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Catalyzing public sector innovation

Defining your role in the innovation ecosystem

A report from the Deloitte Center for Government Insights

ABOUT THE DELOITTE CENTER FOR GOVERNMENT INSIGHTS

The Deloitte Center for Government Insights shares inspiring stories of government innovation, looking at what's behind the adoption of new technologies and management practices. We produce cutting-edge research that guides public officials without burying them in jargon and minutiae, crystalizing essential insights in an easy-to-absorb format. Through research, forums, and immersive workshops, our goal is to provide public officials, policy professionals, and members of the media with fresh insights that advance an understanding of what is possible in government transformation.

Innovation focused on addressing societal challenges rarely occurs in a vacuum. Rather, it requires an ecosystem of actors working together and filling distinct but equally important roles. Deloitte's unique perspective on ecosystem-driven innovation helps organizations understand how to make an impact on an area of importance even when they aren't positioned to solve the problem themselves. In a fiscal and regulatory environment in which public sector organizations are being asked to do more with less, identifying and playing the right role in an ecosystem of actors are vital steps to achieving the mission and continuing to evolve.

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Introduction



Actors of innovation

This decade marked a breakthrough in humanity's understanding of the universe.

For years, scientists had unsuccessfully attempted to solve one of the great challenges of astrophysics: how to map the presence of dark matter.

Dark matter cannot be seen with telescopes. It emits neither light nor radiation. And yet, scientists believed that it had to exist due to its gravitational effects on visible matter. They just hadn't been able to map it.

But this all changed in May 2011, when a dramatic leap forward in dark matter research came from the most unlikely of sources.

A consortium of scientists from NASA and the European Space Agency posted the challenge of mapping dark matter to the competition website Kaggle, making their data available for potential innovators to use in developing approaches of their own.¹ In less than a week, a glaciology PhD student named Martin O'Leary had crafted an algorithm that outperformed existing approaches for mapping dark matter by applying techniques his field used for estimating the mass of submerged glaciers.²

O'Leary's solution represented a revolutionary step forward in solving a long-standing challenge faced by the scientific community. However, his innovative contribution to the field of astrophysics would likely never have been possible without Kaggle and the international space agencies. Kaggle played a vital role by providing an incentive platform for non-traditional problem solvers like O'Leary to apply

their own knowledge to the dark matter challenge. Meanwhile, the space agencies provided essential data without which O’Leary’s algorithm may never have been possible.

This story points to an often-discussed but rarely examined point about public sector innovation: It seldom occurs in a vacuum. *Rather, innovation focused on addressing societal challenges often requires an ecosystem of actors working together and filling distinct but equally important roles.*

Why roles matter

In the private sector, it’s often innovate or perish. No one questions the notion that multiple companies will likely be developing similar products and services simultaneously, as this kind of competition lies at the heart of a free-market economy.

But in the public sector, innovation can be more challenging. Organizations hoping to address societal challenges are often faced with resource limitations and little tolerance on the part of donors, taxpayers, and other constituents for the expenditure of these resources on unproven solutions. Additionally, market forces that can naturally drive innovation in the private sector do not always have the same effect in the public sector. For example, if two government agencies or nonprofit organizations were conducting the exact same research, many would view these efforts as redundant and wasteful. But the sheer number of individuals and organizations focused on public sector challenges can make

Large public sector challenges are often addressed simultaneously by a number of actors in a variety of ways. When launching a new innovation initiative, organizations should consider the appropriate role or roles their effort can fill within the existing ecosystem of actors that are focusing on the same challenge. Then, they should implement a set of strategies specifically aligned to that role or roles.

redundant efforts common, with new entrants struggling to identify ways to add value.

For public sector organizations and others playing in this space, the following important question should be top of mind: *If my organization hopes to launch an innovation initiative that has an impact on a societal challenge, where should it start, and how does it fit in with other actors already focused on the same or similar challenges?*

