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Anticipatory Governance Practical Upgrades: Equipping the Executive Branch to Cope with Increasing Speed and Complexity of Major Challenges

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Disclaimer

The concepts presented in this report were developed by Leon Fuerth during the period 2001–2011 and refined during a series of workshops held at the National Defense University from April 2011–July 2011. The workshops convened experts from in and outside government to vet, validate, and build upon Anticipatory Governance concepts based on strict criteria for practical implementation. All workshops operated under the Chatham House Rule, meaning participants entered under agreement from all parties that the discussion would be private, comments would not be attributed to individual persons, and it would be assumed that participants spoke for themselves personally rather than for any institution. The initiatives proposed in this document represent a synthesis of the best ideas that emerged from the 2011 working group process. The concepts have also undergone supplementary scrutiny in a series of individual encounters with very senior officials from the present and past administrations that took place from September 2011–April 2012. The concepts described herein do not represent the views or opinions of The George Washington University, National Defense University, Department of Defense, Federal Government, or any other institutions associated with the Project on Forward Engagement.

Endorsers

The following endorsements reflect a consensus within a group of exceptional public servants that—politics aside—our government systems and processes need to be upgraded to reflect the new realities of today's complex challenges. These individuals have extraordinary credentials to pass judgment on what is practical and necessary for government. They have not lent their names casually: they have read this report and many of them have commented extensively on its contents. They do not all necessarily support each finding and every specific recommendation. *They do, however, endorse the basic spirit and thrust of the proposals.* While some of the steps suggested in the report have been tried by administrations in the past, endorsers agree that a more comprehensive and systematic approach is required. Fundamentally, endorsers agree that Anticipatory Governance identifies and addresses an important national problem and that the recommendations in this report are doable, affordable, politically neutral, and should be the basis for action.

Madeleine K. Albright	Former Secretary of State
Charlene Barshefsky	Former U.S. Trade Representative
Samuel R. Berger	Former National Security Advisor
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Michael "Mickey" Kantor	Former Secretary of Commerce; former U.S. Trade Representative
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Ellen Laipson	President and CEO, The Henry L. Stimson Center
Timothy C. Mack	President, World Future Society
Neera Tanden	President, Center for American Progress

About the Project on Forward Engagement®

The Project on Forward Engagement was established in 2001 by Leon Fuerth to explore methods for incorporating systematic foresight into the U.S. Federal policy process, and for configuring government systems to deal with challenges that are "complex," rather than just "complicated."

Leon Fuerth's career in the U.S. Government spanned more than three decades, including 11 years as a Foreign Service Officer, 14 years on Capitol Hill, and 8 years in the White House as the National Security Advisor to Vice President Al Gore. In the Clinton White House, Fuerth served on both the Principals' and Deputies' Committees of the National Security Council and the National Economic Council. Following government service, he became the J.B. and Maurice C. Shapiro Professor of International Affairs at The George Washington University's Elliott School of International Affairs. He presently holds simultaneous appointments as Research Professor at the Elliott School and as Distinguished Research Fellow at the National Defense University.

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The Project on Forward Engagement is nonpartisan, not for profit, and policy neutral. The Project is exclusively concerned with the systems and processes by which policy is produced and implemented.

More information is available at http://www.forwardengagement.org.

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Contributors

The following individuals contributed significantly to the ideas in and formulation of this report; some participated in the NDU workshops on Anticipatory Governance held at NDU in 2011, others commented on drafts of the report, and many contributed as both workshop participants and commenters. Participants in the workshops were not representing the official views of the organizations with which they were affiliated nor the official views of the U.S. government or any of its agencies.

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The term Forward Engagement *originally appeared as part of Vice President Al Gore's foreign policy platform in 2000,*[1] *and was used in two of the Vice President's speeches: once at the United Nations Security Council in the course of its first session of the new millennium,*[2] *and once 6 months later at a speech in Boston before an international conference of newspaper editors.*[3] *It became the subject of the Project on Forward Engagement ® at The George Washington University in 2001.*

The term Anticipatory Governance *was inspired by an email message from former student and research assistant Neil Padukone in December 2008, writing about needed changes in the intelligence function in India, following the deadly Mumbai attacks,*[4] *and it also appears in various applications such as Clement Bezold's "Anticipatory Democracy," and in association with managing nanotechnology.*[5] *It is used here as a descriptor for proposed modifications to systems in the Executive Branch of the Government of the United States.*

[1] "Al Gore. On The Issues—Foreign Policy," *4President.Org*, n.p., n.d. 2000, available at <www.4president.org/issues/gore2000/gore2000foreignpolicy.htm>.

[2] Al Gore, Remarks to the UN Security Council, New York, January 10, 2000, available at <http://clinton3.nara.gov/WH/EOP/OVP/speeches/unaid_health.html>.

[3] Al Gore, Remarks to the International Press Institute, Boston, April 30, 2000, available at <www.acronym.org.uk/dd/dd46/46gore.htm>.

[4] Neil Padukone, "India's 'September 12th,'" *Observer Research Foundation*, n.p., December 10, 2008, available at <www.observerindia.com/cms/sites/orfonline/modules/analysis/AnalysisDetail.html?cmaid=15513&mmacmaid=15514>.

[5] Daniel Barben et al., "Anticipatory Governance of Nanotechnology: Foresight, Engagement, and Integration," *The Handbook of Science and Technology Studies*, ed. Edward J. Hackett et al., 3rd ed., 979–1000 (Cambridge: MIT Press, 2007), available at <www.futures-studies.rwth-aachen.de/team/STS%20Handbook-Barben%20et%20al-Anticipatory%20Governance%20Nanotechnology-08.pdf>.

Contents

Executive Summary

If we are to remain a well-functioning Republic and a prosperous nation, the U.S. Government cannot rely indefinitely on crisis management, no matter how adroit. We must get ahead of events or we risk being overtaken by them. That will only be possible by upgrading our legacy systems of management to meet today's unique brand of accelerating and complex challenges. *Anticipatory Governance* responds to this need by introducing three critical elements to existing Executive Branch functions: *foresight* fused to policy analysis; *networked governance* for mission-based management and budgeting; and *feedback* to monitor and adjust policy relative to initial expectations. This report suggests *practical upgrades* to Executive Branch systems that are light on resources, compatible with the existing structures and processes of government, and fully executable under customary Presidential authorities (requiring no congressional action).

The Problem. A well-functioning Republic needs time for deliberation, and the U.S. Constitution was designed to make sure that this time would be protected. On the other hand, challenges presenting themselves today are increasingly fast-moving and complex: they involve concurrent interactions among events across multiple dimensions of governance; they have no regard for our customary jurisdictional and bureaucratic boundaries; they cannot be broken apart and solved piece by piece; and rather than stabilizing into permanent solutions, they morph into new problems that have to be continually managed. This pattern profoundly challenges the adaptive capacity of our legacy systems of government, which are essentially modeled on the early industrial period: vertical, hierarchical, segmented, mechanical, and sluggish. Our 19th-century government is simply not built for the nature of 21st-century challenges.

This problem is increasingly manifesting itself in the growing perception at home and abroad that America is in decline. Decline is not inevitable, but we are at a moment of choice. That choice is not just a choice between this or that policy, but a choice as to whether we will seize this moment to upgrade government for the challenges and opportunities of this century, or continue to operate with a system designed for an era gone by. There is a feeling among Americans that we need to get ahead of the game, and it is imperative to find ways to resolve the tension between the need to accommodate differing perspectives on major issues and the need to act on them in time to achieve optimal effects for the resources that are to be expended.

The Proposal. Anticipatory Governance Practical Upgrades seek to address this tension with upgrades to existing systems in the Executive Branch. It proposes three basic sets of changes: integrating foresight and policy, networking governance, and using feedback for applied learning. Each section of this report is broken into concrete initiatives, and each initiative contains subsets of specific options.

- Section A [Foresight-Policy Integration] discusses the subject of *systematic foresight*—defined as the disciplined analysis of alternative futures—for the policy process, especially in terms of assessing consequences of actions we take in response to challenges and opportunities. It suggests 4 concrete initiatives broken down into 18 specific options for organizing foresight as an input into the policy process.

- Section B [Networked Governance] approaches the issue of how to organize government for more effective management of complex issues. It suggests 8 initiatives broken down into 38 specific proposals for improving the capacity of existing systems to mesh their activities for coherent effect, especially those at the most senior levels of an administration where strategic intent and strategic action must come together. It discusses ways to relate policies, priorities, and budgetary resources, and it discusses the problem of how to encourage a true strategic dialogue between the Executive and Congress.

- Section C [Feedback for Applied Learning] discusses the need for constant, organized monitoring of policies in action, and suggests five specific, sequential, initiatives to detect and respond to error and unintended consequences in mid-stream, before calamities occur. It also addresses how we can relate awareness of what has been done to new decisions about what needs to be done.

Vetting and Validation. These proposals were developed and intensely vetted by working groups (consisting largely of current mid- to high-level government officials) who were assembled for this purpose during the summer of 2011, operating in their personal capacities under the privacy of the Chatham House Rule. Subsequently, drafts of this report were circulated back to members of the working groups as well as to very senior sitting and former government operators. Comments have been carefully reviewed, and in many cases incorporated into the text. The list of contributors comprises only those working group participants and commenters who granted permission to have their names associated with this effort.

Why Policymakers Should Pay Attention. What is the case for making time to read this paper and for seriously considering taking action? Readers will already have noticed an unusual feature: a long list of "endorsers" with extraordinary credentials to pass judgment on what is a practical and necessary for government, as opposed to what would be theoretically "nice to have." These endorsements are not casual; collectively, they are making a statement that (1) the Nation has a problem with its governance systems, with important implications for the its ability to thrive; (2) Anticipatory Governance identifies and addresses the sources of the problem; and (3) these recommendations are practical and should be the basis for action. The list of contributors makes a complementary statement: this report represents not only their collective judgment as to what could be useful, but also as to what is *practical*. These are measures that can be approached on a gradual, modular basis; they do not require legislative action and can be carried out under existing laws and Presidential authorities; they are designed to be carried out without requirements for new "brick and mortar" institutions or large expenditure of resources; and they intentionally leverage existing personnel and processes under new arrangements in order to strengthen the Executive Branch. In sum, the message is: don't put this report on the shelf; make time for it on a flight somewhere, and if you conclude that these are real answers to real problems then, upon your return, become an agent of change. Ask yourself: "If not now, when?"

There is no way around the fact that this is the kind of document that often winds up in a stack of "guilt reading" that every busy person has: an accumulation of documents that look interesting and important, but which also look formidable and are therefore set aside "temporarily" for careful reading when time permits (but it never does). The same may be said for the central idea expressed in this paper: our systems of governance—especially at the level of the White House—need to be upgraded in order to be able to better comprehend and respond to powerful, complex forces that are forcing societal change at an accelerating rate. Flipping through the paper, hard-pressed readers may actually conclude that it contains ideas well worth considering and even implementing, but not just yet. Better to wait for calmer times, which are always due to arrive just after dealing with the current plateful of crises du jour. The calm interval for reflection and new departures never comes; meanwhile, the need for upgrades is urgent, and the opportunity for beginning it is now, not later. To delay is to miss—not merely postpone—the chance to better inform short-term decisionmaking about long-range consequences, and to navigate not only through each storm as it comes, but also toward the defining goals of our generation.

These upgrades are not a panacea, but they are short-cut approaches for beginning to adapt existing U.S. Government systems and processes to be more anticipatory, adaptive, and resilient. They cannot alone transform the culture, but the improvements to mechanism are a real and necessary step. They are not intended to be "swallowed in one gulp," but they should at least be tried and tested in various combinations in a handful of policy areas in order to pave the way for broader implementation. The skills required to take these steps already exist in government, and regardless, *they can be taught*. At stake is not only much-needed improvement in conducting the business of government, but also a tremendous potential for legacy: to improve the government's ability to think and act strategically in a vastly changed world.

The Case for Upgrading Systems

The United States is confronted by a new class of complex, fast-moving challenges that are straining the capacity of national leadership to "win the future." These challenges are cross-cutting: they simultaneously engage not only traditional national security systems, but also our social, economic, and political systems. "Legacy" methods of organization and operation cannot meet this kind of challenge, and government has been increasingly confined to dealing with full-blown crises rather than focusing on shaping events. Meanwhile, the Nation is losing confidence in government, and there is a widespread perception that America is in decline. Government needs to organize itself to extend warning time, improve coordination and agility, and learn rapidly from experience.

Time, money, and skilled human capital are the basic raw materials of strategy, and at least the first two of the three are now in very short supply. As a result, our margin for error has narrowed considerably, and we find ourselves in a crisis that extends not only to physical counters—such as the stability of the financial system, or systemic unemployment—but one that has also acquired a moral dimension in terms of public faith in the future. Government in and of itself must be part of the solution, but government as we have been practicing it has been a major source of the problem. Other countries have developed systems in their governments that enable them to plan and execute long-range policy,[6] but the U.S. Government continues to operate using institutions designed for an era gone by. The consequences are visible in terms of an increasing number of collisions with "unforeseeable events" and in terms of economic opportunities lost to rivals who are consistently pursuing their strategies.

This pattern is feeding an increasing conviction at home and abroad that the United States is in irreversible decline. Such a conviction feeds upon itself and can become a negative force. Faith in our ability to shape the future has been a constant factor in the development of the Nation, but if the public concludes that events are outpacing us, it will be increasingly difficult to find common cause among ourselves. This has a potentially devastating impact not only on our domestic existence as a state, but also on our behavior within the international system. There could be substitutes for American primacy in the world, but there is no substitute for American leadership. Our policies assume the desirability of a win-win approach for all competitors. Any other approach, based on zero-sum thinking, carries the risk of inhibiting rational international action to preserve the future of our species. The stakes actually are very high.

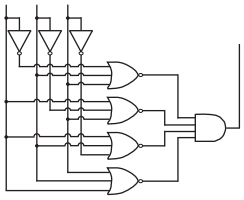
In chaotic circumstances, small actions can powerfully influence ultimate outcomes. It is clear that we are in such circumstances, whether we consider ongoing shifts in political dynamics around the world, in economics, or in the environment. **These are not matters where we can rely indefinitely on crisis management, no matter how adroit. We need to get ahead of events.** It is possible to win a series of important tactical victories but still lose the war for the Nation's future if we fail to visualize it and shape it from a strategic, long-range perspective.

The case for systems upgrade is not an easy sell, even if there is broad agreement on the basic need. The endless procession of near-term emergencies always distracts from the longer-term challenges that need to be shaped over an extended period of time. The question is how to achieve strategic coherence in a system that is continuously driven by very urgent shorter-term crises. Each administration quickly gets swept up dealing with the urgent problems of the day, and too much is happening that demands the constant attention of officials who—before taking their posts and often after leaving them—bemoan the absence of attention to the big picture and the longer range. The case for upgrading systems is not about this or that policy; the case is that the *inherited* systems of government for dealing with major issues are outmoded for today's kind of problems, which are "complex" rather than "complicated." As new crises continue to gestate on the horizon, we simply can no longer afford to delay a system upgrade. We urgently need to begin focusing on how to bring our management processes up to par with the nature of the challenges we face.

[6] Organized Foresight systems set up in foreign governments are described in the Annex on page 75.

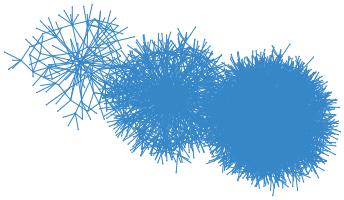
"Acceleration" and "complexity" have become common catch phrases for describing today's challenges, but they are real phenomena that have profound meaning—and technical implications—for the way we understand issues and organize policy responses.

"COMPLICATED" PROBLEMS



- Originate from isolated causes that are clearly identifiable and fall within distinct bureaucratic categories
- Can be dissected into isolated chunks addressed, and pieced back together
- Consequences are generally proportionate to their causes (for every input, there is a proportionate output)
- Fixtures can be put in place for permanent solutions.

"COMPLEX" or "WICKED" PROBLEMS



- Result from concurrent interactions among multiple systems of events, and they erode the customary boundaries that differentiate bureaucratic concepts and missions
- Cannot be broken apart and solved piece-by-piece. They must be understood and addressed as a system
- Do not automatically stabilize, but intrinsically unravel into chaos if not systemically managed
- *Cannot be permanently solved.* Instead, they morph into new problems as the result of interventions to deal with them.

Anticipatory Governance offers ways to manage challenges (and opportunities) that are "complex" with adaptations to existing systems that are presently built for problems that are "complicated." It involves institutionalizing three basic management systems into those that already exist at the White House level:

(1) a system for integrating foresight into the way we create and execute national policies, including anticipation of upcoming challenges and opportunities as well as disciplined analysis of the long-range consequences of today's decisions
(2) a networked system for orchestrating whole-of-government management and budgeting to mission, including intensive coordination of our strategies and our assets applied over time
(3) a feedback system to constantly measure consequence against expectations as a way to learn from experience and refresh policy.

In combination, these new systems should enable the U.S. Government to deal more effectively with today's class of high-stakes, high-speed, complex issues on a more systematic basis, where we typically find ourselves acting short term, even though we are aware of the need to shape events over the long term. It would establish, in the White House, an enhanced capacity to mobilize and coordinate resources in a way that begins with a concept of managing-to-mission as the organizing principle for operations. It would also enable the White House to better keep track of the consequences of its own policies, so as to be more responsive to facts about what is happening, rather than projections of what was supposed to happen after decisions were made.

As theory, that has great appeal, but the reality is less clear. In order for a President to give this idea serious consideration, there needs to be clarity regarding: *what* "anticipatory governance" can do to help the White House develop and sustain a comprehensive approach; *why* the proposed new arrangements would be better than existing arrangements; and *how* this

system would be better at detecting, tracking, and then managing long-range developments as they move from the horizon line to the top of our agenda. This report attempts to provide the details that can produce that clarity. Anticipatory Governance is by no means a panacea, but modernizing government can begin with these practical upgrades to the processes and mechanisms of government.

Vetting and Validation of Concepts against Strict Criteria

The obstacles to our government's ability to act are deeply rooted in its structures: the deliberately designed tension between the executive and legislative branches, the vertical and functional divisions of departments and agencies, and the extraordinarily cumbersome processes by which decisions such as budgeting are channeled. Reconfiguring the government to handle complex priorities—to be anticipatory, rather than reactionary—will ultimately require deep changes within the executive branch, involving new legislation and a lengthy period of organizational adjustment to new processes. As we know from experience with the Goldwater-Nichols Department of Defense Reorganization Act of 1986, once a new legal foundation is laid, it will be the work of a generation to integrate it completely into the processes and culture of government.

Supporters of the status quo can easily hold off any major change efforts until the drivers of that change rotate, leave, or another election occurs. Meanwhile, the Nation is immersed in multiple, ongoing crises, with more on the horizon. Something needs to be done in the moment, capitalizing on existing law and precedent, to upgrade system capacity. The pulse of government cannot be stopped while whole parts of the system are redesigned, and Congress is unlikely to produce a well-designed, bipartisan, omnibus bill providing for major alterations in the way government operates. **The best chance is to make limited improvements in the operation of executive branch systems at the White House level, and to leverage these changes to improve the performance of government as a whole and to open the door to broader transformation of government if and when that becomes possible.** This process can be initiated using existing Presidential authorities to adjust our processes, to make them more efficient and attuned to the long range. It can be accomplished by broadening government's aperture rather than linearly adding additional scaffolding and by redeploying existing personnel and resources rather than by adding people or new organizations.

A series of workshops held at the National Defense University (NDU) from April 2011 to July 2011 convened experts from in and outside government to vet and validate and build upon Anticipatory Governance concepts based on strict criteria for practical implementation. Participants were mostly from mid- to high-level positions in government, as well as former senior practitioners and some outside experts in subjects such as foresight and network theory. Consistent participation throughout the process came from individuals working at the National Security Staff (NSS), Department of State (DOS), Office of the Secretary of Defense (OSD), Joint Chiefs of Staff (JCS), Department of Homeland Security (DHS), Office of the Director of National Intelligence (ODNI), and the Government Account-

Criteria for Implementation

To comport with reality, the initiatives contained in this report have been designed, vetted, and validated against the following criteria:

- very light on resources
- executable under existing Presidential authorities (requires no Congressional action)
- compatible with existing White House processes (adjustable arrangements for existing staff)

Additionally, initiatives are designed to be:

- ultimately compatible with longer-range, more profound reform involving the executive branch as a whole, if and when that becomes possible; and
- integrated with advanced methodological approaches, including methods potentially important to foresight generation and to systems operations.

ability Office (GAO). All workshops operated under the Chatham House Rule, meaning participants entered under agreement from all parties that the discussion would be private, comments would not be attributed to individual persons, and it would be assumed that each participant spoke for themselves personally rather than for any institution. These conversations *did not* address specific policies, but focused instead on how to improve systems that enable the executive branch to formulate and execute policies.

The initiatives proposed in this document represent a synthesis of the best ideas that emerged from the 2011 working group process on Anticipatory Governance held at NDU. The proposals have also undergone supplementary scrutiny in a series of individual encounters with very senior officials from the present and past administrations that took place from September 2011 to May 2012. All of these concepts can be put into place efficiently, quickly, and by means that *are specifically suited to Presidential authority.*

Implementing Practical Upgrades

Implementing Anticipatory Governance would not be a matter of one-size-fits-all, and the total set of proposals herein should not necessarily be applied equally to every subject. Implementing these initiatives should not require expanded personnel, provided that the White House offices—EOP, OVP, NSC, NEC, DPC, etc.—leverage existing staff seconded from agencies and instill them with a sense of leadership in effecting common cause. An administration interested in implementing these initiatives would certainly have to identify priorities for implementation, and tailor new arrangements to the circumstances, in order to ensure that the new initiatives cumulatively do not place an additional call on resources. It would be a good idea to review division of labor with an eye toward moving certain day-to-day functions out to the periphery so as to lighten the load of the NSS, NEC, and DPC at the core. The President does have the authority to create new groupings immediately, provided they are centered within the White House.[7] Special attention would need to be paid to the skill sets needed among people who are drafted into these groupings, but these skill sets do exist in government, and regardless, they *can be taught.*

Typically, reports of this nature are long on the problems and short on the solutions; this report is quite the opposite–*by design*. Each section provides a brief overview of one element of Anticipatory Governance—[A] Foresight, [B] Networked Governance, and [C] Feedback—and the majority of each is devoted to concrete initiatives for establishing these elements as part of the existing processes of government. Each initiative is supplemented by specific options for implementation, describing discrete ways that the initiative could be operationalized under the existing authorities of a President. This report does not aim to provide a singular roadmap for the transformation of governance; the initiatives and their specific options are not designed as a package deal, nor are they mutually exclusive. Rather, the report details a comprehensive "menu of initiatives" that could be implemented in various combinations in order to adapt existing U.S. Government systems and processes to be more anticipatory, adaptive, and resilient. These are suggestions, involving multiple possible combinations, and they would certainly need to be adjusted as problems are identified. The key is to think big, start small, fail cheap, and make adaptations along the way.

