Improving Decision Making in the Area of National and International Security- the Future Map Methodology

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1. Summary

The qualitative shift in the complexity of the global security environment requires a proactive, networked decision culture. This article proposes improving decision making in the area of national and international security by building a comprehensive, shared map of the organization's future environment. The Future Map methodology creates a platform for leveraging numerous internal and external contributors, driving a "strategic conversation" across the organization, and linking strategy, intelligence and learning.

2. Introduction

The capacity of organizations working in the national and international security area to make good decisions depends to a large degree on their ability to anticipate the behavior of complex social and political systems. Our far from perfect knowledge of these systems, the uncertainty and ambiguity associated with their future development, together with often conflicting perspectives of multiple stakeholders further complicate this work.

To be successful in dealing with global security challenges, a proactive, anticipative approach, or what Research Professor of International Affairs at George Washington University Leon Fuerth calls "forward engagement," is critical. Such engagement is difficult to imagine without the organization's commitment to a "future preparedness" that involves continuous systematic exploration of its future environment, and building of capacities to meet coming challenges. From a strategic perspective, it may be more important whether organizations have processes and tools for continuously improving the knowledge of their complex environment, than how well they are able to understand this environment today. The lack of a systematic, organization-wide approach to "future preparedness" is one of the greatest hurdles that prevent organizations from adopting a more proactive strategic posture.

3. Challenges of decision making in a complex environment

The challenges of decision-making in the international security area arise from the complex nature of social and political systems as well as from the internal complexity of organizations in charge of security. A global security environment is constantly changing, and the relations between the factors of change are often difficult to understand and quantify. The "human" factor introduces additional elements of surprise. While many

decisions carry potentially high political and economic costs, they have to be made fast and on the basis of information that is often ambiguous and rarely complete.

At the same time, decision makers need to reconcile multiple, frequently conflicting internal perspectives. They have to consider options and strategies derived from organizational processes that are based on different methodologies and information. Short-term operational requirements may not be entirely consistent with long-term strategic goals. Personal agendas, experiences and value judgments play an important role, while distance, cultural backgrounds and organizational procedures create potential for "blind spots."

The characteristics of the international security environment define the need for the tools that have the potential to offer the most value for decision makers in managing uncertainties and risks [Van der Steen, 2005.] If we draw a chart that plots the degree of our understanding and predictability of the future environment against the rate of change impacting the organization, the following three situations are possible (Figure 1.)

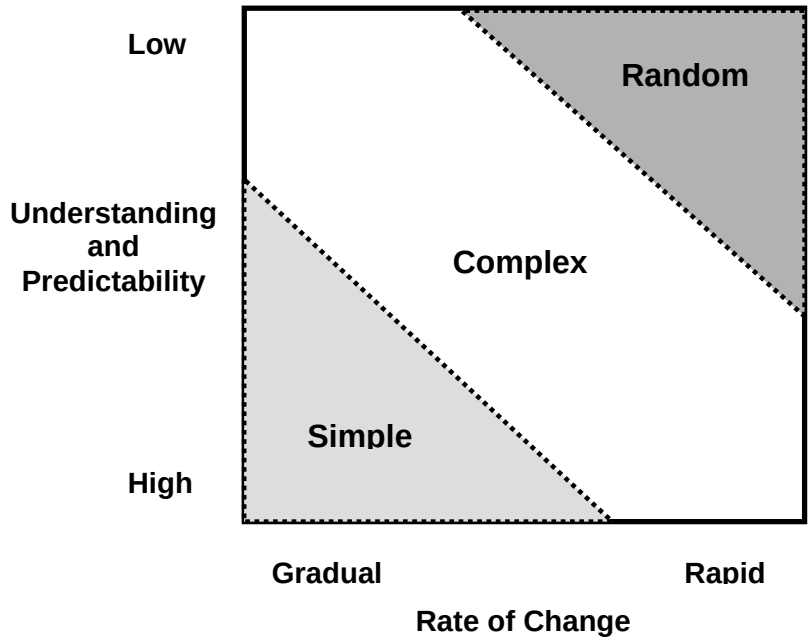


Figure 1.

Sudden changes, which we cannot predict may be considered *random*, as they cannot be anticipated. Major accidents, natural disasters or terrorist acts can be placed in this category. To prepare for such situations, decision makers should focus their attention on developing the capacity of their organizations to withstand the impact of these events as well as the capacity to mitigate and recover. Building organizational resilience is the only strategy.