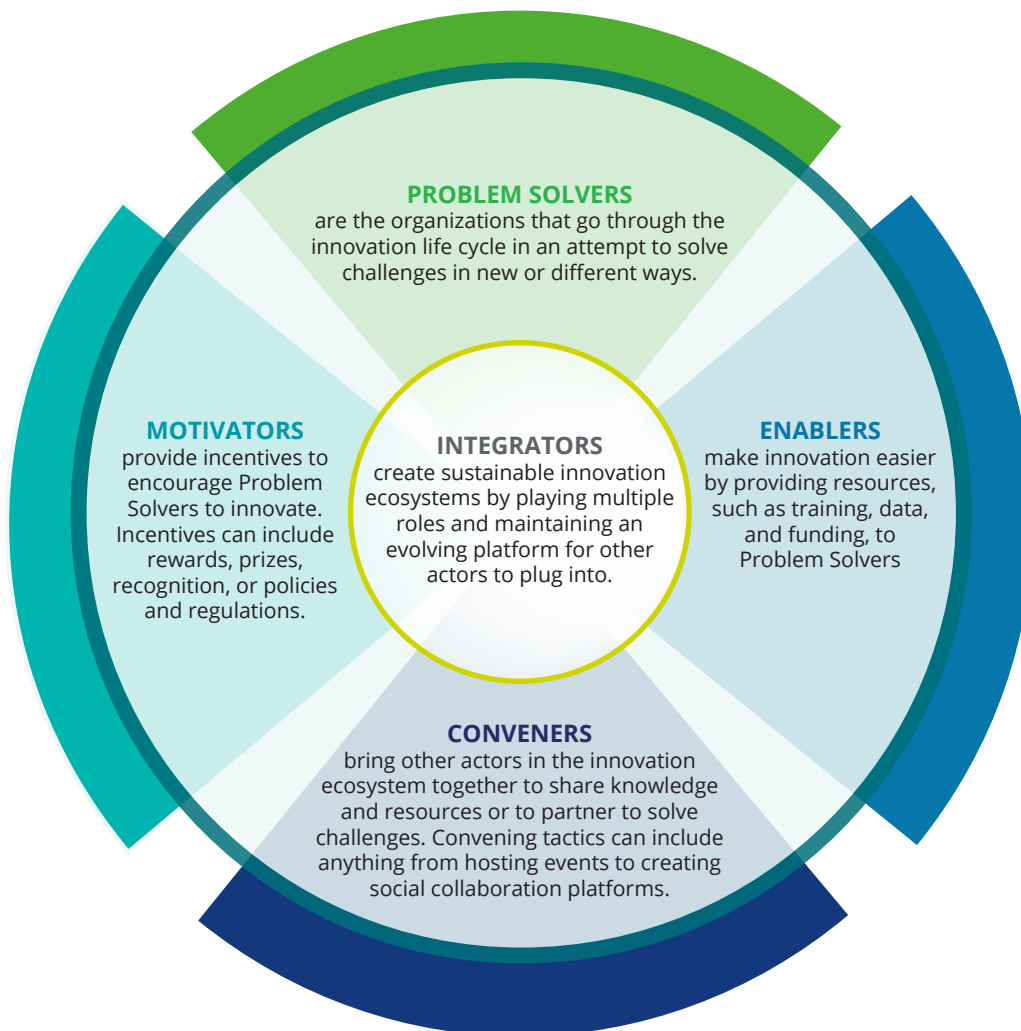
An examination of innovation initiatives in the United States begins to provide an answer to this question. *These initiatives generally involve an organization playing at least one of five key roles in an innovation ecosystem: Problem Solver, Enabler, Motivator, Convener, and/or Integrator.* By understanding which of these five roles to assume when launching an initiative, organizations hoping to support public sector innovation may be able to more effectively deploy their resources, partner with other organizations, and reduce redundancies.

Five roles in public sector innovation initiatives

AN analysis of over 100 prominent innovation initiatives³ focused on societal challenges across the United States confirmed what is already well known: that the definition of “innovation” varies widely from one group to another.⁴

However, if one classifies these initiatives based on what they are actually trying to achieve—that is, if we take the word “innovation” out of the equation—a pattern begins to emerge. Nearly every such effort—regardless of whether they are launched by a

Figure 1. Five roles in public sector innovation



private sector company, a nonprofit organization, a foundation, an individual, or a government agency—involves organizations playing at least one of five key roles:

- Developing innovative solutions
- Giving others tools or resources to make innovation easier
- Creating incentives to spur innovation
- Bringing various actors together to collaborate through the innovation process
- Establishing and/or sustaining the innovation ecosystem as a whole

For purposes of this paper, we will refer to these five roles as *Problem Solver*, *Enabler*, *Motivator*, *Convener*, and *Integrator*.

Multiple roles are often essential to making an innovation effort a success, and each role involves the application of a specific set of strategies and approaches. For example, in the case of mapping dark matter, Kaggle’s platform acted as a Motivator, providing a financial incentive that prompted non-traditional Problem Solvers to get involved. The space agencies acted as Enablers, contributing essential data that enabled O’Leary to develop his innovative solution.

Taking an ecosystem-based approach to innovation can have a dramatic impact in addressing societal challenges. If each actor within an ecosystem understands its appropriate role and engages in the right strategies to fulfill this role, the entire ecosystem can function more effectively. A clear understanding of one’s appropriate role can also serve as a valuable starting point for organizations hoping to launch new innovation initiatives, helping them use resources as efficiently as possible and interact in a complementary manner with other actors.

Finally, an ecosystem-based approach to innovation can help organizations implement strategies to build their capacity to fill needed roles more effectively on an ongoing basis, creating an infrastructure for ongoing innovation success.

Problem Solvers

In 2013, Amber Schleuning, deputy director of the Department of Veterans Affairs (VA) Center for Innovation, was struggling to tackle the many access issues veterans face when attempting to locate services or file claims online. In conjunction with the department’s US digital services team, she interviewed hundreds of veterans and applied human-centered design principles to rethink the way the VA organizes and presents its services to constituents online. The VA’s “Vets.gov” platform, released in 2015, has begun to change the way veterans access services and interact with the department.⁵

PROBLEM SOLVERS

Problem Solvers are the groups or individuals who are most often identified as “innovators.” They are the actors who come up with a solution to a public sector challenge.