Policymakers take their cues from the President. If this is prioritized at the top, it will be taken seriously. Transition periods between administrations can be used to inaugurate systems changes. The time between elections should be used to think them through and to experiment with new ideas. At stake is not only much-needed improvement in conducting the business of government, but also a tremendous potential for legacy: to improve the government's ability to think and act strategically in a vastly changed world.

[7] Congress caps the number of persons who can work at the EOP, based on both EOP direct hire caps and caps on the number of persons who can be seconded to the EOP at any one time. The initiatives herein do not propose hiring new staff, but they will require competition for the allocation of existing staff since it is a matter of moving around finite slots. Of course, if Congress does not like something, they could pass a personnel or appropriations limitation.

Overview of Anticipatory Governance

Anticipatory Governance is a systems-based approach for enabling governance to cope with accelerating, complex forms of change. Anticipatory Governance is a "systems of systems" comprising a disciplined foresight-policy linkage, networked management and budgeting to mission, and feedback systems to monitor and adjust. Anticipatory Governance would register and track events that are just barely visible at the event horizon; it would self-organize to deal with the unexpected and the discontinuous; and it would adjust rapidly to the interactions between our policies and our problems.

Section [A]:

Foresight as a systematized and actionable component of the policy process

Foresight is the disciplined analysis of alternative futures. It is not prediction, it is not vision, and it is not intelligence; it is a distinct process of monitoring prospective oncoming events, analyzing potential implications, simulating alternative courses of action, asking unasked questions, and issuing timely warning to avert a risk or seize an opportunity. As a disciplined process, organized foresight offers a means to simulate actions that would otherwise have to be tested against reality, where the consequences of error are irrevocable. A foresight-generating and horizon-scanning system can help government detect trends and weak signals, visualize alternative futures, and foster better outcomes. The United States lacks such a system at the national level. There are multiple concepts for organizing foresight into a specific stream of information available to policymakers. The central problem is that no mechanism exists for bringing foresight and policymaking into an effective relationship. This problem is partly political, partly cultural, and partly a matter of inadequate systems-design. The political and cultural issues are very difficult to deal with, but mechanisms can be put in place to ensure that foresight and policy come together by design, rather than by chance. These initiatives focus on ways to institutionalize an "interface" that can integrate foresight into the policy process.

[A-1] Organizing a Foresight System

[A-2] Establishing Foresight as a Staffing Function

[A-3] Incentivizing Foresight

[A-4] Training Professionals for Foresight

Section [B]:

Networked Governance to support whole-of-government planning and execution

Complex challenges require organizational innovation, and networks are the organizational response to complexity. Government is presently organized on the basis of "best practices" from the age of the vertically integrated American corporation. This system is ill-suited for the successful management of policies that address complex issues. Flattened, networked organizational structures can facilitate rapid flow of information and can thus serve as the basis for a smarter and more prescient bureaucracy. Networks can help to engage the full resources of government in the form of adjustable groupings, and in arrangements that encourage a high degree of initiative, although responsive to overall strategic guidance from the President. Deep integration of the government would be a lengthy process requiring enabling legislation. Alternative approaches exist that would enable agencies to plan and operate more strategically based on "management-to-mission" as the organizing principle of policy formation and execution, and to apply much greater precision in bringing resources to bear by "budgeting-to-mission" rather than only by jurisdiction. Networked governance can also enable the President to acquire much greater situational awareness of the operations of government. These initiatives could be put into place rapidly by altering operations within the White House and the Cabinet.

[B-1] Networking the Strategy /Policy Planning Offices

[B-2] Leveraging the Deputies' and IPC Process

[B-3] Engaging the Cabinet Strategically

[B-4] Networking Coordinators for Cross-agency Missions

[B-5] Budgeting for Strategic Impact

[B-6] Synchronizing National Strategy

[B-7] Systematizing Strategic Priorities

[B-8] Reformatting the Dialogue with Congress

Section [C]:

Feedback Systems to monitor performance and speed up learning from results

Every policy—no matter how impeccable or creative at the time of its creation—eventually deteriorates as circumstances change. At the national level, there is not a comprehensive system for monitoring the vitality or tracking the consequences of policies once they are in the process of execution.[8] Feedback systems can serve as a basis for ongoing evaluation, reassessment, and recalibration of policies in order to prevent breakdowns and system failures that routinely go undetected until it is too late. Applied to policy, feedback can have at least three basic functions:

(1) Monitoring, evaluation, and adjustment of policy (to measure results against estimates, and to reassess/recalibrate policy as needed)
(2) Accountability, control, and self-synchronization (to sustain accountability and control in a networked system)
(3) Learning and promoting rapid self-evolution (to improve the conduct of ongoing policies and inject feedback into a foresight mechanism to improve the design of policy in the future).

These initiatives focus on ways to institutionalize these kinds of feedback as a continuous process.

[C-1] Identifying Explicit Feedback Precepts to Track Policy Execution

[C-2] Establishing a Venue for Feedback

[C-3] Continuously Routing Triggered Indicators

[C-4] Diagnostic Reviews of Consequences

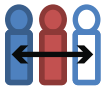
[8] Some major policies (e.g., Afghanistan) are closely tracked, but feedback should be employed on a comprehensive basis.

{ A }

Foresight-Policy Integration

Foresight is the disciplined analysis of alternative futures. It is a distinct process of monitoring prospective oncoming events, analyzing potential implications, simulating alternative courses of action, asking unasked questions, and issuing timely warning to avert a risk or seize an opportunity. As a disciplined process, organized foresight offers a means to simulate actions that would otherwise have to be tested against reality, where the consequences of error are irrevocable. A foresight-generating and horizon-scanning system can help government detect trends and weak signals, visualize alternative futures, and foster better outcomes. These initiatives focus on ways to institutionalize an "interface" that can integrate foresight into the policy process.

[A-1] Organizing a Foresight System



[A-2] Brokering Between Foresight and Policy

[A-3] Incentivizing Foresight

[A-4] Training Professionals for Foresight

Discussion on Foresight-Policy Integration

There is nothing radical about "foresight" in concept, but it is not practiced systematically in the formulation of policy. Of course, policy is naturally about the future, and no policy is deliberated without considering its implications. There is, however, a definite distinction between common-sense thinking about the future on the one hand, and foresight as a structured process on the other. The former is innate: it is loosely structured and generally uses no defined procedure, it relies on intrinsic deductive reasoning by hurried operators often using predictions produced by subject-matter experts, and it hopes for a serendipitous alignment of the consequences that we were smart enough to predict amid the fury of decisionmaking, and the actual events that eventually transpire. Foresight, by contrast, is a disciplined and continuous visualization of alternative outcomes, based on a systems-operations perspective. It can be organized into a structured sequence, using rigorous methods to systematically ask the "unasked questions" and to test the implications of different actions and contingencies. Foresight does not offer prophetic prediction, but it can dramatically increase our preparedness for the inevitable surprises, and significantly reduce our likelihood of being blindsided by events and dilemmas that would otherwise never be considered. Foresight can also alert decisionmakers to major opportunities—especially at the first signs that combinations of events are coming together to open a window for action—that may otherwise either go unnoticed or be recognized only after the window of opportunity for action has closed.

The policymaker's universe is complex, meaning that events are simultaneously interactive, and therefore fraught with surprise and unintended consequences. Policymakers always want more certainty, not less. For that reason, foresight often engenders a strong allergic reaction because it deals with uncertainty, complexity, and contingency rather than with certainty. In a complex universe, however, the only certainty is surprise. Success goes to those who anticipate.

The acceleration of today's events has the effect of compressing the time that policymakers have to respond, and government processes that are designed to be deliberate are challenged when the rest of the world is speeding up. Foresight provides the capacity to extend response time. Foresight can be converted into a unique stream of information to accompany deliberations about policy; it is the long-range component of what should be a complete system for maintaining awareness of important contingencies at the level of policymakers. It requires the engagement of skill sets that are broader than those demanded of the Intelligence Community (to produce short-range predictions), and it also requires a mandate to pursue understanding across all customary boundaries, be they organizational or functional. Inside the government, foresight is produced in stovepipes from a risk-based, subject-matter perspective. The alternative is to generate foresight from a structured methodical perspective relating to the direction of the Nation. This requires an institutional system to deal proactively with issues approaching over the long-range horizon, and with the effects of near-term decisions on the longer range.

Policymakers who are busy and overworked will have a reason—or at least the option—to prioritize foresight when it is fed into their inbox.

Forward Engagement and Future Contingencies of Interest. "Forward Engagement" is an analytic process designed to help policymakers anticipate future contingencies of interest (FCIs) that are still nascent and gestating on the horizon, so that their risks and opportunities can be assessed in time to take meaningful early action to shape events favorably. An FCI is a hypothetical (but plausible) trend or event that would have significant implications for U.S. policy. Properly formulated, an FCI is a hypothetical described in the present tense, and it does not presume certitude of form or timing (which is why an FCI is not a forecast). FCIs almost always give off early hints that they are coming, like tremors before an earthquake (what futurists refer to as "weak signals"). FCIs can be derived as a product of an individual or a group effort, based on a mix of intelligence, open-source information, and personal imagination.

"Black Swans" and Mounting Challenges. Often, when we are badly surprised by a major event, it is because we have not picked up weak signals that an FCI is approaching, or we have spent too much time disagreeing about what to do about them. The former category consists of those fast-moving and unexpected events termed "black swans." Black Swans are very rare events, if they are defined as moments that *truly* emitted no warning signs, and the term should not be used as a way to avoid responsibility for the consequences of bad or outdated policy. Most calamities are preceded by warnings, even if these warnings are faint. Most calamities do emit plenty of warning signs. The least that should be expected of government is to have installed systems to scan for high-impact events—especially those that are not considered likely by the collective wisdom of experts—and to ensure serious consideration by policymakers as to what these possible events can tell us to consider doing, in advance, in our own interests. There is another category consisting of familiar slow-moving, inexorable challenges that are more obvious but also more difficult to act upon (and which tend to extend over several administrations in their development before they come to a head) such as: fiscal deficits, deteriorating infrastructure, resource scarcity and climate change, and loss of strategic competitiveness in education, technology, and manufacturing. Disciplined foresight is not a tool for crisis management, but it does at least make it possible to gain early strategic advantage over both the fast-moving and slowly-mounting challenges.

"Black Swans" that need not have been:

- **Katrina:** There was knowledge going back decades that the levee system protecting New Orleans was inadequate and the efforts to get attention paid to it were ignored.
- **The Financial Crisis of 2008:** This crisis took decades to put it in place, and there were plenty of warning signs that went ignored.
- **BP Oil Well Failure:** Reports on the causes of the Deepwater Horizon spill indicate problems with safety and maintenance procedures involving BP and its subcontractors, which should have been picked up by government regulatory systems.
- **The Arab Spring:** We all knew about the youth bulge, unemployment rates, and rising commodity prices, but no mechanism exists to consider the convergence of such trends and to evaluate assumptions and alternative possibilities. The U.S.-Egyptian Partnership for Economic Growth and Development (1994–2000) was formed on the explicit premise that failure to reform Egyptian governance—particularly by fixing inability to encourage economic growth in the presence of an impending youth-bulge—would endanger the stability of that country and its region.
- **Fukushima:** No one can predict the particulars of a tsunami, but the safety systems in the reactors skimped on backup, and in effect had failure built into them under conditions more extreme than allowed for by the design.

Foresight as a Discrete Kind of Information. Foresight is a discrete form of information about the future, and it has distinct characteristics. Foresight relates to—but is not a synonym for—existing methods of prediction, forecasting, vision, gaming, or intelligence. Here is why foresight is truly distinct from each:

- **Prediction** is a point statement of what will happen in the future. Life does not behave that way. Foresight wrestles with the potential consequences of contingencies, but it steers away from attempting predictive certainty. Prediction is unreliable, and the consequences of taking action on failed predictions can be calamitous.[9] Foresight is about ranges of possibilities, not point-predictions. Foresight acknowledges the ambiguity and uncertainty that accompanies all actions; prediction denies the existence of ambiguity and uncertainty. Prophesy is a form of prediction based on religion or magical thinking. Foresight should be systematically developed by rigorous methods, to be used as an input to policymaking; prediction should be excluded from that role whenever possible.

- **Forecasting** uses trends and statistical models to predict events and their arrival time. Forecasting is based on a closed set of assumptions, and it is particularly useful for predicting quantifiable outcomes (finance, demographics, employment levels, and so forth). While forecasting is useful for foresight, foresight considers a much broader

[9] Of course, it is also possible that decisions made based on nonpredictive foresight do not pan out well, which is why a feedback process is needed.

context that includes questioning the assumptions on which forecasts are based and analyzing dynamics that are difficult to measure and do not lend themselves to quantitative estimates.

- **Vision** is the capacity to see that which is not yet clear to others and to translate it into a (typically singular) path to the future. Vision is often exclusive in its views about what should happen, and visionaries can be blind or outright hostile to alternative outcomes. Visionaries seek to knock out the competition. Foresight, to the contrary, is about openness to multiple futures and alternative possibilities. Vision can respond to alternatives as heresy. That does not mean vision is not useful as a mobilizing force, but it should be tempered with humility.

- **Gaming** is not the same as foresight, but it is one of many foresight tools that permits a decisionmaker to test in the mind (at minimal cost) what might otherwise have to be tested in reality (at incalculable cost). Unfortunately, senior policymakers rarely participate in gaming exercises, and therefore do not benefit from what they can best offer: the hands-on experience of stress-testing alternatives against a simulated complex environment. Gaming exercises are typically based on scenarios that can take months to create; they can thus be a vital tool for foresight, but are not particularly useful in the midst of ongoing crises. However, it is possible to accelerate the development of games and the scenarios on which they are based. Quicker design and playability on an as-needed basis would make games an accessible tool for policymakers. Ultimately, online videogames and massive multiplayer games may offer the potential for a "holodeck" for policy.

- **Intelligence** is concerned with providing policymakers accurate knowledge about real-world events. It focuses on what is known, and it is generally oriented toward short-range threats that need immediate attention. Intelligence has strict requirements demanding empirical evidence about things that have already happened in the past, and is generally more about collection than sense-making. Classification schemes for intelligence are arranged by topics and regions, which has the effect of jettisoning that which is deemed irrelevant because it is crosscutting. Foresight, to the contrary, deals with uncertainty, complexity, and contingencies. It is more focused on hypotheticals-based analysis of alternative possibilities, which need to be grounded in what is realistic, but not necessarily backed up by proof. Foresight focuses on opportunities as well as risks, and foresight requires openness rather than secrecy. The Intelligence Community (IC) can certainly generate foresight,[10] but foresight is not the same as intelligence, and the process for developing it is not the same as the process of intelligence analysis. Foresight is a much broader form of information, to which intelligence can act as a tributary—not the reverse.

Foresight and Intelligence. The IC has certain characteristics that account for the reasons why foresight—as a function of the policy process—must include but should not be limited to formal intelligence:

- **Overreliance on classified information.** Intelligence analysis generally relies heavily on information obtained from classified sources to the point where open-source information is undervalued.[11] The result is that critical facts and patterns can go unnoticed. Foresight, on the other hand, cannot be bound to a certain type of information source. Foresight is necessarily an open—not a closed—system.

- **Foreign-Domestic divide.** Intelligence analysis is forbidden—for good reason—to deal with domestic U.S. policy. It cannot, therefore, address the interactivity that exists between domestic events and international events. As a result, the Intelligence Community's representation of the world suffers from a form of "macular degeneration": a blind spot precisely at what should be the center of the field of vision, especially for policymakers at White House level. System-

[10] The National Intelligence Council has published a series of reports since 1997 on "Global Trends," which study the future in progressive 5-year increments: 2010, 2015, 2020, 2025, and 2030 (to date). These reports are genuine examples of government foresight. However, as intelligence documents, they face certain limitations and constraints—such a legal prohibition on domestic analysis—that non-IC based foresight would not.

[11] Much more serious attention is currently being directed toward open-source data, but it is still a young trend.

ic foresight, to the contrary, analyzes opportunities and risks as they interact across the domestic-international divide.[12]

- **Burden of proof.** Intelligence analysis has also been tightly bound—not necessarily for good reason—to requirements for direct evidentiary proof for every conclusion. *Intuition*—inexplicable flashes of insight—are essential to the intelligence process, but by their nature cannot be routinized in the intelligence process. The system, by its own internal standards, filters out what cannot be quantified or proven. This suppresses the creative, speculative analysis that is essential to foresight.

- **Short-range orientation.** The quality of the intelligence that a policymaker receives is a function of the quality of the questions one asks. It is also a function of the expectations set for the IC itself. Although it is understandable that policymakers are generally interested in near-term intelligence, they must also send a demand signal for foresight, if the IC is to adopt a proactive approach to asking the "right questions." When foresight is not demanded, current intelligence trumps all other forms of activity inside the IC, to the extent that the IC is systemically distorted, with a major blind spot for the long-range. This is not necessarily for lack of tools, but rather the result of a lack of demand. It is possible that if policymakers made it a point to request long-range, deeper analysis, the IC would give greater weight to the basic skills to conduct foresight.

- **Overemphasis on "risk."** The U.S. Government has offices dedicated to "risk" and "warning" (for example, in the IC). Skeptics of foresight might conclude that these offices sufficiently serve the government's foresight function. However, while foresight is certainly about reducing risk, it is just as much about seizing opportunity. Often we are so preoccupied with thinking about vulnerability, threat, and warning that we miss timely indicators of oncoming "on ramps" and "off ramps" that could lead to game-changing opportunities for strategic advantages. The IC is, by law, focused on external threats to the United States, and the government is much better organized to avert risk than to seize opportunity. Foresight, however, should support a whole-of-nation approach for shaping the future, and must factor in threats and opportunities that could originate internally or externally. Therefore, while risk management is definitely part of foresight, emphasizing risk-avoidance comes at the expense of attention that also needs to be paid to identifying, tracking, and organizing to seize opportunities.[13] It is not enough to be superior at addressing risks because we will always inevitably be surprised. We must also be superior at seizing opportunities so that we can shape the terms of the game.

Actionability.[14] Foresight is not exclusively future-oriented; it is about *actionability*: the relevance of long-range information to today's decisions. It is concerned with what will happen, but it is used primarily to inflect what we do in the present. Otherwise, we blunder forward with limited visibility. Foresight is about conceptualizing what may be happening and what needs to be done, in alternative models, to protect and further our interests. It is not a single statement, a single J-curve, an ideology or a doctrine; it is the capacity to rapidly formulate alternative constructs and examine the consequences of different forms of response. Its highest application, therefore, is to enable policymakers to experiment with different kinds of action in the mind, rather than to proceed immediately to action in the real world. The ability to experiment in a virtual setting safely, without suffering real-world consequences of trial-and-error, is an invaluable tool. *Reality has no "do over" function.*

[12] In general, American governance has historically viewed policy and management for external and affairs as separate domains and dealt with them as such. There are many exceptions to this observation, but they nevertheless prove the rule. America's geographic isolation from potential enemies made this a reasonable approach, but that separation has been breached. America's economic advantages over potential rivals also made it possible for us to be less mindful than we should have been about the existence of powerful cross-dependencies. That separation, too, has been breached. Disciplined foresight recognizes domestic and external policy as coequal, interactive, and fundamentally complex.

[13] Risk management offices have become "best practice" in the private sector since the 2008 financial crisis. In addition to reporting on how risks correlate, they typically have a component dedicated to identifying emerging risks and opportunities on the horizon for consideration by senior management.

[14] This concept of "Actionability" was explored in a series of expert workshops cosponsored by the National Defense University and State Department's Bureau of Intelligence and Research. Neyla Arnas and Warren Fishbein, Actionable Foresight, NDU workshop series 2010.

Defining "long-range." The length of time that constitutes "long-range" is not a set amount of time, but rather a function of at least three variables: (1) the speed at which the contingency is or may be approaching; (2) its "mass" or perceived impact (which is difficult to quantify, but can be assigned an index); (3) the amount of time needed to plan a coherent response; and (4) the resources needed at various levels of response. Foresight can have various "focal lengths," meaning that it can be adjusted for clarity at desired points along a timeline, extending from the near present to the distant future.

Linking long-range and current issues. What is the handoff between long-range and current issues? At what point is an issue no longer prospective in the long term and active in the here and now? What is the boundary between foresight and operations? Any piece or set of information about the future that provides a basis for a tangible response is actionable foresight. Once a long-range contingency begins to have tangible or measurable impacts on present events, it has made the jump from a long-range to a current issue.

Prioritizing Analysis. Plausible future contingencies are too numerous for comprehensive study, and foresight practitioners have developed methods for prioritizing analysis of future contingencies, mostly using indicators related to probability and impact. "High-probability/high-impact" contingencies get plenty of attention, as do a familiar set of "low-probability/high-impact" contingencies (e.g., pandemics, physical attacks on the homeland). Foresight is a discipline, but it is also a craft. That is why—in addition to being responsive to the needs of policymakers—an ideal foresight operation will be able to set its own agenda and analyze contingencies on the basis of new weak signals detected by horizon scanning functions.

