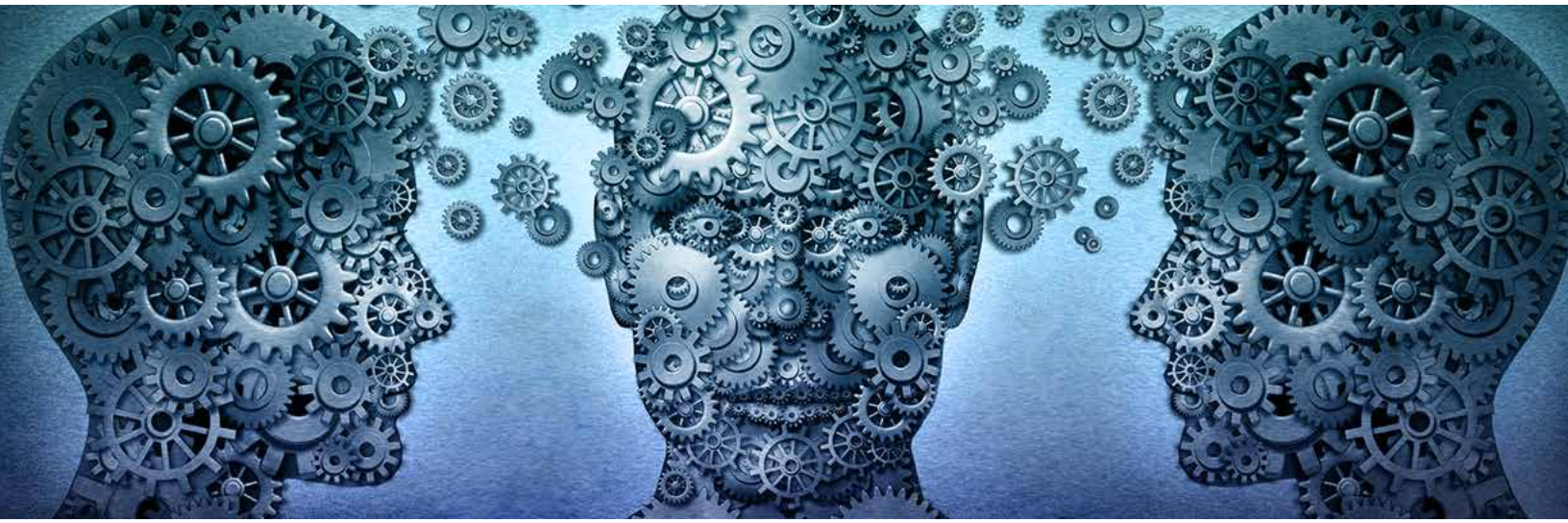
SOLUTION PAPER

INNOVATION CENTER



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What Is Innovation?

Innovation is doing something different to add value for a customer. It means adding a capability they value such as enabling them to do something new or better, learn something they need to know, connect to people, platforms, or systems. This is true for every type of customer an organization exists to serve—citizens, businesses, mission offices, buyers, other agencies or governments, and on.

Innovation is a broad topic and words used to describe it are confusing. It's talked about as a means, an end, a tool, a technique, and a capability. Without splitting hairs, let's say all those are relevant in different ways or at different times. But let's also clear-up some confusion.

Invention is the first notion to differentiate. If an invention adds value for someone, it's innovative. But not all innovations are inventions. Some were best practices in one field and cross-applied to another. Boxcars were on trains for a century before someone put them on ships and completely innovated transoceanic shipping.

Improvement is another one to distinguish. If the objective of a change is internal to an organization and not intended to add value for a customer, let's avoid confusion and call it improvement. Streamlining a process, upgrading equipment, adding resources to a task—these and similar improvements are unquestionably wise. But being your own customer isn't what it means to innovate. Improvements that add value for a customer? That's innovation.

