

Beyond Appropriations

# Building a Defensible RDT&E Program

Individual federal research programs often get lost “in the weeds” of agency summaries and budget requests, and thus don’t receive attention from agency and department management or oversight from the Executive Office of the President. As a result, there is little systematic pressure to ensure that programs support broader goals or maximize the results of their research. The Trump administration can shake up this culture by encouraging managers to take a broader perspective on strategic alignment, external coordination, and knowledge dissemination—making their programs more “defensible.” Doing so will not only provide greater benefits to the nation, but will also expand the impact of each individual program.

## A Case for Action

Developing and justifying research budgets within the federal government is vastly different than in the private sector. There is no profit motive, no shareholders comparing returns on investments in research groups with returns on investments in advertising. Instead, there is a massively complex budget development process in which research allocations are discussed at levels well above individual programs, and oversight and management are often disconnected from the budget process. Individual agencies (and even subcomponents within these agencies) may have their own expectations of the extent to which their programs need to be defensible. Individual program managers have widely divergent viewpoints, ranging from “it’s good practice to do it anyway” to “it’s not a valuable use of my time.”

The Trump administration can direct its incoming agency leadership to encourage solid strategic planning and management of its research programs by ensuring that each program is defensible. Doing so will maximize the benefits of federal research investments, minimize duplication, and accelerate

advancement while requiring only modest additions to program management budget lines.

A defensible federal research, development, test, and evaluation (RDT&E) program is one that is closely aligned with national-level policies and agency priorities, has solid technical and project management plans, and strategically leverages external activities as much as possible.

**“One of our Committee’s most important responsibilities is to ensure that federal science agencies spend taxpayer dollars as effectively and efficiently as possible. Every dollar wasted on mismanagement is a dollar that could be spent on groundbreaking basic research or training future scientists.”**

—BARBARA COMSTOCK, HOUSE RESEARCH & TECHNOLOGY  
SUBCOMMITTEE CHAIRWOMAN, FEBRUARY 2016

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## **Understanding the Problem**

Development of the federal science and technology budget is a complex process spanning many years and two branches of government. Any federal leader must understand the primary steps and influences affecting budget decisions to be able to plan strategically and direct an agency's internal activities and external interactions.

No federal RDT&E program exists in isolation. Each provides a service to someone, uses someone else's funds, and collaborates with external entities. Determining which entities have influence over a particular program and identifying the pressures they exert in decision making is critical to the RDT&E planning process. These entities include:

- Stakeholders, such as parent departments, the White House, and Congress, who provide direction, resources, and oversight
- Customers, such as members of the scientific community and field users, who adopt and build on the results of the RDT&E program activities
- Partners, such as other federal agencies, academia, and the private sector, whose research and know-how should be leveraged (rather than duplicated)

In the private sector, the roles of stakeholder and customer are clearly defined. Stakeholders are company investors, shareholders, and board members. Customers are the people who purchase and use the product or service. There is no such demarcation in the federal government, where stakeholders and customers are often one and the same. For example, an operational unit may use the RDT&E program's technologies, which makes it a customer. But it may also play a role in developing the RDT&E agency's strategy and budget, which also makes it a stakeholder.

In most RDT&E strategic planning activities, there is no clear beginning or end to the process. Since the

pace of innovation is much faster than the three-year federal budget cycle, program managers must strike the right balance between embracing new discoveries and managing federal accountability. They must conduct ongoing assessments of capability gaps and future activities and adjust accordingly.

## **Areas of Opportunity for the New Administration and Agency Leaders**

Incoming agency technology innovation leaders will likely find themselves knee-deep in budget planning and justification upon taking office. (As the government is still operating under a Continuing Resolution, FY17 budgets aren't final. The FY18 budget request will be submitted in February 2017, and some agencies are already developing budgets for FY19.) They'll need to quickly master the macro-level processes at work in the development of the President's budget request and establish relationships with their stakeholders. They'll need to understand their agency's existing priorities and plans, as well as the processes used to develop them—including gaps in the defensible process described above. These immediate, time-critical tasks are opportunities to set expectations for future budget cycles and to understand the agency's current culture—both of which are key steps in ensuring a defensible planning process. In the longer term, the Office of Science and Technology Policy and OMB can further reinforce a defensible RDT&E culture by analyzing some of the individual research programs in the budget development process (to push agencies toward compliance) and by highlighting individual program successes (to encourage individual action).

*For further ideas about applying the guidance in this paper to your agency's particular needs, contact [federaltransition@mitre.org](mailto:federaltransition@mitre.org).*