

Framework Forecasting

Managing Uncertainty and Influencing the Future

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Overview

The methods of futures studies deal with change in all its variety, and for two purposes: to understand change and to influence it. Understanding change means describing expected and other plausible future states, for which we need to prepare. Influencing change means to bring about the best possible future for ourselves and others given the time and resources we have available. People who understand the dynamics of change and the changes that are going on around them are not often surprised. People who then influence those dynamics toward their vision of a better future will have a greater change of getting that better future.

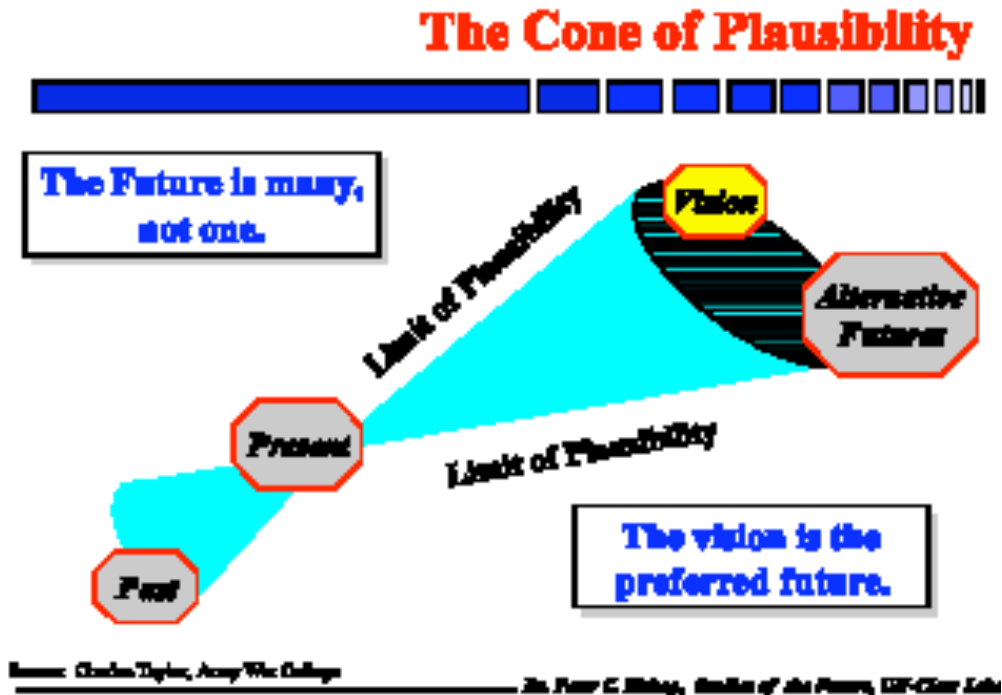
The two big divisions of futures studies, therefore, are forecasting and planning. Forecasting is the cognitive aspect of futures studies, knowing which futures are plausible; planning is the action side of futures studies, working to bring about a better future.

Forecasting results in two types of forecasts: baseline and alternative. A baseline forecast is the extrapolation of present conditions and trends into the future. It is also called the expected or surprise-free forecast. It would be the future that would occur if nothing really surprising or interesting occurred, if present trends continued uninterrupted. No one really expects the baseline forecast to occur, at least futurists don't. But it is a useful place to begin the forecast. Knowing where we are headed gives us a departure point to talk about the other and more interesting forecasts, the alternatives.

Alternative futures happen when the baseline does not. As a group they are more probable than the baseline even though each of them individually is less probable than the baseline. The total of all futures, baseline and alternatives, is represented as an expanding cone. The longer the time that elapses, the less probable the baseline becomes and the more probable something else will occur. In the far reaches of the cone, enough time passes to allow unexpected events or issues to turn the trajectory of the future one way or the other.

The cone has limits, however. It does not include all *possible* futures. That would be too much to handle. Rather it includes plausible futures, those with a probability of occurrence somewhat

larger than zero. The distinction is purely subjective, but the operational definition of a plausible future is that someone could tell a story about how it comes about and reasonable people would admit that they could see it occurring. They do not contain any fantastical leaps of imagination or violations of the known rules of science. There are plenty of plausible futures to consider without getting into all the possible ones, too.