Common strategies used by Problem Solvers include:

- Design thinking and human-centered design techniques
- Ideation sessions
- Diverging and converging techniques that combine unlike concepts into solutions
- Scenario planning and futurist techniques that project the potential benefits of new solutions being applied to a specific problem area

Organizations hoping to build their capabilities as Problem Solvers often:

- Establish innovation groups responsible for idea generation, piloting, and incubation
- Use innovation programs to bring in external Problem Solvers
- Establish innovation committees or governance groups to guide solution development

Schleuning's effort is a classic example of a public sector leader employing design thinking to fulfill the Problem Solver role. Problem Solvers are the groups or individuals we most typically think of as “innovators”: They are the ones who come up with a solution to a specific challenge. As the actors who create the solutions, Problem Solvers are familiar with the innovation life cycle: coming up with new ideas, selecting the most promising ideas, prototyping them as solutions, and working to scale those solutions to a broader population.⁶

There is a great deal of literature on how to “innovate” as a Problem Solver. From design thinking methodologies to the use of the “Ten Types of Innovation”⁷ to build innovative breakthroughs, Problem Solvers have a variety of tools and methodologies at their disposal. Some Problem Solvers apply scenario planning techniques to envision how innovations could shape the future, while others are adept at divergent and convergent thinking to combine seemingly unlike concepts into new solutions.⁸

Many public sector organizations have acted as Problem Solvers using techniques like these. For example, NASA invented the water filters now used by many municipal water plants, and the global positioning system (GPS) that we now use in our cars was originally developed by the United States' Defense Advanced Research Projects Agency (DARPA) as a means of targeting ballistic warheads.⁹

Problem Solver innovation initiatives do not have to be restricted to a single challenge. It is also possible for an organization to launch an initiative that builds its capability to act as a Problem Solver on an ongoing basis. In some cases, these efforts involve the establishment of groups or labs devoted to developing and piloting innovative solutions directly within the communities where the solutions are developed, such as the Offices of New Urban Mechanics in Boston and the Entrepreneurship in Residence Program in Philadelphia and San Francisco.¹⁰ In other cases, technology platforms that harness Problem Solvers' knowledge, such as the US Transportation Security Administration's IdeaFactory or New York City's Simplicity, can be used to improve overall government efficiency and support idea generation and selection.¹¹

Examples of other organizations that are working to build a sustainable capacity as Problem Solvers include Gateway Cities Innovation Institute, a nonprofit group that supports innovative policies and works collaboratively with local governments to find new solutions to civic challenges, and Los Angeles Civic Innovation Lab, a cross-governmental innovation unit that develops new solutions for the city and forges partnerships to help agencies be more effective Problem Solvers.¹²

But while Problem Solvers are often the most celebrated actors within an innovation ecosystem, they rarely act in isolation. Rather, Problem Solvers are often supported by other actors filling the roles of Enabler, Motivator, Convener, and Integrator.

FEDERAL SPOTLIGHT: LAB@OPM

At the federal level, the US Office of Personnel Management began building on its capacity to serve as a Problem Solver through the establishment of Lab@OPM in 2012. Lab@OPM began as a group of employees who met regularly to tackle the agency's most difficult challenges using human-centered problem-solving methodologies. The creation of this internal organization has had a strong effect on OPM's overall culture; it has been hailed as a success across the government, leading to requests for the Lab@OPM to partner with other agencies. For example, in 2016, the US Department of Agriculture (USDA) sought the Lab's assistance in solving design issues in the USDA's free and reduced-cost lunch program.¹³ The Lab@OPM has become a way for the federal government to tackle innovation head-on. It is an excellent example of the government equipping itself to solve challenges without outside actors.

Enablers

In 2016, the city of Chicago began installing 500 outdoor sensor boxes as part of a new, real-time open data initiative called Array of Things. The city plans to release data on air quality, noise levels, traffic, and other measures to the public, allowing private citizens, companies, and other organizations to develop innovative new analysis tools and applications that improve public health and safety outcomes in the region.¹⁴ This effort is a prime example of a city fulfilling another role in an innovation ecosystem: Enabler.

Enablers make innovation easier—or in some cases possible—by providing other actors with resources that help them innovate. For example, in December 2016, the White House Office of Science and Technology Policy (OSTP), in partnership with the General Services Administration (GSA), launched a Challenges and Prizes Toolkit for federal agencies and employees interested in making greater and more effective use of prize challenges. The toolkit contains a step-by-step guide for the execution of each stage of the prize design process, case studies, lists of mentors, templates, and strategies for overcoming frequently encountered hurdles.¹⁵ With continued support from GSA and a federal community of experts, the toolkit represents an example of the federal government taking on the Enabler role.¹⁶

In other examples of enabling, many cities have rolled out their own innovation incubators. Philadelphia's FastFWD program, for instance, provides direct financial support and 12 weeks of training to aspiring entrepreneurs with ideas for how to address urban challenges. The first 40 entrepreneurs to go through the program have, since May 2014, raised more than \$40 million in private capital for their projects.¹⁷ As another example, in partnership with The Rockefeller Foundation in September 2016, the Boulder, CO-based Unreasonable Institute launched a Future Cities Accelerator that awards \$100,000 in grant funding, plus nine months of intensive mentorship and start-up support, to for-profit and nonprofit organizations with innovative solutions to challenges facing poor and vulnerable urban populations across the United States.¹⁸

ENABLERS

Enablers seek to make innovation easier—or in some cases possible—by providing other actors with necessary resources.

