the public to gain sufficient trust in the technology for its use to become widespread.

79. Quality, service, and reliability will be routine business criteria around the globe.

Already happening.

80. Customized products will dominate large parts of the manufacturing market. Manufacturers will offer customers unlimited variety in their products.

On track: Customization is picking up momentum, but there is still a way to go in terms of unlimited variety. Businesses are experimenting with business models that work with this approach, as traditional models focused on producing large amounts of standardized products at increasingly lower cost. Economies of scale must give way to economies of scope for this forecast to succeed.

81. Economic health will be measured in a new way, including considerations of environment, quality of life, employment, and other activity and work. These new measures will become important factors in governmental planning.

On track: Organizations are increasingly recognizing the importance of these considerations in attracting the talent they need. Similarly, mu-

nicipalities are recognizing these factors in attracting organizations. The progress has been piecemeal and slow, but should still be in place by 2025.

82. GDP and other macroeconomic measures and accounts will include new variables such as environmental quality, accidents and disasters, and hours of true labor.

On track: Some progress here, as evidenced by the rise of socially responsible investing and similar schemes that rate organizations according to their performance across a wider range of factors. The groundwork is in place for wider adoption of these new measures moving forward.

83. Sustainability will be the central concept and organizing principle in environmental management, while ecology will be its central science.

Coming soon: Sustainability is clearly here, but it's less clear that ecology is its central science. There is still more talk than action, and more politics than science, or otherwise this could have been cast as already here.

Additional, but Slightly Less Probable, Developments by 2025

84. Telephone communications within the United States and within Europe will be so cheap as to be effectively free.

On track: Several cities are experimenting with free WiFi, but vested interests in charging for services will slow this transition. In the meantime, new business models are likely to emerge that capture value elsewhere, thus making the basic communications effectively free.

85. Telecommunication costs will be integrated into rent or mortgage payments.

On track: Similar to #84 above, we see these costs for telecommunications proceeding along a path similar to electricity.

86. The greening of North Africa will begin, with mega-technologies to promote rain and build soil along the coast.

Needs a boost: While there are discussions along these lines, and there are some cloud seeding efforts in China for example, the relatively poor economic conditions in Africa and accompanying relative apathy among the affluent nations about those conditions suggest that this is not likely to happen without a change of course.

87. Antarctic icebergs will be harvested for watering the west coast of South America, Baja California, the Australian outback, Saudi Arabia, and other arid areas.

On track: Growing concern over water issues and water rights suggests that the search for water will get increasingly desperate and lead nations to pursue water wherever it is available.

88. Going to work will be history for a large percentage of people. By 2020 or 2025, 40% of the workforce will be working outside the traditional office.

On track: This forecast was clearly aimed at the affluent nations focused on knowledge work. It most likely happens closer to 2020 than 2025. While the infrastructure is in place, inertia and transition time to adapt to the new culture of telecommuting will likely keep the threshold from being crossed sooner.

89. The home work/study center will be the centerpiece of the integrated, fully information-rich house and home. Mom and Dad will work there, the kids will reach out to the resources of the world, and the whole family will seek recreation, entertainment, and social contacts there.

On track: This was a tough one to call, as portable computing and communication devices to a large extent make the need for a dedicated room superfluous. Nonetheless, a dedicated space is proving practical, helpful, and even necessary in separating work or study from other household

activities.

90. Inorganic chemistry will rise to parity with organic chemistry in profit and importance in such areas as ceramics and composites.

Needs a boost: Seems as though some of the excitement from inorganic chemistry has worn off at the same time that organic, particularly life sciences, has picked up momentum.

91. Biomimetic materials and products that imitate natural biological materials will be common.

On track: Biodesign has emerged as the more popular term. There has probably been more excitement about its potential than actual delivery to this point, but that should change as more is learned and experience with it grows.

92. Micromachines the size of a typed period will be in widespread use. Nanotechnological devices 10,000 times smaller will have been developed and will be in use.

On track: Micromachines are not yet widespread, but they are in use and should continue to emerge. Nanotechnology is also emerging, and the interest and research behind it suggest applications will develop by 2025.

93. Radical cosmetics will leave no component of the body or mind beyond makeover. This will be accompanied by a melding of cosmetics, medicine, and surgery.

On track: The growth of cosmetic surgery continues to surge in the affluent nations and among the well-to-do. It is reasonable to anticipate that as more and more practices become mainstream, the frontier will expand to more regions of the body and with greater impact. The one area giving pause here is "the mind," which is unlikely to be widely impacted, but some experimentation is quite plausible.

94. Ocean ranching and farming for food and energy will be widespread.

On track: Though not yet achieving much media attention, lots of activity is going on here. Given continued pressure on food and energy resources, it is reasonable to expect much greater attention will be paid to the ocean and its potential in these areas.

95. The asteroid watch will become a recognized institution. Among its most notable achievements will be several trial runs at altering an asteroid's path before it intersects Earth's orbit.

On track: This forecast is poised to emerge from the fringes today into mainstream, as growing knowledge about the possibilities will lead to calls for developing a defensive capability.

96. Moon mining and asteroid harvesting will be in their early stages.

Needs a boost: Not enough interest or activity is going on here yet to suggest that this is going to take off within the forecast timeframe without some kind of discovery or breakthrough to ignite it.

97. Artificial intelligence devices will flower as aids to professionals, as adjuncts to ordinary workers, as doers of routine tasks, as checks on the functionality of software and complex systems, and as teaching and training tools.

On track: Slow, steady progress in this area suggests that person-machine partnerships will be routine in the world of work.

98. Privatization of many highways, particularly beltways and parts of the interstate system, will occur. This will be tied to the evolution of an intelligent vehicle-highway system.

On track: Privatization is well under way, though clearly having a big impact in some regions and very little in others. The lack of interest in government spending on infrastructure suggests privatization will continue, though recession stimulus spending could slow it temporarily. It is a bit of a reach to tie the development to intelligent-vehicle highway systems, but private roads

could possess the funds to enable experimentation with state-of-the-art tools and techniques.

99. Restoration of aquifers will be a standard technology.

Needs a boost: Not enough activity to suggest this will be standard. Pressure on water supplies suggests there will eventually be interest and capability development, but it looks like other solutions will be pursued first.

100. Fuel cells will be a predominant form of electromechanical energy generation.

On track: One could group this with several technologies that seem perpetually on the verge of breaking through. Nonetheless, pressure to develop alternative, clean energy and continued slow, steady progress suggest the promise will be increasingly realized over the next decade and beyond.

101. Mastodons will walk the earth again and at least 20 other extinct species will be revived.

Needs a boost: Species revival remains an intriguing possibility, but it appears that it's a lot more complicated than suggested by *Jurassic Park*.

102. Biocomputers will be in the early stage of development and applications.

On track: There are already small-scale experiments and working prototypes, but their capabilities pale in comparison to conventional computers. Advances in biotech and nanotech, combined with the search for new and creative ways to keep Moore's law continuing, suggest interest and developments will continue in this area.

103. Squaring-off of the death curve will make substantial progress in World 1 and some progress in World 2, leading to most people living to 85 years.

