EXECUTIVE SUMMARY

DOCUMENTED BRIEFING

Innovation and Change Management in Public and Private Organizations: Case Studies and Options for EPA

April 2003

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RAND
Science and Technology

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PREFACE

This report summarizes the findings of a study of innovation within six public and private organizations. The study had several purposes: (1) describe and analyze the characteristics of selected innovative organizations, (2) describe and analyze the elements of change management that helped the selected organizations become more innovative; and (3) use the findings from the cases to suggest options for innovation within the U.S. Environmental Protection Agency (EPA).

At the request of the Office of Policy, Economics, and Innovation (OPEI) in the EPA, RAND used a case study approach to provide concrete examples of organizations that had succeeded in becoming more innovative, and in the process, systematically developed "systems for system change" to manage the change process. RAND was not asked to study EPA's own innovations or benchmark agency performance against these other organizations. Hence, these case studies offer insights and possible models for the agency, but their applicability to EPA would need to be assessed independently. Virtually any action taken by another organization would be adapted to meet EPA's own particular circumstances and needs.

A slide format was chosen for this study to provide the client with flexibility to use selected parts of this analysis for various audiences and purposes. Consistent with a slide presentation, "navigational" slides have been inserted at the start of each new section to assist the reader in following the flow of the briefing.

The immediate audience for this study is EPA's Innovation Action Council (IAC) and members' staff. The IAC is composed of senior career managers from all of EPA's program and regional offices. However, the report is likely to have a broader audience among others interested in examining options for pursuing innovation and organizational change at EPA and other public organizations.

RAND is a nonprofit institution that helps improve policy and decision-making through research and analysis. RAND Science and Technology (RAND S&T) conducts research and analysis that helps government and corporate decision-makers address opportunities and challenges created by scientific innovation and rapid technological change. Our work stretches from emerging energy technologies to global environmental change to still other endeavors seeking a better understanding of the nation's scientific enterprise and how best to nurture it. Focal points of RAND S&T work include energy, the environment, information technology, aerospace issues, technology and economic development, bioethics, advanced materials, and "critical" technologies for industries and occupations.

RAND S&T serves a variety of clients, including federal, state, and local government agencies, foreign governments, foundations, and private organizations. Our team has a wide range of expertise and includes physicists and geophysicists; chemists and geochemists; electrical, chemical, mechanical, and information technology engineers; biological and environmental scientists; and economists and other social scientists.

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TABLE OF CONTENTS

EPA Message vii

Executive Summary E-1

Relevance of Cases to EPA E-1

Characteristics of Innovative Organizations E-2

Mission and Strategy E-2

Employees and Organizational Capacity E-2

Business Processes E-2

Budget and Finance E-2

External Relationships E-3

Change Management E-3

Prepare for Change E-3

Execute Change E-3

Support Change E-3

Options for EPA E-3

Acknowledgments E-5

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EPA MESSAGE

Innovation is about testing new ideas, assessing their effectiveness, and mainstreaming those that prove useful in helping an organization achieve its goals. In an attempt to learn how other organizations have promoted innovation and instituted systems for sustaining the innovation cycle, EPA asked the RAND Corporation to survey six public and private sector organizations that have used innovation to advance their goals. We believe the RAND case studies of three Federal Agencies — the Food and Drug Administration, the Veterans Health Administration, and the U.S. Customs Service — and three businesses — Proctor & Gamble, Dupont, and Marriott — offer some valuable "take-away" lessons that can assist our ongoing innovation efforts at EPA.

It is encouraging to note that some of the hallmarks of other innovative organizations are already well underway in EPA — using information to strategically improve program design, targeting limited resources to priority problems, and creating partnerships with other organizations that share similar goals. However, there are areas where we can do more to promote and support innovation across the Agency. The RAND adaptation of the "balanced scorecard" approach and "change management" model offer some interesting insights into how we can advance innovation more fully at EPA.

In each case study, RAND found that organizations that have sustained innovation have senior leaders who establish a clear and compelling vision, create alignment of the entire organization around that vision, and personally lead organizational change. They also establish an environment in which creativity and innovation can flourish, and they institutionalize good ideas. In recent years, EPA has demonstrated strong management support for innovation through its cross-Agency Innovation Action Council, a comprehensive Innovation Strategy, a newly established National Center for Environmental Innovation, and numerous high-profile innovation initiatives. With these experiences and support mechanisms in place, EPA must now focus on building an organizational culture and set of management systems that enables innovation to flourish at all levels of the Agency.

We welcome your response to the ideas put forth in this report, and hope it can help propel EPA forward in its pursuit of innovative approaches for improving environmental results.

Jay Benforado
Director,
National Center for Environmental
Innovation

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EXECUTIVE SUMMARY

This report summarizes the findings of a study of innovation within six public and private organizations. The study had several purposes: (1) describe and analyze the characteristics of selected innovative organizations, (2) describe and analyze the elements of change management that helped the selected organizations become more innovative; and (3) use the findings from the cases to suggest options for innovation within the U.S. Environmental Protection Agency (EPA).