Future Contingencies of Interest on the Horizon

- **Evolutionary Secession Produces Unintended Consequences.** Science and technology now permit us to dictate the evolution of our species and the planet. While regulatory regimes can respond to near-term risks, incremental advances are building in ways that pose medium- and long-range risks and opportunities for human destiny. Desired and undesired outcomes have direct relevance to immediate decisions in policy areas such as research and development, trade, regulation, and health care.
- **Environmental Disruptions Demand Sudden Adaptation.** Climate change poses a threat to the Earth's ability to sustain human affairs as we have long practiced them. We may be either approaching or have already passed an irreversible threshold, and the window for preventative or adaptive action required across myriad aspects of governance is closing, while the debate continues regarding whether or not this even requires attention.
- **Labor Force Up-ended by "Disruptive Technologies."** Watson, the *Jeopardy!* game show winner, changed the question from *if* to *when* automated machines will be able to replace "white collar" jobs previously only doable by humans. Meanwhile, additive (or "digital") manufacturing promises cheap, durable, lightweight, custom-made products available instantly. We know from experience that automation can build (China) or disaggregate (U.S.) labor systems. How do the Watson and manufacturing revolutions impact U.S. strategy for the future of U.S. labor, commerce, and education?
- **Social Media Transform U.S. Governance.** Online social networks have catapulted countries into revolution, and the clock may be ticking on their breakout impact on U.S. governance. Social media give voice to anyone, thereby posing meaningful challenges to a representative form of democracy not built for direct participation. U.S. policy on information transparency abroad will have implications for our own domestic politics. Will we shape or be shaped by this technology?
- **Demographic Shifts Present New Market Opportunities.** Population profiles across the globe are shifting dramatically toward both old age and urbanization. These trends are more or less locked-in: they will play themselves out over several decades, impacting the goods and services that these societies will require (and who will supply them), and therefore the economic strategies of nations. There will be changed mixes of domestically created products and of needs for imports, including imports based on a combination of increasing disposable income and more sophisticated tastes for everything from food to furniture to health care. How will these changes bear on our future market opportunities for goods and services and on the robustness of present trade arrangements in the future?

Forward Engagement Process

Anticipation has a dual nature: it is possible to anticipate consequences by visualizing alternative ways in which events play out in response to exogenous events; it is also possible to visualize the consequences of decisions you initiate yourself, including what is desired, acceptable, and undesirable. Functions of an actionable foresight process can either begin at the present and look outward, or begin from the long range and work backward.

Now ➔ Future: ***The impact of near-term decisions on the long range.*** Decisions at the White House level are made with awareness that they may produce deep historical reverberations, yet the haste with which many decisions must be made restricts the time available for analysis of their potential long-range consequences. While it is impossible to imagine and study so many possible outcomes under such time constraint, it is possible to think rigorously about potentially major consequences of present decisions before choosing and implementing them. Methods for doing this include:

- Identification of blind spots by evaluating select unquestioned premises on which policies are based (for example, that housing prices will rise indefinitely), and using alternative sets of assumptions when making predictions and forecasts of the effects of a policy.
- Delphi surveys to rapidly collect predictions, assemble forecasts, and assemble the opinions of stakeholders (decisionmakers and/or analysts) about alternative policy options using automated (electronic) survey systems.
- Scenarios to evaluate potential consequences, employing alternative assumptions. Scenarios are case studies of the future: looking forward to possible events rather than backward to known events. They take a narrative form, providing a means to visualize outcomes of alternative courses of action, analyze their hypothetical consequences under different combinations of assumptions, and "back-cast"—that is, link logical sequences of hypothetical events backward from the imagined outcome to the present.
- Structured brainstorming techniques to quickly and methodically consider cause-and-effect relationships across categories.
- Issues-analysis to systematically identify whole sets of major questions and dilemmas relating to alternative policy choices and/or contingencies of interest.
- Modeling of behavior and decisionmaking (for example, computer-generated models) to simulate large sets of interacting variables and to gain insight into the range of possible outcomes based on probabilities.

Future ➔ Now: ***The implications of long-range issues on near-term decisions.*** We have a tendency to discount the future, which means we postpone making decisions that are long-range in favor of dealing with what is very close to us in time. The trouble with that habit is that our near-term decisions have an effect on choices that will be available to us in the long term. There is always something new and consequential brewing. If potentially transformative or destabilizing developments are detected early, we can take action in the present while they are still nascent enough to be shaped for preferred future outcomes. Functions for this kind of foresight would include, on a continuous basis:

- Scanning the horizon to identify weak signals of prospective oncoming events.
- Tracking trends and analyzing plausible hypothetical Future Contingencies of Interest.
- Monitoring development of weak signals and tracking their interactions.
- Using these trends as drivers in the development of alternative scenarios and back-casting to identify key decision points that can be tested.
- Testing alternative policy responses (and their first-, second-, and third-order consequences) by analysis and simulation of plausible hypotheticals.
- Correlating best and worst outcomes with the simulated decisions, and matching the analysis with actual decisions presently being deliberated in the real world.
- Developing national priorities and objectives over multiple time periods—for example, the next 1–5 and 10–20 years—and tying aspirational outcomes to required near-term actions.

Methods. Futurists in business and academic communities use these and numerous other analytic techniques for conducting disciplined foresight, and the methods have advanced tremendously since the 1970s (a period during which an original burst of creativity arguably first gave rise to foresight as a discipline). Below is a sample set of foresight methods. A useful area of further study would be to pull together these various methods into a robust sequential process (although not all methods are useful/necessary for all circumstances). See Annex page 80 for definitions of these methods.

- Back-casting
- Course of action analysis
- Cross-impact analysis
- Delphi survey method
- Environmental scanning
- Futures Wheel
- Gaming
- Historical analogy
- Horizon scanning
- Implications Wheel
- Issues-analysis
- Morphological analysis
- Real-time Delphi
- Roadmapping
- Robust decisionmaking
- Scenarios
- Simulation/modeling
- State of the Future Index (SOFI)[15]
- STEEP implication analysis (Social-Technological-Economic-Environmental-Political)
- SWOT analysis (Strength-Weakness-Opportunity-Threat)
- Trajectory Analysis
- Trend projection

Why does this process have to take place in the White House, where bandwidth is so limited? At the White House, an ultimate responsibility exists to assemble the whole picture from a national perspective. That whole picture should include integration of things that are administratively separate at all other levels of the executive branch: economics and defense, domestic and foreign, short- and long- term. It is not possible to outsource that kind of foresight. It is possible to acquire inputs for it, but the composition and inspiration need to take place in the White House, *as a distinct function.* At the very least, a foresight function in the White House can ensure a higher probability that a timely exchange occurs between those responsible for producing foresight and those who can make good use of it. It does not need to be an operation. In fact, it should be kept small because enlargement leads to bureaucratization.

American Foresight. A frequent response to the challenge of proposing something "new" is to note that it has not been done before, implying that it should therefore not be attempted. The United States, to a unique degree, is a polity built on the rejoinder: "Why not?" The value of foresight for the United States is not theoretical: repeated acts of foresight have defined this country, as even a casual list demonstrates. We tend to view history linearly, but at the time of major decisions in our history, there were many possibilities under consideration, and the outcomes were very unclear. Each of these actions occurred in circumstances of deep controversy, at pivotal moments that were recognized to be such, and with reference to long-term consequences. The makers of these decisions did not stumble into them, and they were not predestined to happen; every one of them was based on an awareness, an *anticipation* (often Presidential) of an approaching fleeting moment when, by taking action, it would be possible either to avoid great risk or seize great opportunity on behalf of the United States. Skeptics might point out that these decisions were not decided based upon the kind of rigorous foresight proposed herein, but today's context is different: big decisions today often have immediate, cascading unintended consequences that can quickly become unaffordable. The big decisions of today and tomorrow that will eventually be added to this list require the kind of foresight only achievable by a disciplined process.

Examples of American Foresight

- Ratification of the Constitution
- Bill of Rights
- Louisiana Purchase
- Lewis and Clark Expedition
- Transcontinental Railroad
- Land Grant Act
- Emancipation Proclamation
- Alaska Purchase
- Establishment of Federal Reserve
- Lend-Lease
- GI Bill
- United Nations
- Marshall Plan
- Establishment of NATO
- Interstate Highway System
- Civil Rights Act
- Support for German Reunification
- Support for the European Economic Community

[15] Jerome C. Glenn, "The Millennium Project, *State of the Future Index*, The Millennium Project, 2009, available at <www.millennium-project.org/millennium/SOFI.html>.

Precedents by Foreign Governments. Many foreign governments recognize the unique need for foresight for today's decisionmaking context. The governments of China, Finland, France, Singapore, South Africa, South Korea, Turkey, and the United Kingdom have invested in the creation of foresight units to promote foresight and whole-of-government policy integration. These governments do not necessarily grapple with the number, variety, and importance of the issues that the White House faces all the time. The existence of these institutions and their proximity to leadership underscore the seriousness with which foreign governments recognize that the nature of today's challenges requires a dedicated effort to think across categories and in a disciplined manner about the long range in a way that other kinds of government bodies are not equipped to do. Relatively new and ranging in sophistication, these foreign government foresight offices offer models that should be examined for their possible value if applied to our own needs and capabilities. A survey of foreign governments' foresight units is presented in the Annex on page 75.

Foresight in Foreign Governments

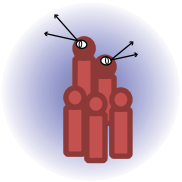
China	Department of Policy Studies
Finland	Government Foresight Network
France	Strategic Analysis Center
Singapore	Risk Assessment and Horizon Scanning Programme
South Africa	Policy Coordination and Advisory Services
South Korea	Ministry of Planning and Budget
Turkey	State Planning Organization
United Kingdom	Foresight Horizon Scanning Centre

Foresight Initiatives

This section contains four initiatives for integrating foresight and policy in the executive branch, each with a set of specific options for implementation. They are designed to satisfy all of the "Criteria for Upgrading Systems": no new resources, no consent or action required by Congress, compatible with existing processes, and implementable under conventional Presidential authorities.

[A-1] Organizing a Foresight System
[A-2] Brokering Between Foresight and Policy
[A-3] Incentivizing Foresight
[A-4] Training Professionals for Foresight

A-1 Organizing a Foresight System



An organized, ongoing, and disciplined foresight process would supplement the short- and medium-term emphasis of the White House by incorporating a dedicated focus on the long term. This would bring into our line of sight what is developing outside of our immediate vision and the attendant implications of current actions on future outcomes. There are many sources of foresight available to decisionmakers originating both within and outside of the U.S. Government, but foresight is not methodical, continuous, or structured in a form that is useful for decisionmakers. An organized process based inside the White House could serve as a vital clearinghouse for the most important and *actionable* long-range information. This information can be applied both in terms of the long-range impact of present decisions and the implications for future events on today's decisions.

Primary Functions

- Continuous scanning for weak signals of impending major events
- Analyzing alternative potential consequences
- Gaming out alternative courses of action
- Linking long-range assessments to ongoing policy formation.

Secondary Functions

- Draw upon and maintain inventory of foresight streams produced within the U.S. Government, foresight originating from external sources (academia, private sector, open source, foreign allies, etc.), and feedback/learning streams (described in Section C-5)
- Convert these existing streams of foresight into actionable analysis
- Coordinate existing U.S. Government foresight operations in and outside the Intelligence Community
- Sustain a multinational foresight platform to promote shared situational awareness.

Mandate

- Responding to instruction from policymakers on a topic of high priority (e.g., gaming out implications of policy options and/or supplying analysis of the implications of long-range factors on present decisions)
- Generating its own questions and setting its own agenda in order to analyze prospectively
- Ability to employ staff seconded from across the interagency (e.g., agency strategy or policy planning offices)
- Access to policymakers at very senior levels
- Authority to draw on highest level intelligence analysis and request that certain issues be tracked more closely.

To remain viable and useful, the process also must

- be detached from day-to-day concerns: allowed to remain sufficiently independent to survive being drawn into the demands of day-to-day crisis management operations in the White House. Its resources must be insulated so that it can focus exclusively on issues related to the long range without bleeding into crisis operations[16]
- not be restricted to focusing on "risk" and the traditional "national security" domain, but also focus on opportunities
- be able to bridge the gap between intelligence and policy, assessing both jointly in its analysis
- be a protected system to protect honest analysis.

[16] Any tension between buffering and isolating foresight will need to be solved on a trial basis. A foresight system needs to be plugged-in, but leadership must give it sufficient independence to be able to conduct its work without being drawn in to the crisis of the moment.

Options for Organizing a Foresight System

A Foresight "Fusion Cell"

A foresight "fusion cell" inside the White House could resemble a "skunk-works"[17] operation with a very small staff (5 to 10), about the size of an NSS directorate. The office could be located within the EOP, OVP, or operating across the NSS/NEC/DPC, reporting to the Chief of Staff, the Vice President, or jointly to the heads of the NSS, NEC and DPC, respectively. In addition to producing original foresight and red-teaming on an in-house basis, the office could serve an aggregating function based on a hybrid organizational approach: cross-linkages to existing foresight activities taking place in various offices across the executive branch (policy/strategy/planning offices) with centralized distillation and conversion of insights into *actionable foresight* that is continuously looped in to the White House policy system. Staffers could be seconded from these offices to supply a broad range of disciplines and deep expertise. This idea depends for success on the selection of people with a special set of attributes operating with an explicit mandate from the President. That having been said, such networks can add tremendous value, if only in the form of offering the last place in government where it is possible to find and address critical "unasked questions."

Revised Role for the NSS Strategy Directorate and IPC for Strategy

Rather than serving as the "utility infielder" for the NSS—fielding any issue that demands strategic thought on a crisis-by-crisis-basis—the NSS Strategy Directorate could take on the foresight functions of a foresight fusion cell with the Senior Director for Strategy leading an Interagency Policy Committee (IPC) that (a) examines long-range future contingencies on an ongoing basis, and (b) develops strategic goals and alternative pathways for the Nation as a whole.

Sub-IPCs for Topical, Regional, or Prevention-focused Foresight

Sub-IPCs could be stood up to conduct foresight on a topical or regional basis. Topical foresight could focus on national missions (such as the future of energy, education, or commerce); regional foresight could focus on alternative futures for America's role in strategic areas such as the Arctic, Indian Ocean, or South China Sea. It would also be useful to have a dedicated standing interagency group focused on *conflict prevention* as opposed to ad hoc responses to ongoing conflict. Such a capability would bring an anticipatory approach to bear in time to deal with incipient (as opposed to actual) conflict. Such a sub-IPC would identify and track potential flashpoints for intra- or inter-state violence, consider possible approaches for squelching violence before the ignition point, and provide this information to the President and key stakeholders (State, Defense, etc.) by direct reporting.

Virtual Organization

A virtual foresight group could comprise existing personnel, operating in their existing U.S. Government planning organizations, cooperating almost entirely remotely in a structured methodical approach to foresight at the national level, with participation and perspectives from each relevant agency. Centering this process at the White House (EOP, OVP, NSS/NEC/DPC, or Office of the Chief of Staff) would maximize the relevance and timeliness of the foresight generated by this network of operators. Populating the network with practitioners spread across the government is valuable not only for the sake of efficiency, but also in that it disseminates foresight deeper into the bureaucracy. A director based in the White House could serve as a catalyst to drive the system by ensuring analysis is relevant to present policy concerns and designating members of the virtual organization to serve in a "chief of contingency" capacity when major contingencies merit extra scrutiny. Someone assigned to be a chief of contingency would serve as a hub for foresight and intelligence relating to emerging issues of major potential consequence and develop actionable alternative plans for his or her assigned contingency (drawing upon existing agency capabilities). The system could also identify gaps and inadequacies within the U.S. Government as related to major future contingencies and recommend corrective action (i.e., a "GAO" function for foresight). Additionally, the system can take maximum advantage of extant foresight production by including a

[17] The term *skunk-works* refers to a group within an organization whose mission trumps the rules, and which is therefore given a high degree of autonomy and is allowed to operate with relatively less interference from the normal bureaucracy.

series of "portals" where nongovernmental foresight producers (think tanks, academia, private sector, international perspectives, etc.) can deliver streams of foresight information and receive direction/suggestions for further study.

Presidential Advisory Council for Foresight

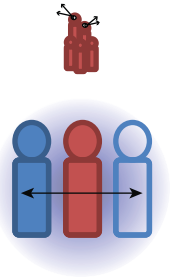
A Foresight Advisory Council—in the model of the President's Council of Advisors on Science and Technology, President's Management Council, President's Management Advisory Board, and President's Council on Jobs and Competitiveness—could comprise a small group of operators and trusted outside experts who are detached from day-to-day policy concerns and have a mandate to examine policy implications of extraordinary contingencies coming down the road. Topics would be identified using a systematic prioritization method that weighs both administration priorities and oncoming future issues identified by this group as having greatest potential consequence. Reporting to the Chief of Staff, the Council would have access to the President on a quarterly basis to discuss long-range contingencies and implications for present decisionmaking. Rolling membership and staff rotations could ensure fresh perspectives as the agenda transitions from one issue to the next.[18]

Foresight Retreat for Principals

A periodic retreat for NSC principals and deputies provides a forum to talk about long-term challenges and opportunities facing the country. For 1 day (annually or biannually), the President and his/her NSC principals and deputies could discuss a tightly prepared agenda. Insights and agreements would be recorded and converted by the NSA or Chief of Staff into an agenda for action.

[18] Advisory councils/committees implicate the Federal Advisory Committee Act and likely additional open-government laws. There are exceptions to the law, such as advisory committees for intelligence matters and for classified matters—which is why the President's Intelligence Oversight Board and Defense Policy Board can function—but depending on how they are stood up, such bodies could trigger these laws and/or litigation. Setting them up can be done and done right, but would authorizing language would have to be carefully crafted.

A-2 Brokering Between Foresight and Policy



Although there are multiple ways to organize foresight into a specific stream of information available to policymakers, no mechanism exists for bringing foresight and policy into an effective relationship. Foresight-producers—especially those in the Intelligence Community—do not think like policymakers, and vice versa. There is inadequate exchange of information between these two communities as to what is available and what is needed. This gap is structural, in the sense that for good reason, each community avoids not only the reality but even the appearance of an arrangement that causes intelligence producers to ignore information that may not be palatable to policymakers.

Ideally, the relationship between foresight and policy is not one-directional, but interactive; immediate policy challenges dictate the kind of foresight needed while long-range considerations should also influence the design of policy. Long-range foresight is indispensable as a test for short-range decisions. Although foresight should ideally be a function of all analysts and decisionmakers (not just the IC), the reality is that most policymakers are unlikely to become deeply engaged by foresight, which—from their perspective—usually sheds no light on immediate risks to themselves, their goals, and their policies. Except for standard intelligence briefings, interactions between policymakers and foresight producers occur on a randomized—rather than systematized—basis. That is not a formula for success. An interface is needed to ensure a higher probability that a timely exchange occurs between those responsible for producing foresight and those who need to use it.

A dedicated foresight staffing function would create a critical missing linkage between foresight generators and policymakers. It is possible to track alternative future developments, and even to assign them probabilities of happening; it is much more difficult to understand whether today's plans will cover those alternatives, or whether today's plans are completely inadequate for some plausible contingencies. This kind of "stress-testing" of today's plans and policies against alternative futures requires a constant dialogue between foresight producers and potential consumers.

A "brokering function" could have the effect of making foresight much more relevant, useful, and therefore more "actionable" from the perspective of a policymaker by translating long-term matters into consequences relevant to the decisionmaker in the short and medium term. This would also help foresight producers gain a better understanding of current priorities so that the long-range insights they generate are meaningful and relevant to decisionmakers' needs. Meeting decisionmakers *where they are* helps them to see how long-range issues have near-term manifestations that connect to their immediate needs and priorities. This does not mean giving up on the long range; rather, it means connecting the long range to the here and now. This type of "translating" requires not only identifying current implications of long-range trends and possibilities, but also expressing foresight in short, policy-relevant bites, in addition to the big-think studies and reports. The nuances of future-oriented information are often best conveyed using imaginative presentational techniques designed to capture the attention of decisionmakers and to bring about "suspensions of disbelief." These serve as aids to comprehension, using graphic shortcuts to communicate foresight findings. Examples include interactive charts, narrative illustrations, network maps, fake newscasts to make a future scenario more compelling, and short foresight papers building on hot items in the news. The purpose is to help decisionmakers "feel" the future and not only try to take it on board analytically, which supports uptake and sense-making by decisionmakers.

Options for Brokering Between Foresight and Policy

Translation Teams

Small, ad-hoc translation teams could serve a vital brokering function to improve communication between consumers (decisionmakers) and producers of foresight (including policy, scientific, academic, and intelligence analysts). The teams would be composed of foresight and policy specialists tailored for specific issues, but with broad experience in both domains (foresight and policy). Their job would be to serve as translators—translating to policy what is available from foresight sources; and translating for foresight producers what is needed by policymakers. Translation teams would be particularly useful for converting insights from highly technical computer modeling into language that decisionmakers can understand and that is relevant to policy decisions. Over time, these brokers could also help policymakers practice foresight methods. Such a function would bridge the "cultural" gap between policymakers and foresight producers who do not think in the same terms, and who do not understand each other's approach.

Establish a Staffing Function for Foresight

Assign individual staff members to maintain a stream of foresight-related information as part of the data flow to principal officials, and to be responsible for ensuring that foresight issues are identified and inserted into the agendas for Deputies' and Principals' meetings. An important part of this function would be to connect foresight to the "here and now," and decide which day-to-day decisions require integrating longer-range consideration into the calculus. This staffing function could also include performing vital stress-testing of today's policies and plans against future contingencies. The Chief Operating Officer as mandated by the Government Performance and Results Act Modernization Act (GPRA-MA) of 2010 could perform this function in each agency.

Designate Key Gatekeepers for Foresight

Assign a high-level operator in the White House and in each department—Assistant Secretary or Deputy Secretary who has the ear of the President or Secretary—to be responsible for incorporating foresight analysis and long-range insights into briefings and decision memos. This person would be responsible for finding the right timing to brief the President on horizon issues (e.g., on Air Force One while traveling).

Enlist Former Policymakers to Advise Foresight Producers on "Actionability"

Convene small teams of former senior policymakers with various groups of U.S. Government foresight producers (with teams selected on a policy-area basis). Facilitate this interaction in such a way as to encourage the former policymakers to respond to the following questions: "Do you see any impact on the design or execution of near-term policies and actions in light of these long-range views?" and "Are there long-range issues whose examination could illuminate short-term decisions about policies and actions?" Use these exchanges to *identify ways to process foresight in a way that directly contributes to near-term action*. This would generate new insights within the foresight production community as to how to make their products more relevant to senior policymakers, and how to get more traction out of our policy community and our very expensive intelligence bureaucracy. It would also demonstrate the way that exposing senior policymakers to long-range analysis triggers ideas for immediate actions that can be taken to advance short-range goals with an eye toward systematically producing desired long-range outcomes.

A-3 Incentivizing Foresight

Foresight ultimately requires a demand signal.[19] When the President and senior officials ask for foresight, it will be valued. Otherwise, there is little incentive within the bureaucracy to produce foresight and integrate it with current analysis, and staff will revert to the routine of crisis management. Crises, by their nature, will demand Presidential attention. Strategic thought and Anticipatory Governance are unlikely to find time on the Principals' schedule unless the President and his senior staff encourage it.