Predictable and gradual changes present a relatively *simple* challenge that organizations can handle using traditional strategic planning approaches. The development of robust models of the environment will go a long way towards improving the quality of strategic decisions. The evolution of the biggest "threat presented by the conventional and nuclear forces of the USSR" during the Cold War, as Leon Fuerth points out, was fairly gradual

and predictable. As a result, the national security agenda was "prioritized around it into a hierarchy" and its management was based on "a pyramidal approach" [Fuerth, 2006.]

The space between the simple and random is by definition a domain of *complexity* [Wikipedia.] The growing complexity of today's security environment manifests itself in two ways. Not only do we have to deal simultaneously with multiple, often inter-related, yet distinct challenges, but the underlining economic and political changes are driven not only by governments, but increasingly by "multinational corporations, state-owned enterprises, non-government organizations (NGOs), and even by "super-empowered individuals" [Bremmer, 2006.]

Dealing with relatively well understood but rapid changes, the aftermath of a financial crisis, for example, requires strong implementation and coordination capabilities, while relatively slow but ambiguous developments, such as strategic implications of new technologies or climate change, will challenge the organization's capacity to anticipate and adapt.

According to Fuerth, "we have entered the period when the problems we face are themselves networked: Information about them is marked by complex interaction, and organization for dealing with them must become flattened and integrated. The expertise required to track these problems has broadened."[Fuerth, 2006.] To achieve success, the complexity of the organization's decision-making system must be, using the words of Yaneer Bar-Yam, "correctly matched to its environment" [Bar-Yam, 2004.]

In this complex environment the ability of organizations to shorten the time between the recognition of warning signals and the implementation of decisions is critical. Success depends on how fast the whole organization can see the "big picture" and learn to change its ways of working. Organizations need a rigorous "future preparedness" process that would drive their collective learning about the behavior of the complex systems around them. In practice, they should focus on the following strategies:

- Develop, in absence of reliable environmental models, the ability to learn about the behavior of the "target" systems using a "forced learning" method based on trial and error: proactively anticipate changes, comparing as many perspectives as possible, while being ready to question their assumptions and adjust the picture of their future environment as changes occur.
- Improve their capacity to meet unanticipated challenges faster and more effectively: quickly share the "big picture" of changes and challenges across the organization, accelerate adaptive learning processes, mobilize commitment, drive and measure their progress towards the new objectives.

Both strategies require the creation of the "working picture" of the future that can be shared, debated, and contributed to by many actors across the organization, as well as the dynamic scorecard of the organization's performance in relation to its future challenges.

4. Requirements for the Picture of the Future Environment

To improve decision-making we have to create and organize a shared future space. The picture of the future environment needs to be based on a common denominator that does not depend on the type of methodology employed and the source and nature of the information. This picture must be able to display both strategic and operational future in real time. The process of building this shared picture must fulfill the following fundamental requirements:

1. Create a boundary-less, systemic, holistic view of the future security environment based on broad inter-domain, inter-agency, and when possible, global expertise.
2. Bridge the methodological gap between future-related techniques and processes and established "core" organizational tools and processes, thus making future preparedness a daily activity linked to established reporting and measurement tools such as organizational scorecards. [Kaplan and Norton, 1996.] Organizations need to track not only the external environment, but also their internal preparedness progress.
3. Connect four elements – future exploration, early warning, communication, and use of information about the future as parts of one comprehensive system, a unique depository of all future-related knowledge, as well as a real-time, shared space for exchanges, analyses, debates and learning.
4. Integrate both long- and short-term preparedness perspectives – be reactive enough to offer real time intelligence along with strategic foresight, to avoid the competition for decision makers attention between their daily needs and the "big picture," recognizing that both are essential to strategic success.
5. Ensure a highly intuitive visual interface, in order to be able to communicate the situation and key messages quickly, and speak the language of decision makers in a way that conveys highly strategic analysis along with pure facts.

Where can we look for inspiration in designing such a tool? Take the example of the Airborne Warning and Control System (AWACS). What makes it so valuable? Integrating on one screen and tracking in real time the battlefield and the movements of own and hostile forces, the AWACS creates a transparent decision environment, in which both staff and field participants can contribute and learn. As the result, the AWACS allows to conduct joint, network-centric warfare, linking "sensors, decision makers and shooters to achieve shared awareness," [Alberts, quoted from Fuerth, 2006.]

We need tools that create "shared awareness" of the complex and continuously changing global political and security environment and that extend this awareness "as far into the future as possible" [Fuerth, 2005.] Without such tools it is hardly possible for the new decision making culture to take hold.

5. The Event Field

How can we assemble a shared picture of the future from a multitude of facts and opinions? How can we present the future in a way that facilitates decision-making? How can we get the maximum number of people within and outside of the organization involved into the scanning of the global environment? How can we learn to continuously question our assumptions and conclusions? How can we make the information collection and information assessment processes work together as one?