Common Enabler strategies include:

- Training sessions that equip Problem Solvers with new skill sets
- The release of data sets for use in a specific challenge
- Facility-sharing sessions
- One-time investments in new innovation projects

Organizations hoping to build their capabilities as Enablers often:

- Build an infrastructure for technology and web-based projects through Wi-Fi or broadband initiatives
- Launch open data initiatives
- Provide online toolkits to support Problem Solvers
- Establish permanent grant and training programs

As with the other innovation roles, organizations can build their capacity to act as Enablers on an ongoing basis. These efforts may include technology infrastructure projects that make the development of new technology innovations easier, such as city-wide Wi-Fi or broadband initiatives; permanent training programs that potential Problem Solvers can turn to in order to learn needed skills; open data initiatives to drive innovation; and permanent grant programs that offer seed funding to support innovation.

Similar to Chicago, cities such as Houston and New York are building their capacity as Enablers by implementing open data initiatives to provide civic data and performance metrics that Problem Solvers can use in developing new products and services.²¹ Meanwhile, Chattanooga, TN, has developed its own community-owned fiber-optic grid, providing tech-minded entrepreneurs and others with a

FEDERAL SPOTLIGHT: DATA.GOV

In May 2013, President Barack Obama signed an executive order requiring that data generated by the federal government be made available to the public in open, machine-readable formats. The creation of Data.gov, a website where federal data made available by the collecting agencies are aggregated to promote transparency and encourage innovation, reflects a broader movement toward open government data.¹⁹ Individual agencies have since begun to follow suit, with the US Department of Defense rolling out its own open data site, data.mil, in December 2015.²⁰

10-gigabit broadband service that allows them to experiment with datasets and test complex applications that require high-bandwidth connectivity.²² As a result of Chattanooga's enabling infrastructure, innovators such as Branch Technology—named to Inc.com's 2015 "10 Most Disruptive Technology Companies" list for its creation of the world's largest free-form 3D printer—are able to focus their efforts on problem-solving.²³

Motivators

In his September 2009 Strategy for American Innovation initiative, President Barack Obama called on agencies to increase their use of tools such as prizes and challenges to promote innovation.²⁴ Within six months, the Office of Management and Budget issued a memorandum that provided a policy framework to guide agencies in using challenges to stimulate innovation to advance their missions. Soon after, many government agencies responded by launching incentive programs that still flourish today.

President Obama's plea was neither a call for agencies to fill the role of Problem Solver, as they would not be the ones actually developing the innovations, nor a request that agencies act as Enablers, as they would not necessarily provide essential tools or resources to support the innovation process. Rather, the president was asking agencies to fill another role within the innovation ecosystem: Motivator.

Motivators provide incentives that encourage Problem Solvers to innovate. Motivators' capacity-building efforts may include the development of competition platforms that allow Problem Solvers to vie for prizes; annual awards that afford recognition for successful innovation; and policies and

regulations that require or reward new approaches to challenges.

Prizes and competitions are perhaps the most visible examples of Motivator tactics. Bloomberg Philanthropies, for example, has served as a Motivator by awarding millions of dollars to Problem Solvers through its Mayors Challenge, a competition designed to encourage American cities to generate innovative ideas that solve uniquely urban problems and improve quality of life.²⁵ Other foundations, including the XPRIZE Foundation and Ashoka Changemakers, have also acted as Motivators by sponsoring prizes and contests.²⁶ Governments

MOTIVATORS

Motivators provide incentives to encourage potential Problem Solvers to innovate.

Common Motivator strategies include:

- Challenges and competitions that award prizes or recognition for new innovations
- The use of games or gamification to encourage participation in problem-solving

Organizations hoping to build their capabilities as Motivators often:

- Establish competition platforms that allow Problem Solvers to vie for funding
- Provide awards that confer status in exchange for successful innovation
- Establish policies and regulations that require or reward new approaches
- Issue social impact bonds that provide financial incentives for demonstrated social impact

FEDERAL SPOTLIGHT: CHALLENGE.GOV

In 2010, the US General Services Administration launched Challenge.gov, a federal online portal for crowd-based challenges. In the years since, Challenge.gov, which has received more than 5 million site visits to date, has become one of the US government's most successful efforts to fulfill the Motivator function on an ongoing basis. More than 100 federal agencies ran 740 challenge competitions on Challenge.gov between September 2010 and February 2017, addressing issues ranging from stopping illegal robocalls to developing 100-mile-per-gallon vehicles. Collectively, these competitions awarded \$250 million in prizes during this period. Challenge.gov's success has not gone unnoticed: Within four years of its launch, it was selected from more than 600 applicants as a winner of Harvard's Innovations in American Government Award.²⁷

have also adopted this tactic: Sacramento's 2016 RAILS (Rapid Acceleration, Innovation, and Leadership in Sacramento) program awarded up to \$1 million in grants to local organizations and companies that produced the most innovative and highest-impact new products and services.²⁸

The city of Boston has taken a different approach to spurring social innovation by turning innovation into entertainment. Boston citizens can use StreetCred, an app that aims to gamify civic engagement, to gather information necessary to solve citizen-identified problems. A point system encourages Bostonians to complete a range of actions, from reporting potholes to sharing civic accomplishments on Instagram, that help the city address urban issues. Completing a series of missions earns users virtual coins with which they can vote on actual grants to community groups.²⁹