RAND selected three public organizations (Food and Drug Administration, the Veterans Health Administration, and the U.S. Customs Service) and three private organizations (DuPont, Marriott, and Procter and Gamble) that had implemented and sustained innovative practices. Beyond meeting this threshold criterion, these organizations also had operational and structural attributes similar to the multifunctionality and complexity of the EPA.

It should be noted that RAND was not asked to study EPA's own innovations or benchmark agency performance against these other organizations. Hence, these case studies are intended to offer insights and possible models for the agency. Virtually, any innovation-related action undertaken by another organization would need to be adapted to meet EPA's own particular circumstances and needs.

Relevance of Cases to EPA

- Food and Drug Administration (FDA). The FDA case focuses on implementation of the new drug review process which has relevance to review processes for EPA mandated by the Toxic Substances Control Act (TSCA) and Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). More broadly, the case describes the steps taken by the FDA to manage high-profile technical review processes that require balancing risks and benefits in the context of competing public and private interests.

- Veterans Health Administration (VHA). The VHA is an example of major organizational transformation. The case is rich in detail on how to align organizational structures and allocate resources to achieve primary objectives, and how to change the locus of decision-making to ensure effective solutions are applied when local conditions vary. The VHA experience could help the EPA rethink its business model in broad terms and how headquarters might interact with regions and states. The case also provides interesting insights into how an agency seeks legislative change.

- U.S. Customs Service (Customs). Customs is a multifunctional organization charged with protecting our borders, enforcing international trade laws, and collecting tariffs, while at the same time facilitating trade. An important reason for selecting Customs as a case study was because of the significance of its enforcement responsibilities. Customs has found a way to target limited enforcement dollars through better data gathering, analysis and record-keeping. Customs is also able to leverage the private sector's self-interest in rapid inspection processing times at ports of entry in order to achieve high compliance rates.

- DuPont. The DuPont case illustrates how innovation was coordinated at the corporate level and provides some insights into the respective roles of corporate and business units. It also presents a fairly complete picture of what activities are required to sustain an innovation system. This case provides some insight into how EPA headquarters might work with regions and states to develop an integrated innovation system.

- Marriott. Because of its decentralized franchise operations, Marriott has relevance and value as an analog to EPA's state delegation and permitting processes. Another important feature of this case is the fact that

Marriott has struck a profitable balance between enforced compliance with standard operating procedures and active encouragement of innovation and problem-solving among its front-line and corporate employees. Marriott has also demonstrated how to effectively align human resources practices to corporate goals.

- Procter and Gamble (P&G). Both P&G and DuPont illustrate how innovation was coordinated at the corporate headquarters level and provide some insights into the respective roles of corporate and the business units. This has relevance to how EPA headquarters might work with regions and states to develop a broad-based innovation system.

Characteristics of Innovative Organizations

We adapted the Balanced Scorecard[1] approach to reflect the core elements, connections, and actions of innovative organizations. The Balanced Scorecard offers an integrated system of activities that covers four primary domains, each emanating from the organization's mission and strategy. The domains are employee and organizational capacity, business processes, budget and finance, and external relationships.

Mission and Strategy

- Innovative organizations use performance-oriented management systems for guiding and stimulating innovation. In each case, change was centered on the mission or strategic focus of the organization and permeated all the primary functions and processes.

- All cases employed some type of performance measures for managing operations and evaluating new approaches.

Employees and Organizational Capacity

- In each case, organizational change was typically necessary to improve the organization's capacity to meet its mission and strategic goals. While different means were used, in nearly all cases, the ability to measure performance and enhance accountability of senior leadership enabled greater room for individuals to exercise judgment and solve problems (i.e., flexibility with accountability) at the point of service delivery.

- Organizational capacity includes significant change in culture and engagement of employees at all levels of the organization. Not only did the organizations measure their overall performance with new metrics, they also needed new metrics to evaluate individual employee performance. Among the cases, different methods were used to empower and mobilize employees.

Business Processes

- The efficiency and effectiveness of business processes depend on a systems view of the organization. In each of the cases, some means was used to create ownership of organization-wide processes, systems of accountability, and strategic planning to guide change and improvement in performance.

- Information technologies (IT) played an important role in transforming the business model or key business processes within nearly all of the organizations.

Budget and Finance

- Innovation requires investments in people, training, seeding of new ideas, prototyping and evaluation, and scale-up. Institutionalizing a budget and funding process for innovation was a common action among all of the organizations studied.

[1] The Balanced Scorecard is a trademarked measurement tool (Rohm, 2002) used by Marriott and other firms.

- Innovation requires a predictable stream of investment to create and sustain the motivation to generate, test, and follow through on new ideas. Most of the organizations found some way to finance innovation through user fees, special CEO funds, or direct appropriations from Congress.