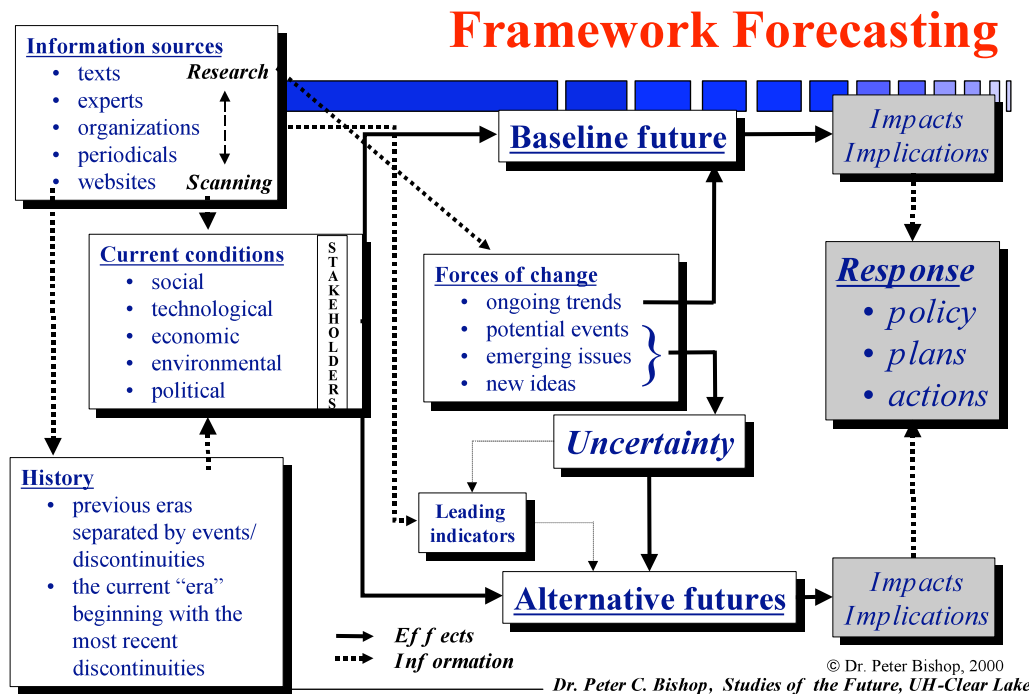
The appearance of an alternative future usually signals the end of the current era and the beginning of new era. Eras are coherent periods of time characterized by equilibrium conditions in which change occurs incrementally. Eras are bounded by events that disrupt the equilibrium and generate a largely new set of conditions and trends. This overall approach to change is called punctuated equilibrium, first development by Niles Eldredge and Stephen Jay Gould to describe the episodic character of biological evolution. It is useful to think of all long-term change in terms of eras, however, because it places the present into an on-going historical context that contains both continuous and discontinuous varieties of change.

Framework forecasting is a process for categorizing information and placing the categories in relation to each to generate the expected (baseline) forecast and a series of alternative forecasts (scenarios). The process begins with a characterization of the present era--when did it start; what are its conditions and trends? It then explores the forces of change, beginning with trends which, after a while, generate the expected future. Discontinuities are then introduced in the form of plausible events, emerging issues (issues that have not yet made the news) and new ideas. The discontinuities are collected into dimensions of uncertainty, each of which has the potential to kickoff a new era. The result is a baseline forecast and scenarios of alternative forecasts whose implications can be explored for opportunities and threats to the enterprise in question.

The Framework consists of five sections describing the Domain, as listed in the appendix:

- Definition
- Current assessment
- Driving forces and the baseline future
- Discontinuities, Uncertainties and alternatives futures
- Information sources

This figure portrays the whole framework process in one chart –



Domain definition

The forecast is always about a Domain, an area of interest for the individual or enterprise doing the forecast. Just about anything with a future can be a Domain from global warming to toy sales. The first section defines the Domain--what is included in the Domain and, sometimes, more important, what is not included. So in the Domain of telecommunications, for instance, one would need to explicitly state whether broadcast communications were included or not. If not, the Domain would only include interactive, two-way communication like telephone or Internet. The reason for defining the Domain precisely is to bound the forecast and not spend time collecting information that is not part of the Domain. Most Domains will be large and complicated enough without including unnecessary elements.