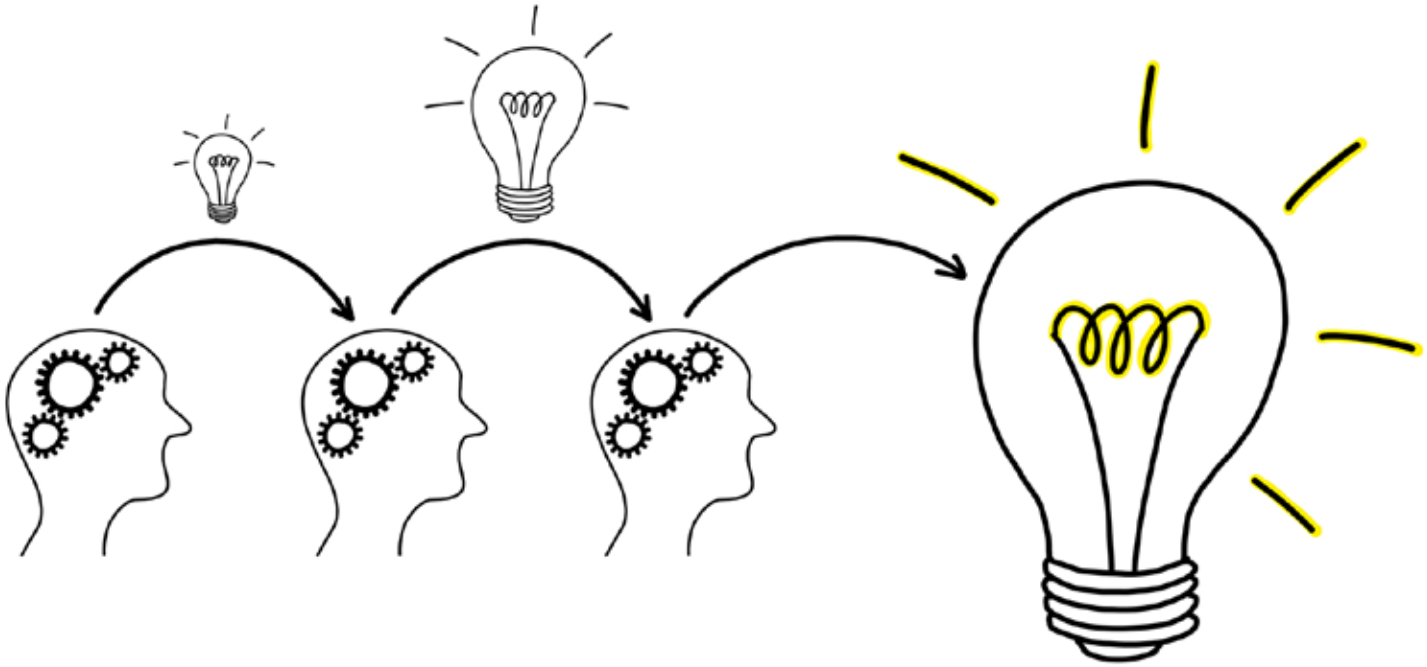
Technology is a big source of confusion. Some innovations are technologies. Most innovations use technology. But innovating an organization's business model or management practices can be more profound than deploying a new technology. Many innovations involve technology and non-technology solutions in a coordinated way. In fact, degrees of innovation are determined by whether and to what degree an organization changes both its business and technology models.

Here's a myth to bust: Innovation is creative, chaotic and can't be managed. Innovation surely requires creativity but isn't art, magic, or luck. It isn't subjective and you need not worry that defining it will constrain it. Innovation is a business proposition that can be planned, managed, measured, and linked to other organizational processes and objectives.

What Is an Innovation Center?

Organizations are standing up innovation centers as hubs of innovation activity. Some focus on R&D. Some on acquisition. What an innovation center is and does are business decisions each organization makes about how the center best closes a mission-critical capability gap. Regardless of what it's called or how it's organized and run, an innovation center fulfills basic functions:

- **Find and receive inputs** about customers, value, and potential innovations
- **Act on inputs** to manage strategy, innovation and organizational change processes
- **Produce outputs** in the form of innovations and learning which add value for customers and the organization



If you think in terms of space, an innovation center is a physical or virtual place where people work together to do these things. If you think in terms of people, an innovation center is the people who do them. One can also describe centers in terms of processes and tools, but you get the idea.

Essentially, an innovation center is where people work together to turn ideas into innovations. The notion of a center implies an organizational operation with the requisite roles, responsibilities, authorities, and resources to systematically do something different to add value for customers, on a sustained basis.

What's the Best Way to Organize an Innovation Center?

Innovation is a business proposition unique to each agency. The best way to organize and run a center depends on the business use to which it will be put.