All future scenarios, objectives, decisions, and warning signals are the *events* that we anticipate. Using an *anticipated event* as the "common denominator," we can recreate our future environment, both short- and long-term. We believe that we need to put in front of decision makers the *field of anticipated events* with which the organization will have to deal in the future. This Event Field is the product of our collective anticipation; it is the picture that appears on our collective future "radar screen." Our goal is to construct the organization's Event Field and then continuously question and clarify this picture of the future using all means available.

The purpose of the Event Field is to involve decision makers in a collective learning process that focuses them on future preparedness. By introducing the future Event Field, we are shifting the discussion, as Arie de Geus proposed, from "whether something will happen" to "what would we do, if it happened." [Arie de Geus, 1999.] The process of the construction and assessment of the organization's future Event Field forces the participants to "live in the future," going back and forth in time, "trying on" various alternatives. It takes decision makers from "future awareness" to "future appropriation."

This process is consistent with the observations about how people unconsciously prepare for the future made by the Swedish neurobiologist David Ingvar and described in his article "The memory of the future" published in 1985. According to Ingvar, a part of the human brain "is constantly occupied with making up action plans and programs for the future," making "alternative time paths into the future," and "storing these alternative time paths." This "memory of the future" helps us to establish a "correspondence between incoming information and one of the stored alternative time paths," thus perceiving its "meaning." It also allows us to filter out irrelevant information that has no meaning for any of the "options for the future which we worked out" [quoted from Arie de Geus, 1999.] By creating a similar process in organizations, we can help their leaders visualize strategic paths towards the future, identify and prioritize the critical changes in their security environment, and develop and effectively execute strategies.

6. Construction of the Future Map

A field of anticipated events can be built for any domain or entity, whether an organization or a country. Following the practice of social scientists, we define an *anticipated event* as *Who will do What to Whom/with Whom, When and Why.*

The Event Field stretches as far into the future as available information allows. In the Event Field, anticipated events are arranged on a timeline, in the columns that correspond to the key factors that impact the future of the organization (Figure 2.)

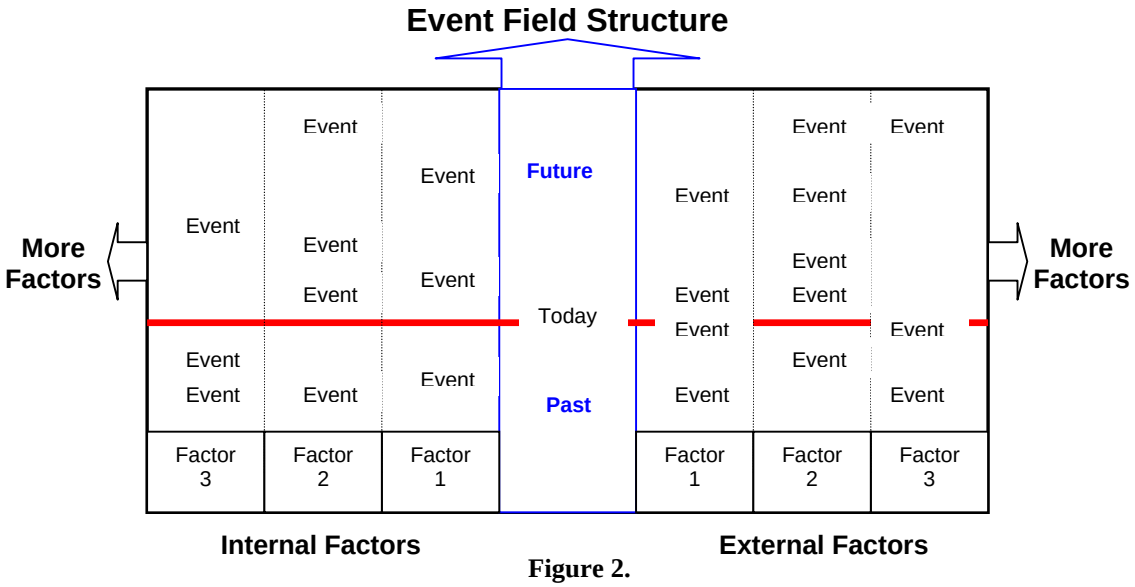


Figure 2.

Factors that influence the future may represent the external environment as well as the internal situation of the organization. These factors can be divided into several levels of sub-factors, and further into scenarios of their likely development. (Figure 3.)