Yet another Motivator tactic can be the use of social impact bonds: contracts between the public sector, a social service provider, and often a private sector entity. In this type of agreement, the private sector entity is incentivized to finance social interventions by the public actor's commitment to pay for improved social outcomes. Recently, firms like Goldman Sachs have aimed to reduce prisoner recidivism through the use of social impact bonds.³⁰

Conveners

On June 4, 2016, the White House hosted the fourth annual National Day of Civic Hacking, which brought together thousands of citizens, software developers, and entrepreneurs from across the United States to participate in more than 100

virtual and in-person hackathons where they could collaboratively design new solutions to civic challenges.³¹ By connecting civic-minded individuals with diverse skill sets, varied technical backgrounds, and a common interest in solving problems using public data, the 2016 National Day of Civic Hacking spawned new applications and data visualization tools that addressed issues ranging from affordable housing and prisoner recidivism to detecting Zika virus and increasing access to work visas.³²

Events such as hackathons are one approach taken by a fourth type of innovator: Convener. Conveners bring actors in the innovation ecosystem together,

CONVENERS

Conveners bring actors in the innovation ecosystem together to share knowledge and resources or to partner to innovate.

Common Convener strategies include:

- Organizing conferences, "un-conferences," hackathons, and other events that bring diverse parties together
- Using wikis or crowdsourcing tools to leverage broad-based knowledge and skills to solve a problem

Organizations hoping to build their capabilities as Conveners often:

- Develop social collaboration and crowdsourcing platforms that allow innovators to share knowledge and exchange ideas
- Establish physical spaces that bring other innovators together

FEDERAL SPOTLIGHT: WHITE HOUSE CANCER MOONSHOT SUMMIT

In addition to connecting disparate groups, Conveners can afford actors a level of visibility to an issue that serves as an additional catalyst for innovation. The June 2016 White House Cancer Moonshot Summit brought together more than 350 researchers, scientists, advocates, and data and technology experts to facilitate and encourage additional investment and improved policymaking for the prevention, diagnosis, and treatment of cancer. The highly publicized event resulted in dozens of new research, data-sharing, and investment commitments from organizations aiming to make breakthrough strides in cancer patient access and care.³⁹

either virtually or in-person, to share knowledge and resources or to partner to innovate.

Countless examples exist of the power of Convener initiatives to aid innovation. A 2016 snowstorm in Seattle inspired the city to set up its Let it Snow Hackathon, which encouraged citizens to use their combined skill sets to devise better storm communication tools using open-source data.³³ Another city, Philadelphia, partnered with Code for America to host a civic hackathon, Apps for Philly Transit, which gave participants the opportunity to conceive, design, and prototype uses of open data.³⁴ Both hackathons exemplify how an organization can play the Convener role within an innovation ecosystem, bringing together groups and individuals that otherwise would have remained dispersed.

Organizations can build their capacity to act as a Convener by creating social and professional networking sites, crowdsourcing platforms, and other physical and virtual spaces that bring innovators together to share knowledge and skills in the service of innovation. In Boston, for instance, the Innovation District Hall serves as a physical space that gives individuals and organizations the opportunity to convene and share knowledge.³⁵ Chicago's FoodBorne app provides a virtual platform for individuals to report food-borne illness, giving local residents the ability to collaborate with the city's Department of Public Health in an effort to safeguard citizens' health and root out food safety code violators.³⁶

Universities can be particularly effective Conveners due to their access to broad networks of intellectually and technically diverse actors and their ability to provide a neutral platform for engagement. MIT's Solve initiative, for instance, acts as a

convening platform that crowdsources solutions to challenges related to education, carbon emission, and chronic disease. It connects individuals with promising ideas with valuable enabling resources, such as MIT's network of academic and industry advisors, so that they may test, pilot, and implement their solutions.³⁷

The growing trend of creating coworking spaces further highlights the value of the Convener role, with companies such as WeWork, Hub, ImpactHub, and Cove increasingly cropping up near epicenters of innovation. In addition to providing enabling resources, these organizations provide professional convening spaces, affording innovators access to a wide variety of skills and experience. The ability to work together, bounce around ideas, and build on shared knowledge within these environments can allow entrepreneurs to get their new businesses up and running more quickly than would have otherwise been possible.³⁸

Integrators

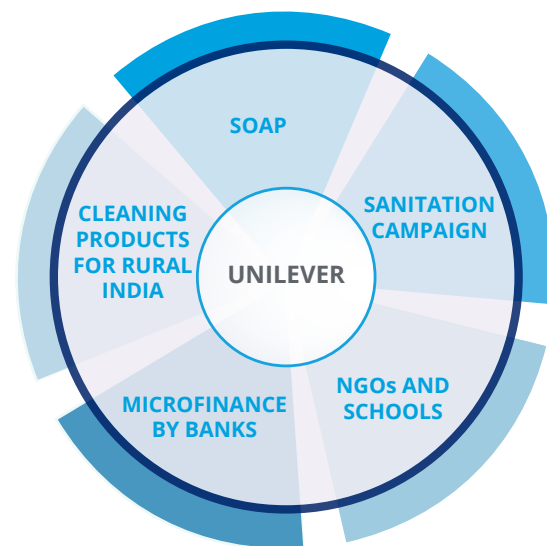
A vital component of a true innovation ecosystem, the Integrator is a fifth, hybrid role that serves to align actors in the other four roles and enhance the effectiveness of the ecosystem as a whole.