Many potential uses exist. The difference between innovating acquisition and innovating R&D, for example, would require different definitions of value, customers, participants, stakeholders, pipeline management, and more. Even the difference between innovating *Veterans' health care* and innovating *rural Veterans' health care* can lead to surprising differences. The broader objective might include Veterans' benefit programs, for example, while the narrower objective might not.

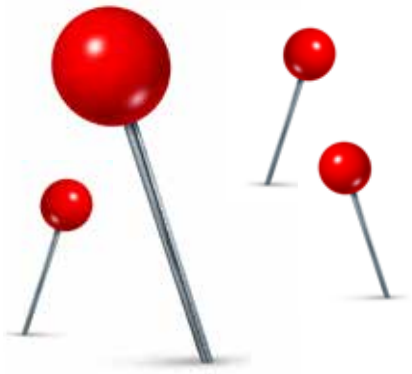
To further complicate matters, there are many business objective frameworks to consider. Classic business objectives are effectiveness, efficiency, quality, timeliness, and productivity. Operations management objectives are quality, speed, dependability, flexibility, and cost. Improving customers' digital experience is becoming broadly recognized as a priority government business objective. Then there are shared services, data analytics, security, cloud computing…Does it end?

Amidst this complexity and confusion, keep two principles in mind:

- Innovation is about the customer. This is the first thing that makes it a business proposition. Your organization exists to serve certain customers and it's already organized and operating to provide current value to them. Innovating further concentrates focus on the customer. You'll never stray far from center by iteratively and incrementally asking what you might do differently to add value for a customer. Focusing on the customer is a business proposition.
- Innovation is about your organization. This is the second thing that makes it a business proposition. Your organization is the place where product, service, customer, and value meet. It's also the place that will change to add value for a customer. But because there's no end to additional value customers would take, your organization must choose to do some things differently but not others. Or it must choose to add incremental value here and moderate innovation there. Changing the organization to innovate for the customer is a business proposition.

Standing Up the Center

GETTING ORIENTED



Standing up an innovation center is like orienteering. Orienteering is an outdoor activity in which one navigates to a destination across unmarked terrain. There are no trails, no signs. The challenge is to figure out how to get from where you start to a destination using just a map and compass.

Before beginning our crash-course in navigating an innovation center, here's an orienteering cheat-sheet:

NAVIGATION COMPONENT	NAVIGATION ACTIVITY
Your destination is a productive innovation center, stood up and ready to operate	Determine the destination and define "productive" using a requirements hierarchy; document using the hierarchy and additional formats, as needed
The terrain you navigate is the environment in which the center is stood up and will operate	Observe and clarify using graphics and descriptions of your organizational environment, the customer's, stakeholders' and relevant business and technology markets
Your trek is the set of activities you manage and perform to stand up the center	Determine using project management practices modified with innovation requirements
Your map is the phases and disciplines required to stand up the center	Fill in using the requirements hierarchy, strategic planning inputs and innovation requirements
Your compass is a set of tools which you use to take readings, adjust direction and proceed	Use by facilitating conversations to decisions, then implementing decisions

NAVIGATING YOUR WAY

Choosing a Destination

Standing up a center ready to operate productively begs the question of what *productive* means. Simply put, it's the right center for the right need at this time. That begs questions about what's right and how one would know, and that's where the requirements hierarchy helps.

Requirements hierarchies are often used to trace requirements in software development. You can find and use any framework, but I recommend the one below because it smoothly links *business requirements* to *design and technical requirements*. Influence flows in two directions:

↓ Requirements disaggregate in the downward direction where the relationship is one of "includes" or "bounds." A department mission includes or bounds a component mission. A performance requirement includes or bounds functional requirements.

↑ Requirements consolidate in the upward direction where the relationship is one of "is necessary for" or "supports the accomplishment of…" Meeting functional requirements is necessary to meeting performance requirements (but perhaps not sufficient). Meeting the component mission supports the department mission.