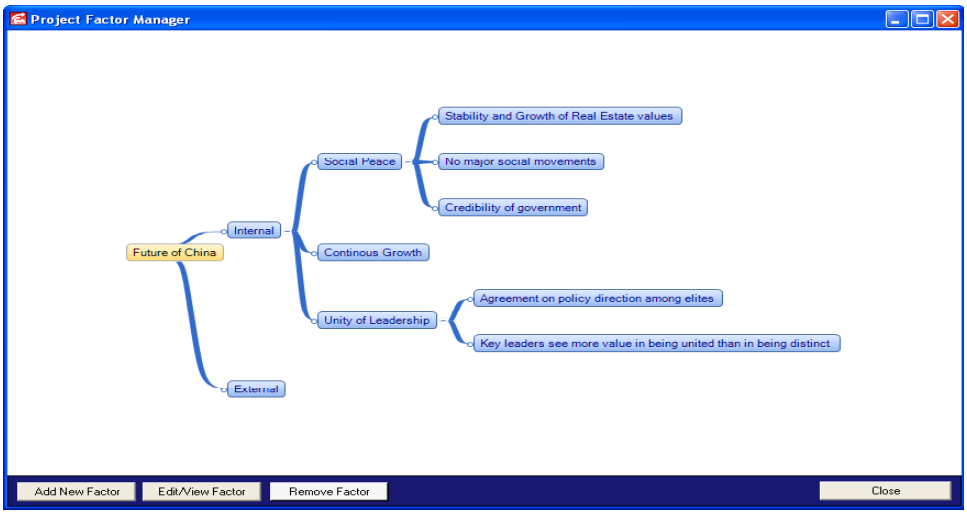


Figure 3.

The Event Field integrates into the two-dimensional "Time-Factors" framework information from all contributors inside and outside the organization: early warning networks, external expert communities, newswire reports, trend forecasts or automatic extraction tools. Internal decisions can also be incorporated into the Event Field as anticipated events. The Event Field creates a space into which the information from all sources can be continuously fed. While working with a multitude of continuously evolving events related to a large number of factors may seem exceedingly challenging, specialized web-based software solves this problem (Figure 4.)

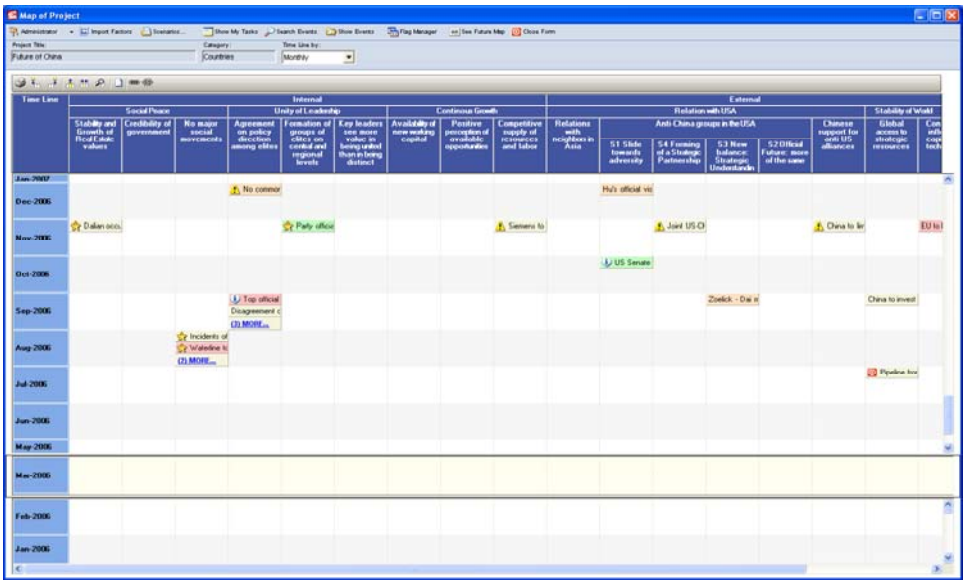


Figure 4.

From a methodological point of view the development of the Event Field is consistent with the principles of morphological analysis, a "method for rigorously structuring and investigating the total set of relationships in inherently non-quantifiable socio-technical problem complexes," introduced in its modern form by Fritz Zwicky and further advanced by Tom Ritchey and others. [Ritchey, 2005.] We believe that many methodologies and software developed to support Morphological Analysis can be applied to the strategic analysis of the Event Field.

The *Event Field methodology* (patent pending) establishes the step-by-step continuous circular process of constructing the Event Field in the domain and then assessing this Event Field to extract useful knowledge for decision-makers. This methodology defines the framework for identifying and assessing risks, impacts and probabilities associated with anticipated events. It offers a structured approach to the collection of information about the driving forces in the domain, and establishes the process of continuous reassessment of the Event Field to factor in the latest knowledge.