The Domain Definition also includes the Time Horizon for the forecast. The Time Horizon is the longest future time to be considered in the forecast. It is analogous to the spatial horizon—that is, "as far as the eye can see." Forecasts of the economy for 2010, for instance, would be quite different than those for 2030.

Summary

The most important item in the whole Framework Process is the Summary. Although the Summary appears early in the document, it should be completed at the end, once all the other sections are complete. The Summary is the opportunity to look over all the material about this Domain and select those items that are most important for understanding its future. It is easy to get lost in the details because the Framework Process is so information intensive. The Summary prevents the product from being just a mass of facts.

Good candidates for the Summary are surprising bits of information, important implications from the baseline, interesting scenarios developed, and significant information sources. The Summary contains the highlights of the best material in the Framework.

Current Assessment

The first detailed section is the Current Assessment, basically assembling the pieces and the recent history of the Domain. This section provides a snapshot of the Domain in the present. The next sections will put that snapshot into motion. Even though it appears simple and straightforward, the Current Conditions section is a difficult category to define. It contains all the structural elements that an individual would need to know in order to understand the Domain. In the Domain of petrochemicals, for instance, it might include the total annual sales, perhaps by major product category and by application area. It could also cover applicable standards or regulations that govern actions in the Domain.

The Current Assessment also includes the Stakeholders, the individuals and enterprises that work in and could affect the future of the Domain. In petrochemicals again, the Stakeholders would be the primary producing companies, their suppliers and customers, service providers like transportation companies or equipment manufacturers, government regulators and not-for-profit groups like trade associations or environmental organizations. The Stakeholders contain all the people involved in the Domain just as the Current Conditions contain all the quantities and structural elements.

The purpose of the History section is to identify the Previous and Current Eras of the Domain. An Era is a generally cohesive period of time that begins and ends with discontinuous Events. So the Cold War was a Previous Era that began with the Events of 1946-49, such as the Berlin Airlift and the Soviet acquisition of nuclear weapons, and ended with the Events of 1989-91, such as the fall of the Berlin Wall and the Soviet Union itself.

The period within an Era is called the Equilibrium period, a quieter time when Trends shape the future and incremental change dominates. The periods of Discontinuity and Equilibrium together form a model of change called Punctuated Equilibrium, a term borrowed from the study

of biological evolution. Contrary to what Darwin thought, that biological evolution proceeds smoothly, the fossil record shows that significant change in biological capability is infrequent yet rapid when it does occur. So the era of the dinosaur ended 65 million years ago in the fiery catastrophe of a meteor that hit the earth. With the dinosaurs out of the way, the mammals could exploit ecological niches previously closed to them, ushering in the current biological era. Paleontologists have actually recorded five such Great Extinctions in the history of the planet. The model applies equally well to economic, political and even socio-cultural Domains.

The two areas of concern in the Framework is the Previous Era and the Current Era. The Current Era is more difficult to define because we do not have historical perspective on the present and because we do not know how it will end. Geopolitically, the Current Era might be the Age of Terror of the Conflict between Islam and the West, beginning with 9-11. Economically, it could be the Age of Globalization, beginning with the fall of the Soviet Union and the dominance of capitalism as the preferred economic system throughout the world.

Although difficult, it is nevertheless important to try to define the Current Era and how it began because the Current Era captures the “spirit of the times” and, most importantly from a forecasting perspective, it captures most of the major Trends and Issues that are shaping the future. When the era changes, however, those Trends and Issues go away or change significantly. So in the Cold War, the nuclear issue was how many nuclear missiles the U.S. and the U.S.S.R. had pointed at each other. In the Current Era, nuclear weapons are still an issue, but now the issue is nuclear proliferation.