Here's an example for standing up a fictitious U.S. Coast Guard innovation center:

LEVEL	WHAT TO FILL IN	REQUIREMENTS
Department Mission	DHS mission statement	Lead a unified national effort to ensure a homeland that is safe, secure and resilient against terrorism and other hazards
Component Mission	Coast Guard mission statement	Protect the public, the environment, and U.S. economic interests in the nation's ports, waterways, coasts, international waters or any maritime region as required to support national security
Mission Need/ Capability Gap	Make a statement about a capability missing or lacking but which is required to satisfy the component mission. Can read like a strategic goal or objective, or problem statement.	Create a culture of innovation which produces cutting-edge solutions for operators
Capability Requirement	Make a statement of capability required to satisfy the mission need or close the capability gap. Should read like a solution statement.	Stand up a center where staff, customers, and stakeholders continuously collaborate to develop cutting-edge solutions for operators
Performance Requirement	Make a statement of outputs or outcomes which satisfy the capability requirement. May be multiple statements, but must be complementary.	Fill a pipeline of ideas in various stages of technology readiness by [date]; deploy one new cutting-edge solution by [date]
Functional Requirements	Make specific statements of what a solution should do to satisfy the performance requirement. Requires multiple statements.	Foster collaboration; foster innovation or inventive thinking; manage a pipeline; develop, design, and test solutions for deployment; etc.
Design Requirements	Make specific statements of how the solution should be designed to meet functional requirements. Requires multiple statements.	Create processes to solicit user needs, generate candidate solutions, manage the pipeline, determine ROI; define resources and core competencies required to operate; etc.
Material Requirements	Make specific statements of people, processes, tools, materials, etc. required to satisfy design requirements. Requires multiple statements.	Provide physical space to work at…; provide virtual space to work at…; determine protocols for; acquire equipment for…; store data in…; etc.

Requirements hierarchies aren't easy to fill out but they're worth investing the time and effort, early. No matter how challenging it might be to get agreement on words, it's more challenging later to get agreement on actions—and more costly.

How the Mission Need/Capability Gap and Capability Requirement are worded is **critical**. There are many ways to describe a need and a capability to meet it, and small wording changes can have big design and operation impacts. Compare the Mission Need/Capability Gap from above with a slightly altered alternative:

1. Create a culture of innovation which produces cutting-edge solutions for operators

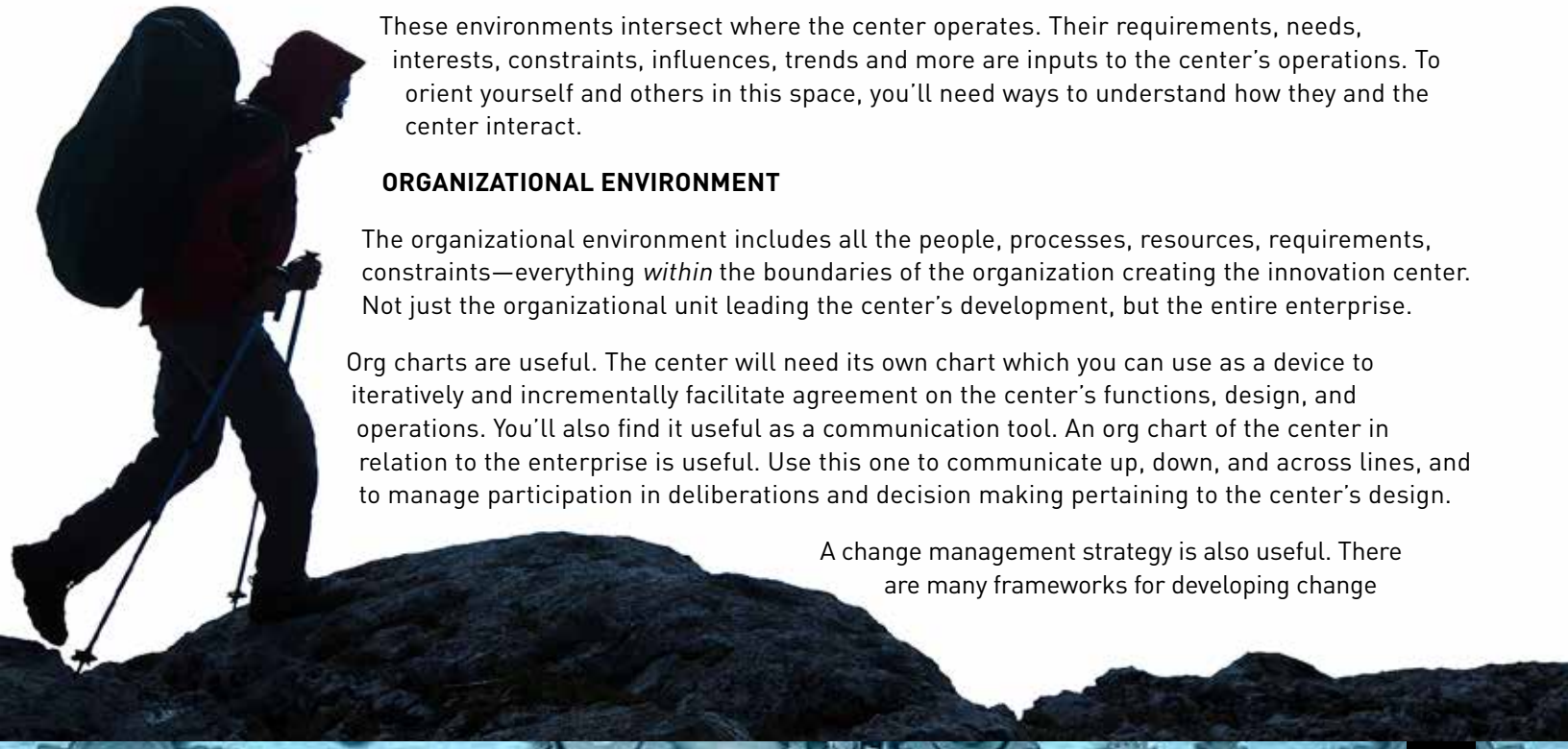
2. Create a culture of innovation which accelerates the transition of technologies from R&D to operators