Scenario technique plays a key role in the construction of the Event Field, helping to outline alternatives in the development of each factor and to imagine various combinations of outcomes of multiple factors that constitute different future environments. To ensure consistency, the Event Field is built from two opposite directions at the same time: from the long-term scenarios towards the present by tracking scenario milestones, and from the present towards the future by converting observed trends into anticipated events. As the forecasts made using different independent methodologies are translated into events, we can crosscheck and refine our assumptions and expectations.

Once the future Event Field for the organization or a domain has been created, we can extract from it a number of Future Maps. These Future Maps are the "snapshots" of the Event Field that represent the future seen through the lens of different perspectives. Each Future Map can convey a particular scenario, a vision of a particular group of experts, an extract from a specific type of sources, or a picture with a specific time horizon.

7. Benefits of the Future Map Approach

The Future Map can be seen as an *outcome* – a picture of an anticipated future, as well as a continuous *process* of creating, updating, and assessing this picture to extract value from our combined knowledge.

The Future Map serves as a unique repository of all information about the future of the organization. It bridges the gap between short-term trend extrapolations and long-term scenarios, helping decision-makers better understand the time horizon within which the majority of policy decisions need to produce results – from a few months to 3 - 5 years.

By offering the capacity to show a variety of visions of the future side-by-side, the Future Map provides a tool for evaluating scenarios, reconciling conflicting information, understanding alternative perspectives, identifying discontinuities and examining gaps in knowledge. By focusing on future milestones, it forces us to actively search for early indicators of emerging trends. By assessing the impacts of events across time and across domains, the Future Map encourages holistic thinking about the future, promotes more systematic and rigorous analysis of risks and challenges, and fosters discussions among all contributors.

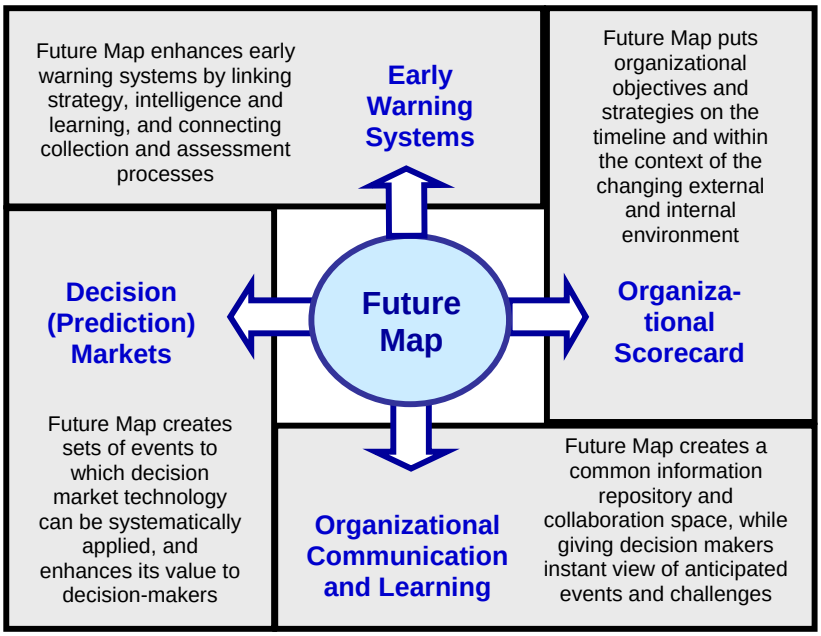
The Future Map facilitates the assessment of probabilities and expected impacts of the events in the domain by providing "decision market" ("prediction market") technologies with structured sets of events to "bet" on. Without these sets, the "decision market" tools find only sporadic application in policy analysis and planning.

At the same time the Future Map creates a dynamic scorecard by putting the organization's mission, strategic objectives and measurement milestones on the timeline and in the context of its security environment.

The Future Map is conceived as a platform for making "the strategic conversation" in an organization permanent by connecting all pertinent contributors around the shared vision of future challenges. The Map's potential as a sharing tool, an integration tool, a learning tool, a strategy development tool, and a progress-tracking tool is greatest when it is used to leverage global collaboration.

Future Map software facilitates the construction of Future Maps. Using the software remote contributors can create and update event fields for multiple domains, track changes, collectively assess probabilities, map and discuss potential implications, develop and extract scenarios, plan strategic options and build progress scorecards.

By creating a foundation for systematic analysis of future security environment and facilitating inter-organizational collaboration the Future Map provides a tool for building a focused strategic preparedness process that links strategy, intelligence and learning, and for improving decision making in a complex security environment.



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