On track: The unspoken "forecast" here was that there would not be a dramatic expansion in

life expectancy by 2025, but incremental. Forecast #104 speculates on radical extension.

104. Critical experiments in life extension to move the average lifetime of our species from 85 to 105 will begin. One hundred thousand people will be in a lifelong monitoring program. Massive numbers of other people will apply the treatments on a nonexperimental basis.

Needs a boost: It is plausible to envision such experiments, but the scale suggested here doesn't seem to follow from present trends. A breakthrough, however, could trigger interest and activity.

105. Cars capable of 120 miles per gallon will be in widespread use.

On track: Tough call. One could perhaps argue that combustion engines will not be in widespread use, but it doesn't appear that all-electric or fuel cell vehicles are poised to displace them completely. Hybrids achieving this efficiency are plausible.

106. Hypersonic air carriers will be common.

Needs a boost: While technically available, the economics have not been compelling enough to overcome social/environment resistance.

107. Brain prostheses will be one of the practical applications of brain technology.

On track: Perhaps a bit of a reach, but there has been an explosion of interest, research, and growing knowledge of how the brain works. It is plausible to expect more and more applications to emerge.

Checking the Evaluation

Recognizing the subjective nature of the scale and evaluation, and the potential bias of evaluating one's own work, the author asked colleagues at the Association of Professional Futurists (www.profuturists.org) to do the evaluation as well. More than a dozen respondents scored each of

the 107 forecasts. Their average scores for each of the nine categories are shown next to the author's in Table 1.

Not surprisingly, the author is more optimistic about how the forecasts are faring than his colleagues, and would like to believe that given the time to explain his position to everyone, they would adjust their scores upward appropriately. It is left to the readers to make up their own minds on that question as they reflect on the analysis of the author's forecasts above. Even with the tougher scoring of the APF colleagues, the averages are all above "ok or good" with the exception of the "slightly less probable developments," which by definition are suggested to be less likely to be accurate forecasts for 2025.

In looking across the scores in the eight categories of forecasts, a few patterns emerge. As expected, demography ("population trends") came out with the highest average scores according to my APF colleagues. The slow rate of demographic change, barring disaster, and its quantitative nature make it routinely the most accurate area to forecast. The author was a bit tougher in this area, relatively speaking, finding the forecasts to have

been somewhat pessimistic in light of the success of population control.

Our biggest differences were in "Managing Our World" and "Worldwide Tensions." The author ranked these as his two most accurate categories, while the APF colleagues ranked them below their average accuracy score. In reflecting on some of the comments attending the rankings, the author's sense is that his colleagues are perhaps too caught up in current events — granted they could make the opposite charge that I am ignoring present reality in hopes of a happier future. My response would be that forecasts rarely progress in a linear fashion. Progress toward them often accelerates, stabilizes, and even occasionally reverses along the way. The author, upon further reflection, is willing to stand by the accuracy of the forecasts despite some current slowdowns and reversals.

Both of us ranked the accuracy of the forecasts in "Managing Environment and Resources" relatively low compared to the other categories. In particular, several forecasts around the role of genetics appear to have been overly optimistic. It has turned out that the knowledge-to-application tran-

Table 1

Category	APF	Author	Difference
1. Managing Our World	3.04	4.50	1.46
2. Managing Human Health	3.64	4.43	0.79
3. Managing Environment and Resources	3.12	3.84	0.72
4. Automation and Infotech	3.68	3.56	0.12
5. Population Trends	3.93	4.13	0.20
6. Worldwide Tensions	3.28	4.45	1.17
7. The Electronic Global Village	3.62	4.00	0.38
8. Public Issues and Values	3.58	4.31	0.73
9. Additional, but Slightly Less Probable, Developments by 2025	2.89	3.13	0.24
Average score	3.42	4.05	0.63

sition is far more complicated than originally envisioned. Interestingly, where the author saw genetics happening faster than has been the case, the opposite miscalculation has often occurred with information technology; that is, events in that category have often unfolded faster than forecast.

Only in one case were my colleagues more optimistic about the accuracy — automation and infotech. The author will admit to some tough scoring in this area toward seeing the forecasts as coming to fruition before 2025, including a perhaps overoptimistic assessment that global broadband networks of networks will happen closer to the present than 2025.

Analysis and Lessons Learned

It would be more accurate to wait another 15 years for 2025 to arrive and do a more accurate assessment — hopefully the author will be around to do this. In the interim, here's how the forecasts are faring according to the author's grading:

Table 2		
Evaluation	# out of 107	Percent
On track	71	66%
Needs a boost	24	22%
Coming soon	8	8%
Already happening	4	4%

While there is a scarcity of this type of evaluation available, a similar exercise was conducted a decade ago by former World Future Society President and long-time *Futurist* editor Edward Cornish.² He examined 34 forecasts that first appeared in a 1967 issue of *The Futurist* and assessed how they had fared 30 years later. Using simple right or wrong evaluations, he scored 23 hits and 11 misses, an accuracy of 68%. This is amazingly close the author's 66% above — two data points

don't make a case, but they do suggest that the common perception of forecasting being mostly wrong or inaccurate — is inaccurate!

So let us turn to what we've learned from this exercise.

1. *Futurists' forecasts are more accurate than commonly assumed.* A common perception is that futurists are mostly wrong and focused on silly distant future possibilities such as the infamous flying cars. Typically, a reporter looking for a story will find a collection of forecasts that turned out wrong — the paperless office is another familiar target — and then poke fun at forecasting and futurists. This may be more entertaining to read than a balanced assessment of how forecasts have actually fared, so it is in a sense understandable that such stories have proliferated. As they have accumulated over the years, they have created a perception that most forecasts miss the mark. As a result, clients or potential clients new to futurists and forecasting are often predisposed to question the value of even trying to look very far beyond the present. This essay provides one piece of evidence that futurists do an accurate job in forecasting.

2. *Language is critical.* Among the key lessons for forecasters, and consumers of forecasts, is the importance of language, and in particular the "qualifiers." A difficulty in evaluating the accuracy of the forecasts here was in trying to discern what was meant by some of the terms. For instance, many forecasts used qualifiers such as widespread, commonplace, routine, etc. While the use of these terms gives the forecasts a little "wiggle room," they also leave themselves open to a wide range of interpretations, evidenced to some degree by the disparity between the author's rankings and those of his colleagues. While we might hope for more standardized terminology in the long run, today's forecasters would do a great service to their audience by clearly defining their terms. Put simply, explain what terms such as "widespread" really mean.

3. *Don't become obsessed with precision.* A partial caveat to lesson #2 above is to be wary of trying to be more precise than is warranted. If one is truly speculating in a long-term forecast, recognize that the use of numbers helps provide a ballpark figure that can aid understanding, but that is all — an estimate — and be wary of those numbers taking on a life of their own. Remember the “500 channels of cable” truism that was simply tossed out there to provide a sense of the scale, but became a mantra.