Integrators help articulate the innovation ecosystem's goals and create processes and platforms that allow the ecosystem's other actors to work effectively together on an ongoing basis. Integrators should not be confused with Conveners: While Conveners serve as hosts, Integrators identify different actors who can partner with each other, make connections between them, and examine and select the right tools to create value among the ecosystem's various members.

Integrators usually begin by playing one of the other four roles and evolve into Integrators as they take steps to identify other actors, develop platforms, conduct ongoing analyses and activities to keep the ecosystem running, and help other participants partner effectively. South by Southwest (SXSW), for example, began as a Convener, but its brand and the community it has formed are so strong that it now also serves as an Integrator by reaching out to potential partnering organizations and bringing them together for various activities. Similarly, the City of Chicago's Data Portal, which originally provided a limited number of open-access data files that others could use to develop innovations for the city, now provides code-sharing opportunities, hacking groups, proactive app requests, and feedback on new and useful data sets to augment the site's functionality.⁴⁰ With this expansion of functionality, the site (and the organization running it) has morphed from an Enabler, offering resources to Problem Solvers seeking to address discrete challenges, into an Integrator that supports the ongoing community and attracts and enables a range of actors that produce innovations for the city.

Private sector organizations may also act as Integrators. Unilever, for instance, took on the Integrator role when it worked to generate new business in rural India by increasing handwashing

Figure 2. Unilever's innovation ecosystem around rural Indian sanitation



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while also reducing the country's 1.5 million annual child deaths from diarrhea. By engaging schools, nonprofits, microfinance institutions, and unemployed women, Unilever positioned itself at the center of the ecosystem of actors, bringing the right combination of participants together to solve this social challenge.⁴¹

FEDERAL SPOTLIGHT: HEALTH AND HUMAN SERVICES IDEA LAB

The US Health and Human Services (HHS) Agency established its IDEA (Innovation, Design, Entrepreneurship, Action) Lab in 2013 to promote innovation across the 90,000-person department. Historically, HHS has operated as a traditional Problem Solver, with deep roots in science and technology. However, since the establishment of the IDEA Lab, HHS has externalized its innovation efforts to create an ecosystem that attracts actors from both inside and outside the organization to act as Enablers, Conveners, Motivators, and other Problem Solvers. The IDEA Lab has provided Problem Solvers with health data resources (as an Enabler), hosted Innovation Days (as a Convener), and conducted over 140 open innovation prize competitions (by finding internal and external Motivators). While it does not serve in all of these roles itself, HHS has acted as an Integrator by identifying relevant actors and making connections between them in a manner that is sustainable and supports the organization's mission. In one case, a logistics expert from a major package delivery company was brought in to develop and deploy an electronic tracking system for the nation's organ procurement and transplantation process, which was previously entirely paper-based.⁴²

Selecting the right strategies for your innovation initiative

Which role(s) should you pursue?

Understanding the five innovation roles and how they fit together and complement one another can be essential for driving innovation across an ecosystem. Launching the wrong type of initiative can lead to redundant efforts, unnecessary costs, and missed opportunities to support actors that are better positioned as Problem Solvers or in other roles.

Organizations that can benefit from taking an ecosystem view of their innovation activities generally fall into one of two broad categories:

1. Organizations with established impact models. Some organizations already have a clearly defined role or set of roles they play when attempting to drive innovation. The XPRIZE Foundation, for example, is likely never going to give up its role as a Motivator that runs prize challenges. Similarly, Code Academy, an online platform offering free coding classes, is fundamentally an Enabler, equipping individuals with the skills to develop innovative solutions through programming. But while such organizations are unlikely to change their core impact model, they can still benefit from understanding the role they play and working to be more effective in filling that role. In a political environment in which lean operations and partnerships with the private sector are valued, government and nonprofit organizations in particular could benefit from understanding how to engage different types of actors in the right ways. For example, by understanding commonly used partnership strategies between actors, a Motivator might realize that more value can be created for the ecosystem if it teams with an Enabler to launch

an open data challenge rather than attempting to launch an effort independently. Similarly, a Convener may see immediate results by partnering with an Enabler to provide both a physical space as well as the necessary data and tools to run a hackathon.

2. Organizations looking for ways to make the greatest impact with their initiative's launch. Start-up nonprofits and socially focused organizations, new government programs, and organizations looking to shift their impact model can also benefit from taking an ecosystem view of their innovation activities. For these groups, an analysis of the actors already present in the ecosystem can help guide the type of initiative that could have the greatest impact, filling existing gaps and giving Problem Solvers the greatest likelihood of success (or in some cases helping to scale proven solutions more broadly). For example, if Problem Solvers are already attempting to solve a societal challenge but have been unsuccessful, perhaps they are lacking some key resource or piece of data. The new initiative could then focus on providing that resource, acting as an Enabler rather than launching an effort that is redundant with efforts already underway by other actors.

Both of these types of organizations can benefit from conducting a careful analysis of the ecosystem surrounding a specific public sector challenge, and then adopting the right role or combination of roles to maximize the value that the ecosystem produces.