Comparing the Previous and Current Eras can also be highly illuminating. In fact, people and institutions are usually struggling with the Trends and Issues of the Current Era, but they are using the ideas and tools of the Previous Era. Making that comparison explicit reveals the novelty of the Current Era, and it allows us to jettison old ideas and habits more readily in order to confront the Current Era on its own terms.

A simple device for doing such a comparison is a small chart that requires people to identify the differences between the Previous and the Current Eras.

<i>Discontinuous Event:</i>		
	Old Era:	New Era:
Conditions, Arrangements		
Trends		
Issues, Conflicts, Controversies		
Responses, Strategies, Plans		

Table 1
Old Era vs. New Era

An example of a discontinuous event that started the Current Era in information technology might be the release of HTML and the creation of the World Wide Web (~1993-4). The comparison between the era before the World Wide Web and the era after it would look like this:

<i>Discontinuous Event:</i>	<u>Creation of the World Wide Web</u>	
	Old Era: PC	New Era: Internet
Conditions, Arrangements	Print	Digital
Trends	More paper, mail	Less paper/mail as % of all information and communication
Issues, Conflicts, Controversies	Cost Distribution	Privacy IP Rights
Responses, Strategies, Plans	Push In-house development	Pull Open source development

Table 2
PC Era vs. Internet Era

Those comparisons are commonplace today because the Internet era is more than 10 years old, but more insight could be gained from Domains that began more recently, like the Wireless Era, or the Genomic Era, or the Age of Terrorism. Those Eras are not so mature that we are fully aware of their import or of the appropriate responses and strategies required to be successful.

In fact, some Eras are so new that the Domain may be in the midst of the short-term effects of its opening Discontinuity when the Framework is constructed, but that is rare because Eras are long compared to the turbulent times that get them started.

In many Domains, it is possible to identify more than one Discontinuity that began the Current Era. Multiple Discontinuities indicate that the present is layered with a number of equilibrium periods. For instance, the Current Era of public education in the U.S. might have begun with the publication of *A Nation at Risk* (1983), a study that described the deplorable state of public education throughout the country, or with the arrival of the Internet (~1994), a communication medium that could change the very delivery of education itself, or the passage of the No Child Left Behind Legislation (2002) that required standardized testing in all states. All three are significant Events in the recent history of public education in the U.S., and together they all define the Trends and Issues in the Current Era.

The History category, however, is not a complete history of the Domain. Such an exercise might be interesting, but it would not be especially relevant to the Domain's forecast. Events and Trends involved in Eras before the Previous one have usually faded from consciousness, and though their residue may continue to shape the present, their effect is not as strong as the Events

and Trends in the Current Era. Thus a complete historical study of the Domain is different from and generally unnecessary in constructing a forecast.

Finally, the Current Assessment also lists those quantities, structures and Stakeholders that are likely to continue unchanged throughout the forecast period. Forecasting is about change, but change occurs in layers--from the daily toing-and-froing record in the daily newspaper and even more frequently on the 24-hour news channels, to the medium-size changes that take months or years to play out, to the truly deep currents that take decades to have an effect. Beneath even the deepest layer of change lies a layer of constants, things that are changing so slowly or not at all that they can be considered static for the purpose of the forecast. In the petrochemical Domain, for example, one would consider the need for plastics and for the financial system that accounts for it as constant throughout the forecast period. That is not to say that the elements cannot change in some unlikely set of Events, but the probability is so remote that one cannot consider them in depth and do justice to the more significant changes within a limited time and effort. The Constants are also called the boundary conditions in systems modeling--the conditions around the boundary of the Domain that are unlikely to change during the period under study.

The Current Assessment is the snapshot of the Domain as it exists today. The elements in the Current Assessment tend to be unremarkable. Nevertheless, it is good to articulate what they are so that any questions or Issues concerning the Domain can be raised and dealt with, particularly the assumptions about what is likely not to change in the forecast period. With the snapshot taken, we set the Framework in motion with the consideration of the driving forces of change.