Statement 1's broader framing opens up more possibilities. Statement 2 narrows the focus to R&D. Neither is more "right" unless one is better at helping the organization solve the right problem the right way, at a certain time. And if you think there's little difference between them, or no significant difference, fill in content for the Performance, Functional, Design, and Material requirements and watch differences grow! Because each lower level disaggregates the requirement above into specific conversations, decisions, and actions, small degrees of difference at one level multiply at lower levels.

Checking The Terrain

The terrain you navigate is the entire environment in which the center is stood up and will operate, which includes:

- Organizational environment
- Operational environment
- Relevant business and technology markets



These environments intersect where the center operates. Their requirements, needs, interests, constraints, influences, trends and more are inputs to the center's operations. To orient yourself and others in this space, you'll need ways to understand how they and the center interact.

ORGANIZATIONAL ENVIRONMENT

The organizational environment includes all the people, processes, resources, requirements, constraints—everything *within* the boundaries of the organization creating the innovation center. Not just the organizational unit leading the center's development, but the entire enterprise.

Org charts are useful. The center will need its own chart which you can use as a device to iteratively and incrementally facilitate agreement on the center's functions, design, and operations. You'll also find it useful as a communication tool. An org chart of the center in relation to the enterprise is useful. Use this one to communicate up, down, and across lines, and to manage participation in deliberations and decision making pertaining to the center's design.

A change management strategy is also useful. There are many frameworks for developing change

management strategies. Use one that helps people plan the center stand-up and manage impacts of *that* change to the broader organization.

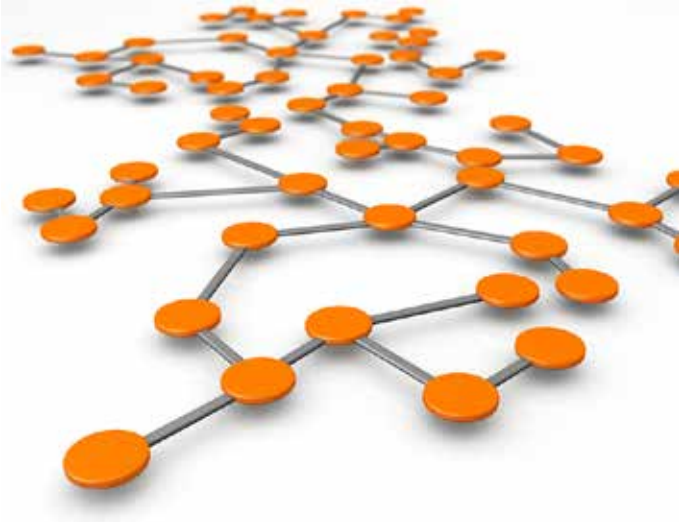
- Plan the center stand-up: Standing up the center will require decisions about strategy, structure, processes, systems, staff and skills, and tools. Your requirements hierarchy will tell you a lot about the *what* and *why* of these decisions. Your change management strategy will guide *how* you plan the center in four ways:
  - Thinking strategically about the future, continuous environmental scanning, customer benefit, business benefit, and alignment of the center to the enterprise organization
  - Managing innovation including leadership, communication, participation, organizing for innovation, creating and managing an innovation pipeline, creating and delivering value, and buying innovation
  - Managing business model change, technology model, behavior and culture, and risk
  - Managing organizational learning and continuous innovation
- Manage impacts to the broader organization: Standing up the center will impact the organization within which it exists. Your change management strategy should help you monitor and manage impacts along three dimensions:
  - Depth, or how far into the organizational structure/hierarchy change is felt
  - Size, or how many people are impacted
  - Extent, or the degree to which the center impacts fundamental aspects of the existing organization such as strategy, beliefs, values, assumptions, roles and responsibilities