External Relationships

- Organizations explicitly recognized the importance of building strong relationships with their outside constituencies. Strong linkages also improve the organization's capability to exploit ideas and opportunities from other sources.

Change Management

Managing change or a "system of innovation" refers to three sets of integrated actions: prepare for change, support change, and execute change. Organizations that have successfully sustained innovation addressed all three of these action areas. Innovative organizations have leaders who establish a clear and compelling vision, create alignment of the entire organization around that vision, and personally lead organizational change. They also establish an environment in which creativity and innovation can flourish, and they institutionalize good ideas by making sure they get implemented.

Prepare for Change

- In each of the public sector cases, there was widespread consensus that the organization was so out of step with the times that serious actions were needed to preserve some semblance of function and effectiveness. Each of the public sector organizations actively responded to criticisms and worked with stakeholder groups to develop a basis for legislative change.

- Each of the organizations used clarified statements of goals and priorities as the foundation for change in culture, business processes, interactions with stakeholders, and budget and financial decisions.

- Leaders created action plans, set clear goals and priorities, stayed focused on their mission, and made the necessary structural changes to implement their plans.

Execute Change

- Implementation methods varied among the cases, but all put organizational structure and accountability tools in place to make sure that the change was implemented successfully. Most important, prototypes and pilots were not ends in themselves but vehicles for testing ideas that the organization intended to implement at full scale.

Support Change

- Supporting change requires the alignment of multiple elements. For example, budget or financial resources must be in place and expected to remain so for the duration of the change process. Organizations initiated training programs and implemented incentives to motivate employees.

Options for EPA

The model for change management[2] provides a useful checklist of questions that address the agency's readiness to plan, execute, and support change. The case studies also yielded a number of ideas of potential relevance and applicability to EPA. Practically speaking, EPA is at least several years away from major

[2] The Change Management Model includes three interactive and dynamic loops: prepare for change, support change, and execute change. This dynamic model was used to contrast normal static models of organizational behavior. Regardless of the scale of the change desired, these three elements are believed to be necessary to sustain an innovative organization (Moore et al, 2002).

transformational change. However, opportunities exist to pursue and learn from well-designed incremental changes. For example,

- Keying off the DuPont case, the EPA might consider two different innovation processes, depending on the level of change desired. More ambitious, system-wide innovations could be managed at the EPA headquarters level, while other innovations, especially those focused on process improvements and efficiencies, could be managed at the program or regional level with the headquarters role primarily to disseminate lessons learned from elsewhere in the agency and to encourage collaborations.

- Borrowing from the Customs case, account management may have some merit as an alternative organizing principle for the various and separate permitting processes. In contrast to transaction-based information, account-based information provides a complete nationwide view of all reported activity for an importer, exporter or broker. This organizational structure enables Customs to capture a big-picture view of trade, identify major importers who use multiple ports, and compile useful statistics to guide resource allocation and enforcement actions.

- The use of performance measures in Marriott's Balanced Scorecard and VHA's budget allocation system may be models for realizing the promise of the National Environmental Performance Partnership System (NEPPS) to improve the overall effectiveness of EPA and the states in delivering environmental benefits under resource constraints.

On a more general level, leadership, clarity of mission and goals, internal communications, and responsiveness to external signals all consistently emerged from the cases as essential ingredients of success, whether change was incremental or more radical. Learning from the experiences of other organizations – positive and negative – in each of these areas has the potential to improve EPA's prospects for a successful path forward on innovation.

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We also would like to acknowledge the assistance of RAND colleagues Sue Bodilly, Tom Glennan, and Frank Camm. RAND has conducted similar studies of organizational change in a variety of policy areas. These colleagues helped us understand some of the potential parallels and differences between their areas of expertise and the challenge of innovation in an environmental regulatory agency. Frank Camm also served as a formal reviewer along with DeWitt John of Bowdoin College and Charles Prather of BottomLine Innovation Associates, Inc. Their thoughtful and extensive reviews significantly improved the presentation of our results.

The conduct of case studies could not have been possible without the cooperation and expertise of individuals within the organizations we studied. Their insights and the information provided cannot be matched. Any errors in interpretation rest with the authors. Without doing full justice to their contribution, we would like to acknowledge and thank the following individuals for their time and assistance:

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RAND used a case study approach to provide examples of public and private sector organizations that had succeeded in becoming more innovated, and in the process, systematically developed "system for system change" to manage the change process. The logos on this page represent the organizational case studies described in the report on the Food and Drug Administration, the Veteran's Health Administration, the U.S. Customs Service, DuPont, Marriott, and Proctor and Gamble.

Effective March 1, 2003, the U.S. Customs Service is no longer an agency within the Department of Treasury, but is now under the Department of Homeland Security as U.S. Customs and Border Protection.

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