Incentives need to be designed so that the bureaucracy values foresight, and individuals involved in foresight production must have protection in their career path equal to that afforded to individuals who are not engaged in analysis that is considered internally controversial.

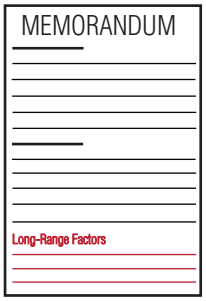
Revised precepts for policy and intelligence analysis could be a starting point for institutionalizing systematic foresight by requiring or at least incentivizing long-range analysis to be factored into the work of the bureaucracy as a whole. Requirements for internal written documents typically emphasize short-term problem-solving based on empirical analysis. Foresight analysis, by contrast, is longer-range and employs assessment of hypotheticals. This kind of analysis is not regularly encouraged because it is speculative in nature and may appear at face value to have little bearing on immediate issues or decisions. As a result, analysis is often created "inside the box," focusing on short-term fixes that do not synchronize with larger enduring goals, and may not hold up against major unanticipated events. Hypotheticals-based analysis should be mandated, rather than discouraged, and insights about the future should be tied to actions that can be taken to seize an opportunity or avoid a threat. Precepts for intelligence production and for major intelligence reports and new policy documents should mandate long-range, foresight-based analysis.[20] They should incentivize a stream of foresight-based reporting, tied to policy and to budget.

[19] The demand signal is simultaneously vital and elusive. It is a crucial factor that depends exclusively on qualities of leadership that may or may not always be online. That difficulty should be no reason to discount the importance of building anticipatory analysis into the system. It is far better to have a system for anticipation in being, even if it is not always well used, than to have no such system at hand when it is needed.

[20] Such a mandate would not necessarily extend to all (e.g., minor) issues. If too many well-intentioned "requirements" are added, the memos become less useful. The purpose should be to ensure that foresight and significant "un-asked" questions are included as often as appropriate.

Options for Incentivizing Foresight

Embed Precepts for Foresight into Terms of Reference for Policy Analysis



Mandate that major intelligence assessments and new policy recommendations include foresight-based analysis sections to acknowledge assumptions about the future and to consider relevant long-range factors. This would require analysts to go beyond purely evidence-based analysis and include disciplined assessments of plausible hypotheticals that could have major consequences. New precepts could incentivize a stream of foresight-based reporting (tied to policy and to budget) that is presently lacking. Insights about the future should be tied to actions that can be taken to seize an opportunity or avoid a long-range threat. *These requirements could be written into standards via supporting directives at the department or agency level.* Measures would have to be taken to prevent these requirements from being mechanically applied to so many documents as to destroy their value (or as a "box-checking" exercise), as well as to ensure that hypothetical analysis from the intelligence community does not become policy advocacy.

Red Cell in National Intelligence Estimates and the President's Daily Briefing

A "red cell" could be installed in every NIE and President's Daily Briefing to stress-test the analysis against long-range possibilities such as unforeseen contingencies and/or downstream contingencies of recommended actions. Quality foresight, as part of such a "red cell," would contradict (or at least not fully agree with) the rest of the document since foresight deals with the hypothetical, not the probable.

Revise Career Incentives to Encourage Long-range Analysis

Four kinds of incentives can encourage foresight:

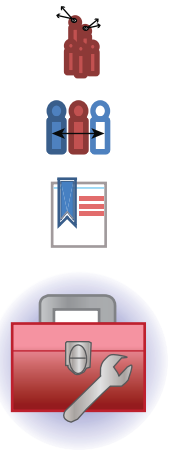
(1) Rewards could be issued for good foresight analysis, specifically for analysis that leads to seizing opportunities (in addition to averting risks).

(2) Promotion standards could weigh individuals' use of foresight and reference to long-range considerations in their work.

(3) Protection should be afforded to those who produce long-range assessments that challenge current thinking and offer tangible alternatives based on high quality analysis of hypotheticals and contingencies.

(4) Explicit requests for long-range analysis from decisionmakers will create a demand signal that incentivizes high-quality foresight and establishes an organizational culture where it is an expectation.

A-4 Training Professionals for Foresight



New sets of leadership competencies are required for 21st-century government professionals. Foresight is often considered a rare professional skill, but it can be inculcated.[21] Government needs leaders who are proficient in foresight and requisite skills such as collaboration, coordination, adaptability, and others that have always been "valuable to have," but now have become "required to succeed." Civil servants (including career civil service, FSOs, IC analysts, political appointees, etc.) are not trained to think across categories, and they are not equipped with methods for thinking in a disciplined way about long-range issues and future contingencies. We have a civilian governance about to retire in a block, and it is time to think about operational requirements of a future civil service. There should also be a revised approach to training at the academic level, stressing interdisciplinary study and exploring the relationship between theory and practice. This kind of training is necessary in order to give the next generation of civil service the capacity to operate under complex conditions. Methods of foresight generation and application should be formally taught to all civil servants and political appointees as part of training and qualification for government service.

The military's systems-oriented education and joint service requirements mandated by Goldwater Nichols should be replicated in the civil service. U.S. military officers cannot advance in careers without education; the same does not apply to civil service, where the present policy is "you bring education to us and pay for it, and we'll use it." Additionally, exposure to joint planning and joint operations should be an expected element of professional development in the civil service.[22]

[21] Sample curricula for Forward Engagement (taught 2001–2010 at George Washington University) are available at <www.forwardengagement.org/>. (Click on "Graduate Seminar.")

[22] **References:**

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Options for Training Professionals in Foresight[23]

Crash-course for Senior Officials, Political Appointees, and NSC/NEC/DPC Staffs

Many officials arrive for the first time at the White House with deep expertise on various subjects, but little feel for government operations and the demands of national-level strategy. As part of crash-course training for how to operate the system (including the vast resources available across the bureaucracy), disciplined foresight should be taught as an integral component of standard deliberation and decisionmaking procedure.

Focus on Senior Executive Service (SES) and National Security Professionals (NSP)

The SES and NSP programs offer a high-level opportunity for bureaucrats to rise above specific institutional affiliations and think of governance as a whole. As a requirement, professionals who enter these cadres should be trained to understand what foresight tools are available and how to think in a systematic way about complex problems. SES education programs at the Harvard Kennedy School and Federal Executive Institute could teach a course on foresight and complexity. Joint Service/rotations could also be rewarded or required for promotion, a la Goldwater-Nichols.

Insert into the Curriculum at Major Government Training Institutions

Create opportunities for Federal officials to acquire formal education in foresight generation and application using existing government educational institutions or outside consortia. Cross train civil servants to see beyond the current agenda and across the categories to consider the longer-term issues. Devise a set of learning objectives for U.S. Government training institutions to teach foresight.

Write Foresight Proficiency into Promotion Standards

Proficiency in and use of foresight methods should be weighted as part of promotion standards for civil servants.

Expose Senior Leadership to Foresight Through Workshops

A short-course training (perhaps 3-day workshops) in foresight methodology should be part of the experience of senior civil service, including SES and NSP, as well as military officials and political appointees.

[23] These options would not require legislation if implemented on an ad hoc or TDY basis. To be sure, civil servants can be lawfully assigned to training under existing authority, but not in the numbers that a military model would suggest. Neither is the system staffed for the redundancy necessary to place a certain number of civil servants out of cycle. This is both a personnel cap (total numbers) and personnel authority (job status) issue. Most Federal employees are hired to perform a particular task, rather than to serve as assigned, like military officers or Foreign Service Officers. Therefore, legislation might be required to take a large number of these types of General Schedule personnel into an educational cycle, but most of this can be accomplished under existing authority with the right leadership push.

{ B }

Networked Governance

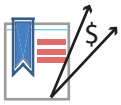
Networked Governance structures can facilitate rapid flow of information and can thus serve as the basis for a smarter and more prescient bureaucracy. Networks can help to engage the full resources of government in the form of adjustable groupings, and in arrangements that encourage a high degree of initiative, although responsive to overall strategic guidance from the President. These initiatives focus on enabling agencies to plan and operate more strategically based on "management-to-mission" as the organizing principle of policy formation and execution, and to apply much greater precision in bringing resources to bear by "budgeting-to-mission" rather than only by jurisdiction.

[B-1] Networking the Strategy/Policy Planning Offices

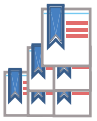
[B-2] Leveraging the Deputies' and IPC Processes

[B-3] Engaging the Cabinet Strategically

[B-4] Networking Integrators for Cross-Agency Missions



[B-5] Budgeting for Strategic Impact



[B-6] Synchronizing National Strategy Reports

[B-7] Systematizing Strategic Priorities

[B-8] Reformatting the Dialogue with Congress

Discussion on Networked Governance

Modern policy issues erode the customary boundaries that differentiate bureaucratic concepts and the missions that are based on them. Executive branch legacy systems are based on vertical (stovepiped) hierarchies, an organizational concept hailing from best practices of industrial models that were appropriate in the late 19th and early 20th centuries, but are now obsolete because they derive from an understanding of events as linear and complicated rather than as interactive and complex. The interagency system is especially ill-suited for managing complex problems that involve strong interactions among formerly isolated policy domains: for example, the relationships among energy policy, trade policy, climate policy, fiscal policy, and defense policy. Complex problems must be constantly monitored and managed, and systems for doing so must be able to adjust as the contours of the problem continue to change. Vertical organization impedes responses to issues that are lateral and crosscutting, and linear processing blocks responsiveness to interactive issues. Adaptability is the cardinal virtue of organizational behavior in the digital age, and fluidity and flexibility must become characteristic of government processes if we are to shape events rather than merely react to them. The vertical nature of our legacy systems impedes the executive branch's ability to deal with complex challenges in a number of ways—many of which will be familiar to anyone involved in national security—all of which are actually rooted in the outmoded design of the system itself.

- **Stifled Information Flow.** The agencies are configured for secrecy rather than sharing. Jurisdictional boundaries prevent information about real-world conditions from traveling easily between field-level components of institutions and the policymaking levels, and it flows even less readily among the agencies. Classification of information varies across agencies and is often employed excessively, which prevents sharing among analysts and operators who desperately want to be able to collaborate to do their job more effectively. There are few institutional incentives to perform beyond strict immediate requirements or to connect across jurisdictional boundaries.

- **Unaffordable Sluggishness.** Authority to act requires detailed supervision from the top, mediated by dense procedural oversight and red tape. Momentum at the periphery stalls because overburdened supervisors are the ones with the authority to decide whether to authorize action, let it die on the vine, or punt to higher level decisionmakers who are more overburdened and often less familiar with critical details. The result is a systemic inefficiency, characterized by long lead times and missed opportunities to shape events as they unfold progressively faster than our ability to respond.

- **Disjointed Strategic Planning and Operations.** Strategy, planning, and operations are conducted independently and concurrently in each department—from a department-specific perspective, based on internal capabilities and resources—rather than collectively, based on a coherent view of national missions and the full spectrum of national capabilities and resources.

- **Darwinian Competition.** Like most institutions, agencies often prioritize survival, turf, and budget maximization, and the continuity of familiar procedures, rather than institutional change or even success. Self-preservation trumps creative change, and there is a tendency to purposefully withhold options and information that would benefit national-level missions if the internal implications include tightened resources, reduced influence/turf, reassessment of a favored (or "pet") policy or project, or undesired changes to standard operating procedure.

A more subtle and continuous integration among policy, management, and budgeting is needed. The fiscal situation presents an urgent need for *strategic budgeting:* a deep and constant linkage between the budget process and the planning/operations process. There is a growing consensus that complex events demand the total engagement of government assets, but that what we have at best is a deeply flawed effort to link vertically organized systems (for example, the creation of the ODNI and DHS). We have left a period when our most serious security problems were by nature

"stovepiped" and hierarchical management was sufficient; we have entered a 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 more flattened and integrated.

Network Theory offers an alternative way to organize governance. Networks facilitate relationships, interactions, interdependencies, and synergies. Networks expand the mandate of lower echelons to act, eliminate bottlenecks latent in middle layers of management, and radically improve the flow of information throughout the new system. The fundamental idea is that large organizations will—if organized in the form of networks that feed information to the periphery and enable the periphery to act toward broadly but clearly stated goals—display a capacity for rapid, internally generated responses that will consistently out-perform conventionally organized hierarchical systems. Models for networking civilian governance already can be found in the armed Services in the form of "net-centric warfare": an approach to military operations pioneered by the late Admiral Art Cebrowski based on complexity and network theories and advances in command, control, and communications. We need similar processes for collection and assessment of intelligence and for policy analysis and implementation—not just in the military (where it is still a work in progress) but also on the civilian side of government.

A Civilian Equivalent of the Military's "Commander's Intent" would provide foundational statements of objective as the means to promote self-synchronization. Planning and operations would remain distinct but become interlocking functions, whereby both could employ networked structures with overlapping personnel. Networked planning means not only linking disparate government strategy units and managing-to-mission, but also routinely incorporating budgetary considerations in strategic development (and vice versa). Networked operations would be guided by commander's intent, and should also have input into its formulation. Feedback systems (see Section C) would be required to ensure that the system is responding to the expressed guidance, to modulate the speed of implementation, to identify rogue behavior, and to redirect objectives and resources as needed. As has been the case in the military, networked civilian operations will require encouragement of a culture of governance adapted to the requirements of action within the framework of complexity.

Management-to-Mission—as opposed to traditional management-by-jurisdiction—would permit the system to harness existing resources and capabilities that are spread across the whole of government and to vector the full scope of what is actually required (rather than what is only available under a single authority) into coherent operations. Organizational boundaries are convenient for management and budgeting purposes, but they are ultimately artificial when real-world consequences ripple across them. Complex issues have no regard for the

Complex National Missions

- **Transnational Organized Crime and Terrorism.** Criminal and terrorist networks are interacting with each other, diversifying their activities and adapting their tactics fluidly and rapidly enough to keep us a step behind. The very legitimacy of formal governance as enterprise is at stake. The problems of drugs, terrorism, money-laundering, gang violence, and human-trafficking cannot be separated from each other. It takes a network to fight a network, and that requires a coherent approach among the scores of agencies involved (ONDCP, NCTC, DEA, DOS, DOD, DHS, IC, etc.), not to mention international partners. None alone has the resources or authorities to combat these threats' myriad forms, and we can only be successful if our strategies, operations, and budgets are synchronized.
- **Robust and Sustainable Economic Growth.** Defining a "new normal"—to include sustainability, secured lending, risk management, and deficit reduction—is a national mission touching every aspect of economic governance. Fiscal, trade, investment, research and development, labor and manufacturing policies must be integrated and synchronized to create an "economy built to last."
- **Infrastructure Modernization and Security.** America's communications, energy, and transportation systems are foundational to the kind of nation we will be this century, and all three systems contain systemic vulnerabilities (physical, cyber, and otherwise) that are interconnected and can only be addressed by whole-of-nation planning and synchronized execution.

jurisdictional boundaries of government's vertical and sequential mechanisms for problem-solving. Today's national missions—such as lowering the national debt, improving health outcomes and living standards, ensuring our economy is sustainable in the face of change, etc.—require not just the resources and authority vested in a single agency or department, but the capabilities spread across government in various jurisdictions. Management can and must begin with the nature of the mission rather than with the boundaries and limitations of our legacy organizations. Rigid hierarchy must give way to protean networking. The purpose should be to focus the disparate programs within different agencies on commonly understood strategic goals consistent with the President's objectives. In practice, this means organizing adjustable groupings according to strategic requirements, either as ad-hoc interagency task forces or networked arrangements of existing subgroups within departments and agencies. It also means designing a budget around priorities and missions rather than by turf.

Maintaining a Balance Between the Center and the Periphery. Strategic behavior is the foundation of what is now commonly referred to as a "whole-of-government" approach, a concept that is perhaps more radical than the concept of foresight. Foresight means adjusting the existing process to accommodate a new stream of specialized information having to do with the interaction between potential actions in the present, and their consequences expressed as alternative future outcomes. The response to this proposition is skepticism about the value of foresight as a guide to action. Whole-of-governance management, on the other hand, evokes other kinds of skepticism because it contradicts basic principles needed for hierarchical systems. Advocates of pushing decisionmaking "to the periphery" point to advances in data-handling that support this approach, although the very same advances also can support reconsolidation at the center. Today's communications make it possible to boomerang any issue to the White House and thereby to neutralize efforts to flatten decisionmaking efforts. It will be said that large organizations cannot be run unless executive power is totally vested at the top, and if the President is ultimately accountable for what is done by the executive branch, then it is wrong to push power down and outward. These objections will be raised even in the face of indications that legacy approaches are failing to match today's challenges. The White House cannot, however, create responsiveness across the executive branch by micromanaging from the center. It needs to set the course and monitor the consequences. In between, it needs a networked approach to knit together the administrative effort that converts policy into practice.

Strategic Behavior. The degree to which the United States is still in charge of its own destiny and is still a positive force in the world will depend not just on its ability to formulate *strategy,* but on the degree to which government can convert strategic knowledge (foresight) into *strategic behavior.* Acquiring strategic knowledge is something that can be done even in the midst of very negative trends and events. The political and organizational ability to strategically is the challenge, and this capacity is the subject of networked governance. Networked governance permits strategic behavior by enabling leadership to practice management-to-mission and budgeting-to-mission synchronized to the commander's intent. Without a network, it is possible to generate "actionable foresight" linked to policy and to visualize strategic behavior without being able to execute it. Strategic behavior has certain characteristics and enabling requirements:

- It has the ability to form and sustain relatively stable, long-range objectives.
- It has highly adaptive responses to shorter-term impediments.
- It has a very short turnaround time between new circumstances and revised action.
- It evaluates action in the short term within a long-term framework.
- Its visualizations of the future are not driven by ideology, but by facts and shared objectives.
- It treats alternative futures as either desirable or undesirable, and treats none as unthinkable.
- It insists on marrying means to ends, including tests for fiscal reality (not just "pay as you go," but also "plan as you go").
- It couples management-to-mission with budget-to-mission.
- It employs a broad-scope definition of "national security."

Organizations cannot impose strategy; they can only execute it. Strategies are not meant to be updated weekly; they are for the duration. By contrast, strategic behavior absolutely requires extensive, synchronized action within and by a large organization, and it does require adjustment when and as indicated by feedback systems (described in Section C).

Strategic behavior for coping with increased complexity requires something like multiple concurrent networks. In fact, government already is a web of multiple concurrent networks; the question is how to make the output of these systems coherent in terms of ability to focus on a defined mission. The key is improvement of information and command and control systems at the White House and Cabinet level. Whole-of-government applied *literally* would be far too sweeping to be manageable, but the executive branch can move to a more flattened internal approach, aiming for faster adaptive behavior and self-synchronization around "complex operations."[24] Along these lines, if there is such a thing as "wisdom of the crowd," government had best learn how to tap it as part of a networked approach. The goal should be the ability to focus any and all government capabilities that are relevant to the accomplishment of a complex national priority—operating across conventional jurisdictional lines—by means that are consistent with the Congress's constitutional authority to appropriate funds.

Networked Governance Initiatives

This section contains eight initiatives for networked governance in the executive branch, each with a set of specific options for implementation. They are designed to satisfy all of the "Criteria for Upgrading Systems": no new resources, no consent or action required by Congress, compatible with existing processes, and implementable under conventional Presidential authorities. They are designed to reinforce existing systems—not to circumvent them or add new layers—and they are adjustable in structure to reflect the goal of management-to-mission.

[B-1] Networking the Strategy/Policy Planning Offices
[B-2] Leveraging the Deputies' and IPC Process
[B-3] Engaging the Cabinet Strategically
[B-4] Networking Coordinators for Cross-agency Missions
[B-5] Budgeting for Strategic Impact
[B-6] Synchronizing National Strategy
[B-7] Systematizing Strategic Priorities
[B-8] Reformatting the Dialogue with Congress

[24] *Complex operations* as applied to interagency missions are under study at NDU's Center for Complex Operations, available at <http://ccoportal.org/>.

B-1 Networking the Strategy/Policy Planning Offices

Although every Cabinet-level agency has its own dedicated strategy shop/policy planning unit,[25] these offices are generally not in communication with each other, and there is no venue for overall policy coordination at the top. The absence of such linkages means that government strategic planning is effectively disjointed. Strategic planning is conducted independently and concurrently in each department—from a department-specific perspective, based on internal capabilities and resources—rather than collectively, based on a coherent view of national missions and the full spectrum of national capabilities and resources. Arranging a network of the various policy planning offices across the executive branch would be simple and an important first step toward a more coherent whole-of-government approach to strategy.

There is a difference between successful crisis management and anticipatory policy planning. It is possible to think systematically through the multiple issues, implications, and alternative consequences of a policy, including long-term implications of short-range choices, indicators that a policy is meeting or deviating from expectations, etc. Major decisions sent up to Cabinet officials and the President can and should be enriched by this type of analysis. The policy planning offices—collectively and individually—can serve this need.

Systematized interactions among policy planning offices would create a space for obtaining and sharing information that is otherwise siloed, but which is essential to improving each department's "whole-picture" of major issues and the broad-based implications of various policy options.[26] A system for sharing information about capabilities would reveal specific instances where agencies' needs and capabilities overlap, enabling discussion of what can be shared. The center of gravity for this mode of integrated strategic planning needs to be at the White House, but as a means to define, guide, and empower, not to micro-control.

[25] List of U.S. Government Department Strategy/Policy Planning Offices is presented in the annex, page 77.
[26] President Dwight D. Eisenhower was known to use the planning offices in this way.

Options for Networking the Strategy/Policy Planning Offices

Revised Function for Policy Planning Offices

Policy planning offices have a unique potential value added that other parts of the bureaucracy do not. It is possible for these offices to focus not only on what the policy response should be to any given issue on the immediate agenda, but also on:

- long-range issues and unasked questions that need to be identified as part of creating policy
- how to organize effectively to define and pursue objectives (what pieces are in place, in what sort of arrangement, and if that arrangement is suitable to meet our objectives)
- strategic plans—roughly 5 years out—that clearly articulate objectives, capabilities, and resource alignments to those capabilities.

Regular Meetings (e.g., monthly), chaired by Deputy NSA or Deputy COS

A single meeting of policy planning directors, convened by a senior White House official, would create a stir. What is needed is a pattern of activity. Persistent demonstration of high-level interest is key. Moreover, only a senior White House official has the convening authority to draw in the participants on a regular basis and to steer the discussion toward some collective activity in addition to information-sharing.

Electronic Mission-management System

An electronic system for management of the issues could be used to help synchronize policy planning activities across departments. The system could be organized by mission and/or use tag-tracking of issues whereby when a policy planning team is working on an issue that crosses into the domain of another department. The system would apply a tag alert to that issue in order to alert the corresponding staff in the other department's policy planning bureau, as well as a set of questions about their operations to identify cross-links).

