

Appendices

Appendix 1. Framework forecasting specification

This appendix contains the exact specifications for the framework forecast.

Forecasting Framework: The basic categories and elements used in forecasting a domain or topic of interest.

- A category is a type of information that plays a specific role in the forecast.
- An element is a specific item within a category.

Contents: Each category should contain:

- at least one element from each of the following societal sectors that are relevant to the domain: demographic, environmental (nature), technological, economic, political and socio-cultural.
- five to ten of the most important items in a standard framework. For more complete frameworks, the category may contain several elements from each sector in a columnar format.

Table A.1 Framework forecasting specification

1. *Domain definition:* A paragraph that defines the scope of the domain, including what is and what is not in the domain. A domain definition may include one or more of the following three levels:

The organization level	The internal environment of the region, organization, industry, or issue that is to be forecast
The immediate level	The external environment that directly affects the organization in the short or medium term. (The stakeholders within the organization are usually quite conscious of this level of the environment.)
The global level	The external environment that indirectly affects the organization in the long term (includes STEEP)
Geography	The area of the forecast
Time horizon	The future date of the forecast

Table A.1 Continued

2. *Summary*: A short description of the major findings of the study, focusing on interesting or important aspects of the future that the research uncovered. (Not a traditional abstract that merely abbreviates the report.) Develop the summary last as a communication device for people who will receive the framework

3. *Current assessment*: A review of the domain up to and including the present. Each of the following may be divided into any of the three levels (organization, immediate/transaction or global) and/or into the STEEP categories

Current conditions	An overview of how the domain is structured and how it operates. Key quantities that characterize the domain
Stakeholders	The major actors in the domain (individuals and organizations) along with their values, political interests and relationships with one another
Past events	Recent events within the domain that have created the current conditions and stakeholders, with particular attention to recent discontinuities that began and define the current era

4. *Era analysis*: the major differences between the current era and the previous one

Previous era	Current era
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5. *Baseline forecast*: material that describes the difference between the present and the expected or most likely future

Constants	Conditions or quantities that are expected not to change before the time horizon
Trends (extrapolations)	Quantities or changes that move incrementally in a specific direction over a long period of time; the value of the quantity and its rate of change (if known). Forecasts of specific quantities and their value at some specific time in the future. Can always say "More" or "Less," or "Increasing" or "Decreasing." Cluster similar alternatives into macro themes
Plans (goals)	Announced intention by any stakeholder to create future change
Cycles	Quantities or changes in the domain that recur, where quantities are in the cycle at present. Can always say "And again..."

(continued)

Table A.1 Continued

Projections	Public forecasts that may influence what is expected to happen
Baseline forecast (expected future)	The result of the constants, trends, plans, cycles and projections. A description of the most likely future at a specific time, focusing on the important differences from the present and the implications of those differences for the stakeholders in the domain. The extrapolated value of important quantities in the future if constants, trends, plans, cycles, and projections continue as expected
6. <i>Baseline analysis</i> : An expected change in the baseline future	
A. Evidence	For the change (as much as is needed)
i. Assumption	Required to use the evidence
1. Alternative	Opposite assumption
a. Reason	For the alternative
b. Reason	For the alternative
7. <i>Alternative futures</i> : material that describes the difference between the expected future and other futures that might happen instead	
Trend reversals	Trends that go on for a while, but then they may stop or go in the opposite direction
Unfulfilled intentions, plans	Intentions or plans that may not be realized or accomplished
Potential events, wildcards	Expected or unexpected events and wildcards that would disrupt, change, and potentially end the current era. Often appear as a headline in a news source
Issues, conflicts, controversies, dilemmas, choices	Issues that are currently being discussed and those that could become important (emerging) along with the various ways they could be resolved and the implications of each of those ways. In form of: "Should we..." or "Should they..."
New ideas, images, perspectives	People and their ideas that present a new or insightful look at the domain, particularly about its structure, types and rates of change and plausible futures. Something really new or novel, even if unusual

(continued)

Table A.1 Continued

Key uncertainties	The quantities, potential events, issues, and ideas that would have the greatest impact on the future, yet which are least predictable/most uncertain. (The key uncertainties are a selection of the most important items from events, issues and ideas above. Key uncertainties do not contain any new elements that are not listed above.)	
8. <i>Scenario kernels</i> : One or more alternative futures (scenario logics); scenarios that represent the most important and different plausible alternative futures of this domain that result from the uncertainties, including major differences from the present, the value of key quantities, and implications for stakeholders		
Title (of the scenario) Kernel (the logic or plot)	Leading Indicators: Quantities or events that would signal that a key uncertainty is being resolved in one way or another or that one or other scenario is more or less likely to occur	
9. <i>Information</i> : lists of relevant items in each of the following information categories:		
	Research	Scanning
Texts	Overview publications that describe the structure, statistics and/or future of the domain	N/A
Periodicals	Journals or magazines that carry overview or summary material about the domain	Journals or magazines that report on the latest developments in the domain
Organizations	Professional, trade or research organizations and institutes that publish relevant material on the field	
Experts	Knowledgeable people who are often consulted about the domain	
Websites	Sites that contain important information for understanding the future of the domain (portals and destinations)	Sites that carry the latest information about the domain.

