

DELIVER THE FUTURE HOW RESEARCH & DEVELOPMENT ORGANIZATIONS CAN BUILD RESILIENCY & DEMONSTRATE VALUE

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Research and development (R&D) organizations are engines of change, but they are still vulnerable to disruption. Tightening budgets and fast-moving demand signals are complicating the work of R&D organizations across government and private industry. Toffler Associates' experience as strategic advisor to major labs, tech accelerators, and other sites of R&D has yielded insights into how these organizations can successfully define their role, engage their customers, and deliver on their mission.

Scrutiny & Scarcity

As inflation saps spending power and high interest rates tighten access to capital, there is new scrutiny of R&D as a cost center. Consumer technology companies such as Meta and Alphabet, for example, spent the past year curtailing speculative bets on the development of new technologies in favor of shoring up balance sheets and delivering profits. On the government side, the Department of Defense (DoD) requested 3.4% less funding for science and technology activities in FY2024. Of the planned spending, less will go to early-stage technology development and more to pilots and demonstrations that bring technology out of the lab and onto the battlefield.

Toffler Associates observes two challenges in our clients' R&D organizations:

- Demonstrating and communicating value; and
- Developing long-term plans that are resilient to surprise.

Successful R&D organizations develop strategies to communicate the impact of their work, tighten the scope of their mission, and prepare for diverse outcomes.

Demonstrating Value

To succeed, R&D organizations need to look outwards. All R&D has the objective of delivering value to downstream stakeholders: those who will be responsible for building, using, or selling the product of the R&D organization's work. The R&D organization can maximize their impact by carefully mapping that group of stakeholders, understanding their needs, and aligning R&D efforts to produce products likely to be successfully transitioned by customers.

This doesn't mean just taking orders. Variety in speculative investment can help hedge against technological surprise, and the science and engineering workforce is best positioned to assess the likely return on different research paths. But it does mean involving downstream stakeholders – industrial engineers, sales and marketing, warfighters – earlier in the development process. By soliciting and acting on early feedback on how a product could be manufactured, sold, and used, R&D teams can ensure that their products solve problems and build relationships of trust.

It's harder than it sounds. Especially in government, many R&D organizations are separated from their customers by geography, bureaucracy, and culture. To build this type of meaningful relationship, R&D organizations need to convene stakeholder groups that may not understand each other's incentives and constraints. In large organizations like the Department of Defense, R&D teams and their customers may have a hard time discovering each other in the first place.

Some customers will always need a high degree of coaching, information sharing, and interpretation to productively communicate what they need to solve the problems they are facing. The more esoteric the problem set or the solution space, the harder the challenge. Soldiers, for example, can struggle to make clear to scientists the reality of the battlefield environment, and scientists can struggle in turn to explain the capabilities and limits of artificial intelligence or quantum sensing. The ability to listen, observe, and intuit the problems faced by customers is crucial for R&D organizations to cultivate.



To succeed requires thoughtfulness and an investment of resources that may feel like a distraction from the core mission of all parties. There are tools that can help:

- R&D organizations can develop a stakeholder map to clearly define all key stakeholders, including customers, governing authorities, and sources of talent and resources.
- An engagement strategy builds on the stakeholder map with a clear prioritization of stakeholder needs and an approach to involving them throughout the R&D process to validate solutions. Not all stakeholder needs are equally important to success, and by articulating a logic of prioritization, the R&D organization sets itself up to use time and resources wisely.
- A communications plan can help R&D organizations be deliberate about how they will engage their stakeholders. This should be as detailed and tactical as possible, with formats, templates, and schedules. A thorough plan can remove the guesswork, leaving more time for science and engineering.

These activities may even help the R&D organization discover that its lines of effort already align to stakeholder needs – except that without communication, the value is not understood by either party. A little attention to stakeholder management can often provide a means of defending the value of existing investments and priorities.

In theory, by providing value to downstream stakeholders, the R&D organization can satisfy the interests of upstream stakeholders too, including executives, oversight authorities, and shareholders. Reality is a little more complicated. In government, for example, the R&D organization may be bound by law and policy to leadership and oversight across agencies and branches of government, and these stakeholders may have different definitions of success. Here too, a tactful but thorough discovery process can help the R&D organization map, engage with, and satisfy upstream stakeholders.

Looking Over the Horizon



Aligning current activities to stakeholder needs is good; planning to do so sustainably through an uncertain future is better.

R&D organizations depend heavily on assumptions about the future. They are tasked with supporting, typically, the shifting strategy of a parent organization. They rely on a fragile pipeline of skilled talent. Their research activities need to adapt in response to discoveries, including occasional paradigm shifts, made in the broader science community. R&D organizations have to react to these fast-changing external forces with slow-moving investments in people and technology, a differential that can leave them poorly-equipped when assumptions fail.

A **scenario planning** approach can help R&D team members at all levels break out of their silos, communicate assumptions, and think creatively about future worlds and their implications for today's investments. The process of scenario planning improves intellectual agility by encouraging participants to identify drivers of change and imaginatively explore their consequences. It is also an excellent way to create or stress-test an R&D organization's assumptions. These might be explicitly framed in planning documents or verbally conveyed by leadership. By exploring the consequences and validity of assumptions through scenario planning, R&D organizations can develop a measure of their resilience.

Ultimately, scenario planning offers a compelling alternative to simple predictions about the nature of the future and viability of the R&D organization's research portfolio in that future. Scenario planning welcomes and encourages divergent views of the future – in fact, the more divergent, the more the planning process benefits from testing the strategy and its assumptions against a variety of possibilities.

Planning for Resiliency

As parent organizations across government and industry face rising pressure to launch or field products while cutting costs, R&D organizations are under scrutiny. Many are finding traditional strategies and planning processes inadequate. By considering the risks and opportunities of future scenarios, assessing the viability of their portfolio through those scenarios, and then planning to communicate value to downstream stakeholders, R&D organizations can affirm their indispensable role and prepare for change. The result is a more resilient organization that builds a stronger link between its research and the value realized for downstream customers.

Toffler Associates has helped R&D organizations navigate this challenge for over 25 years. We have supported our clients in their journeys to develop priorities and strategic plans, identify stakeholders, and communicate their value. Our **Alternate Futures® Scenario Planning methodology** is a standard-setting tool to help organizations creatively imagine the risks and opportunities of the future and test assumptions against the possibility of surprise. Our **Future Value Analysis®** methodology provides an evaluative framework for portfolio management that accounts for sunk costs and identifies risks and opportunities over the entire planning horizon. Together these tools have helped R&D organizations navigate uncertainty and prepare for the fast-approaching change.



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IS YOUR ORGANIZATION READY FOR CHANGE?

For 27+ years, we've guided government agencies through uncertainty. Our foresight expertise equips leaders to make resilient decisions and lead with confidence. We help agencies stress-test against multiple futures and develop flexible strategies for mission success.

We Go Beyond the Technology



**Taking a
Multidisciplinary Lens**



**Integrating with
Futures & Foresight**



**Preparing for
Multiple Outcomes**



**Focusing on Possibilities
& Plausibility**

Your Shape Tomorrow



**Positioning for
Advantage**



**Navigating
Uncertainty**



**Thriving in
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you mitigate risks, capitalize
on opportunities, and harness
technology's promise.**



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