4. *In the end, it's still subjective.* The evaluation of accuracy depends largely on the mental model or view of the world of those who make the evaluation. We bring our own views and biases to the task. For instance, part of the author's mental model is that growing social awareness of energy, environment, and resource issues would eventually catalyze action on the “solutions” front and speed up developments that might otherwise fall outside the 2025 timeframe. Others who do not share this view might easily reach a different conclusion about how well the forecasts were faring. There is no totally objective evaluation superstore that one can take evaluations to — though perhaps some evaluators are more objective than others. There can always be reasonable differences of opinion concerning

the evaluations made. Yet, it is hoped that the essence of the author's representations, backed by the evaluations of colleagues, support the basic arguments that these forecasts, as well as forecasts made by professional futurists in general, are more accurate than they have often been portrayed as being by the media, or perceived to be in the general opinion of clients.

5. *Utility still trumps accuracy.* While we've focused on accuracy in this paper, it is important to reemphasize that “a good forecast is not necessarily a correct one. Rather, a good forecast is one that stimulates your thinking and leads to subsequent action.... A correct forecast may not necessarily be useful. It might just get filed away, spurring no action.”³

Notes

1. Joseph F. Coates, John Mahaffie, and Andy Hines, 2025: *Global Scenarios of US and Global Society as Reshaped by Science and Technology*, Oak Hill Press, 1996.
2. Edward Cornish, “Forecasts Thirty Years Later,” *The Futurist*, January 1, 1997.
3. Andy Hines, “A Checklist for Evaluating Forecasts,” *The Futurist*, November-December 1995.

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- **Building a Better Body and Mind**, Arthur L. Caplan
- **Creativity Matters**, Marci Segal
- **Bioviolence Policies for a Secure Future**, Barry Kellman
- **Cultural Identity**, Esther Franklin

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- Work Experience
- Teaching
- Workshops and Presentations
- Publications
- Print Interviews
- Online Activities
- Professional
- Television
- Radio

Work Experience

University of Houston, Futures Studies Program, Houston, TX
Lecturer & Executive-in-Residence June 2010-present

- Teaching two classes and performing program development activities

Hinesight, Houston, TX
Principal May 2010-present

- Offers foresight-related speaking, workshopping, and consulting

Innovaro (formerly Social Technologies), Washington DC/Houston, TX
Managing Director May 2006-May 2010

Oversee all single-client research and consulting engagements, as well as doing public speaking, workshops, and other promotion and new business development related activities

University of Houston, Futures Studies Program, Houston, TX
Adjunct Faculty May 2006-May 2010

Teaching a class in Graduate Program Futures Studies Graduate each semester

University of Houston, Futures Studies Program, Houston, TX
Lecturer & Educational Specialist January 2005-May 2006

- Dual appointment teaching in the College of Technology Futures Studies Graduate Program and Consumer Science & Merchandising Undergraduate program, as well as performing program marketing and development support

The Dow Chemical Company, Midland, MI
Sr. Ideation Leader & Futurist January 2000-January 2005

- Developed and led new process for generating alternative business strategies that been used with several dozen business units
- Custom designed and led processes filling the new business pipeline with new growth concepts for several dozen business units
- Designed and executed several dozen workshops in support of general ideation for business and business functions
- Responsible for developing the "Best Practices" in New Business Exploration and "Alternative Strategy Development" for Best Practice Group

- Co-founder of Dow's Explorers Network, of practitioners doing exploration work and founding member of Dow's IDEAS Council, charged with seeking out large scale cross-business growth opportunities,
- Developer of new global human resources training courses "Approaches to New Business Exploration" and "Juicing the Lightbulb: Tapping Your Creative and Innovative Potential"

Kellogg Company, Battle Creek, MI (Global Trends Program Sr. Manager) June 1998-December 1999

- Expanded scope of N. American program globally.

N. American Trends Program Manager June 1997-July 1998

- Pioneered and established a trends program to provide the company with a comprehensive understanding of emerging consumer, technological, food, and other trends worldwide for input into market research, marketing, product development, and long-term R&D.
- Raised awareness of key trends through auditorium and small-group presentations, trend and implication briefs, the establishment of a "futures roundtable" discussion group, and in project work.
- Responded to internal customers by providing ready access to trend information and identified experts to assist in strategy formulation, project work, and by leading trends ideation workshops.

The Futurist, Washington, DC (The magazine of the World Future Society, a non-profit association with 25,000 members aiming to improve our understanding the future).

Contributing editor 1996-1997

- Edited and wrote feature articles, shorter trend items, book reviews, and helped with redesign of magazine.

Coates & Jarratt, Inc., Washington, DC (A consulting firm specializing in the study of the future. Its mission is to help organizations anticipate and prepare for the future.)

Futures research analyst/partner 1990-1996

- Principal analyst on over three dozen projects on the future focusing on trends, developments, and issues affecting organizations. Projects ranged from the future science and technology, human resources, the environment, and globalization of the economy.
- Honed presentation and facilitation skills in keynote addresses, presentations, and workshops for clients and professional conferences.

Teaching

24. World Futures, Graduate, UH, Spring 2012
23. Impact of Modern Technology on Society, Undergraduate, UH Spring 2012
22. Social Change, Graduate, UH, Fall 2011.
21. Impact of Modern Technology on Society, Undergraduate, UH Fall 2011
20. Seminar in Futures Studies, Graduate, UH, Spring 2011
19. Impact of Modern Technology on Society, Undergraduate, UH Spring 2011
18. Futures Research, Graduate, UH, Fall 2010.
17. Impact of Modern Technology on Society, Undergraduate, UH Fall 2010
16. Seminar in Futures Studies, Graduate, UH, Spring 2010
15. Futures Research, Graduate, UH, Fall 2009.
14. Social Change, Graduate, UH, Fall 2008.
13. Systems Thinking and Analysis, Graduate, UH, Spring 2008
12. Forecasting for Technology Entrepreneurship, Undergraduate, UH, Summer 2007
11. Strategic Planning and Visioning, Graduate, UH, Spring 2007
10. Futures Research, Graduate, UH, Fall 2006
9. Scenarios and Visions, Graduate, UH, Spring 2006
8. Human Ecosystems & Technological Change, Undergraduate, UH, Summer 2005
7. Forecasting for Technology Entrepreneurship, Undergraduate, UH, Summer 2006
6. Introduction to Futures Studies, Graduate, UH, Fall 2005
5. Human Ecosystems & Technological Change, Undergraduate, UH, Summer 2005

4. Technology Entrepreneurship, Undergraduate UH, Summer 2005
3. Human Ecosystems & Technological Change, Undergraduate, UH, Spring 2005
2. World Futures, Graduate, UH Clear Lake, Spring 2005
1. Seminar in Futures Studies, Graduate, UH-Clear Lake, Summer 2004