Appendix 2. World Futures

This is currently the only regularly scheduled course in the curriculum that deals explicitly with the content about the future. As such, it is a survey of the overall trends and issues that are shaping the world on a global scale. Since the content is updated on a regular basis, as trends and events unfold, this course is treated with a brief overview of how it is taught, rather than going into the specific content.

The key premises of the course are:

- The world of today will be different from the world of tomorrow and is different from the world of yesterday
- The direction of those differences can be anticipated
- The resulting alternative futures can and should be observed, analyzed, discussed and, where practical, acted upon.

Several topical areas are covered:

Demographics

Resources (such as food, water, energy and the like)

Globalization

Environment

Geopolitics

Technology (such as information technology, biotechnology, nanotechnology and so on)

Economics

Social (such as lifestyles, values, culture and so on)

The course explores the long-term future of the globe. The students are expected, upon completion, to have:

- a comprehension of the major issues affecting the development of the world's future
- an ability to identify emerging global trends and issues
- an ability to analyze global issues, trends, and drivers of change from multiple perspectives
- a competence in futures-based tools and techniques for analyzing the world's future.

Students pick a specific domain and topic to focus a project around. As the semester proceeds, they scan for developments in their domain and their implications for the future. They build up a set of material to use to forecast the baseline or expected future, alternative futures, and

then offer a recommendation for improvement in their domain. This is the key work product for the course.

A unique feature of the course is that, for selected topics, students are asked to identify different types of relevant information:

- A dataset, graph or other *empirical data* that illustrates an important change
- An *informative descriptive* piece that analyzes change and provides a forecast of the *expected* future
- An *informative descriptive* piece that analyzes an uncertainty and provides a forecast of an *alternative* future
- A *proposal piece* that contains a specific recommendation, proposal or plan for creating a more *preferable future*.

Appendix 3. Scanning form and explanation

The form was originally developed by Wayne Pethrick while he was a student at the University of Houston-Clear Lake. Wayne is now a futurist with Pitney Bowes.

Title		Author					
Brief source		Date					
STEEP Category/ies		Keywords					
URL							
Type <i>(bold one)</i>	Actual event	New trend	New cycle	New plan	Potential event	New information	New issue
Brief description of the item							
How could the future be different as a result?							
What are the potential implications for...?	...Stakeholder name:						
Overall effect <i>(bold one)</i>	Confirming (baseline scenario)	Creating (a new scenario)	Resolving (between two scenarios)	Impact (0-5)		Plausibility (0-5)	
Baseline, new or resolved scenario(s)				Novelty (0-5)		Timeliness (0-5)	
Scanner				Date Submitted			

Figure A.1 Scanning form

Category definitions:

Title	The title of the piece
Author	The primary author of the piece
Brief source	The name of the journal or organization that released the piece
Date	The date the piece appeared
STEEP categories	The one or more STEEP categories the piece relates to
Keywords	Other important terms that describe the piece
Full citation	The full journal or book citation or the URL
Types:	
Actual event	An event that has already happened, but which few people know about and whose implications are not fully developed
New trend	Consistent increase or decrease, more or less of something over time
New cycle	Recurring increase and decrease, more and then less of something over time
New plan	Announced intention to create change in the future
Potential event	A potential happening or occurrence
New information	Information that has just been released
New issue	Debate, conflict, decision, "Should we/they..."
Brief description	A short paragraph describing the event or the new piece of information. What happened or what new information appeared?
What could be different about the future?	A brief comparison about the future before and after this event. How does the future change a result?
What are the implications for ...?	Future consequences of this event for a specific person, group or domain. State the person, group or domain that would be affected
...Name	The name of the person, group, organization, community, country or domain
Overall impact	<i>Confirming</i> – confirms the baseline future; supports an existing condition, trend or plan <i>Creating</i> – creates a new scenario or plausible alternative future <i>Resolving</i> – shows that one scenario is becoming more probable compared to others

Baseline, new or resolved scenario(s)	The scenario that is confirmed (baseline) or created (new) or made more probable (resolved) by this scanning hit
Impact (0–5)	How much is this event or information likely to change the future for that person, group or domain?
Plausibility (0–5)	How likely will this change actually affect the future?
Novelty (0–5)	How new is this event or piece of information to those involved?
Timeliness (0–5)	How much time do those involved have before this item becomes public or is framed in some way?
Scanner	The person submitting the hit
Date submitted	The date the scanning hit was submitted

Appendix 4: Strategic Planning and Change Management

The organization model

Every Enterprise (organization) has a **Mission** – a contract with the World in which the Enterprise agrees to provide certain products and services and the world agrees to grant the Enterprise legitimacy and the resources to carry out its mission. Figure 10.3 (page 260) is a schematic of a generic Mission.