Baseline forecasting

Putting the snapshot in motion requires a consideration of the drivers of change. The three basic drivers of change in this theory are Trends, Events, Issues. Trends and other relatively predictable drivers of change lead to one type of future, the expected or baseline future, and the other drivers lead to other futures, the plausible alternative futures. Together they describe the major regions at the end of the cone of plausibility, an ever-expanding region of alternative futures as time goes on. The big difference between Trends and the others is the degree of uncertainty. Trends do reverse themselves, but rarely. Hence they are fairly predictable. Potential new Events, emerging Issues and new Ideas, however, are quite unpredictable. Trends, therefore, lead to the expected future, called the baseline, at the center of the cone and intervening Events, Issues and Ideas can twist and turn the trajectory to some other region in the cone. Hence we deal with two types of futures--the expected and the alternative futures.

The expected future is called the baseline because it is the fundamental future with no surprises. It is *more likely* to occur than any of the other single futures, but it is not *likely* in itself because of all that could intervene in the meantime. (As Herman Kahn once said, "The most likely future isn't [likey].") It is called the baseline because it is good place to start, as the surprise-free default future against which we develop the more interesting alternative futures.

Listing Trends that drive the expected future is usually not too difficult. In fact, selecting the most important ones from the vast number proposed is usually more challenging. One must guard against two dangers, however, in proposing Trends. The first danger is to select almost all

negative Trends or Trends that lead to unpleasant futures. Is this a human trait to imagine negative futures first? Perhaps so, but for whatever reason, it occurs all the time. It is doubly strange that we think of negative Trends much more readily than positive ones given the overall progressive view of change in Western culture.

It is perhaps this primeval view of change, that any change in the stable societies in which our most basic instincts evolved would be negative, that sees catastrophes more often than opportunities even in this modern world. In selecting Trends, therefore, it is important to balance the bad with the good. Although we rarely feel it, good things do happen. Positive and negative Trends do not have to be exactly equal, but the positive should be strongly represented nevertheless.

A second tendency is to draw Trends from certain sectors of society, especially the technological. The American or Western view of change sees technology as the big driver, particularly during these heady days of the electronic revolution. But technology is only one of five or six sectors of change. The list of sectors varies by individual or enterprise. The most common list is the acronym STEEP--Social, Technological, Economic, Environmental, Political. We use STEEP because we can pronounce it, but it may be too brief. Some would also include a Demographic category, others might include a Legal one, still others an Information category. Some would even group the Trends into their major categories or extend the form itself to the right by adding columns for each of the STEEP categories. Whichever set one uses, the Trends should be distributed across all categories. Again they do not have to be equal, but there should be representatives in most categories.

Four other drivers contribute to the development of the baseline future: Constants, Cycles, Plans and Projections.

- **Constants** remind us that not everything changes before the arrival at the time horizon. Hence some of the elements of the baseline future will be the same as they are today. In fact, most things do not change, but identifying the most important constants is not trivial. In fact, directly after articulating some constants, others will think of ways in which they might change. So the discussion of constants is an excellent probe into the assumptions of the baseline forecast.
- **Cycles** are predictable oscillations of some variable. So the seasonal cycle of sales, the boom and bust of different commodities, or even the swing from one political extreme to each other can be part of the baseline. It might be impossible to predict where in the cycle one is at the time horizon, but at least, the repetition of cyclic variables is not confused with the secular increase or decrease of trends.
- **Plans** are intentions to act. They are announced by individuals, organizations or governments. People who announce plans do not always carry them out, but they are usually sincere in their intention to do so. Hence they represent a driver of the future. A government's plan to reduce taxes or to start a new program is not guaranteed to occur, but it is more likely having been announced than if it were just a possibility.

- **Projections** are forecasts of the baseline future made by others. Again these are not guaranteed to be accurate, but most forecasters are technically qualified and generally good at describing the baseline. Projections also increase their own likelihood by the process of self-fulfilling prophecy—i.e., what people believe is going to happen is more likely to occur than if they do not believe it will happen. Self-fulfilling prophecy may be stronger or weaker in different Domains, but the projections themselves and their effect on the future is important for understanding the baseline.