Workshops and Presentations

234. "Better Thinking about the Future," Toyota, Torrance, CA, Sept. 27, 2012.
233. "Scenarios," California Peace Officer Standards and Training (POST), San Diego, CA, Sept. 11, 2012.
232. ConsumerShift: How Changing Values Are Reshaping the Consumer Landscape, Association for Education in Journalism and Mass Communication, Centennial Session, Chicago, August 10, 2012.
231. w/ Terry Collins, "The Evolution of Integral Futures," World Future Society General Assembly, Toronto, July 29, 2012.
230. w/ Riel Miller, "An Insider's Guide to Foresight Consulting," World Future Society General Assembly, Toronto, July 27, 2012.
229. "World Futures," California Peace Officer Standards and Training (POST), San Diego, CA, July 10, 2012.
228. "Implications, Visioning, & Planning," University of Houston Certificate in Strategic Foresight," Brussels, Belgium, May 31, 2012.
227. "Introduction to Scenario Planning," University of Houston Certificate in Strategic Foresight," Brussels, Belgium, May 30, 2012.
226. "Scanning & Alternative Perspectives," University of Houston Certificate in Strategic Foresight," Brussels, Belgium, May 29, 2012.
225. "More Effective Foresight," Finnish Embassy, Washington DC, May 25, 2012.
224. "Implications, Visioning, & Planning," University of Houston Certificate in Strategic Foresight," Houston, TX, May 24, 2012.
222. "Introduction to Scenario Planning," University of Houston Certificate in Strategic Foresight," Houston, TX, May 23, 2012.
221. "Scanning & Alternative Perspectives," University of Houston Certificate in Strategic Foresight," Houston, TX, May 22, 2012.
220. "Roundtable: How Changing Values Are Reshaping the Consumer Landscape," Office Products International Global Forum, Chicago, IL, May 21, 2012.
219. "A Dozen Surprises about the Future of Work," Office Products International Global Forum, Chicago, IL, May 24, 2012.
218. "Introduction to Foresight," California Peace Officer Standards and Training (POST), San Diego, CA, May 14, 2012.
217. "ConsumerShift: How Changing Values Are Reshaping the Consumer Landscape," Affinity FCU, Mohonk, NY, April 29, 2012.
216. "Four Scenarios for Credit Unions," Affinity FCU, Mohonk, NY, April 28, 2012.
215. "Four Scenarios for Credit Unions," 2012 Board Planning Session, United Nations FCU, Miami, FL, April 24, 2012.
214. "Scenarios" California Peace Officer Standards and Training (POST), San Diego, CA, April 17, 2012.
213. "Is Enoughness Enough," After Capitalism, University of Houston, April 14, 2012.
212. "ConsumerShift: How Changing Values Are Reshaping the Consumer Landscape," The Learning Forum, Austin, TX, March 16, 2012.
211. "Scenario Planning Workshop: The Future of Diversification," The Business Alliance, Leeds, United Kingdom, February 23, 2012.
210. "ConsumerShift: How Changing Values Are Reshaping the Consumer Landscape," Webinar, Social Marketing Club, Centers for Medicare and Medicaid Services, Baltimore, MD, January 25, 2012.
209. "Scenario Archetypes," Sustainable Consumption Conference, Robert Wood Johnson Foundation, Racine, Wisconsin, January 19, 2012.
208. "ConsumerShift: How Changing Values Are Reshaping the Consumer Landscape," Sustainable Consumption Conference, Robert Wood Johnson Foundation, Racine, Wisconsin, January 19, 2012.
207. "Thinking [Better] About the Future; A Hands-on Approach to Applying Foresight," Internship in Consumer Science and Merchandising Class, University of Houston, Houston, TX, January 24, 2012.

206. "Introduction to Scenario Planning," University of Houston Certificate in Strategic Foresight," Houston, TX, January 11, 2012.
205. "Scanning & Alternative Perspectives," University of Houston Certificate in Strategic Foresight," Houston, TX, January 10, 2012.
204. "Systems, Social Change, and Critical Thinking," California Peace Officer Standards and Training (POST), Sacramento, CA, December 13, 2011.
203. "Introduction to Futures Studies," California Peace Officer Standards and Training (POST), Sacramento, CA, December 12, 2011.
202. "Integrating Foresight into Organizations," California College of Arts, San Francisco, CA, November 18, 2011
201. Students Rising Scenario Workshop, Lumina Foundation, Indianapolis, IN, November 14-15, 2011.
200. "The Future of Law Librarians," AALL Futures Summit, Chicago, IL, November 3, 2011.
199. "ConsumerShift: How Changing Values Are Reshaping the Consumer Landscape," APF (Assn of Professional Futurists) V-Gathering, October 26, 2011.
198. "A Dozen Surprises about the Future of Work," High Tech Symposium, Lone Star CC, The Woodlands, TX, October 21, 2011.
197. "ConsumerShift: How Changing Values Are Reshaping the Consumer Landscape," Whitewave, Boulder, CO, April 16, 2011.
196. "Thinking [Better] About the Future: A Hands-on Approach to Applying Foresight," CGGVeritas, Houston, TX, September 14, 2011.
195. "Scenarios" California Peace Officer Standards and Training (POST), Sacramento, CA, Sept. 13, 2011.
194. "World Futures," California Peace Officer Standards and Training (POST), Sacramento, CA, July 12, 2011.
193. "Introduction to Futures Studies," California Peace Officer Standards and Training (POST), Sacramento, CA, May 16, 2011.
192. Thinking [Better] About the Future: A Hands-on Approach to Applying Foresight, IABC Houston, Houston, TX, May 12, 2011.
191. "Introduction to Scenario Planning," University of Houston Certificate in Strategic Foresight," Houston, TX, May 11, 2011.
190. "Scanning & Alternative Perspectives," University of Houston Certificate in Strategic Foresight," Houston, TX, May 10, 2011.
189. "Introduction to Scenario Planning," University of Houston Certificate in Strategic Foresight," Brussels, Belgium, May 4, 2011.
188. "Scanning," University of Houston Certificate in Strategic Foresight," Brussels, Belgium, May 3, 2011.
187. "Alternative Perspectives," University of Houston Certificate in Strategic Foresight," Brussels, Belgium, May 4, 2011.
186. "Thinking Better about the Future," Innisbrook Lafayette, Lafayette, LA, April 9, 2011.
185. "The Front End of Innovation: Future-focused Approaches to Identify New Opportunities for Growth," FutureThink, McGraw-Hill, Webinar, April 6, 2011.
184. "A Dozen Surprises about the Future of Work," *Region 4: Retooling for the Recovery*, Department of Labor/Employment Training Administration, Dallas Texas, March 31, 2011.
183. "Thinking [Better] about the Future: A Hands-on Approach to Applying Foresight," *Region 4: Retooling for the Recovery*, Department of Labor/Employment Training Administration, Dallas Texas, March 31, 2011.
181. "Youth Happiness," Children at Risk: Fort Bend, Houston, TX, February 28, 2011.
180. "Two Scenarios for the Future of Houston: Long Boom or Soft Path?" Liveable Houston: Houston-Galveston Area Council, Houston, TX, February 23, 2011.
179. "How Changing Values & Worldviews Are Reshaping the Consumer Landscape," Clay St. Project, Cincinnati, OH, February 14, 2011.
178. "Introduction to Scenario Planning," California Peace Officer Standards and Training (POST), Sacramento, CA, February 8, 2011.
177. "Introduction to the Foresight Maturity Model," University of Houston Certificate in Strategic Foresight," Houston, TX, January 15, 2011.
176. "Houston 2040: Long Boom or Soft Path?" Houston Tomorrow, Houston, TX, January 13, 2011.