OPERATIONAL ENVIRONMENT

The operational environment is where the innovation center's solutions are implemented and used. Actors in this environment include the center's customers, suppliers, partners and other stakeholders. Actors in this space also include customer's customers or targets, depending on the mission. In our Coast Guard example this would include bad guys operators chase, recreational boaters they assist, and so on. An acquisition innovation center designed to support contract officers and specialists would include requirements owners, general counsel and others in the operational environment. What follows focuses on the customer.

The customer's environment includes everything that impacts their role, responsibilities, authority, competencies, and activities – the things for which the innovation center should add value. As with the center, customers have requirements, needs, interests, enablers, constraints, influences, and forces operating on them that they must successfully manage to perform their job. An innovation center that does its job meets a mission need, or closes a

capability gap, that the customer has in his or her own requirements hierarchy.



There are many models from which to choose in organizing your thinking about the customer. It's useful to distinguish between primary and supporting customers. Primary customers are the entities that benefit by what your organization does. The programs, products and services you provide directly benefit primary customers, and innovation targets doing something different to add value for them. Supporting customers are the entities who care about how you serve primary customers. Government has many of these: Sister organizations, partner organizations, other federal/state/local government agencies, congressional members and committees, NGOs, watch dog groups, media/trade press—the list goes on. Innovating for primary stakeholders usually satisfies secondary customers' interests.

Among primary customers, it's also useful to distinguish **customer segments**. A segment is a subset of your customer, which justifies a product or service distinct from others. Segments are reached by different channels and require different types of relationships with your organization.

Finally, let's distinguish between internal and external customers. Organizations have both and while an innovation center can add value for either, it might be more likely to add value for internal customers who, in turn, add value for external customers. A center which does something different to add value for the warfighter, TSA screener, border guard, investigator, drinking water plant operator, etc. adds to the **value chain** which ultimately benefits citizens and businesses.

Understanding and mapping the customer experience, especially digital experience, is a growing priority in government and many agencies have developed or adapted models you can reuse. Various customer-centered and human centered design methods view the customer in ways more or less relevant depending on the purpose of the innovation center and nature of innovations planned. Pick one and use it to engage customers for ideas about the center's requirements.

RELEVANT BUSINESS AND TECHNOLOGY MARKETS

Innovation is doing something different to add value for a customer, and a center is a place to plan, execute, and evaluate innovation activity. A productive innovation center needs a pipeline of *things different*—candidate solutions in different stages of readiness capable of adding different value for different customers. Many will be technology solutions, but business model and process innovations should be part of the pipeline portfolio. Think recruiting, hiring, training, development processes, governance, analytics, decision making and many others.

Markets for technology and business innovations are everywhere. There are many in the commercial sector, the not-for-profit sector, and all of government—including state and local government. Relevant innovations might also be in overseas companies and foreign governments innovating beyond your organization's horizon.

Many government subject matter experts belong to and understand markets relevant to their work. These range widely across government missions to include satellites, ships, DNA research, finance systems, weapons, cloud IT, and many more. But candidate innovations exist in fields where government isn't engaged and wouldn't see them. Many agencies work hard at finding non-traditional partners for this very reason.

Another challenge is that there are too many markets to understand and track. Support functions would likely require innovations developed in markets altogether different than the markets for mission technologies. Agencies with very different missions might benefit by separate *and* related innovations, but chances are they originate in different markets. Government also leads some innovation—for example, cybersecurity, surveillance, governance, acquisition, and other inherent functions—but doesn't always connect the dots across its own large enterprise.