The baseline then is the result of Constants, Trends, Cycles, Plans and Projections that create differences in the future. The top 5 to 10 of each type should be included in this section. The baseline future is the result of these driving forces and their consequences for the Domain being forecast. It is sometimes hard to distinguish a trend or a plan from the baseline future. Trends and plans, however, exist in the present. They are changes or intentions going on today. Describing the baseline requires extrapolating these Trends and Plans into the future the way projections do. It is a subtle difference, but an important one. The most important realization is not just that Trends will continue, but that the future will be quantitatively and qualitatively different as a result. Highlighting the most important differences is the beginning of understanding the future.

Alternative futures forecasting

A funny thing happened on the way to the baseline future--something else happened instead! That is the essential problem of forecasting. We can tell very well where we are headed, but no one really expects to get there. Something will happen between now and then to upset the most elaborate and well-supported baseline forecasts.

Can we tell what that will be? No, but we can guarantee that something will. What is one to do then? Give up the forecasting enterprise entirely? Hardly. Rather we explore the range of variation in plausible futures by focusing on the Uncertainties in the baseline forecast.

The beauty of alternative futures forecasting is that we don't even have to get all these Uncertainties right, though the better they are the more interesting and useful our alternatives will be. But even if we don't get the "right" alternatives, we are at least considering some of them. The effect is to remove the illusion of certainty or determinism, that feeling that we know what is going on and we can tell where we will end up. Plausible alternatives show that one can't be positive that the baseline will occur--hence the need for flexibility, contingencies, creativity. That attitude, more than the right alternatives, will prepare enterprises for the unknown and the uncertain.

Uncertainties arise from the other drivers of change--potential future Events, emerging Issues, and new Ideas.

- **Events** clearly change the future. Eras begin and end with Events as described above. If they happen, you get one future; if they don't you get another one. Will there be a major economic recession? Will the atmosphere suddenly shift into another warmer or colder mode due to greenhouse gases? Will AIDS mutate into another more communicable

form? Will scientists develop the means to retard aging? Any of these Events could shape the future dramatically. The Events specific to the focal Domain have the same power and the same degree of unpredictability.

- **Issues** also have the power to shape the future. Resolving current Issues one way or the other could make the future different. Issues on the agenda today include U.S. involvement in the rest of the world, free trade or protectionism, assistance for or competition with the world's developing countries, universal health care, endangered species. Other Uncertainties arise from what are called "emerging Issues"--Issues that have not yet appeared on the public agenda. As with Events, emerging Issues are inherently uncountable, but some are more apparent than others. Emerging Issues are not unheard of, but they are not receiving the attention they could. The difference is a framing event, an occurrence that propels the issue onto the public agenda. Books or studies might be such an event. Dr. Jim Hansen's testimony on the reality of ozone depletion before Congress in 1989 was just such an event. 9-11 put terrorism on the world's agenda; Iran and North Korea did the same for nuclear proliferation. Emerging Issues have a way of significantly changing the direction of the future after they become framed.
- Finally, **Ideas** also have power to change the future. "There is nothing as practical [or as powerful] as a good theory" (Kurt Lewin). New Ideas have shaped history--religious ideas contained in Christianity and the other world religions; political and economic ideas of monarchy, democracy, socialism, communism, mercantilism, capitalism; social ideas like human rights, freedom of the individual, freedom of the press and assembly. New Ideas in the focal Domain can also shape its future--welfare reform, market-oriented solutions for environmental problems, charter schools and vouchers. Where do new Ideas come from? Who knows? But when they appear, they can have a profound impact on the future--hence their ability to kick off alternative paths to the future.

Images of the future are also ideas that shape the future. Elise Boulding, herself a proponent of powerful positive images of the future, describes Fred Polak's argument about how images shape the future –

According to Polak, the human capacity to create mental images of the "totally other" - that which has never been experienced or recorded - is the key dynamic of history. At every level of awareness, from the individual to the macrosocietal, imagery is continuously generated about the not-yet. Such imagery inspires our intentions, which then move us purposefully forward. Through daily choices of action, individuals, families, enterprises, communities, and nations move toward that which they imagine to be a desirable tomorrow. – "Why Imagine The Future?" by Elise Boulding (<http://www.context.org/ICLIB/IC40/Grass.htm>).