175. "Introduction to Scenario Planning," University of Houston Certificate in Strategic Foresight," Houston, TX, January 14, 2011.
174. "Scanning & Alternative Perspectives," University of Houston Certificate in Strategic Foresight," Houston, TX, January 13, 2011.
173. "Introduction to Futures Studies," California Peace Officer Standards and Training (POST), Sacramento, CA, December 6, 2010.
172. "The Future of Science and Technology," China Program, Center for Public Policy, University of Houston, Houston, TX, November 18, 2010.
171. "Transportation 2025...and Beyond," Takata Corporation, Atlanta, GA, November 17, 2010.
170. "Which Energy Future?" Harvey Nash USA, Houston, TX, November 11, 2010.
169. "Youth Happiness," Communities in Schools Committee Meeting, Houston, TX, September 9, 2010,
168. "How Futures Studies Can Help HRD Professionals," ASTD Houston Chapter Meeting, August 10, 2010.
167. "The Future of Children's Happiness," Children at Risk: The Future of Children Conference, Houston, TX, August 3, 2010.
166. "The Soft Path: Turning Away from the Long Boom, Innovaro Futures Consortium Meeting, Washington DC, June 23, 2010.
165. "Scanning & Alternative Perspectives," University of Houston Certificate in Strategic Foresight," Houston, TX, May 19, 2010.
164. "Social Change & Alternative Perspectives," California Peace Officer Standards and Training (POST), Sacramento, CA, May 18, 201.
163. "Introduction to Futures Studies," California Peace Officer Standards and Training (POST), Sacramento, CA, May 17, 2010.
162. New Dimensions of Consumer Life....and What it Means for Law Librarians," Library of Congress, Washington, DC, April 7, 2010.
161. "The Future of Youth Happiness," Texas Daily Newspaper Association Annual Meeting, Houston, TX, March 3, 2009.
160. "New Dimensions of Consumer Life," Bamboo Worldwide Visioning Workshop, Chicago, IL, December 8, 2009.
159. "A 'Tipping Point' in the Future for Libraries," DC Special Libraries Association, Annual Meeting/Banquet, Washington DC, December 3, 2009.
158. New Dimensions of Consumer Life Social Technologies Futures Consortium Meeting, Washington DC, November 10, 2009.
157. "An Eight-Pack of Emerging Issues Influencing the Future of Beverages," Kraft Innovation Week, Tarrytown, NY, November 2, 2009.
156. "Future of Media: Changing Times" The Economist - Media Convergence Forum, New York, NY, October 20, 2009.
155. Social Media Workshop, ADP, San Dimas, CA, August 5, 2009.
154. "Twelve Emerging Issues for the Next Twelve Years," Webinar, Social Technologies Futures Consortium, June 1, 2009.
153. "The Long View of Living and Working and What It Suggests for Office Products," OPI Global Forum 2009, Chicago, IL, May 8, 2009.
152. "Trends Shaping the Future of Credit Unions and What to Do About Them," Affinity FCU Strategic Learning Retreat, Seaview, New Jersey April 17, 2009.
151. "How Values Shifts Are Influencing Consumers at Work and Play," TDS Strategy Retreat, Chicago, IL, Feb 18, 2009.
150. "Trends Influencing the Future of Insurance," State Farm "Learning Journey" Dallas, TX, Feb 3, 2009.
149. "Thinking about the Future Workshop," Information Online Conference 2009, Sydney, Australia, January 23, 2009.
148. "Trends Influencing the Future of Libraries," Information Online Conference 2009, Sydney, Australia, January 22, 2009.
147. "Future Savvy: Trend Implications and Organizational Responses," Urban Libraries Council Audioconference, December 10, 2008.
146. "Trends Shaping the Future of Credit Unions, CUES New England, Boston, MA, November 12, 2008.

145. "Trends Shaping the Future of Credit Unions and What to Do About them Workshop," Forum Credit Union Planning Session Amelia Island, GA, October 15, 2008.
144. "Trends Shaping the Future of AAA," Triple AAA Conference N. America West, Portland, Oregon, August 20, 2008.
143. "Trends Shaping the Future of Credit Unions....And the Future They Suggest," Members United Federal Credit Union, Chicago, IL, July 22, 2008.
142. "Trend Watching," Consumer Electronics CEO Summit, Cancun, Mexico, June 19, 2008.
141. "Top Technology Innovations," Qualcomm, San Diego, CA, June 12, 2008.
140. "Top 20 Trends," WITHIT (Women in the Home Industries Today) Education Conference, Charlotte, NC, August 13-14, 2008.
139. "Thinking about the Future of Corporate Philanthropy," Corporate Philanthropy Board, Chicago, IL, April 21, 2008.
138. "Thinking about the Future Workshop," Executive Forum 2007 – 2008 Management Forum Series, Portland, Oregon, March 5, 2008.
137. "Trends Shaping the Future of Credit Unions, Credit Union Leaders Forum, Pebble Beach, CA, February 13-15, 2008.
136. "Shaping your Future.....and that of SLA," SLA (Special Libraries Assn) Leadership Summit 2008, Louisville, Kentucky, January 24, 2008.
135. "Integrating Foresight into Organizations," Houston Executive Roundtable, Houston, TX, January 8, 2008.
134. "Trends Shaping the Future of Credit Unions," CUES Executive Conference, Kona, Hawaii, December 3, 2007.
134. "The Future of Happiness," IIR Future Trends, Miami, FL, November 13, 2007.
133. "Technology Values," IIR Future Trends, Miami, FL, November 12, 2007.
132. Thinking about the Future, Texas Council of Engineering Companies Executive Training, Houston, TX, October 19, 2007.
131. "The Customized Workplace: Trends Influencing the Future of Human Resources," The Personnel Co-op, Tomorrow's Workplace, Washington DC, October 16, 2007.
130. "Porch Rockers, Kidults, and Migration: Consumer Trends Shaping the Future of Credit Unions," Massachusetts and New Hampshire Credit Union Leagues & Credit Union Association of Rhode Island, Bretton Woods, NH, October 13, 2007.
129. "Trends Shaping the Future of Credit Unions," New York State Large Credit Union CEO Roundtable, Canandaigua, NY, September 20, 2007.
128. "Futurizing Market Research, Qualitative Research Consultants Association, Philadelphia, PA, September 7.
127. "Consumer Trends Influencing the Future of Home Furnishings," American Home Furnishings Alliance Annual Marketing Meeting, Baltimore, MD, August 16, 2007.
126. "Thinking about the Future, Motorola, Schaumburg, IL, August 14, 2007.
125. "Top 20 Trends," Motorola "Tech Talk," Schaumburg, IL, August 14, 2007.
124. "Integrating Foresight Into Organizations: Three Perspectives for Making Foresight Come Alive," World Future 2007 – Fostering Hope and Vision for the 21st Century, Minneapolis, MN July 31, 2007
123. "A Green World: Trends Influencing the Future of Green," Colgate Palmolive, New York, NY July 10, 2007.
122. "Global Consumer Trends: Bring the Future to Life for Your Credit Union," Discovery 2007, CUNA Mutual Credit Union, Nashville, Tennessee, June 22, 2007.
121. "Workshopping Corporate Philanthropy's Tomorrow," Conference Board on Philanthropy, Atlanta, GA, June 20, 2007.
120. "Thinking about Corporate Philanthropy's Tomorrow, Conference Board on Philanthropy, Atlanta, GA, June 19, 2007.
119. "Thinking Strategically about the Future," Auto-Steel Partnership, Southfield, MI, May 18, 2007.
118. "Organizational Foresight Audit," Euroforum, Cologne, Germany, May 9, 2007.
117. How to Think about the Future, Philips Design, Eindhoven, The Netherlands, May 7, 2007.
116. "Inside a Futurists Tool Kit: Figuring Out What's Really Next," IABC, Houston, June 14, 2007.
115. "Individualism," P&G, Geneva, Switzerland, April 26, 2007.
114. "Thinking about the Future," Don't Stop Thinking about Tomorrow, Copenhagen, Denmark, April 25, 2007.