A center can manage these challenges by engaging its own subject matter experts in the areas it expects to innovate, and by communicating through networks to which they belong. A center can tap networks of networks this way and extend its reach. The investment community is an underutilized source of information about innovation generally, and about technology innovations in particular. Challenges, SBIRs, grants, FFRDCs, and R&D programs are avenues of innovation candidates. And a center would likely benefit from considering universities, professional associations, government associations, not-for-profits, trade press and other nodes in nontraditional networks that can source candidate innovations.

Making Your Trek

Your trek is the set of activities you manage and perform to stand up the center. Your requirements hierarchy identifies some activities and suggests many more. The hierarchy is summative however, so you'll need to document all the activities you can think of in a work breakdown structure (WBS) of some kind. Categories and lists, or an outline will do. The point is to get items out of your head and onto paper where you can see and manage them, and communicate about them.

In many respects, standing up a center is a project, and the Project Management Institute's PMBOK knowledge areas and management processes offer a solid framework. To traditional activities you can add these innovation requirements:

MANAGE STRATEGY

- Vision/imagine/re-imagine the future
- Identify customer value and benefit
- Identify business value and benefit
- Continuously scan the environment for enablers and constraints on strategy
- Connect dots in the requirements hierarchy and continuously monitor linkages

MANAGE INNOVATION

- Lead innovation
- Manage the requirements hierarchy
- Organize for innovation
- Create and manage value pipeline/portfolio processes
- Create and deliver customer value
- Measure value-add to the customer
- Measure value-add to the organization
- Buy innovation

MANAGE CHANGE

- Business model change
- Technology model change
- Behavior and culture change
- Sustaining innovation
- Communication management
- Risk management

MANAGE LEARNING

- Establish learning objectives
- Track and report learning
- Apply learning
- Disseminate lessons learned

These additional requirements will also help you fill out the requirements hierarchy, and vice versa. Many of these activities meet requirements for Functional, Design, or Material Requirements, or inform decision making about them. Meeting these additional requirements will help develop a productive innovation center, one which improves and eventually optimizes how your organization innovates.

Reading Your Map

Just as a topographic map contains lines of longitude and latitude, your map contains vertical time phases and horizontal sets of activities to be performed. And just as you use lat-long to orient yourself on a map, you can use the intersection of phases and activities to orient yourself and others to navigate standing up an innovation center.

There are many frameworks available for time phases. The PMBOK's Initiate, Plan, Execute, Monitor/Control, and Closeout are serviceable, except that the center shouldn't close following stand-up. Rational Unified Process (RUP) phases are also serviceable. While commonly applied to software and systems development, Inception, Elaboration, Construction, and Transition can be modified as good guides to center stand-up activities. Some RUP frameworks add Production and Retirement, which could be substituted with Operation and Evolution.

Activity sets are managing strategy, innovation, change and learning. The framework you choose will stipulate activities and additional activities to be performed are identified in Making Your Trek. Create a phase-activity matrix to locate any activity in relation to others, and to phases. This is especially important in iterative and processes, and will help you sync to requirements hierarchy iterations.

Whichever development framework you use, consider how it helps you accomplish and refresh requirements in the hierarchy. While hierarchy levels are not strictly temporal, work on them progresses over time through iterative and incremental deliberations and decisions. Your center development phases and activities should support them.

Another important read to make on your map is phase transitions. In addition to transitions as described by the framework you choose, the following conditions signal you're ready to transition to another phase of development:

1. Priority customers and stakeholders understand and support the requirements hierarchy down to the Performance Requirement, and project sponsors/decision makers approve the statements. Initial time, budget, and resource estimates can be made.

2. Priority customers and stakeholders understand and support the requirements hierarchy down to Functional Requirements, and project sponsors/decision makers approve the statements. As many functional requirements as possible are identified permitting more detailed time, budget, and resource projections. Project sponsors/decision makers commit an initial operating capability.

3. Priority customers and stakeholders understand and support the requirements hierarchy down to the Material Requirements, and project sponsors/decision makers approve the statements. Center structures, policies, procedures, and processes are under development. Time, budget, and resources estimates are updated and presented for approval.