So the Uncertainties about the future are numerous and unknown. A list of the most important Uncertainties, however, is a valuable asset because they together identify the most important alternative futures, those with the greatest impact on the Domain. The Key Uncertainties are

chosen using two criteria--impact and unpredictability. Impact is straight-forward--which Events, Issues or Ideas would change the baseline the most if they were to occur.

Uncertainty and Unpredictability

Judging unpredictability or uncertainty is a little trickier. The problem arises from the fact that most people confuse uncertainty with probability. "Highly probable events are also highly certain," they say. "Therefore, highly improbable events are also highly uncertain." The first statement is true, but the second is not. The problem is illustrated in this figure.

While highly probable events are quite certain and predictable, highly improbable events are also predictable. They are predictable because they probably will not occur. It's the Events in the middle of the distribution, the moderately probable, the 50-50, that are the least predictable.

We have been taught all our life to avoid such Uncertainties because up to know, we have not known what to do with them. Since we could not predict their outcome, we were at a loss for what to say. In the methodology of alternative futures forecasting, however, Uncertainties are the most important element. They create the alternatives that make up the rest of the cone of plausibility. Without uncertainty, the future is just the baseline. Without uncertainty, the future is already determined. But then where is our chance to influence the outcome? What do we do about an already pre-determined future? So in alternative futures forecasting, we search for important Uncertainties, and we use them to explore the cone of plausibility.

The development of scenarios is a whole methodology of its own that can be incorporated into the Framework Process, but it does not have to be. Rather the scenarios in the Framework can just be brief suggestions of how the future may turn out given the Uncertainties. The purpose is to be aware and to agree that many futures are plausible and that the baseline future is not guaranteed. Indeed one of the alternatives will probably happen instead. So proceed with caution, be flexible, be alert to the signals of change, act contingently so that actions taken can be revised and amended when new information appears.

Leading Indicators

Finally, the alternative futures section concludes with attention to Leading Indicators. While futurists revel in the Uncertainties of the long-term future, those items will not be uncertain forever. As the future gets closer, they will resolve themselves into a singular present (or at least that is the way we think about it). At any rate, Events that don't happen, Issues that don't appear, Ideas that are not created pass off to the side much like the hazards to navigation (rocks, buoys, other ships) pass off the side of vessel in motion. So knowing as early as possible how the Uncertainties are resolving themselves is the key to navigating the waters of the future.

Leading Indicators are the focused information that will tell how an uncertainty is resolving itself. It is a set of precursor Events or statistics that point toward one alternative rather than another. What are the signs of impending recession? What indicates whether or not the have/have-not gap is growing or shrinking? How does one tell whether other countries resent the U.S.'s position in the world more or less? As opposed to scanning, which takes in everything relevant to change in the Domain, Leading Indicators are very specific, targeted pieces of information with a clear link to one alternative future or another. Some even use a special term for watching Leading Indicators; they call it monitoring as opposed to scanning. Scanning uses the radar image; monitoring uses the image of pilot or nurse who monitors their instruments for any signs of change. Change (or stability) in the Leading Indicator gives a clear signal toward the increasing likelihood of one alternative future or another. Leading Indicators are the signposts along the way to whatever future ultimately prevails.

Alternative futures then balance the baseline. The baseline is the expected future if nothing really surprising happens; the alternatives contain the surprises. The real future is a combination of both. Many elements of the baseline will come about, but not all. Speculating on how the baseline could be wrong is the source of flexibility and creativity in approaching the future. We need both the momentum of the baseline and the surprising developments of the alternatives to appreciate and prepare for the real future when it finally becomes the new present.

Information sources

This last section catalogs the most important information sources used in the Framework to date (research) and the sources that will be most useful in the next phase (scanning). The Framework is the sum total of what is most important to know about the future of Domain at the present time. Scanning is the on-going effort to keep up with new changes, ultimately to keep the Framework current. So anything that might change the Framework, even in the slightest detail, is a worthy scanning hit. Scanning in turn provides the material to adjust the Framework to new changes that occur after it was originally created. The Framework therefore is a living document, periodically reviewed and revised in light of recent change revealed by scanning.