Mission-based Teams of Policy Planners, chaired by Lead Agencies or Interagency Coordinators

Ad-hoc groups of policy planners could extend across agency barriers, aiming to draw together information and insight regarding complex advancing issues. These groups would be useful for early spotting, discussion, and first consideration of possible responses to events that are distant from action but advancing toward that threshold. The chair could be either the representative from the department designated as for the mission, or by interagency coordinators.

Mission-based Teams of Regional and Functional Bureaus

Regional and functional bureaus across departments and agencies could likewise be coordinated in networks and organized according to mission in conjunction with a strategic or policy priority.

B-2 Leveraging the Deputies' and IPC Processes

The Deputies' Committee (DC) is a unique space in government: it is a group that deals with national-level issues while simultaneously representing departmental viewpoints. The DC is a good place for incubation of foresight and mission-based management. The deputies are the most senior officials who combine in themselves responsibility for day-to-day operations of agencies (to support the principals) and full awareness of policy issues as seen from the top. When the deputies function well, the DC is not only the place where agency interests are represented, but also a network of associates where a creative synthesis of those interests and capabilities begins to take place in order to support Presidential decisionmaking. The same network is capable of absorbing information about longer-range concerns and integrating that information into its work on short-range matters. These are not theoretical observations about what is only possible in the ideal: they reflect experience of past-serving deputies. While such an arrangement depends tremendously on personality and "chemistry," it is an outcome of both the care that is given to selection of deputies and to the standards set for the way in which the system operates.

The deputies could serve as a nucleus for cross-disciplinary policy formulation that is mission-oriented, and which responds to and uses foresight. Their function could be to consider the intersection of multiple issues and match potential consequences to policy priorities. This would enable the exploitation of resources from a variety of bureaucracies while coordinating cross-bureaucracy policies. It would also be a lightweight way to add formal consideration of the foresight dimension to the White House policy process.

The process has to be designed to continually bring the deputies back to strategy. At the deputies' and senior directors' level, there is a tendency to get sucked into single issues and divert attention from strategy to focus on tactics. These issues become personally consuming for good reason, but the position demands a broader and longer view.

"Packaging," not *deciding.* Instead of channeling the Secretary and "deciding the answer" where major decisions are needed, deputies could focus on packaging issues adequately in order to clarify the full range and implications of policy choices. This would provide a systematic basis for executing big ideas.

Delegating day-to-day operations. Hands-on tactical and operational decisions could be pushed down below the deputies' level.

Options for Leveraging the Deputies' and IPC Process

Revised Role for the Deputies' Committee

Rebalance the agenda of the DC to enable its members to focus on long-term and mission-oriented complex priorities that relate to their day-to-day tactical and operational agenda items.

Foresight into the DC Packet

The DC packet should include a section for foresight related to specific issues and decisions.

Dedicated Strategy Meetings

Foresight/Mission Meeting. Schedule a series of meetings dedicated to foresight and mission-based planning that would take place over the course of the entire administration. Topics should be chosen using a systematic prioritization process based on a mix of major issues of the day that require long-range thinking and horizon issues that require proactive attention.

Annual Priority Rebalancing. Once (or twice) per year, deputies should meet for 2 hours to review and rebalance priorities (e.g., first Monday of October, before planning guidance and State of the Union preparations). An annual meeting with a set date: everyone knows when it is; it is linked to budgetary purposes; and it is part of the annual strategy cycle. For the agencies, that becomes the target date to engage with the White House about priorities.

Deputy COS or Special Assistant to the President as "Chief Management Officer" for Complex Priorities

Since the deputies are often required to focus on day-to-day crises, a new Deputy for Complex Priorities can focus exclusively on long-range priorities and interactive issues management. The role would be akin to a "Chief Management Officer" for the EOP, focusing on converting interactive issues into coherent sets of priorities (that is, "complex priorities"), managing the priority-setting process, and walking priorities through the bureaucratic processes. This role would not be divested from policy but focused on its administration; it must be protected from being pulled into day-to-day crisis management and should function in a cyclical process through the budget processes.

IPC for Strategy

The IPC for strategy should meet on a regular basis to serve as a "tiger team": coordinating the broad scope of major interagency missions, priority-balancing, and incorporation of long-range considerations. IPCs do not have the same authority as the DC, but they have more specific knowledge that could make it the proper forum, chaired by the Senior Director for Strategy with agency participants at the deputy assistant level. Output could feed into a more senior venue (e.g., the DC or "foresight fusion cell" as described in the previous section). Representatives from each of the agency strategy/policy planning staffs and someone from the NIC should serve on the IPC for strategy in order to bring long-range issues to the table and to contextualize discussions with reference to longer-range issues.

Foresight Broker at Deputies' Meetings

One or two people on the Deputies' Committee should be assigned responsibility for contextualizing the decisions of the day with reference to the long term. This person could feed information about what is on the current agenda to a standing body (e.g., foresight "fusion cell" or separate DC or IPC for strategy, which would include representatives from the agency strategy/policy planning staffs and the NIC) whose full time job is to perform foresight analysis on immediate issues. The foresight broker could bring this analysis back at the top of the next meeting, to contextualize major decisions within long-range strategic considerations.

Retreat

Deputies should occasionally retreat (perhaps to Camp David) for a discussion of whole-of-government operation and long-range considerations.

B-3 Engaging the Cabinet Strategically

The Cabinet can organize as leadership teams to promote synchronization of individual agencies on a mission-oriented basis by orchestrating horizontal coordination from top to bottom. Mission-based coordination would combine, at the top-level, the ability to coordinate planning and execution. The model for this form of collaborative approach exists in the Department of Defense, under way as of the Goldwater-Nichols Act of 1986, as well as under various concept headings including "net-centric warfare." Ultimately, departments should be able to move away from "forced" integration and act that way reflexively.

Strategic cooperation among Cabinet secretaries does not require changing the internal management or structure of the departments. It does require changing patterns of operation and—over time—institutional "cultures." Unfortunately, the congressional oversight system is designed to match funding, policy, and operations on an agency-by-agency basis, and therefore today's challenges cut across not only the formal interagency boundaries, but also the jurisdictional boundaries within the congressional committee system. As a result, Congress does not systematically hold Cabinet secretaries accountable for how well they have interlinked their agencies or interacted with each other, no matter how much this mode of operation is needed to strategically maneuver the government. The Congress has sufficient flexibility within its rules to enable it to adapt, but that is ultimately a question of political will. In the meantime, only the President is in a position to assure that the executive branch combines strategic behavior and strategic thinking. Ultimately, the President must lay out expectations for how secretaries should operate. If the President wants the Cabinet to operate differently than it does, he or she must specifically articulate this change—and enforce it.

Options for Engaging the Cabinet Strategically

Establish Ad-hoc Interagency Task Forces at the Level of Cabinet Officers for Complex Priorities

The interagency system exists to develop policy up to the point of Presidential approval and to coordinate among agencies in the process of execution of policies. The Principals' and Deputies' Committees are the most senior elements of the interagency, operating in either mode. The Cabinet itself, however, is mainly a gathering of officials who have direct, legal responsibility for the management of their individual agencies. The suggestion here is to use the Cabinet, as such, as *the most senior management body in the government,* with special responsibility for assuring synchronization across agencies that have missions that represent components of broader complex priorities. Short of constantly referring back to the President, Cabinet-level task forces would work with a top tier of White House officials, who collectively would work to make sure that the President's intentions are translated into operations across government jurisdiction.

Task Force Subgroupings

Create subgroups to ensure that government organizations are in alignment as they "maintain formation" on complex priorities. These subgroups would report to individual Cabinet members comprising a given task force.

Use "Secretary's Intent"

Use "secretary's intent" (like commander's intent in the military) to establish priorities and outline ends, ways and means.

Offer Secretary's Incentives

Secretaries can offer incentives for agencies to contribute to national-level missions in ways that otherwise deviate from their standard routines.

Intradepartmental Linking

Link the analytic offices in the different agencies doing alternative strategic conceptualizations, so they are not just creating their own versions separately within the same department.

Retreat for Cabinet Officials

A retreat for 1 day per year would afford NSC and Cabinet Principals a major opportunity—under circumstances that do not normally exist—to assess whole-of-government missions and explore alternative futures.

B-4 Networking Integrators for Cross-agency Missions

Specialized coordinating functions in government compensate for the stovepiped nature of the existing Cabinet system, which was not designed to manage complex, cross-cutting priorities. One improvised response to this problem exists already in the form of approximately 35 officials distributed across the executive branch who effectively serve as coordinators for complex national missions. The press and Congress have labeled this set of officials "czars," and the label has stuck. However, the term *czar* is a misleading concept, weighed down by a great deal of historical baggage. It unavoidably suggests vertical organization, rigid hierarchy, and an imperious style of decisionmaking. This obviously does not represent their intended role in an administration, which is to coordinate massive, difficult missions. Moreover, any effort to create such nodes of coordination can be perceived in the Congress as a means to circumvent its authorities. In any event, that kind of centralization of power could not be further from what is actually required: laterally networked organization, characterized by decentralized authority, operating with flexibility.

Officials operating in this capacity should be regarded as *integrators,* not czars, since they are effectively *coordinators,* not *autocrats.* As a group, they actually have tremendous collective knowledge about where the government is, where it is headed, and what specifically can be done to convert the concept of whole-of-government into operational reality in any given policy space. Such system-wide knowledge to coordinate planning and execution on a mission-oriented basis could be extremely important for helping the President achieve overall system coherence: an overall awareness of the operations of government, the interactions of policies with each other, and of the impact of these forces on our complex challenges. This collective knowledge can be tapped, but no system presently exists for that purpose. These officials have no venue for coordination and no way to talk to each other except "hub-and-spoke." Their authority and access range widely: some report directly to the President, others report to Cabinet officers, and some have hybrid responsibilities with lines of responsibility running more than one way. Individually, they may somewhat improve coordination within and among various agencies, but cannot do so for the system as a whole. Collectively, however, the whole decisively can exceed the sum of its parts. Integrators—individually and corporately—could perform a crucial knowledge management function in the executive branch by connecting top-of-system awareness to political authority. They could generate situational awareness across the whole of government, during both the formation and execution of policy, and track policy implementation and needs for midcourse adjustment. Operating in this fashion—as a network instead of on an ad hoc basis—could also have the added bonus of easing strain on deputies for day-to-day coordination.

Integrators conducting issue- or system-management functions need not threaten the oversight authority of Congress[27] providing it is clearly established that responsibility for the execution of policy remains in the hands of Senate-confirmed officials. They would not substitute for the IPCs or the Principals' and Deputies' Committees, nor would they displace Senate-confirmed Cabinet officers from their authorities and responsibilities. They would simply augment the existing process by adding a critical missing element: the ability to visualize policy formation and execution in relation to mission as opposed to bureaucratic jurisdiction.

[27] It is important to acknowledge that the more de facto authority that these officials wield, the more likely the pressure from Congress to have them produce testimony. Purely advisory or not, "integrators" who perform foresight, whole-of-government, and feedback roles would have a greater and more important role, and thus more separation-of-powers pressure to step outside the White House's protection in order to testify before Congress.

Options for Networking Integrators for Cross-agency Missions

Strategic Groupings of Integrators

Integrators could be organized into strategic groupings, forming a venue whereby they come together for systematic consultation and cross-fertilization of ongoing processes. The purpose of these groupings would be to create a network of officials with a collective responsibility to make sure that operations in their several agencies are focused on national priorities. Integrators might be able, operating through a network, to rapidly develop ways to work around impediments to coordinated action, both within their own organizations and among them. They would also serve as sources of insight and analysis that should be tapped by processes that staff the Deputies' and Principals' Committee as well as those that provide information to the upper tier of Presidential advisers who are charged with maintaining coherent executive branch responses to complex priorities. This arrangement would require an authority responsible for coordinating the groupings and rearranging them as the problem or priority on which they are focused inevitably morphs.

Integrators as a Venue for Foresight

Integrators could take on responsibility for foresight and horizon-scanning within their policy domain and feed that foresight into the policy process (see Section A).

Integrators as a Venue for Feedback

Integrators could take on responsibility for feedback within their policy domain and feed that foresight into the policy process (see Section C).

B-5 Budgeting for Strategic Impact

One of the most important systems issues in government is the disconnect between strategy and the budget process. The Office of Management and Budget (OMB)—which conducts budget planning, budget response, and management performance review—historically administers the budget process more as arbiter of a zero-sum competition among agencies than as a coordinator for strategic resourcing on a whole-of-government basis. The result is a budget process that is divorced from long-range thinking rather than shaping the budget to enhance strategic priorities. OMB could serve as an active party to strategic planning and coordinating resources to achieve missions that cross agency jurisdictions. As a full-fledged part of the strategic process, OMB could be the gravitational field that aligns strategic planning with the budget. Careful attention would need to be paid to staffing these arrangements with budgeting experts who are also well-versed in strategic planning and foresight methods.

Options for Budgeting for Strategic Impact

Regular Interface Between OMB and NSS/NEC/DPC

- Regular meetings should take place between OMB and NSS/NEC/DPC counterparts to clarify strategic priorities by translating them into budgetary terms. A "two-way street" is essential; it cannot be just OMB at NSS/NEC/DPC meetings, but has to work the other way, or OMB hierarchy could undo agreements made at a higher level.
- OMB and NSS/NEC/DPC should each invest at least one person to serve as the bridge between them. A deputy in each organization could be assigned to specifically facilitate integration.
- Every working group within the NSS/NEC/DPC should automatically include at least one resource specialist from OMB. This person should participate as a vested broker, not just as an observer. His or her role would be to inject budgetary considerations into the formulation strategy and to bring back insight to OMB about options under consideration.
- Representatives of the NSS/NEC/DPC should also be present at OMB discussions (about specific policies or programs) in order to shed light on strategic intentions and the implications that budget decisions have on the government's ability to coherently implement a strategy.
- The benefits of this would be to help OMB gain a sense of ownership in the strategic process and to provide a forum for brokering budget decisions at the right moment in the strategy process, instead of OMB just serving as the "pocket book" to say how things get funded.

Joint Mission-oriented Projects Between NSC/NEC/DPC Staffs and OMB

- To demonstrate the feasibility of a systems-approach to budgeting, the Budget Director and National Security Advisor should work together to prioritize a small number of joint projects dealing with national missions that cut across agencies. Two or three priorities could be used for the pilot (one each for the NSC, NEC, and DPC).
- These projects could center on outcome-specific or problem-specific sets of issues.
- The projects could serve as proof of concept toward enabling OMB's cultural shift toward a more strategically oriented organization.
- The output of such a project might be planning guidance issued jointly by an OMB deputy and respective deputy in NSS/NEC/DPC saying "here's what needs to be done, put your budgets together on this basis."

Pilot Projects could be conducted with one security-related policy issue (e.g., combating transnational organized crime), one economics-related policy issue (international trade policy and practice), and one domestic policy issue (reducing homelessness).

Create an Integrated OMB-NSS-NEC-DPC Strategic Shop

- A small strategy shop inside of OMB—integrated with the NEC, DPC, and NSS strategy offices—could provide OMB with a conscious capacity to look at what is coming and to think proactively about what will require resourcing.
- Its primary function would be to scan for signals of pending funding requests—e.g., based on major events or developments domestically or abroad, Presidential speeches, etc.—and begin the process of studying how responses could be funded. A regular staff retreat (perhaps every 2–3 months) could be used to call attention to the issues on the table and those coming down the pike.
- A secondary function would be to go beyond the annual budget process and take a longer-range (5–10 years) view of the budget, including analysis of alternative budgets based on alternative priorities (see below).

Budget for Alternative Futures

- There are many possible futures—so why do we have one budget? If we have budgets that really do address the fiscal crisis, alternative approaches are going to mean alternative futures for how we live in the United States and how the United States relates to the international system. In its present form, the budget is a succession of single-image views of budget cuts and taxes, which are not adaptive enough to withstand a range of contingencies. America's destiny is shaped by its budget, yet there is no mechanism for converting alternative visualizations of the American future and alternative constructs of the budget.
- OMB already requires alternative budget proposals, but they ask for alternative decrements without considering alternative priorities or their long-term consequences that shape the country we become.
- Instead, OMB could use its leavers to enforce prioritization by requesting priorities-based budget alternatives.
- Alternative budgets could be used to model the effects of different decisions about prioritization, so you can see the benefits of alternative budgets (that is, "if you prioritize this, you invest here; if you invest here you prioritize this").
- The effect would be to underscore choices about whether to "buy into" or "buy out of" alternative visions of where we want to be.
- It would be helpful to have a set of scenarios that show where we are supposed to end up after these transactions. Developing alternative budgets based on alternative strategies would provide for better informed decisions as to how to pursue and resource our national strategies.
- Technologies make it possible to make data more transparent (e.g., grants.gov, recovery.gov, cio.gov), and applications exist that can generate alternative budgets based on alternative priorities (e.g., *the New York Times'* Budget Puzzles for the Federal Budget[28] and the military budget[29]).

[28] "Budget Puzzle: You Fix the Budget,"*The New York Times,* November 13, 2010, available at <www.nytimes.com/interactive/2010/11/13/weekinreview/deficits-graphic.html>.

[29] "The Future Military: Your Budget Strategy," *The New York Times,* January 2, 2012, available at <www.nytimes.com/interactive/2012/01/02/us/you-cut-the-defense-budget.html>.

B-6 Synchronizing National Strategy Reports

Any strategy is a plan for imposing a predetermined outcome on a complex system. Strategy necessarily intends to be comprehensive, meaning it purports to solve the problems of an entire set of issues. It needs to be durable enough to last until completion, and it should not be susceptible to disastrous failure in the almost certain event that it encounters conditions not foreseen in its premises. The term *national strategy* (or *grand strategy*) conveys the sense of sitting at the apex of all other plans and tactics, which should be regarded as tributary. That means that it should encompass the entire range of actions that may be required for execution: from maneuvers to tactics to operations to battles to diplomatic missions to trade negotiations to campaigns and upwards. Grand strategy is more than the sum of its parts. It is the high ground from which all of the parts and all of their interactions can be thought through, and employed as overall guidance for action.

It is not clear, however, that grand strategies are really available. Complexity theory challenges the notion at a basic level, since any action designed to solve a problem in a complex system simply causes the problem to mutate. Grand strategies do not end with permanent stability; history is a continuum in which every victory march leads on to the next set of problems that have to be dealt with and which therefore require that every strategy be revisited and adjusted. It is nonetheless possible to develop real strategic narrative,[30] and to use it to synchronize *strategic behavior* across the Federal Government.

Congress has mandated an array of reports on national strategy that can provide strategic direction for the government and the Nation. These reports—listed in the annex on page 78—range from the President's National Security Strategy to the Quadrennial Reviews conducted by heads of Federal departments, and to the scores of department and agency strategies. These strategy documents range widely in terms of their scale, mandate, time horizon, use of terminology, release dates, and myriad other factors. As a result of such variations, the U.S. Government's broad spread of strategic documents do not coherently reference or cross-relate to each other.[31] While each may stand on its own as an important strategy in a given domain, these documents are—as a whole—asynchronous and disjointed from one another. The effect is lack of mutual reinforcement emanating from the core explications of U.S. strategy.

The primary mandated national strategy documents—the President's National Security Strategy and the Quadrennial reviews for Defense, Intelligence, and Homeland security—are defense- and homeland security- oriented; Development and Diplomacy is a recent addition. National strategy, however, certainly encompasses many other domains—such as energy, environment, health care, labor, trade, industry—that are of vital importance to the security and prosperity of the Nation and account for a large share of our national budget and effort.

National Strategies

(Detailed illustrative list in the Annex on Page 78)

- National Security Strategy of the United States
- Quadrennial Defense Review
- Quadrennial Intelligence Community Review
- Quadrennial Homeland Security Review
- Quadrennial Diplomacy and Development Review
- National Military Strategy
- National Intelligence Strategy
- National Strategy for Homeland Security
- National Export Strategy
- Strategy to Combat Transnational Organized Crime
- National Strategic Plan for Advanced Manufacturing
- National Nanotechnology Initiative

[30] Mr. Y. (Wayne Porter and Mark Mykleby), *A National Strategic Narrative,* (Washington, DC: Woodrow Wilson International Center for Scholars, 2011), available at <www.wilsoncenter.org/sites/default/files/A%20National%20Strategic%20Narrative.pdf>.

[31] Recent strategy documents (e.g., QDDR) indicate a step in this direction.

Although these elements are described in the most recent National Security Strategy[32] as vital to the national interest, they are not treated at the level of national strategy. The closest the United States comes to a codified national strategy in non-security-related domains (such as energy or education) is a set of departmental and agency strategy documents that define the mission of the departments, but do not lay out a national strategy. National strategy is broader than national security, and national security is a far broader concept than national defense; a comprehensive strategy for national security and prosperity needs to integrate, rather than spin off, thinking about the long-range sources of American stability and power.

Agencies' strategic plans should be reviewed and integrated into national-level strategy. In addition to providing coherent national-level strategy for subjects of national strategic importance, this kind of broad-based synchronization would contribute to the effort to break down silos in government by linking agencies' strategic planning activities more closely and providing an interagency forum for identifying unique and overlapping priorities and capabilities across agencies as part of the strategic planning process.[33]

National strategy documents should be synchronized, nested, and cross-linked to each other. They should incorporate a long-range perspective and specific goals (tied to budget) as guidance for short- and medium-term action, and they should be adaptive enough to withstand unforeseen contingencies. They should also reflect a broad-based perspective on the needs of the nation. This means ensuring that national-level strategy emphasizes not only national *security* but also national *prosperity.*

[32] *National Security Strategy of the United States* (Washington, DC: The White House, May 2010), available at <www.whitehouse.gov/sites/default/-files/rss_viewer/national_security_strategy.pdf>.

[33] The GPRA Modernization Act requires OMB to work with agencies to develop crosscutting goals and annual performance plans for achieving them. It also requires agencies to identify redundant reporting statutes. These requirements can be used as a vehicle for synchronizing whole-of-government strategy.

Options for Synchronizing National Strategy

Explicit Instructions for Synchronization

The strategy reports should be synchronized in the following ways:

- Cumulative impact toward a common goal, understood in common terms
- Direct relevance to each other, and treated as if "nested" one within the other
- Clear progression from broad strategy down to programmatic detail
- Aligned due dates to promote a strategic progression[34]
- Readily convertible into budgetary implications
- Parallel requirements for long-range analysis in each of these reports to establish the link between the national strategy and longer-range foresight
- Feedback process to track priorities and progress.