4. Center structures, policies, procedures, and processes are tested in one or more scenarios or mock applications. The requirements hierarchy, structures, policies, procedures, and processes, and time, budget, and resources estimates are modified accordingly. The initial operating capability is determined adequate to proceed or is enhanced.

5. The center opens for full or partial operation. Following some period of operation, priority customers and stakeholders review initial performance against the requirements hierarchy and center structures, policies, procedures, and processes, with center staff and project sponsors/decision makers. Adjustments are made and operations continue at the same or increased pace. Full operating capability is committed now, if not by now.

6. Periodically during full operations, priority customers and stakeholders review center performance against the requirements hierarchy and center structures, policies, procedures, and processes, with center staff and project sponsors/decision makers. Adjustments are made and operations amended.

Using Your Compass

Your compass is a set of tools, which you use to take readings, adjust direction, and proceed. You use the tools by facilitating conversations to decisions. Your compass is composed of four tools you use to orient yourself to others to stand up of a productive innovation center.

1. **Definition.** The definition of innovation is your first and most basic tool. You should anchor everything to the three parts of the definition—doing something different, to add value, for a customer. Facilitating conversation around these will focus participants on the right things and help people regroup if they get lost in the process.

2. **Questions.** No one can do something different to add value for a customer without asking questions, and the definition gives you the most basic questions you can ask: What could I do differently, to add what value, for which customer? Those questions lead to many more.

   Also ask Why, What If, and How questions. **Why** questions reveal purpose, objectives, outcomes, or the ends to which we do something. **How** questions reveal means, steps, process ideas. **What if** questions reveal new ideas and possibilities. Asking Why, What If, and How questions will illuminate different angles and avenues into innovation. They're especially useful for turning conflicts and constraints inside-out and making them useful.

3. **Requirements.** Requirements are attributes of a product, service or system necessary to produce an outcome that satisfies a customer. In this case, the center is the product and its attributes are its people, structure, and operations. Filling out the requirements hierarchy will clarify your thinking and make your center more effective by aligning important means-ends relationships in design and operations.

4. **Reactions.** Doing something different predictably causes many reactions in many people—positive/negative, supportive/opposed, committed/resistant, and on and on. All reactions contain valuable information, particularly the not so favorable reactions. Reading the effect of your actions, and others, can regularly show you how you're doing to do something different that adds value for a customer. Tracking reactions you can iteratively and incrementally check where you are and where you're headed, as questions lead to conversations to decisions.

Looking Back

Treks are clearest when one looks back on them. From the vantage point of the destination one sees everything in perspective—what worked, what didn't, what to do differently next time. A useful planning technique is to look back from the start, and there are two ways to do this.

1. **Jump Ahead:** As part of deliberations leading to any decision, jump ahead and ask where the decision will lead if made in any of several ways. Imagine scenarios and trace them up the requirements hierarchy to see if a decision pending at any level successively supports the accomplishment of requirements in levels above. Sometimes a clear advantage emerges. Sometimes jumping ahead clarifies trade-offs for decision making. Or it might identify contingencies you can prepare for as you create and recreate conditions for successful innovation. Regardless, it will help illuminate uncertainties in your planning so you can convert them into risks and improve risk management for them.

2. **Backward Map:** As part of deliberations leading to any decision, start the conversation at the point where the rubber meets the road—where the decision is implemented by someone doing something. Describe the current activity that the strategy contemplates changing by discussing who presently does what, when and why. State what is undesirable about the activity performed that way, and what is triggering a need to change it. Then backward map the organizational enablers and constraints that produce or facilitate the undesired activity—from the point where the activity is performed all the way up to the highest controlling policy, procedure, regulation, law or even assumption or misinformation. This will illuminate aspects of the organization which the strategy should modify to enable desired behavior consistent with organizational innovation.

While nothing brings clarity like finishing, mentally positioning yourself some place other than where you are as you deliberate and decide can help you **unthink** what you believe you know and rethink it in profound ways.

Conclusion

Innovation is a business proposition, and the most effective innovation strategy offers strong support to business strategy. It envisions how innovation supports the mission. It devises ways to continuously add value to customers and the organization in a constantly changing environment. And it enables people to reconnect to one other and the mission.

I hope you found a few useful ideas and tips in this paper. Please write **Lou@GovInnovators.com**, and let me know if you did—and especially if you didn't!