113. "The Future of Libraries," Library of Congress, Washington, DC, April 12, 2007.
112. "Top Global Trends in Society and Culture," Institute of Food Technologists Leadership Forum, Chicago, IL, March 22, 2007.
111. "A World of Opportunity: Top Trends Transforming the Lives of the World's Consumers," 5th Marketing Directors Forum, Athens, Greece, February 22, 2007.
110. "Top Twenty Trends Transforming the Lives of the World's Consumers," Consumer Trends Forum International, Portland, Oregon, February 7, 2007.
109. "Economics and Beyond: Trends Shaping the Future of Credit Unions," CUES, January 27, 2007.
108. "Six Payoffs For Thinking About the Future in 2007," International Assn of Business Communicators – Houston, Houston, Texas, January 25, 2007.
107. "Selling in a Global Environment: Hidden Treasure for the Entrepreneur," Venture Series, Lehigh University, Bethlehem, PA, November 17, 2006.
106. "Emerging Global Trends Influencing Government Procurement," National Contract Manufacturers Association – Space City Chapter, Houston, TX, October 26, 2006.
105. "Navigating a World of Choices," Harford County Library Association, Harford, MD, October 9, 2006.
104. "Top 20 Trends," 2006 I3 Meeting, Filene Research Institute, Vancouver, British Columbia, September 22, 2006.
103. "Need Strategic Thinking? Try Foresight," Texas Council of Engineering Companies, Houston, Texas, September 7, 2006.
102. "The [Truly] Global Economy and Its Implications for T&D," American Society of Training & Development – Fort Worth, Texas, August 3, 2006.
101. "Gearing the Machine for the Future: Integrating Foresight Theory and Practice within Public Institutions," Panel Discussion, World Futures Society, Toronto, Canada, July 29, 2006.
100. "Top 20 Trends Transforming the Lives of the World's Consumers," World Futures Society, Toronto, Canada, July 29, 2006.
99. "State of the Art in Strategic Foresight," World Futures Society, Toronto, Canada, July 29, 2006.
98. "Need Innovation, Try Foresight," Toyota, Los Angeles, CA, July 13, 2006.
97. "Building the Future Using Scenarios," Twelfth Annual Student Conference for Research and Creative Arts, University of Houston – Clear Lake, Houston, Texas, April 20, 2006.
96. "Thinking about the Future: Activities, Approaches, Methods? Phases, Stages, Steps? Tools, Techniques, Exercises? Association of Professional Futurists IMOD, Santa Fe, NM, April 1, 2006.
95. "Five Trends That Will Influence the Future of Design," National Manufacturing Week: "Fast Forward: A Look at the Future of Technology and Engineering," Chicago, IL, March 21, 2006.
94. "Trends in Values and Their Impact on Leadership in the Future," PIMA (Professional Insurance Marketer's Association), Tampa, Florida, March 2, 2006.
93. "The [Truly] Global Economy and Its Implications for T&D," American Society of Training & Development - Houston, Houston, Texas, January 24, 2006.
92. "Scanning for Developing Forecasts: Lessons from the Business World," Defense Intelligence Agency, Arlington, Virginia, December 13, 2005.
91. "Foresight as an Approach to Strategic Thinking," Leadership Forum, Texas Council on Engineering Companies, Houston, TX, October 21, 2005.
90. "Using Foresight to Innovate," Keynote Presentation," *CI in Europe: A Thrust Forward*, Barcelona, Spain, April 28, 2005.
89. "Futures Strategy: Incorporating Futures Tools into Strategy," Workshop, *CI in Europe: A Thrust Forward*, Barcelona, Spain, April 27, 2005.
88. "The Tools and the Approach for Hunting for New Business Platforms," *Pharma Intelligence*, Philadelphia, PA, January 24, 2005.
87. "Integral Environmental Scanning: Going Broader & Deeper for Insights with Strategic Impact," *World Future Society General Assembly 2004*, Washington DC, July 2004.
86. "The Futures of Futures: Strategic Issues for Futures Professionals and the Profession" Copenhagen Institute for Futures Studies, Copenhagen, Denmark, June 2, 2004.
85. "An Audit for Organizational Futurists: 10 Questions Every Organizational Futurist Should Be Able to Answer," Copenhagen Institute for Futures Studies, Copenhagen, Denmark, June 2, 2004.
84. "The Trackers Way: Following the Path from Weak Signals to Strategic Influence," *Future Trends*, South Beach, FL, November 17-19, 2003.

83. "Organizational Foresight Audit," *Foresight Roundtable*, Center for Leadership Studies, Regents University, Virginia Beach, VA, September 26-27, 2003.
82. "Integral Environmental Scanning," *Foresight Roundtable*, Center for Leadership Studies, Regents University, Virginia Beach, VA, September 26-27, 2003.
81. "Implementing Technology Foresight," *Technology Foresight Forum*, Minneapolis, MN, November 12, 2002.
80. "Need Innovation? Try Foresight," VentureLink/Australian Foresight Institute Forum, Melbourne, Australia, September 5, 2002
79. "How Foresight Can Help," TAFE, Swinburne University, Melbourne, Australia, September 4, 2002
78. "Scenarios as a Tool for New Business Exploration," *IQPC Successful Scenario Planning Strategies*, San Francisco, CA, March 20 & 21, 2002
77. "Using Trends to Identify Hunting Grounds for New Business," *Michigan Futurists Network*, Battle Creek, MI, February 12, 2002.
76. "A Taxonomy of Tools for Innovation," *Integrating Strategy & Innovation: New Frameworks & Tool*, A GBN World View Meeting, November 29, 2001.
75. "Growth at Dow," *Where Is the Organizational Edge for Innovation*, Strategos Institute, Palo Alto, CA, September 27-28, 2001
74. "Viral Strategy: Infecting the Organization with New and Improved Change Viruses," *Competia.com 2001 Symposium*, Quebec, Canada, June 11-13, 2001.
73. "Where Have All the Insights Gone," *Trend Tracking: Identifying & Leveraging Consumer Trends*, Shuttters on the Beach, Santa Monica, CA, May 17-18, 2001.
72. "Creativity at Dow," *Cleaning for Brighter Tomorrows*, Consumer Specialty Products Association, Chicago, IL, May 22, 2001.
71. "Institutionalizing Futures, Michigan Futurists Network, Dow Chemical Company, Midland, MI April 18, 2001.
70. "Futures Tools for Exploring the Fuzzy Front End of New Product Development," World Future Society General Assembly, Houston, TX, July 24, 2000.
69. "The Drivers Of Change: Taking The Deep Dive Into The Human Condition," *Trend Tracking*, New York, NY, May 22, 2000
68. "Trends in Global Values: How Values Are Changing and What it Means for Media Definition," *Global Trends Roundtable*, New Directions for News, Orlando, FL March 30-April 2, 2000.
67. "What Corporations Need from Futurists," *UHCL Graduate Seminar on Future Studies*, Houston, TX, January 26, 2000.
66. "Modernization and Nutrition Labeling," *CRFTI Workshop*, Mysore, India, December 12, 1999.
65. "Trends in Global Values: How Values Are Changing and What it Means for Health and Nutrition Choices in India" *FoodPro '99*, Chennai, India.
64. "Role of Futurists Inside the Corporation," *MATl*, Chicago, November 1999.
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59. Facilitator, "WFS Professional Members Forum, Organizational Futurists Track," *World Future Society General Assembly*, Washington DC, August 2, 1999.
58. "What Corporations Need from Futurists," 21st Century Lecture, *World Future Society General Assembly*, Washington DC, July 30, 1999.
57. "The UHCL Alumni Web Site," Young Professional Futurists Forum, *World Future Society General Assembly*, Washington DC, July 30, 1999.
56. Facilitator, "Creating Second Generation Institutions of Foresight," *World Future Society General Assembly*, Washington DC, July 30, 1999.
55. "A Hitchhiker's Guide to the Future: Avoiding Boxes, Confronting Dilemmas, and Finding the Best Routes," *New Directions for News: Inventing the Future of Media*, Boston, MA, June 14, 1999.
54. "HMR 2005: What Does it Look Like and How Did We Get There?" *HMR Summit 1999*, Atlanta, GA, March 8, 1999.