White House Official to Coordinate Synchronization

- Run a process where participants from each department responsible for their strategy documents co-develop an outline for the components of whole-of-government strategy with spaces for the departments and agencies to fill in the gaps
- A Deputy Chief of Staff or Senior Director for Strategy could serve as a coordinator during the writing phase to review drafts and check for language and section match-up.

Insert Parallel Requirements for Long-range Analysis

- Insert additional longer-range analysis in each report
- Establish a link between proximate (near-term) national strategy issues and longer-range issues and describe their interactions.

Use Technology to Transcend the Old Style Industrial Process

- Eliminate hardcopies of these reports—instead, report quarterly, but *online*
- "Living documents" literally—rather than static documents—by updating them on a regular basis
- Use web hyperlinks to cross-reference the other documents
- Former versions published and preserved in an archive.

[34] The GPRA Modernization Act of 2010 mandates new agency strategic plans and timing requirements: the strategic plans must cover four fiscal years and are due every 4 years (President's second year), the same day as the President's annual budget proposal to the Congress. Agencies are also required to report redundant and wasteful reporting. This is a step in the right direction. See Annex page 72for more on the relationship between the GPRA Modernization Act and Anticipatory Governance.

B-7 Systematizing Strategic Priorities

The objective of priority-setting in government is to make it possible to rationally allocate time and resources. In government, priority-setting can produce an artificial hierarchy, flattening real differences of relative importance. When multiple complex issues are evolving quickly, "serial processing" places back-end issues "on hold," and they can suddenly spin out of control when no one is looking. On the other hand, without a sense of prioritized outcomes, attempting to deal with everything at once can result in a chaotic jumble of systems and programs where resources are wasted in efforts to accomplish objectives in piecemeal fashion, producing results that are only loosely (if at all) oriented around an overall strategy. Neither approach yields optimum outcomes.

What is needed is the means for *parallel processing* across government, synchronized around a common set of national priorities (as articulated by "Presidential Intent") to incentivize cross-department budgeting and management-to-mission. Multiple strands of decisionmaking that interact with each other need to be kept in sync within a common scheme for government-wide action. Whole-of-government behavior is needed to drive complex policies into existence. But no single agency of government can impose this mode of operation on the other parts of the system. There needs to be a center of gravity at the core (in the White House) where it is possible to have total mission-planning based on a priority list. This could begin with a rank ordering of major national priorities and their linked elements, followed by a reckoning of the urgencies involved to drive relative rate and scale. There is no perfect balance because resources are finite, and tradeoffs are inescapable. Where issues cannot be prioritized, it may be possible to process them in parallel—at varying rates of speed and expense. It is possible to use a priorities process to think rigorously about these tradeoffs and the total effort of parallel action.

Opposition to this is to be expected within and between agencies. However, this opposition should be diminished by the need—at agency and especially at national level—to find ways to pursue large policy objectives under financial conditions that will be straightened for the foreseeable future.

Options for Systematizing Strategic Priorities

Presidential Intent

Objectives could be clearly articulated as Presidential Intent, which in turn could serve as an organizing force to align missions, capabilities, and resources across the interagency, coordinated at the national level in the White House. The President should establish intent by laying major goals and priorities and assigning specific roles and management instructions. The President could present these at a Cabinet-level meeting or a series of internal meetings or speeches to the departments. The President makes his or her expectations clear: *"I expect you to come back to me with decision-quality materials to decide on these major issues. Don't come back with a food fight over this or that. The top priorities are X, Y, Z."* This could be codified in a Priorities Framework and interpreted on a day-to-day basis by a White House official (below).

Process for Priorities Synchronization

[Tier 1] National Priorities Framework (NPF). Top-tier national priorities should be established by the White House in the form of a short (1–2 page) framework document similar to the National Intelligence Priorities Framework used by the Intelligence Community. These could comprise national-level goals (roughly 5 years into the future) as articulated in the National Security Strategy and embedded in the framework. National priorities could be distilled by

NSS/NEC/DPC senior directors based on the National Security Strategy, major policy speeches, and other Presidential policy guidance, and the President could hold an annual Cabinet meeting (perhaps before the holidays) to lay out priorities for the term and define success, which drives the budgetary priorities cycle and becomes the strategic plan for the year.

[Tier 2] National Priorities Review (NPR). A review would identify and rank a comprehensive laundry list of major second-order priorities that fall underneath "national priorities." The review should be led by department strategy offices and facilitated by a White House official or a joint OMB-NSS/NEC/DPC working group for strategic priorities. Once priorities are set and ranked, it is possible to comfortably distribute the solution space, having created the conditions for self-synchronization around outcomes. The more holistic guidance and priorities are drawn, the better sense of prioritization is achievable. The key is for the President to require this as the format in which he receives reporting and analysis.

- Step 1: Department strategy offices develop a department-specific rank-order list of second-order priorities nested within major priorities outlined in the NPF.
- Step 2: Facilitators distill, align, index, and cross-link agencies' second-order priorities to create a uniform package of priorities and return the package to the agencies for review.
- Step 3: Agencies review the priorities in the whole-of-government context and return their wording and ranking modifications.
- Step 4: Facilitators build consensus on a final scheme of nested priorities.
- Step 5: Changes in priority ranking can occur on either a real-time basis (using software), a periodic/scheduled basis, or part of whole-of-government review following a major event (e.g., national election, military action, etc.).
- Longevity: The process should retain continuity from one administration to the next by handing off the priority sets to be reviewed and reordered by each new administration. This could be inserted as part of GAO's mandated transition briefings.

[Tier 3] National Priorities Guidance (NPG). Detailed guidance for executing national priorities would be synchronized with the High-Priority Performance Goals (HPPG) and issued jointly by the OMB director and respective heads of the NSS/NEC/DPC. This guidance would contain:

- Translation of national policies into interagency allocations of resources (time, money, staff capacity, etc.) to be used as a quantitative basis for comparison and choice.
- Instruction to accommodate important priorities within a total "budget" of process time, cost, and capacity, and to integrate duplicate or competing concepts for implementation.
- Instruction to cost-out alternative tradeoffs (e.g., slow down a process because it cannot be fully executed within available time; but expect higher expenses as a result).

The respective heads of NSS/NEC/DPC have the final say in presenting alternative tradeoffs (working with their staffs and the executive agencies); the OMB director has the final say in presenting estimates of the costs of these alternatives. Both could collaborate in order to produce compound options that facilitate rank ordering of imperfect outcomes, ranging from the high financial cost of a "perfect" policy outcome to the policy costs associated with unrealistically low budgeting for implementation. The objective should be to identify a range of acceptable policy outcomes, linked to a range of affordable costs.

Leverage GPRA-MA Priorities

The GPRA Modernization Act of 2010 requires agencies to identify priority performance goals and crosscutting managerial challenges. The priorities established by agencies as mandated by GPRA-MA can be fed as input into this kind of national priorities process, and the Chief Operating Officers for each agency (as mandated by GPRA-MA) can serve as the agency-level coordinators for priority ranking and pass back to OMB. In this way, GPRA-MA compliance could become a powerful tool for management.[35]

Chief Management Officer (CMO) for Priority Management

To oversee a priorities process and to provide day-to-day guidance on synchronization to national priorities, a management official is needed who has authority to interpret Presidential Intent. Many agencies task this responsibility to their Chief of Staff or Deputy Chief of Staff. In the White House, the Chief of Staff has different responsibilities. A Chief Management Officer for Presidential priorities could serve as this authority (might be a Deputy NSA, Deputy Chief of Staff, Deputy Director at OMB, or wear multiple hats; alternatively, the NSC Executive Secretary could serve this function). In addition to overseeing a Priorities Synchronization Process, this person can interpret Presidential Intent on a day-to-day basis in order to prevent major issues from coming to the fore prematurely. This person would serve as a facilitator and would not be in charge of budgets.

Priorities Synchronization and "Collective Intelligence" Software Platform

A software program could be designed to serve as a platform for priorities review and synchronization across the bureaucracy. This would provide a unified portal for all participants and offer the opportunity to collaborate virtually, track changes and evolution of priority statements, and update rankings in real-time.

The concept of "collective intelligence" is gaining currency as a way to use information technology to support decision-making.[36] *Collective intelligence* can be defined as groups of experts, information, and software that are searchable, interoperable, and that continually learn from feedback to produce *just-in-time knowledge for better decisions than these elements would produce acting alone*.[37] A simple collective intelligence system (CIS) would manage content, organize expertise, track comments and changes in documents, and support prioritization. A CIS would also provide continuity from one administration by making it easier to retain and transfer institutional knowledge that is essential for long-term strategic coherence, regardless of changes in policy or political philosophy. Models for this kind of software platform already exist (Wikipedia, Google, Facebook, Twitter, Microsoft SharePoint, etc.), and the design of such a system as an improvement to the existing White House intranet could be tasked by the White House to the government's in-house computer program developers at DARPA, DISA, DIA, or other.

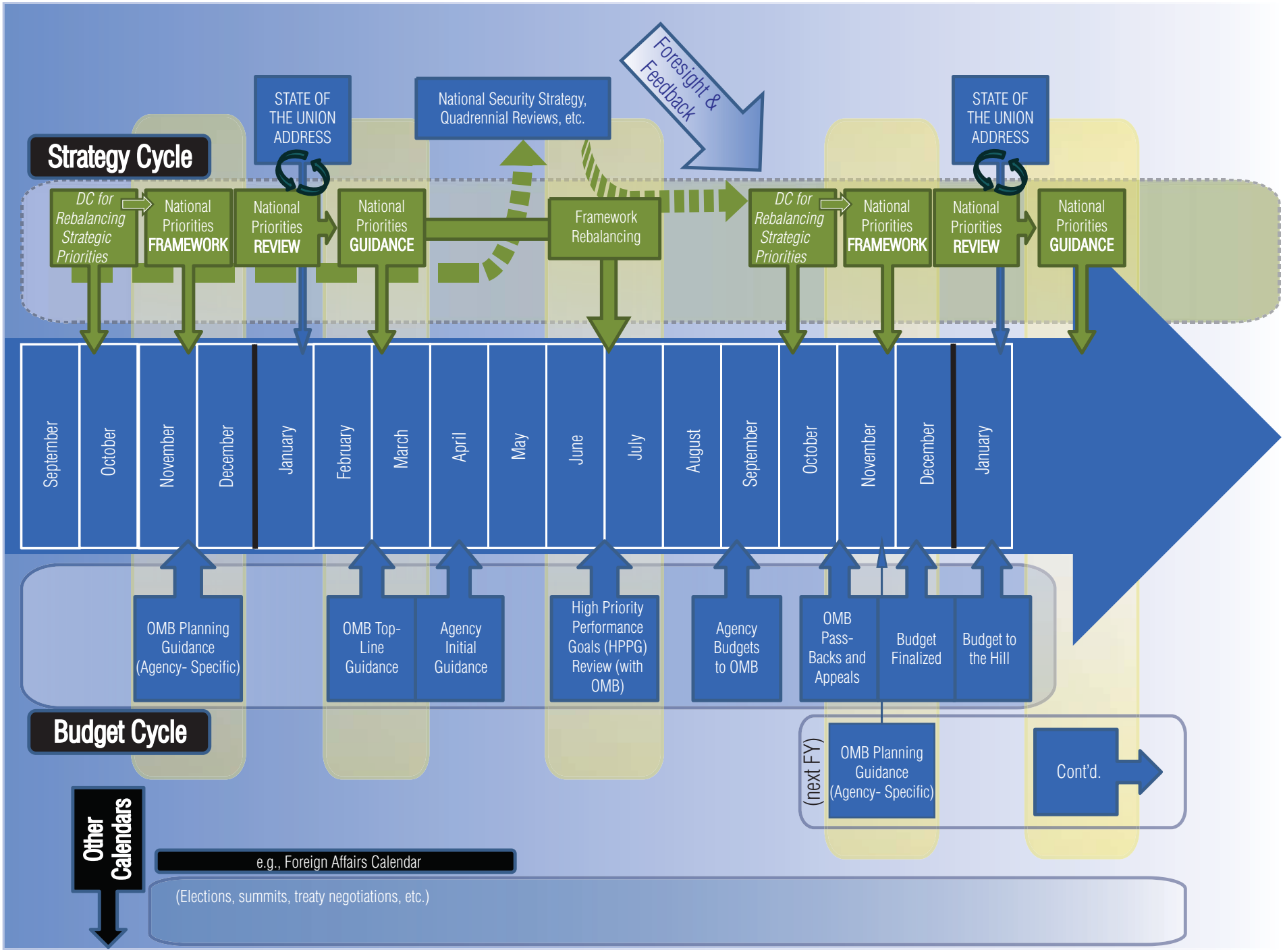
Super Calendar

An inexorable "Super Calendar" could serve as a whole-of-government platform to:

- visualize government activities and major relevant events along a timeline in order to encourage awareness of upcoming events and opportunities for synchronization. It could therefore also become a mechanism for imposing discipline including with regard to visible redundancies across jurisdictions
- regularize a disciplined foresight and feedback processes synchronized to other government processes
- align the strategy cycle (e.g., strategy reports, national priorities process, etc.) to the annual budget cycle run out of OMB [depicted on following page].

[35] See Annex page 72 for more on the relationship between GPRA-MA and Anticipatory Governance.
[36] Thomas W. Malone, "MIT Center for Collective Intelligence," Massachusetts Institute of Technology, 2010, available at <http://cci.mit.edu/>.
[37] Jerome C. Glenn, "The Millennium Project," Global Futures Collective Intelligence System, 2012, available at <www.millennium-project.org/millennium/CIS.html>.

"Super Calendar" for aligning Strategic Priorities with the Budget Cycle (Notional)



B-8 Reformatting the Dialogue with Congress

The committee system in the Congress has co-evolved with the legacy systems of governance in the executive branch. They reinforce each other's authorities, and are resistant to organization based on overall mission as opposed to organization based on turf. This tendency is amplified by the effects of partisanship. While the President can order implementation of the initiatives described herein to encourage Anticipatory Governance without congressional approval, such changes are likely to arouse suspicion within Congress over matters of jurisdiction and oversight.

The new forms of information that these initiatives would generate are intended to strengthen the ability of the President and other senior officials to visualize present and possible future contexts within which policy must operate, but this reporting would not be required as inputs to the Congress. It should at least be possible, however, for the executive branch to be able to *offer* an alternative form of dialogue to Congress in the spirit of effectively organizing and budgeting for national-level, complex, long-range missions. Given political will, the existing rules of both the Senate and House offer sufficient flexibility to experiment with new approaches, designed to focus on areas where collaborative effort might be substituted for divisiveness.

A distinguishing characteristic of governance among our competitors is their capacity to remain focused on long-term goals and to marshal resources for that purpose. As Americans, we have to find our own approach to sustained effort, by means that are consistent with our political culture.

Options for Reformatting the Dialogue with Congress

Cross-linked Dual Reporting

The administration could offer two ways to communicate with Congress: one way is the traditional system organized around the budget as a compendium of funding requests expressed line by line speaking to multiple committee jurisdictions; another way is to communicate with Congress at the strategic level, where the resources needed for complex national priorities are analyzed in terms of strategy and organized according to mission rather than according to jurisdiction. This would allow legislators to consider the whole picture when conducting oversight and debating appropriations. The two versions would contain the same information in alternative formats, and a simple automated cross-linking software platform could be used to automatically translate mission-oriented figures into the traditional format for committee jurisdictions.

Component-level Implementation Process (CLIP)

A new mode of communication would be especially vital where the President's objectives can only be accomplished by sustained effort over an extended period of time, perhaps longer in duration than two Presidential terms. Smart energy grids, catching up with the huge overhang of infrastructure needs, long-range support for research and development needed to create breakthroughs for business, long-range support for scientific research, etc.: these are all examples of this class of extended national commitment. Anticipatory Governance can help identify priorities and match requirements to means through the budget process, but only Congress is able appropriate funds over a lengthy period of time, and one Congress cannot bind another to its intentions even when these are expressed in "permanent" law. Willingness to make these appropriations for national missions, vis-à-vis the existing committee system, could be encouraged by a view of the full picture to lawmakers.

The Federal Government periodically will spend several billion dollars on long-term projects meant to shape the future, and then cancel them with nothing to show. Instead, long-term priorities could be translated into a series of short-term goals to be implemented in components. Proposals for large projects could be broken down into manageable chunks that are independently valuable but collectively aligned toward a larger goal. These chunks would be turned into policy recommendations, and then the recommendations would be translated into legislative language and timelines. Each component is valuable in its own right and can stand on its own so that benefits are achieved regardless of whether the final goal is achieved. Success depends on describing a desired long-term endstate and developing a series of short-term steps to achieve it. CLIP is a way to analyze the programmatic implications with terms that are in sync with congressional politics by breaking down the long-term goals into progressive short-term legislative steps that offer substantial stand-alone benefits. CLIP mitigates the political risk inherent in introducing legislation when the final results may not be seen for decades.

Leverage the GPRA–Modernization Act

Implementing Anticipatory Governance should include steps to show consistency with performance mandates already written into law by Congress, particularly those comprising the GPRA-MA of 2010. White House reporting mandated by the GPRA-MA can be adapted to serve this purpose, and White House systems already operating within OMB as the result of the GPRA-MA can be used to help develop and monitor implementation of Anticipatory Governance initiatives. This would offer Congress an avenue to plug in to the process, while alleviating the administration of the extra burden of expending energy trying to convince legislators that the Anticipatory Governance initiatives are not designed to circumvent constitutional authority granted to the Congress.[38]

[38] See Annex page 72 for more on the relationship between GPRA-MA and Anticipatory Governance

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Feedback for Applied Learning

Feedback can serve as a basis for ongoing evaluation, reassessment, and recalibration of policies in order to prevent breakdowns and system failures that routinely go undetected until it is too late. Applied to policy, feedback can be used to monitor and adjust policy, to maintain accountability and self-synchronization, and to promote resilience and rapid learning. These initiatives focus on ways to institutionalize feedback as a continuous process to maintain the vitality of policies and operations throughout the process of execution.

[C-1] Identifying Explicit Feedback Precepts to Track Policy Execution

[C-2] Establishing a Venue for Feedback

[C-3] Continuously Routing Triggered Indicators

[C-4] Diagnostic Reviews of Consequences

Discussion of Feedback for Applied Learning

Feedback is the use of information to modify behavior. Feedback occurs when a portion of the information contained in a system is recycled into that system in a way that influences its outcome. Feedback is employed in engineering as a way to confine the performance of a system within specific bounds by detecting indicators of error and applying corrections sufficient to redirect the output. For example, a thermostat that regulates room temperature, feel-of-the-road circuits are built into power-steering in an automobile, and delicate feedback systems regulate nearly all aspects of airplane flight. Other examples, perhaps less familiar, are found in biological systems where organisms use information gained from sampling to adapt to their environment (e.g., self-regulation of body temperature or metabolism).

Feedback systems[39] exist in disparate forms throughout government, but the White House should make more systematic use of feedback at the national level as a routinized function of government. Without continuous sampling and feedback to measure the performance of policies, senior officials have no mechanism to detect early signs that a policy is deteriorating until it has become patent and costly. To counter this, we need to design systems for at least three applications in the policy process:

(1) **Feedback for Monitoring and Adjustment of Policy** to regularize connections between estimates and results in order to support continuous reassessment and recalibration of policies
(2) **Feedback for Accountability, Control, and Self-synchronization** to sustain accountability and control in a networked system
(3) **Feedback for Learning** to promote rapid self-learning and evolution in the system (injected into a foresight mechanism where the information can be used to improve the design of policy in the future).

The function of feedback is to monitor actual events in order to help alert policymakers to the known consequences of actions already taken. In this matter, a feedback system should be regarded as consisting of sensors up front. These sensors provide the earliest evidence that events are following one particular course out of an infinite number of other possibilities. One is critically dependent here on the sensitivity of the sensor system, and on the way in which information is passed through from this detection mechanism for evaluation by other systems. Of course, it is not just receiving feedback, but *responding* to feedback, that makes the system smarter. To avoid information overload, feedback needs to be fed into the inbox in appropriate doses at propitious moments.

One obstacle to setting up a proper feedback system is political: administrations may be reluctant to create formal "report cards" that could sacrifice flexibility in a crisis. Nonetheless, routinized feedback can also provide useful political advantages: a way of demonstrating that policies are working, or opportunities to take proactive measures before a news-making calamity occurs. Ultimately, feedback is an extension of the rationale for foresight, and an answer to the question of how to deal with wicked problems in the first place. It may also provide a strong argument for continuity of policy across administrations in that it could guard against the tendency of incumbent administrations to discard even the most effective policies of their predecessors.

[39] Internal standard management systems routinely used in the private sector function as feedback systems. These systems formally incorporate foresight, risk management, management accountability, and process control to innovate and adapt to changing circumstances in order to maintain globally competitive products and services. Many companies in industries such as automotive, aerospace, petrochemical, and information technology use such systems routinely and in some cases require such systems to be used by their supply chain providers (e.g. automotive industry). Widely used examples include American National Standards Institute/International Standards Organization (ANSI/ISO) 9000 series Quality Management Systems, ANSI/ISO 14000 series Environmental Management Systems, and Capability Maturity Model Integration process improvement approaches. These standards are available through the ANSI/ISO series and Carnegie Mellon University Software Institute series.

(1) Feedback for Monitoring and Adjustment of Policy

All policies deteriorate and eventually fail under the pressure of changing circumstances. That is the nature of complexity: the world is always changing, and the problems that policies are meant to solve do not go away; they mutate. Just as it is impossible to predict how and when problems will mutate, it is impossible to predict when a policy will fail. It is possible, however, to monitor for signs of entropy. To do this requires the operation of a dedicated system. However, at the national level, no governance systems are in place to monitor the deterioration in the function of policies or of the governance systems that execute them. Thus, we typically learn not by foresight, but by costly hard knocks. It is impossible to know when a policy is deviating from expectations without identifying those expectations in advance and using some sort of feedback mechanism to keep track.