The process begins with a set of **Customers**, individuals or other enterprises that receive its products and services. Serving those customers, even for public sector or non-profit organizations, is the fundamental reason for the Enterprise's existence.

Customers have **Needs**. Identifying Customers' Needs is crucial. It looks easy, but it's not. The common mistake is to confuse a Customer's Need with the product or service that the Enterprise is already offering. So a university might say that their Customers (students) need teachers and courses. No, that's the service or the means for delivering the service. The student really needs knowledge and skill. Immediately, then, one has to question whether teachers and courses are the best way to satisfy that need. (Answer: They do satisfy that need, but there are many other ways, some of which are more effective.) A similar misconception is that Customers need the four million power drills they buy each year. Obvious, right? Not so. They don't need the drills; they need the holes!

Products and/or Services fulfill the Customers' Needs. The Products and Services are the output of the Enterprise. They must satisfy the Customer Needs in the long run or else the Enterprise will eventually lose its legitimacy and disappear.

Finally, the Enterprise thereby derives **Benefit** from satisfying the Customer Needs with its Products and Services. Customers (or someone) eventually "pays for" the Products and Services – often with money, sometimes with political support, recognition or other non-monetary benefits. So there is always quid pro quo, although it can be quite general and amorphous. But in the end, every Enterprise has to get paid or else it won't be able to maintain itself. (Every organism needs to eat or else it will starve to death.)

Stakeholders are individuals and other enterprises that benefit from the success of the Enterprise, but are not served directly by its Products or Services.

The Enterprise also has an internal **Structure** that understands the Customers' Needs, produces the Products and Services and receives the Benefit. The structure consists of People, Facilities/Equipment, Resources and Processes.

Goal hierarchy

(see Figure 10.5, page 263)

- **Enterprise** A group serving a need by investing resources with the purpose of doing some good and deriving some benefit, e.g. a university.
- **Elements** The items an enterprise consists of, operates on, or deals with.
 The external elements of an enterprise are customers, their needs, the products and services that satisfy those needs and the benefits that enterprise derives when it satisfies the needs.
 The internal elements of an enterprise consist of its people, facilities and equipment, resources and processes, e.g. students, etc.
- **Mission** A statement of the purpose of the enterprise, its charter and reason for being, the basis of its legitimacy, e.g. educate students.
- **Vision** An attractive image of preferred future that represents the best that the enterprise can uniquely be or do, e.g. smiling, grateful students.
- **Goal** An external, long-term result that the enterprise wants to achieve, e.g. higher graduate placements.
- **Measure** An observable means of showing how well the enterprise has fulfilled its mission or achieved its goals, e.g. inflation-adjusted, entry-level salaries.
- **Target** A level of the measure that will be feasible, but difficult to achieve, e.g. +25%.
- **Strategy** A long-term, high-level category of internal activities that accomplishes the goals, e.g. partner with local business.
- **Objective** A one-year goal that leads to the long-term goal, e.g. new partner businesses.
- **Project Initiative** A one-year activity that implements the long-term strategy and achieves the short-term objective, e.g. establish internship opportunities with local businesses.

Table A.2 Goal hierarchy

MISSION ELEMENTS	VISION
Customers	An image (not just an idea)
Needs	About the future (not the past)
Products/Services	Attractive, appealing, even compelling
Benefits	Bold, ambitious, yet plausible
People	The best we can be, unique, special
Facilities	Motivating, energizing
Resources	Spoken by leaders, owned by everyone
Processes	
GOAL	MEASURE
High level, long term (3–5 years)	Observable
Things, noun oriented	Valid
Externally oriented (only indirectly controllable)	Feasible, easily administered
Relatively few in number	Easily recognized
Can be measured	
STRATEGY	PROJECT ELEMENTS
High level, long term (3–5 years)	Objectives
Activities, verb oriented	Tasks
Internally oriented (directly controllable)	Assignments
Achieves or partially achieves a goal	Milestones
Can be assigned to an individual or group	Resources
Fundable	
Relatively few for each goal	

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