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52. Information Technology Forum, Moderator, *World Future Society Annual Conference*, July 1998.
51. "My Experience as a Young Futurist," Young Professional Futurists Forum, *World Future Society Annual Conference*, Chicago, July 1998.
50. "The Future of Market Research," *American Marketing Association*, Chicago, May 20, 1998.
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48. "Coming Attractions: The Futures," *White Plain, NJ Middle School*, Gaithersburg, MD, April 4, 1997.
47. "The Future of the Global Marketplace: What it Means for Energy," *Parsons Power Group*, Reading, PA, April 2, 1997.
46. "Preparing for Work in the Knowledge Economy," *American University*, Washington DC, March 17, 1997.
45. "Tips for Starting a Mexican Chapter of the World Future Society," *WFS Mexico and the Coraza Corporation*, Mexico City, March 13, 1997.
44. "Forecasting So People Notice," *Committee on Visionary Manufacturing Challenges, National Research Council*, Washington DC, January 16, 1997.
43. "A Preview of the Future," *Concord/St. Andrews Methodist Church*, Potomac, Maryland, January 12, 1997.
42. "The Future of Fluor Daniel Diversified Services," Annual Meeting, *Fluor Corporation*, Lake Lanier, Georgia, October 15, 1996.
41. "Trends Shaping the Future of Energy," *PECO Energy Leapfrog Workshop*, PECO Energy (Philadelphia Electric), King of Prussia, PA, September 18, 1996.
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38. "The Knowledge Economy," *World Future Society General Assembly*, Washington DC, July 16, 1996.
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35. "Trends in Associations," *American Association of Dental Schools*, Washington DC, June 9, 1996.
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32. "The Future of Work," (telephone consultation to aid Hewlett Packard), *Saatchi & Saatchi*, March 8, 1996.
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30. "Future Technology and Education," *Montgomery County Middle School*, February 15, 1996.
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28. "The Future of Commercial Real Estate," *NAIOP (National Association of Industrial Office Parks)* Herndon, VA, Jan. 22, 1996.
27. The Future of Telecommunications, *Innotech, Expert Panel*, October 5, 1995
26. Forecasts in Science, Technology, and Engineering project meetings, 4 quarterly meetings in 1995.
25. A Vision of Work in the Next Century, *American University*, September 11, 1995, Laura Manning
24. A Look into the Future Workshop, *Raba-Kistner Consulting*, San Antonio, September 8-9, 1995.
23. Emerging Issues Workshop, *ASFE-HWAC*, Denver, August 16, 1995.
22. How to Build Scenarios, One-day course, *World Future Society Assembly*, Atlanta, July 1995.
21. American Business in the New Millennium, *World Future Society Assembly*, Atlanta, July 1995.
21. Building a Vision of Work in the Next Century, *World Future Society Assembly*, Atlanta, July 1995.
20. Space Manufacturing 10: Pathways to the High Frontier, the Twelfth SSI-Princeton Conference, Princeton, NJ, May 4, 1995.
19. Beyond 2000, Junior Conference of America, *Johns Hopkins University*, March 11, 1995.
18. How to Evaluate Forecasts, *NASTS Annual Meeting*, Rosslyn, March 3, 1995.

17. Science and Technology in 2050, TECI (Technology, Education, & Communications Institute), February 8, 1995.
16. Technology for the Next Generation, George Mason University, January 24, 1995, Don Ray
15. Mobile Communications Systems/Services Workshop, Warren, MI, January 11, 1995.
14. Nuclear Regulatory Commission, Strategic Planning Workshop, 1995
13. How to Evaluate Forecasts, World Future Society Assembly, Boston, July 1994.
12. What Will Work Really Be Like in the Future? World Future Society Assembly, Boston, July 1994.
11. How Science and Technology Will Reshape Life in the 21st Century, World Future Society Assembly, Boston, July 1994
10. Briefing on the Future of Fuel Cells, 1994.
9. New Business Opportunities from Project 2025, 1993.
8. Project 2025, World Future Society Assembly, Washington DC, July 1993.
7. Information Technology and People at Work, World Future Society Assembly, Washington DC, 1993.
6. World Future Society D.C. Chapter, Projects at Coates & Jarratt, November 1992.
5. American Business in the New Millennium Project meetings
4. Project 2025 project meetings
3. HR 2000 project meetings
2. Briefing on Smart Car Report, 1992.
1. International Association for Impact Assessment Conference, The Future of Risk Analysis Panel, World Bank, 1992.

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2. *ConsumerShift: How Changing Values Are Reshaping the Consumer Landscape*, Tucson, AZ: No Limit Publishing, 2011.
3. with Peter Bishop, *Thinking about the Future: Guidelines for Strategic Foresight*, Washington, DC: Social Technologies, 2007.
4. with Joe Coates and John Mahaffie, *2025: Scenarios of US and Global Society Reshaped by Science and Technology* (Akron, OH: Oak Hill, 1997).
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83. "A Dozen Surprises about the Future of Work," *Employment Relations Today*, Spring 2011.
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80. w/Terry Collins, "The Evolution of Integral Futures," *World Future Review*, June/July 2010.
79. w/ Peter Bishop, "An Overview of the Houston Futures Studies Curriculum: Futures Methods," *APF Compass*, Q3 2010.
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33. "The Simple Facts of Business Life," Hinesight, *Foresight*, April 1999.
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23. "Preventing War and Disorder," *The Futurist*, September-October 1997.
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9. "A Checklist for Evaluating Forecasts," *The Futurist*, November-December 1995, pp. 20-24.
8. "Keynote Address," in Barbara Faughnan, ed., *Space Manufacturing 10: Pathways to the High Frontier*, Proceedings of the Twelfth SSI-Princeton Conference, May 4-7, 1995, (Space Studies Institute and American Institute of Aeronautics and Astronautics, August 1995), pp. xiii-xix.