Feedback systems, if embedded as a regular function in the policy process, could serve as a basis for ongoing monitoring, evaluation, reassessment, and recalibration of policies. This kind of continuous loop is vital for preventing breakdowns and system malfunctions that routinely go undetected until it is too late. System-wide awareness gained from feedback could serve as a basis for proactive, instead of reactive, policy adjustments. Elements of this process should include:

- **Monitoring and Data Collection:** Monitoring the impact of a policy once it has been put into operation on a continuous basis. Regular, ongoing sampling for diagnostic information on a policy's performance as well as budgetary needs.
- **Detection of Error:** Diagnosing deterioration of a policy before it fails. This must be measured against expected performance of a policy, which must be clearly defined from the outset, and continuously adjusted to fit changing reality.
- **Correction of Error:** Eliminating deviations from expected policy outcomes by making minor adjustments continuously, and teeing up reviews for major adjustments when necessary.
- **Informing Strategy:** Government strategy cycles can use these data to track priorities and progress to maintain an overall sense of how the whole-of-governance is performing relative to national strategies and objectives. These data could also be fed back into a foresight process as described in section A.

In governance, as in any other system, designing a good feedback mechanism means:

- describing expected performance outcomes of the policy
- identifying and sampling data streams that should be used for feedback
- identifying the point where that data stream would be reintroduced in the policymaking cycle
- codifying protocols to guide the behavior of the system for responding to that information.

(2) Feedback for Accountability, Control, and Self-synchronization

Networks have the advantage of increasing the speed and flexibility of a system by pushing authority to act to the periphery. However, without feedback systems to maintain accountability and control from the center, networked systems tend to "go rogue" since self-regulating behavior is not inherent (e.g., deregulation of the banking sector did not produce self-regulating behavior, but system failure).

Feedback can serve as a means to permit adaptive behavior in a large organization without losing accountability or the ability to provide strategic guidance. It can provide a basis for command and control of flattened networks by streaming real-time information about conditions at the periphery of the system. In this way, feedback allows more flexible relations between command systems on the one hand, and execution systems on the other. Thus, feedback could promote responsible complex adaptive behavior in networked systems, coupling accountability and flexibility.

This form of feedback could be implemented as a civilian equivalent of the uniformed military's Commander's Intent to provide foundational statements of objective as the means to promote self-synchronization. Feedback is not just a way to ensure orders are followed; it is a way to issue guidance in a new fashion and not lose control of the process. Feedback systems should be dynamic enough to achieve a flexible coupling between designed intent and behavior at the edges of a system.

In this way, feedback could be used to sustain a new form of goal-defined management, and feedback mechanisms could be applied for managing and budgeting to mission (addressed in prior sessions, on foresight-policy interface, and networks for whole-of-government).

(3) Feedback for Learning

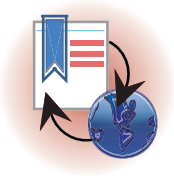
To keep pace with fast paced change, our government must become a learning organization. Feedback could speed up system-learning from experience to improve the conduct of ongoing policies and improve the design of policy in the future. Feedback can accelerate awareness of (and response to) best and worst practices in the operation of networked systems. The standard approach based on case-studies is far too slow. It tends to produce compendia of what is thought to have been true about action in a system which will already have been altered. Mark Twain said: "History does not repeat itself, but it does rhyme." If so, then learning from the past has to occur in time with the rhythm of the rhyme in order to be of operational value. Systems learning must be a continuous effort, which must be sustained by a dedicated system. Furthermore, learning must be institutionally supported and institutionally *rewarded*—all too often there are conflicts between interagency and home department incentives.

Feedback Initiatives

This section describes five distinct but sequential initiatives for institutionalizing a feedback process in the executive branch. They are designed to satisfy all of the "Criteria for Upgrading Systems": no new resources, no consent or action required by Congress, compatible with existing processes, and implementable under conventional Presidential authorities.

[C-1] Identifying Explicit Feedback Precepts to Track Policy Execution
[C-2] Establishing a Venue for Feedback
[C-3] Continuously Routing Triggered Indicators
[C-4] Diagnostic Reviews of Consequences

C-1 Identifying Explicit Feedback Precepts to Track Policy Execution



Every policy sent to the President—or any senior decisionmaker—for approval should be part of a package that includes the following precepts, in explicit terms:

- Statement of key assumptions on the basis of which the recommendation has been made
- Definition of expectations including overall definition of success as well as specific key objectives to include dates, costs, and performance metrics
- Information streams to be monitored on an ongoing basis
- Performance indicators that would automatically trigger a review of the policy (i.e., what constitutes evidence of deterioration or of progress)
- Sampling rate with which monitoring will occur on a continuous basis
- Points of responsibility and accountability in the system for collecting and applying such information
- Routing points in the policymaking cycle where the information is reintroduced
- Periodic "audits" of performance by teams that will independently report their conclusions to higher levels of consideration
- Provisional date for a diagnostic review of the policy and its performance to occur even in the absence of a trigger (said date to be built into the White House calendar).

These precepts could be written into supporting directives at the White House and interagency level. Alternatively, the President and every Cabinet secretary could maintain an informal a rule whereby every decision that comes to his/her desk must contain each of these elements—and if it does not, it does not get read.

C-2 Establishing a Venue for Feedback

White House Process Manager. A senior White House official—with light staff support—could be assigned to oversee implementation of feedback processes for major policies. This individual would provide specialized support for the formulation of input metrics for feedback (i.e., defining expectations, selecting information streams to be monitored, identifying indicators that would serve as triggers, deciding sampling rates, assigning points of responsibility, etc.) as well as for coordination of output (audits/reviews and routing information back into the policy cycle). This person would function as a process manager to manage the vertical integration (a function that ought not require time-consuming meetings). This function would naturally fit in OMB, but could be bridged with NSS, NEC, and DPC to promote jointness.

Related to this function is the problem of overall awareness of system management and operations. The President has a National Security Advisor, National Economic Advisor, and Domestic Policy Advisor for insight and advice on security, economics, and domestic policy, but has no advisor specializing in management and operation of the system. There is no COO or Chief Management Officer (CMO) at the White House (other than the Chief of Staff, whose attention is continuously thrust away from management toward major policy matters). The White House needs a point-person whose job is not policy, but management—someone to maintain awareness of the full scope of government operations and to coordinate its assets and processes.[40] His or her function would be to focus on integration of processes such as feedback, but also other techniques used inside the agencies to assess their utility and potential applications in other areas where they are needed across the system.

Coordinators. Throughout the system, coordination points for feedback could fit under positions, such as:

- COO, CMO or Goal Leaders—positions recently mandated in each agency by the GPRA–MA[41]
- Chief Information Officer at the White House and various agencies
- Inspector General (IG)—*could create an IG for the national security system*
- Policy planning offices (see page 34)
- Executive branch "Integrators" (see page 40).

Their function[42] would be to:

- conduct (or oversee) continuous sampling and monitoring for detection of error (i.e., mismatch between expectations and results) as stipulated by the policy's feedback precepts
- determine whether triggered items indicate an error in policy or execution, or an instance of rogue behavior deviating from the commander's intent
- conduct an urgent inquiry to identify details about the nature of the problem
- route this information accordingly (including into a foresight venue).

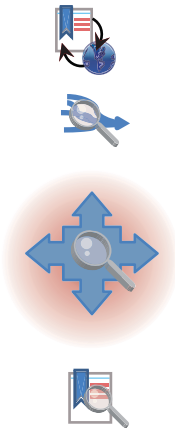
Careful attention would need to be paid to the right kind of expertise needed for staffing these arrangements. That expertise exists in government and can be marshaled for this purpose. It can also be inculcated through training.

[40] While these duties fall under OMB's Chief Performance Officer, the EOP—including the NSS, NEC, and DPC—is exempted from OMB reviews.

[41] GPRA-MA mandates high-priority performance goals and management goals that are monitored quarterly and updated every 4 years in sync with the President's budget.

[42] Care would have to be taken to ensure that agency-level point-people for feedback are incentivized to run the process from the perspective of jointness and effectiveness of the overall mission. These incentives must supersede internal pressures on them to protect or ignore fault by their own agency. Integrity would have to be enforced from the top of the system, with consequences for biased assessments or failure to notify in accordance with a policy's feedback stipulations.

C-3 Continuously Routing Triggered Indicators

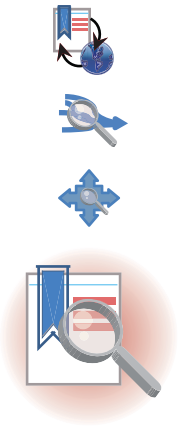


Indications of Deteriorating Policy. When there is determined to be a pattern suggesting signs of deterioration (in either policy or circumstances preventing execution thereof), the coordinator in charge would route that warning into the policy system, either via the White House process manager or directly to the senior director (or whichever official initially took the lead on developing the policy in the first place). Given the pressures on senior directors, the utility of a White House process manager to ensure delivery becomes clear. The routing process should emphasize speed of warning, but must also contain sufficient information about the apparent mismatch between result and expectations; it could also suggest minor tweaks if those options have been identified or recommend a diagnostic review. The issue thereby becomes reintroduced, via the inbox, as an input to the regular decisionmaking process.

Indications of Rogue Behavior. If inquiry yields that the problem is not the policy but possible rogue behavior, that information can be routed to the proper supervisor in the chain of command.

Indications of an Approaching FCI. Where inquiry reveals weak-signals of a major contingency event, or identifies a trend or longer-range issue demanding further study, it can be routed to the proper foresight venue.

C-4 Diagnostic Reviews of Consequences



Regardless of whether one is triggered, a diagnostic review of all major policies should be conducted routinely to check for signs of policy deterioration.

Frequency should not be the same for all reviews, but should instead be scheduled in line with each policy's predetermined sampling rate, outlined expectations, and indicators.

Internal and external auditing group should conduct the review in parallel (as is common practice in the private sector).

- A small independent staff (as described above) could be responsible for ensuring accountability in the internal auditing process.
- A unit inside of GAO could conduct the parallel external review.[43] Ongoing joint review and reporting would provide consistent tracking of progress, providing multiple opportunities to make adjustments along the way, potentially warding off policy failures for which major external reviews and hearings are required.

A scorecard for self-reporting should be maintained by each official in charge of implementation (e.g., each White House senior director) and would be submitted either at a standard frequency or as part of each periodic review.

Format should be standardized to promote jointness, with sufficient flexibility to account for the range of policy areas undergoing a feedback process. The overview format could resemble the "stoplight system" attempted under preceding NSC leadership:

- Green means the policy is on track.
- Yellow means it needs adjustment.
- Red means it is deviating from expectations and requires a review.

A summary report should be conducted—timed to preparations of the national strategy documents—detailing the evolution of the policy (or its execution) in response to feedback. To become a learning organization, feedback must not just influence one policy at a time, but national strategy as a whole. Summary reporting offers a way of tracking progress matched to priorities to get a sense of how the whole of government is performing. Feedback should also be routed to the proper foresight venue in government to promote learning. If assumptions or expectations as described at the onset of the policy proved faulty, generators of foresight must take that into account. This feedback can also help foresight generators and/or brokers keep pace as to what foresight information is useful and what overloads the circuits.[44]

[43] This suggestion may require a new entity and therefore may fall outside the scope of the "criteria."
[44] This closes the loop on what can be described as a "Plan-Do-Check-Act" cycle.

{ Annex }

Response to Critiques

Fast-Tracking Implementation

Leveraging the GPRA Modernization Act

Precedents Set by Foreign Governments

Department Strategy/Policy Planning Offices (U.S. Government)

Illustrative Set of United States Strategy Documents

Foresight Methods

Acronyms

Response to Critiques

The concepts and suggestions described in this report have undergone extensive review and vetting by dozens of serving and former government officials. Although the vast majority of the reactions have been overwhelmingly supportive, evidenced by the lists of endorsers and contributors presented at the front of this document, some raise issues that bear special response.

Critique: The report is too detailed—too "mechanistic"—and offers too many recommendations. Implementation would be unfeasible.

Comment: The report makes just three fundamental recommendations: (1) cultivate long-range foresight as a discrete form of information and couple it to policymaking, (2) use networked arrangements at the apex of the executive branch to achieve a higher order of policy synchronization across bureaucratic lines, and (3) establish a feedback mechanism that makes it possible to adjust in response to real-time information. The rest of the report consists of specific suggestions grouped into these three categories for upgrades that were stress-tested with experts over an extended period of time. The recommendations are a mix-and-match menu, not an inclusive formula. It is possible to develop a short-list of measures that would have the effect of establishing basic foresight, networking, and feedback systems. Ultimately, the people who carry out these systems changes should be directly involved in selecting measures so that they have buy-in to what is to be achieved. However, an illustrative version of such an approach—"Fast-Tracking Implementation"—is presented on page 70).

Critique: Implementation would require an expensive new bureaucracy.

Comment: The working group contributors filtered all proposals against strict criteria, including: no need for new legislative authority; compatible with existing forms of presidential authority; no need for expanded staffs; no budget impact.

Critique: The report ignores what some say is the central requirement for reform: a new "leadership culture at the agency level." Changing systems should not be the priority.

Comment: Addressing bureaucratic culture is essential, but it is also a slow process.[45] Systems can be upgraded much faster than culture, and systems changes can have positive influences on culture. Systems-change and culture-change are best treated as "co-evolutionary." They are complementary, not competing, propositions. There is no question about the need to improve leadership culture by initiatives that are customized by and for agencies, but no single agency—no sub-grouping of agencies—can fully execute its missions by operating on its own.[46] The case for Anticipatory Governance is that meaningful change can begin quickly by upgrading systems that operate at the interface between the White House and the interagency system.

Critique: The real problem is the executive/legislative confrontation that needs to be fixed as a first priority.

Comment: Even if the Congress were completely ready for reforms that would improve relations between the Executive and the Congress (such as the common sense "No Labels" approach[47]), the Executive Branch needs to improve its ability to present information in a strategic long-range format in addition to the traditional line-item approach. It does not presently have that capacity.

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[45] The military, for example, has been working on it for a generation following the Goldwater Nichols Act of 1986.

[46] The phrase "whole-of-governance" is important in this connection. That quality of "wholeness"—of full collaboration—requires maximum room for initiative at the periphery of a system, but it cannot come into existence without strategic direction from the center.

[47] "Make the Presidency Work!" No Labels: Stop Fighting. Start Fixing. Available at <http://www.nolabels.org/presidency-work>.

Critique: The Executive Branch system is not really broken. Do not try to fix it.

Comment: Our leaders face a world in which old categories of thinking and organizing do not work well. Economics and national security, domestic and foreign policy, crisis management and long-term strategy are fiercely interactive. Systems of government should enable more strategically comprehensive leadership by upgrading an Administration's ability to create and implement complex policies.

Critique: Changes of system that were similar to Anticipatory Governance have been tried before, but have not taken hold.

Comment: This is true largely because the bureaucracy does not welcome change unless Presidents make clear that they are personally engaged. Nevertheless, changes of this sort were seriously needed at the time they were proposed and there have been costs to the Nation for not following through on them.

Critique: The Intelligence Community exists to provide foresight, so why speak of it as a separate stream of analysis? Are we not already spending enough on intelligence?

Comment: Foresight is designed to produce alternative constructs of the future for use by policymakers in considering courses of action. The bulk of intelligence work, on the other hand, is short-term and tactical. It also deliberately segregates the interactions between domestic policies and external consequences. The Intelligence Community therefore does not produce information suited for whole-of-government operations designed to handle major long-range issues, nor can it be directed to do so on short notice given that its structures, personnel, and even its culture are committed to other purposes. The very modest amount of money spent on what could be termed real foresight in the intelligence community is mostly directed toward a the Global Trends series, which is produced by the NIC and updated on a 4-year cycle. More on the difference between foresight and intelligence is available in the "Foresight Discussion" on page 12).

Critique: Could foresight have helped prevent the strategic surprise we have experienced in the Middle East or helped us deal with it better than we already are?

Comment: The real purpose of foresight is to shape events over time. In ongoing crisis, foresight can help you avoid taking actions that "lock in" the next crisis.

Fast-Tracking Implementation (An Illustration)

Implementation could begin on a fast-track basis with a White House level experiment to install rudimentary Anticipatory Governance systems as a test-bed for broader adoption down the road. Fast-tracking would involve selecting for early implementation key initiatives from each element of Anticipatory Governance (foresight, networked governance, and feedback) that are deemed by an administration most likely to improve coordination and decisionmaking, perhaps in one or a few particular policy areas. The objective would be to create early opportunities for proof of principle through direct application—with built in time for evaluation and modification based on experience—rather than attempting wholesale adoption all at once. Opinions will vary about the specifics and it is essential that the design of a fast-track approach reflect the views of those in government who operate the system. There are many different ways to approach fast-tracking; what follows below is an illustration.

A fast-track approach could begin with a senior-level official assigned responsibility for coordinating a virtual venue for each element of Anticipatory Governance: (1) Foresight/Policy venue, (2) Networked management venue, and (3) Feedback venue.

Foresight/Policy Venue

Chaired by the NSA or Principal Deputy
Counterparts from OMB, NEC and DPC participate
Couple this process to the networking venue described below

- Assemble a small editing team comprised of seconded staff[48] to: collect foresight-based analyses from a variety of sources,[49] tailor analysis for relevance to White House level decisions, and ensure that this analysis becomes a part of the regular information stream used by the President, Vice President and their senior advisors. [See A-1 and A-2]
- Require that policy recommendations sent to the President incorporate foresight-based assessments to examine the interaction between proposed short-term actions and long-term considerations. [See A-3 and A-4]
- Assign the Deputies' Committee to establish and maintain a national agenda for complex, long-range policy concerns and priorities. [See B-2 and B-7]
- Allocate time for Presidential briefing and review of long-range policy concerns twice per year, including as part of the preparation of Presidential guidance issued for the legally mandated reports to Congress on national strategy. [See A-2]

Networked Management Venue

Chaired by the Director of OMB or Principal Deputy
Counterparts from NSS, NEC and DPC participate

- Establish a dedicated working group comprised of senior coordinators and representatives of the department strategy/policy planning offices to: align overlapping areas of policy and operations, coordinate national-level missions across agencies, and synchronize the production of mandated national strategy documents. [See B-1, B-4 and B-6]
- Maintain a "super-calendar" to roadmap policy planning and operations against scheduled and expected future events and to correlate points at which Presidential priorities and the policy cycle can be matched to the budget cycle. [See B-7]
- Use statements of "commanders' intent" (issued by the President or Cabinet officers on a case-by-case basis) to synchronize agencies around Presidential priorities and national missions. [See B-3 and B-7]
- Directly involve an OMB resource specialist in all White House–level working groups to maintain alignment of objectives, capabilities and resources; require that major policy recommendations for the President be translated into budget terms, and that alternative budget constructs be linked to alternative consequences for policy priorities. [See B-5 and B-8]

[48] Three to six staffers staff seconded from White House offices or agencies
[49] Include inputs from the intelligence community, department strategy/policy planning offices and other foresight producers in government, as well as from foreign partners and the private and non-profit sectors (think tanks, academia, etc.)

Feedback Venue

Chaired by Chief of Staff or Principal Deputy
Counterparts from OMB, NSS, NEC and DPC participate
Couple this process to the networking and foresight venues described above

- Require that every policy recommendation to the President be accompanied by a description of expected results over specified periods of time, key performance indicators to track, and potential trigger points for reexamining the policy and its record of implementation. [See C-1]
- Assign a coordinator to monitor performance indicators and scan for deviations from expectations. [See C-2 and C-3]
- Conduct calendared reviews of major policies,[50] with a provision for intervention based on developments. [See C-4]
- Provide regular reporting to the President and senior advisors on the status of implementation of major policies; create a channel for reporting unusual consequences to take advantage of what may be working better than anticipated and what may be showing indications of deterioration [See C-4].

This approach to fast-track implementation of Anticipatory Governance initiatives could be established by Presidential Order and designed to run until such time as the directive is revoked or for a specified time subject to continuation after review by senior advisors.

[50] Regular and triggered reviews should be conducted not just on national security matters (like a war) but also major economic and domestic policies and programs

Leveraging the GPRA Modernization Act to Implement Anticipatory Governance

The GPRA Modernization Act (GPRA-MA)[51] was signed into law on January 4, 2011 as an update to the 1993 Government Performance and Results Act, aiming for "a more crosscutting and integrated approach to focusing on results and improving government performance."[52] A number of the law's features parallel Anticipatory Governance, and they have been referenced throughout this report to show how they can be leveraged for the purpose of implementing Anticipatory Governance initiatives. There are nevertheless some important distinctions between the intent and mandates of the GPRA-MA and the focus of Anticipatory Governance:

GPRA-MA	Anticipatory Governance
Focuses on goals and priority setting within Executive Branch Agencies	Focuses on the role of the White House as a central coordinator
Focuses on what Congress wants to know about how the Executive Branch defines and manages priorities	Focuses on what a President and senior Executive Branch officials need to know in order to set and execute priorities;
Focuses on Congressional oversight	Focuses on Presidential leadership
Focuses on managerial and administrative performance and outcomes	Focuses on foresight and strategic coordination

Carrying out the mandates of the GPRA-MA and implementing the initiatives described in this report can be developed as complimentary, mutually reinforcing objectives. Its standing as law offers OMB and Executive Branch leadership an opportunity to leverage its management requirements as a vehicle to achieve Anticipatory Governance. This summary suggests some ways that could be achieved:

GPRA-MA Requirement	Implementing Anticipatory Governance
Long-term, outcome-oriented crosscutting federal government goals covering select policy areas and management improvement areas. These goals are developed or revised every 4 years (President's second year), informed by consultations with Congress every 2 years, and may be adjusted due to changes in the environment.	These crosscutting goals can and should be: ■ developed and carried out using disciplined foresight analysis as described in Section A [See Forward Engagement Process on page 15]. ■ regularly monitored as part of the Deputies' strategic process [see B-2]. ■ the subject of strategic budgeting [see B-5] ■ primary elements of synchronized national strategy documents [see B-6]. ■ expanded and refined into a "national priorities process" along a "super calendar" [see B-7]. ■ used as part of an enhanced dual-reporting process to Congress [see B-8]. ■ used as case-studies for an expanded, disciplined feedback process as described in Section C [See C-1].

[51] Pub. L. No. 111-352, 124 Stat. 3866 (2011). GPRAMA amends the Government Performance and Results Act of 1993, Pub. L. No. 103-62, 107 Stat. 285 (1993).

[52] J. Christopher Mihm, Testimony: *Managing for Results: GAO's Work Related to the Interim Crosscutting Priority Goals under the GPRA Modernization Act.* May 31, 2012. Available at http://www.gao.gov/assets/600/591283.pdf.