The information section lists where information about the Domain and, more importantly, where change and the future of the Domain are presented and discussed. Information about change exists in standard publications like texts and periodicals. It also resides in the human sources of information--individuals and organizations.

Websites, the ubiquitous source of information these days, also contain a wealth of information. Important and useful websites come in two varieties: portals contain links to many other websites in the Domain; destinations contain the best information themselves. Portals are characterized by many links going out of the website. They are often nothing more than a long list of links. Destinations are harder to determine since they are linked to by many other sites. One can tell a good destination site, however, by use the Google “link:” command. Entering “link:URL” into the Google search box lists all the sites that link to that URL. The more sites that link to that site, the better a destination site it is.

One note of caution: It is easy in this electronic age to fool ourselves that all information is contained on the Internet. (For a good overview of this issue, consult "[Overcoming Net Disease](#)": The risks in depending solely on the Internet for CI research," by Chuck Klein available. While the Internet is vast and growing rapidly, some of the best information is still obtained from other sources, notably experts. Experts know things about the Domain that have not yet been published. True, in-depth forecasts will always require querying the experts for what they know.

Conclusion

The benefit of listing the most important information in the Framework categories is more than just a repository for good items. It also requires input and agreement from others. There is nothing like a good list to raise assumptions and resolve issues among a group of people who believe that they agree with each other. For the most part, they probably do, but it's the little disagreements that may grow into broad conflicts down the line. Thus the Framework document is more than just a way to categorize information. It is also a method for articulating and coming to consensus on a group's images and drivers of the future. That consensus can be a powerful means to align and work together for their common future. It also a great platform on which to build strategy and action--a platform that can also be modified as conditions change.

There is nothing in the Framework Process that is controversial or even novel. Taken together, however, building a Framework can be the first step to truly understanding the future of a Domain and for getting consensus on that understanding as a prelude to action.

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Appendix I

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. Each category should contain only 5 to 10 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. Each element should be accompanied by a reference specifying where that information came from. References can then be aggregated in the Information Sources at the end.

Definition	<p>a paragraph that defines the scope of the domain, including what is and what is not in the domain.</p> <p>A domain definition may include one or more of the following three levels:</p> <ul style="list-style-type: none">▪ The enterprise 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 enterprise in the short- or medium-term. (The stakeholders within the enterprise are usually quite conscious of this level of the environment.)▪ The global level--the external environment that indirectly affects the enterprise in the long-term. (The global level includes the STEEP factors.)
Time horizon	<p>The date by which the baseline and alternative futures are expected to happen.</p>

Summary	<p>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.) <i>Develop the summary last as a communication device for people who will receive the framework.</i></p>
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Each of the following may be divided into any of the three levels (enterprise, immediate/transaction or global) and/or into the STEEP categories.

Current assessment -- a review of the domain up to and including the present

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

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
Cycles	Quantities or changes in the domain that recur, where quantities are in the cycle at present. <i>Can always say "And again..."</i>
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. <i>Can always say "More" or "Less," or "Increasing" or "Decreasing..."</i>
Projections	Public forecasts that might influence what people expect to happen
Plans, goals	Announced intention by any stakeholder to create change in the future
Expected future, baseline forecast	The result of the cycles, trends and plans in the expected or mostly likely future...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, cycles, trends and plans continue as expected

Alternative futures -- 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. <i>Can always appear as a headline in a news source.</i>
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. <i>Can always "Should we..." or "Should they..."</i>
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. <i>Something really new or novel, even if unusual.</i>
Key uncertainties	The quantities, potential events, issues and ideas that would have the greatest impact on the future, yet which are least predictable (ie most uncertain) <i>(The key uncertainties are a <u>selection</u> of the most important items from events, issues and ideas above. Key Uncertainties do not contain any new elements that are not listed above.)</i>
Alternative futures, scenarios	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
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

Information sources -- lists of relevant items in each of the following information categories

	<i>Research</i>	<i>Scanning</i>
Texts	Overview publications that describe the structure, statistics and/or future of the domain	
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	
Web sites	Sites that contain important information for understanding the future of the domain (portals and destinations)	Sites that carry the latest information about the domain