7. with Joseph Coates and John Mahaffie, "28 Propositions for the Year 2000," *Business Day*, June 26, 1995.
6. with Jennifer Jarratt, Joseph Coates, and John Mahaffie, "Focusing on the Future," *Leadership*, 1995, pp. L16-L30.
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4. with Joseph Coates and John Mahaffie, "Technological Forecasting: 1970-1993," *Technological Forecasting & Social Change*, Vol. 47, 1994, pp. 23-33.
3. "Information Technology and People at Work," *The Futurist*, January/February 1994.
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Interviews

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47. Enrico Pedemonte, *L'Espresso*, Italian Business Magazine, April 5, 2007.
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45. Graham Bowley, "The Time Lords," *Financial Times*, January 27, 2007.
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26. Shari Cauldron, "Trend Spotting: Connecting the Dots," *Business Finance*, February 2001.
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24. "San Diego Holds Key to Future for Marketing Research Conference," *AMA News*, October 25, 1999.
23. "A-Ok To Y2k: The World Won't End, But A Little Preparation Can't Hurt. Here's What To Do As We Approach The 100-Day Mark," *Detroit Free Press*, September 21, 1999.
22. "World Future Society Conference: Feast of the 'Insider' Change Agents," *Mark Satin Report*, September 1999.
21. Steven Weiss. "Biotechnology and Food Trends," *Nation's Restaurant News*, October 1999,
20. "The Art of Gazing over the Horizon," *Organizational Behavior* (NY: McGraw Hill, 1999).
19. "Fuzzy to Focus," *Marketing News*, October 1999, Lisa Keefe.
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13. "Using the Future in Business," *Newsweek*.
12. "The Future," *Hemispheres: Southwest Airlines Magazine*,
11. Cheryl Laird, "Choosing Your Career," *Houston Chronicle*, April 3, 1997.
10. Joanne Mazzoli, "The State of the Future," *Almanac Newspapers*, December 1996.
9. Kathryn Wallace, "The Future of the Global Economy," *Parade Magazine*, August 1996.
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6. Charles Downey "Future Careers," *Boy's Life*, March 1996.
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4. Lini Kadaba, "Future of Health Technologies," *Philadelphia Inquirer*, December 1995.
3. Karen Kreeger Young, "At Mid-Decade Forecasters Taking a Look into Science and Technology Crystal Ball," *The Scientist*, December 11, 1995.
2. Bill Hendrick, *Atlanta Constitution*, July 18, 1995.
1. Cynthia Wagner, "Toward the New Millennium: Living, Learning, and Working," *The Futurist*, Nov/Dec 1994.28(6), p. 37.

Professional Activities

- Board Member, Association of Professional Futurists, January 2006-January 2011.
- Chair, Association of Professional Futurists, January 2008-December 2009.
- Vice-Chair, Association of Professional Futurists, January 2007-2008.
- Executive Director, Association of Professional Futurists, March 2004-June 2005.
- Founding Chair, Association of Professional Futurists, www.profuturists.com, 2002-2003
- Associate Editor & Hinesight columnist, *Foresight*, 1998-present
- Member, World Futures Studies Federation, 2002-present
- Professional Forum Moderator, World Future Society General Assembly, Houston, July 2000.
- Planning Committee Member, World Future Society General Assembly 1998.
- Webmaster, UHCL Futureweb Alumni Web site, 1998-2001
- World Future Society Metropolitan Washington Area Chapter
 - Tasks: start chapter, get speakers, start committees, maintain database, publicity, mailings, organize workshops
 - President, 1995-1997
 - Newsletter Editor, 1992-1997
 - Board, 1993-1997
 - Secretary, 1993-1995
 - Steering Committee, 1992-1993
- Millennium Project (Sponsored by the United Nations University and The Futures Group)
 - Review and summarize scenarios for collection of abstracts
- Editing for The Futurist
 - "Anticipatory Management: Tools for Better Decision-making," September-October 1997.
 - The Future of Energy, September-October 1997.
 - "Generation X: What They Think and What They Plan to Do" March/April 1997.
 - "The Emerging Interactive Society" January/February 1997.
 - "Smart Cards: Key to Cashless Society?" January/February 1997.

Television

- Urban Development & The Future of Houston, Houston8, PBS, April 6, 2012.
- The Future of Jobs," Latina Voices, HoustonPBS, Ch. 8, November 5, 2010.
- "The Future of Libraries," KRIV-26 News, June 28, 2010.
- CBS Early Show, The Future of Happiness, November 13, 2007.
- Interview on Work in the Future for BBC Business Breakfast (N.D.)
- CNN, "The Future," (N.D)
- MS-NBC, "The Coming Year and Beyond," January 1, 1997.
- WMAR, ABC affiliate, Baltimore, "Rodricks for Breakfast," December 28, 1996.
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- Arts & Entertainment Television, Time Machine series, "The Future That Never Was" Interview for PBS, Future of Manufacturing in Japan (my piece didn't air)
- Created and produced 2 Public affairs shows, KHIV Television, Houston, Texas: The Future of Drug Testing, The Future of Private Prisons; 1989.

Radio

- "What does the future have in store for us?" Thunderstruck Radio, October 26, 2012, ([link to podcast](#)).

- "ConsumerShift: How Changing Values Are Reshaping the Consumer Landscape," The West Coast Truth, Russell Scott, January 16, 2012.
- "Values and Rewiring Your Brain," BlogTalkRadio, Dr. Bob Rose, December 17, 2011.
- "How Changing Values Are Reshaping the Consumer Landscape," Coast-to-Coast Radio, December 10, 2011.
- "The Future," Coast-to-Coast Radio, December 31, 2010.
- "The Future of Houston's Children," KPFT-Houston, July 26, 2010.
- Creativity and Workplace, The Brian Lehrer Show, WNYC Radio, December 13, 2007.
- Karen Salmanson "The Future of Happiness," *Be Happy, Dammit!*, Sirius Radio, September 25, 2007.
- Dave Foster, "Trends Influencing Flooring," *Flooring Daily*, May 2, 2007.
- WTOP 1500 AM, Washington DC, "Future of Information Technology, Social interactions, Education, Crime, Biotechnology and Nanotechnology, Judylynne Lilly (202/895-5060), July 1998.
- CIEN 100 FM, Mexico City, Mexico; live, The Effects of Globalization on the Future of Mexico, March 13, 1997.
- ARW 94.7, Rockville, MD, tape, ½ special on the future, Dec 31, 1995
- KMNY, Pomona, CA; live; effect of information technology on jobs; Dale Franks (August and October 1994)
- KPFA (Pacifica), Berkeley, CA; tape; future of work
- WLUP, Chicago; live, effect of science and technology on life; Karen Lincoln
- WBEN, Buffalo; live, information superhighway