Annual performance plans (for achieving the crosscutting goals) and Agency Strategic Plans, which must cover four fiscal years and are due every four years (President's second year) the same day as the President's annual budget proposal to the Congress.	The Annual Performance Plans and Agency Strategic Plans can and should: ■ incorporate long-range analysis [see section A]. ■ incorporate strategic (including alternative) budgeting [see B-5]. ■ be aligned, nested and synchronized with other national strategy documents, such as department's quadrennial reviews [see B-6]. ■ be the output of a systematized national priorities process [see B-7]. ■ respond to explicit performance indicators established at the outset [see C-1 on page 58]. ■ be use as a case study for disciplined feedback reporting [see C-4].
Agencies must each designate a Chief Operating Officer (Deputy Secretary or Equivalent), a Performance Improvement Officer, and Goal Leaders	These positions can and should be leveraged to: ■ broker between foresight and policy [see A-2]. ■ integrate cross-agency missions (and existing integrators could be assigned these roles) [see B-4]. ■ coordinate strategic budgeting [see B-5]. ■ synchronize national strategy reports [see B-6]. ■ coordinate a systematic strategic priorities process [see B-7]. ■ manage dual reporting to Congress [see B-7]. ■ coordinate a venue for feedback [see C-2].
Quarterly progress reviews by OMB, PIC, and agencies for the designated crosscutting federal government and agency priority goals	These quarterly reviews should: ■ use a statement of expectations and performance indicators as described in Section C [see C-1]. ■ be conducted not just for priority goals, but as part of the implementation of all major policies and programs as the output of a dedicated feedback process [see C-2 and C-4]. ■ be used not just for reporting to Congress but by senior leadership to make mid-course adjustments to policy [see C-3].
Performance website (www.performance.gov) to provide information about all federal programs, government-wide performance, and agency performance	This website can and should be used as a platform for: ■ collecting and organizing foresight [see A-1] ■ synchronizing whole-of-government national strategy [see B-6] ■ systematizing strategic priorities [see B-7] ■ feedback and performance improvement [see C-4]
Consultation with Congress	The mandate that OMB and agencies consult Congress on priority goals should be used as an opportunity to present anticipatory and dual reporting [see B-8].

OPM and PIC must identify necessary skills and competencies and incorporate them into position classifications and employee training	Foresight methods should be an essential part of this process [see foresight discussion and A-4]

In conclusion, GPRA-MA can be used as a vehicle for achieving Anticipatory Governance, but is not it itself sufficient. The processes set out in the law help, but they are not self-executing. Making the most of the GPRA-MA processes depends on those who are responsible for implementing the law to treat its requirements as mechanisms for a broader effort to enhance government.[53]

[53] **References:**

- White House Memo, April 14, 2011, available at <http://www.whitehouse.gov/sites/default/files/omb/memoranda/2011/m11-17.pdf>.
- J. Christopher Mihm, *Managing for Results: GAO's Work Related to the Interim Crosscutting Priority Goals under the GPRA Modernization Act*. May 31, 2012, available at <www.gao.gov/assets/600/591283.pdf>.
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- Clinton T. Brass, "Changes to the Government Performance and Results Act (GPRA): Overview of the New Framework of Products and Processes," available at <www.fas.org/sgp/crs/misc/R42379.pdf>.
- Government Performance Improvement Web site, available at <www.goals.performance.gov>.

Precedents Set by Foreign Governments

A number of foreign governments have invested in the creation of foresight units to promote foresight and whole-of-government policy integration. They can offer models for approaches that could—with suitable modification—work in the United States. Below is a brief survey[54] of some of these units and their functions.

China

Department of Policy Studies, National Development and Reform Commission (http://en.ndrc.gov.cn/). China's "five year plans" (now called Guidelines, since the eleventh 5-year program set in 2006) are well known. The Department of Policy Studies drafts policies, releases information, and organizes studies on key national and international issues. It also formulates and implements strategies for national economic and social development, long-term plans, annual plans, and industrial policies and price policies.
Organization: National Development and Reform Commission

Finland

Government Foresight Network (www.vn.fi/tietoarkisto/ennakointiverkosto/en.jsp).
Duties of the Government Foresight Network include:

- addressing major impact change factors, development trends, and weak signals in cooperation with other parties involved in anticipation activities, whenever possible
- sifting through anticipation data and drawing attention to possible overlap between the ministries' anticipation work, variations in results and blind spots; introducing initiatives to promote cooperation between administrative sectors
- improving the effectiveness of anticipation data in political decisionmaking
- serving as a ministerial contact forum for the preparations of the Government Foresight Report
- preparing a joint operating environment description to be used as background material for the ministries' future reviews.

Organization: An interministerial forum for cooperation and exchange of information in issues relating to the anticipation of the future. Each ministry prepares development projections and related strategies under its own administrative branch. In addition, the Prime Minister's Office prepares a report on the long-term future once during each parliamentary term.

France

The Strategic Analysis Center (www.strategie.gouv.fr).
Mission: To inform the government in defining and implementing its economic, social, environmental, and technological strategies. It conducts research at the request of the Prime Minister, produces annual reports, and funds teams to produce foresight studies.
Organization: A networked arrangement across four sectoral departments: Department of Economics, Sustainable Development Department, Department of Labor, and Department of Social Affairs

Singapore

Risk Assessment and Horizon Scanning Programme (http://app.rahs.gov.sg/public/www/home.aspx).
Mission: To enhance policymaking capabilities through engaging analyses, robust processes, and leading-edge systems. RAHS explores methods and tools that complement scenario-planning in anticipating strategic issues with significant possible impact on Singapore.
Organization: National Security Coordination Secretariat at the Prime Minister's Office
Context: Singapore identifies senior civil servants on their way to senior positions and creates a career path in which they are cross-trained as "black belt" bureaucrats in modeling, scenarios, risk analysis, and other foresight methodologies. The process is nested inside the office of the Prime Minister, infusing foresight into the conduct of Singapore's governance as a whole.

[54] Jerome C. Glenn, Theodore J. Gordon, and Elizabeth Florescu, "Government Future Strategy Units and Some Potentials for International Strategic Coordination," *2011 State of the Future* (Washington, DC: The Millennium Project, 2011), appendix D1, available at <www.millennium-project.org>.

South Africa

Policy Coordination and Advisory Services (www.thepresidency.gov.za/pebble.asp?relid=183).
Mandate: To facilitate integrated strategic policy formulation and implementation across government.
Duties: "PCAS monitors and evaluates the interpretation of policies and the implementation of programmes. It advises the President, Deputy President and Minister on any interventions necessary to ensure more effective and efficient service delivery. The mandate of PCAS is carried forward through collaboration with Cabinet and Cabinet Committees, the directors general clusters and national departments."
Organization: Within the Office of the President

South Korea

The Ministry of Planning and Budget has a Strategic Planning Division within its Fiscal Strategy Office (www.korea.net/detail.do?guid=28124).
Duties: The Ministry of Strategy and Finance plans and coordinates the mid- to long-term socioeconomic development goals and sets economic policy direction on an annual basis, distributes resources effectively and assesses the effectiveness of budget execution, and plans and reforms Korea's taxation policy and system.

Turkey

State Planning Organization (http://mevzuat.dpt.gov.tr/khk/540/spo.html#object).
Duties: *(first 6 of 11 total duties listed)*

- to advise the government in determining economic, social, and cultural policies and targets of the country by taking into account every type of natural, human, and economic resources and possibilities of the country
- to prepare long-term development plans and annual programs conforming to the targets determined by the government
- to coordinate activities of the ministries and public institutions concerning economic, social, and cultural policies and to ensure efficient implementation and advise the government regarding policy issues
- to develop future-oriented strategies by working closely with international institutions and to help reduce uncertainties in the medium and long term for the private sector by making policy recommendations in cooperation with the private sector
- to put forward views and to advise on improving structures and activities of the relevant institutions and establishments and operations of local administrations so that development plans and annual programs could successfully be implemented
- to monitor, co-ordinate and evaluate implementation of development plans and annual programs and if required to make the proper amendments.

Organization: Within the Office of the Prime Minister

United Kingdom

The Foresight Horizon Scanning Center (www.bis.gov.uk/foresight/about-us).
Mission: To encourage longer term thinking and evidence-based analysis throughout government and to support the use of evidence-based futures thinking in developing more innovative government strategies and policies which are resilient to different future outcomes.
Organization: Under the Department for Business, Innovation and Skills. The Centre works with departments to help them improve their futures capability.
Activities:

- **Futures projects:** Short projects, looking at discrete issues 10–15 years in the future.
- **Training and tools:** Foresight has published a toolkit based on the work of the Foresight programme since 2002. There is also an online version of Foresight's popular strategic futures training.
- **The Sigma scan:** An online searchable set of research papers that look 50 years into the future. The Sigma scan covers the whole public policy spectrum of social, technological, political, economic, and environmental issues.

Department Strategy/Policy Planning Offices (U.S. Government)

DEPARTMENT	OFFICE
State	Policy Planning Staff
Treasury	Office of Strategic Planning and Performance Management Office of Financial Research
Defense	Office of the Undersecretary of Defense for Policy
Commerce	Office of Policy and Strategic Planning
Labor	Office of Policy Research and Strategic Planning
Environmental Protection Agency	Office of Planning, Budgets, and Results
Energy	Office of Strategic Planning and Policy
Education	Office of Planning, Evaluation, and Policy Development
Homeland Security	Office of Strategy, Plans, Analysis, and Risk
Federal Emergency Management Agency	Strategic Foresight Initiative
Joint Chiefs of Staff	J5 Strategic Plans and Policy
Office of the Director of National Intelligence	ADNI/Policy and Strategy National Intelligence Council
U.S. Agency for International Development	Office of Policy, Planning, and Learning

Illustrative Set of United States Strategy Documents

DOCUMENT (click for hyperlink)	ISSUED BY	MANDATE
National Security Strategy of the United States	President	Annually, same day as the budget (in practice, every 4–6 years: January 2002, January 2006, May 2010) as mandated by the Goldwater-Nichols Act of 1986
Strategy to Combat Transnational Organized Crime	President	Presidential Initiative (2012)
National Strategic Plan for Advanced Manufacturing	Executive Office of the President National Science and Technology Council	Builds upon *The Report to the President on Ensuring American Leadership in Advanced Manufacturing* (2011) as a response to Section 102 of the America COMPETES Reauthorization Act of 2010
National Nanotechnology Initiative Strategic Plan	Executive Office of the President National Science and Technology Council	Every 3 years, as called for by the 21st Century Nanotechnology Research and Development Act of 2003
Quadrennial Diplomacy and Development Review	Secretary of State	Every 4 years (first delivered December 2010) as mandated by H.R. 2410 [111th]: Foreign Relations Authorization Act, Fiscal Years 2010 and 2011, Division A, Section Title III, Subtitle A, Sec 302 (June 2009)
Department of the Treasury Strategic Plan	Secretary of the Treasury	Every 4 years
National Defense Strategy	Secretary of Defense	"Every 4 years," 2 fiscal years after QDR (in practice, March 2005, July 2008)
Quadrennial Defense Review	Secretary of Defense	"Every 4 years, during a year following a year evenly divisible by four" (in practice, November 2000, February 2006, February 2010) as mandated by U.S. Code, 106th Congress, 1999
Department of Defense Strategic Management Plan	Chief Management Officer, Department of Defense	Every fiscal year
Office of the Inspector General (DOD) Strategic Plan	DOD Inspector General	Undefined
Air Force Contracting Strategic Plan	Deputy Assistant of the Air Force (Contracting)	Every 5 years
Office of the Assistant Secretary of the Army for Installations and Environment Strategic Plan	Assistant Secretary of the Army for Installations and Environment	Every 6 years
Coast Guard Acquisition Directorate Strategic Plan	Admiral of U.S. Coast Guard	Undefined
Naval Science and Technology Strategic Plan	Rear Admiral of U.S. Navy	Undefined
Department of Justice Strategic Plan	Attorney General	Every 5 years as mandated by GPRA-MA (P.L. 111-352)
Department of the Interior GPRA Strategic Plan	Secretary of the Interior	Every 5 years as mandated by GPRA-MA (P.L. 111-352)
Department of Agriculture Strategic Plan	Secretary of Agriculture	Every 5 years as mandated by GPRA-MA (P.L. 111-352)
Department of Commerce Strategic Plan	Secretary of Commerce	Every 5 years as mandated by GPRA-MA (P.L. 111-352)
National Export Strategy	Trade Promotion Coordinating Committee	Initiated by the President in 2010

DOCUMENT (click for hyperlink)	ISSUED BY	MANDATE
Department of Labor Strategic Plan	Secretary of Labor	Published every 6 years and updated every 3 years as mandated by GPRA-MA (P.L. 111-352)
Environmental Protection Agency Strategic Plan	Administrator of the Environmental Protection Agency	Every 5 years
Department of Health and Human Services Strategic Plan	Secretary of Health and Human Services	Published every 5 years and updated every 3 years as mandated by GPRA-MA (P.L. 111-352)
Department of Transportation Strategic Plan	Secretary of Transportation	Every 5 years
Department of Energy Strategic Plan	Secretary of Energy	Every 4 years as mandated by GPRA-MA (P. L. 111-352)
Department of Education Strategic Plan	Secretary of Education	Every 6 years
Department of Veterans Affairs Strategic Plan	Secretary of Veterans Affairs	Every 5 years
National Strategy for Homeland Security	Secretary of Homeland Security	Has been delivered July 2002, October 2007, as mandated by Homeland Security Act of 2002
Quadrennial Homeland Security Review	Secretary of Homeland Security	Every 4 years (first delivered February 2010) as recommended by the 9/11 Commission Act of 2007 (May succeed NSHS)
Department of Homeland Security Strategic Plan	Secretary of Homeland Security	Every 5 years as mandated by GPRA-MA (P.L. 111-352)
Immigration and Customs Enforcement Strategic Plan	Director of U.S. Immigration and Customs Enforcement	Every 5 years
Secret Service Strategic Plan	Director of the Secret Service	Published every 6 years and updated every 3 years as mandated by GPRA-MA (P.L. 111-352)
National Military Strategy	Chairman of the Joint Chiefs of Staff	Every 2 years, February 15, of each even numbered year, followed up by "Risks under NMS" on January 1 of every odd numbered year (in practice, September 1997, March 2004, February 2011)
Quadrennial Intelligence Community Review	Director of National Intelligence	Every 4 years (in practice, 2001, 2005, 2009)
National Intelligence Strategy	Director of National Intelligence	Every 4 years (in practice, 2005, 2009)
Department of State and Agency for International Development Strategic Plan	Administrator of the U.S. Agency for International Development	Every 6 years as mandated by GPRA-MA (P.L. 111-352)
Social Security Administration Agency Strategic Plan	Commissioner of Social Security	As mandated by GPRA-MA (P.L. 111-352)

Foresight Methods

Back-casting: a method of working backward from a hypothetical future event (typically a desired goal) to the present in order to visualize short- and medium-term steps, necessary and sufficient conditions, and possible sequences of events that would lead there.[55]

Course of action analysis: a method for assessing the cost, impact and risk associated with alternative action plans. Beginning with a set of alternative plans (courses of action or COAs), the costs, impact and risks of each alternative are expanded upon and then assigned weights that are then measured and compared against each other based on decision rules that reflect priorities.[56]

Cross-impact analysis: a method for forecasting the probabilities of events based on their potential interactions with each other. Each hypothetical in a set is assigned an initial probability; conditional probabilities are determined using a matrix to consider their potential interactions with each other.[57]

Delphi survey method: a method of forecasting by committee that uses a questionnaire to accumulate foresight analysis by experts whose responses are compiled and then recirculated (anonymously) in order to reduce the range of responses and close in on expert consensus about the future.[58]

Environmental scanning: systematic monitoring of an internal and/or external environment in order to detect opportunities and threats in advance so that early action can be taken.

Futures Wheel: a structured brainstorming technique that uses a wheel-and-spoke like graphic arrangement to consider the primary and secondary impacts around a central trend or hypothetical event.[59]

Gaming: a structured exercise for stress-testing decisions in a simulated complex environment based on a scenario, which permits participants to test in the mind at minimal cost what may otherwise have to be tested in reality at incalculable cost.

Historical analogy: a method of using the dynamics of events in the past to understand the dynamics underlying current and future events.

Horizon scanning: systematic monitoring and examination of current events (across categories) in order to detect early signs of potential major impending developments and how they may influence the future so that early action can be taken.

Implications Wheel: a structured brainstorming technique that arranges second, third and fourth order events around a central trend or hypothetical events, and uses probabilities to score potential implications.[60]

Issues-analysis: a method of systematically "unpacking" the dilemmas, cross-category implications, and unasked questions that arise from trends, hypothetical future events, and alternative policy choices.[61]

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[55] Backcasting. World Future Society, available at <www.wfs.org/node/172>.

[56] "A Policy Analysis Approach to Operational Level Course of Action Analysis," Defense Science and Technology Organization, Australia, available at <www.dodccrp.org/events/5th_ICCRTS/papers/Track2/018.pd>.

[57] Theodore Jay Gordon, "Cross-Impact Method," in Futures Research Methodology Version 3.0, ed. Jerome C. Glenn and Theodore J. Gordon (Washington, DC: Millennium Project, 2009).

[58] RAND Corporation, "Delphi Method," available at <www.rand.org/topics/delphi-method.html>.

[59] Jerome Glenn, "The Futures Wheel," in Futures Research Methodology Version 3.0.

[60] Joel A. Barker, "Implications Wheel," Implications Wheel, 2011, available at <http://implicationswheel.com/>.

[61] "House Annual Commission on Forward Engagement Annual Report," Fall 2006 Forward Engagement Class Report, available at <http://forwardengagement.org/images/stories/pdfs/graduate_seminar/fall_2006_final_report.pdf>.

Morphological analysis: a method for structuring and investigating sets of relationships contained in multi-dimensional, non-quantifiable problem spaces.[62]

Real-Time Delphi: an online version of the Delphi questionnaire that harnesses expert opinion about the future on an accelerated basis.[63]

Roadmapping: a technique of planning that identifies a sequence of goals, prospective future developments, and future "on-ramps" and "off-ramps" for decisionmaking.

Robust decisionmaking: a method of relating short-term policy interventions to different clusters of long-term futures.[64]

Scenarios: case studies of the future that depict in detailed narrative how events might lead from the present to an envisioned future. Scenarios should come in sets covering a range of possible futures that provide a means to visualize outcomes of alternative courses of action, analyze their hypothetical consequences under different combinations of assumptions, and link logical sequences of events.

Simulation/Modeling: a quantitative method for understanding the interactions of a system using a prototype, computer program, or other simplified representation of a real system. Models and simulations permit decisionmakers to experiment with interactive variables (often with large data sets) for a specified duration so as to gain understanding about a system's behavior, probabilities, and range of possible outcomes.

State of the Future Index: an index that measures the 10-year outlook for the future based on key variables and forecasts that collectively depict whether the future promises to be better or worse.[65]

STEEP Implication Analysis: a method for systematically analyzing the social (S), technological (T), economic (E), environmental (E) and political (P) implications and issues[66] related to a trend, event, decision or policy.[67]

SWOT analysis: a method of analyzing and assigning weight to an operations' internal factors—strengths (S) and weaknesses (W)—and external factors—opportunities (O) and threats (T)—so as to strategically match resources and capabilities to the environment.[68]

Trajectory Analysis: a method of assessing the directionality of trends and oncoming events so as to create manageable pathways that can aid policymakers in identifying engagement opportunities.[69]

Trend Projection: an extrapolation of a current trend line into the future based on historical data, rates of change, and other variables.[70] Projections are based on an assumption that factors will be held constant with no looming discontinuities.

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[62] Tom Ritchey, "General Morphological Analysis," General Morphological Analysis, June 2011, available at <www.swemorph.com/ma.html>.
[63] Jerome C. Glenn and Theodore J. Gordon, "Real-Time Delphi," available at <www.millennium-project.org/millennium/RTD-general.html>.
[64] Robert J. Lempert, Steven W. Popper, and Steven C. Bankes,"Shaping the Next One Hundred Years: New Methods for Quantitative, Long-Term Policy Analysis," RAND, available at <www.rand.org/content/dam/rand/pubs/monograph_reports/2007/MR1626.pdf>.
[65] Jerome C. Glenn and Theodore J. Gordon, "State of the Future Index," available at <www.millennium-project.org/millennium/SOFI.html>.
[66] See "Issues Analysis."
[67] STEEP Analysis Outputs, Glasgow and the Clyde Valley Strategic Development Planning Authority Futures Group, available at <www.gcvcore.gov-.uk/downloads/futures/STEEPanalysisOutputs.pdf>.
[68] Quick MBA, "SWOT Analysis," available at <www.quickmba.com/strategy/swot/>.
[69] "First Annual Report to the Deputies Committee on Complex Priorities," Fall 2008 Forward Engagement Class Report, available at <http://forwar-dengagement.org/images/stories/pdfs/graduate_seminar/fe_fall08_final.pdf>.
[70] "Trend Projection," World Future Society, available at <www.wfs.org/node/403>.

Acronyms

ANSI/ISO American National Standards Institute/International Standards Organization
CIO Chief Information Officer
CLIP Component Level Implementation Process
CMO Chief Management Officer
COO Chief Operating Officer
COS Chief of Staff
DC Deputies' Committee
DHS Department of Homeland Security
DOS Department of State
DPB Defense Policy Board
DPC Domestic Policy Council
EOP Executive Office of the President
FCI Future Contingency of Interest
FSO Foreign Service Officer
GAO Government Accountability Office
GPRA Government Performance and Results Act
GPRA-MA Government Performance and Results–Modernization Act of 2010
HPPG High-Priority Performance Goals
IC Intelligence Community
IG Inspector General
INR Bureau of Intelligence and Research
IPC Interagency Policy Committee
JCS Joint Chiefs of Staff
NDU National Defense University
NEC National Economic Council
NIC National Intelligence Council
NIE National Intelligence Estimates
NPF National Priorities Framework
NPG National Priorities Guidance
NPR National Priorities Review
NSA National Security Advisor
NSC National Security Council
NSP National Security Professionals
NSS National Security Staff
ODNI Office of the Director of National Intelligence
OMB Office of Management and Budget
ONDCP Office of National Drug Control Policy
OPM Office of Performance Management
OSD Office of the Secretary of Defense
OVP Office of the Vice President
PIC Performance Improvement Council
PIO Performance Improvement Officer
POM Program Objectives Memoranda
QDDR Quadrennial Diplomacy and Development Review
QDR Quadrennial Defense Review
SES Senior Executive Services
SOFI State of the Future Index
STEEP Social-Technological-Economic-Environmental-Political
SWOT Strength-Weakness-Opportunity-Threat
TDY Temporary Duty

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