The five innovation roles described in this report are by no means mutually exclusive. In many cases, organizations may choose to launch initiatives that fill multiple roles simultaneously. For example, it is common for think tanks to conduct research and

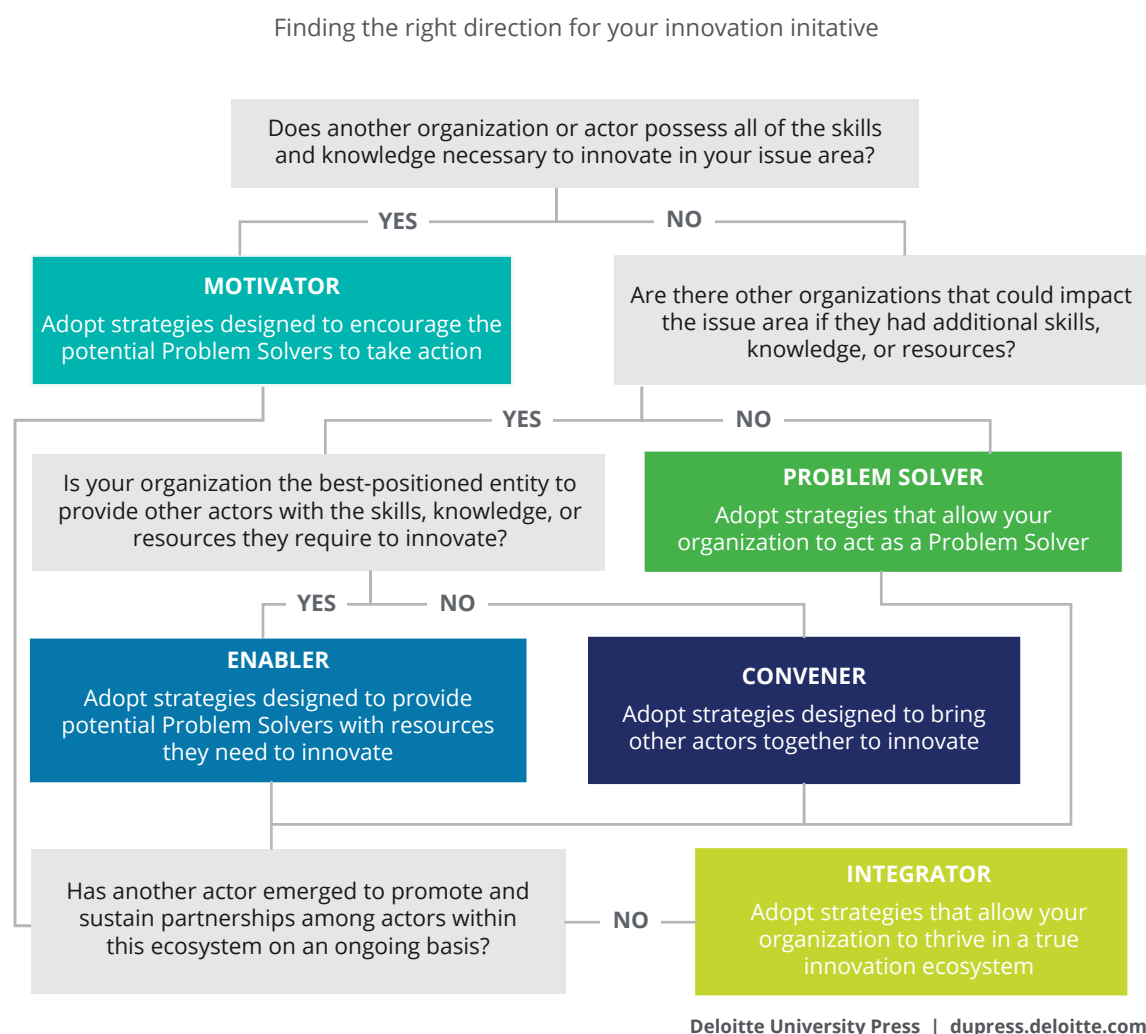
then hold a conference to release it to interested parties. This type of effort can simultaneously be considered both an Enabler and a Convener initiative, as it provides Problem Solvers with new and valuable information while also bringing together actors that might work together in using this information. Similarly, city governments that release data and then offer a reward to citizens who use it to develop a new mobile application are simultaneously serving in an Enabler and Motivator role, providing both essential data and an incentive.

The following questions can serve as a starting point for organizations seeking to identify the type of innovation effort that can allow them to take on the most impactful role(s) based on the actors

already present in an ecosystem. These questions, illustrated in figure 3, are also the types of questions that a strong Integrator will ask at the outset of an innovation effort to pull the various actors within an ecosystem together to tackle a societal challenge.

1. **Which other actors have the potential to impact the societal challenge(s) my organization cares about?** When selecting the right type of innovation initiative to launch, it is often critical to identify the other actors within an innovation ecosystem that are working to address the same or similar goals as one's own organization. These other actors could include parties that have extensive knowledge/experience with either the same challenge or in the

Figure 3. Innovation initiative decision tree



same sector, those that have made an impact on a different challenge through an approach or solution that could be relevant in achieving the current innovation goal, or those that have similar innovation goals. Such parties may include individuals, corporations, social enterprises, nonprofit organizations, foundations, and government institutions; therefore, it is important for an organization to look beyond the actors that are most similar to itself.

2. **Do any of the identified actors already possess the skills and knowledge necessary to innovate in the issue area(s) my organization cares about?** Some organizations may be naturally positioned to be Problem Solvers due to their skill sets and knowledge—but, for some reason, are not currently acting in this capacity. If actors with the capabilities to make an impact on a given societal challenge are simply not applying those capabilities, launching a Motivator initiative may have the greatest impact.
3. **Would any of the identified actors be positioned to impact the issue area(s) my organization cares about if they had additional skills, resources, or knowledge?** Even if another actor is not ideally positioned to innovate, taking on the Problem Solver role may still be its best option if the only thing it lacks is a specific skill set, resource, or dataset. If this is the case, then an Enabler or Convener may be needed to equip the other actor with what it needs to innovate. If no such actor exists, then it is likely that few other actors are considering the issue area that matters to your organization, and your organization may be best served by launching an initiative focused on becoming a Problem Solver.
4. **Is my organization the best entity to equip other actors with what they need to**

innovate? In other words, does your organization have the data, skill sets, tools, expertise, or funding that other actors need to innovate successfully? Or is there another entity that can give the potential Problem Solver what it needs? If your organization is indeed the best positioned to provide these resources, this may suggest that your organization could make the greatest impact by launching an Enabler initiative. On the other hand, if another organization is better prepared to provide resources, then your organization should look to play a Convener role by bringing the other actors together.

5. **Has another actor emerged that focuses on establishing and sustaining the ecosystem as a whole?** If not, your organization should consider whether it would best serve the long-term needs of the ecosystem by serving as an Integrator.
6. **Is my organization focused on a specific one-time effort, or is it seeking to build its capacity to support innovation on an ongoing basis?** An organization can fill an innovation role as a one-time initiative—or it can engage in capacity-building efforts that allow it to fill that role on an ongoing basis. Once your organization has identified the appropriate type of initiative to launch, it should determine whether the specific strategies it employs are one-time efforts or intended to build long-term capabilities.

The five innovation roles described in this paper can serve as a compass of sorts, helping an organization define the direction its innovation initiative should take. By understanding which role or roles it can most effectively fill, and by working to strengthen its capabilities around this role or roles, an organization can play an important part in solving societal challenges more quickly, economically, and effectively as part of a productive innovation ecosystem.

Leading practices for creating and sustaining an innovation ecosystem

UP to this point, this report has focused on particular roles organizations can play within an innovation ecosystem, without specifically elaborating on how to establish a strong ecosystem that can function effectively in the first place. But to have a truly meaningful impact in the long run, it is important that leading actors in the ecosystem be prepared to think beyond excelling in their own role to look at the ecosystem's demands as a whole.

Evolution is expected

Ecosystems should evolve to adapt to their changing environments. Successful Integrators are able to withstand constant expected and unexpected change. For instance, even in its early years, SXSW, which began as a music festival,⁴³ focused on developing a refined yet inclusive platform for the conference that could evolve over time and attract art forms beyond music. As technology in the arts continued to break ground, the incorporation of diverse topics and tracks turned SXSW into a destination for technology, film, interactive media, and innovation as well as music. Today, SXSW brings together

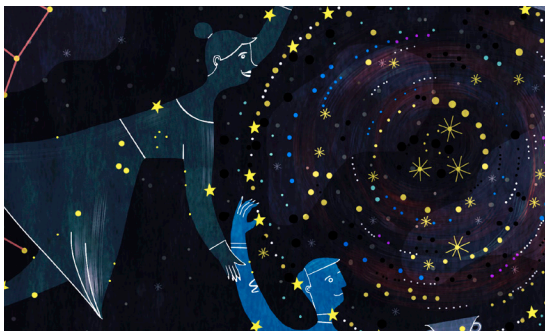
over 70,000 individuals each year to share their knowledge and build their networks in the service of advancement and innovation within media and the arts.⁴⁴

A clear mission is critical to attract additional ecosystem participants

A true innovation ecosystem approach typically includes a clearly articulated mission that attracts more actors and additional resources into the community. Harvard Kennedy School's Innovation in American Government Awards, for instance, were specifically established to recognize and award public sector innovation. Since 1985, the award has received additional funding, attracted 27,000 applications, and named over 500 winners. The award website highlights case studies to showcase learnings, and it added a new section in 2010 to encourage community problem-solving among peers. As a result of having a clear mission, the Innovation in American Government Awards have attracted additional funding and transformed from being a simple recognition platform to becoming an enabling and integrating resource for actors across the thriving public sector ecosystem.⁴⁵

Prioritize a thriving community of innovation over individual initiative success

Established in 1958, DARPA continues to be at the forefront of groundbreaking and transformative



ideas.⁴⁶ How is this agency able to continue to attract funding and teams from wide-ranging backgrounds to engage in short-term, highly impactful projects? DARPA focuses on and embraces innovation, including the many failures that accompany it. Its focus is not on producing successful outcomes each time; the many actors within DARPA understand that to succeed in innovation, failure should also be accepted. This blend of focused attention on a single project with short-term timelines, coupled with a culture of experimentation that holds that both success and failure can lead to learning and

are acceptable outcomes, continues to create long-term success.

Whatever role an organization chooses to play, viewing public sector innovation through an ecosystem lens can be a fruitful way to encourage sustainable innovation efforts among disparate but connected actors. It can empower them to determine which initiatives would likely be most effective at any particular time and allow them to interact with other ecosystem players in a productive and coordinated fashion.

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