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Despite employee's overwhelming positive response, bottom-up programs in the federal government routinely underperform expectations. Annual federal employee climate survey data suggest the problem is rooted in the lack of leadership support and low rate of ideas implemented. Successful programs need a holistic approach by: cultivating employees to explore and submit innovation ideas, ensuring leadership establishes positive support to the organization's innovation culture, and maximizing the exploration and implementation of innovation ideas. Restructuring bottom-up innovation programs to distribute the roles, responsibilities, and activities to the lowest levels of the organization should greatly enhance the overall performance.

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Tiered Innovation Structure:

A Method for Enhancing Bottom-up Innovation in the Federal Government

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OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF MILITARY STUDIES

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Executive Summary

Title: Tiered Innovation Structure: A Method for Enhancing Bottom-up Innovation in the Federal Government

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Thesis: Innovation programs at Department of Transportation, Transportation Safety Administration, Department of State, the Census Bureau, and Health and Human Services demonstrate similar focus on ideation while minimizing leadership, and implementation, the three leading factors of innovation, which is contributing to the individual and collective underperformance in innovation implementation.

Discussion: Since the 1950's, senior federal government leadership continuously establish bottom-up innovation programs to enhance the effectiveness, efficiency, and agility of its agency's operations. Senior federal government leaders invite employees to provide suggestions and recommendations, through bottom-up innovation programs, to improve the organization's operations. Despite the employee's overwhelming positive response, bottom-up programs routinely underperform. Annual federal employee climate survey data suggest the problem is rooted in, the real or perceived, lack of leadership support and low rate of ideas implemented. Successful programs need a holistic approach toward bottom-up innovation by: cultivating employees to explore and submit innovation ideas, ensuring leadership establishes positive support to the organization's innovation culture, and maximizing the exploration and implementation of innovation ideas. Restructuring bottom-up innovation programs to distribute the roles, responsibilities, and activities to the lowest levels of the organization should greatly enhance the overall performance and better meet leadership goals and expectations.

Conclusion: Establishing a tiered structure that emphasizes peer-to-peer support of innovation ideation, leadership, and implementation at the workforce level of an organization may enhance the quality and quantity of bottom-up innovation ideas explored and implemented.

DISCLAIMER

THE OPINIONS AND CONCLUSIONS EXPRESSED HEREIN ARE THOSE OF THE INDIVIDUAL STUDENT AUTHOR AND DO NOT NECESSARILY REPRESENT THE VIEWS OF EITHER THE MARINE CORPS COMMAND AND STAFF COLLEGE OR ANY OTHER GOVERNEMENTAL AGENCY. REFERENCES TO THIS STUDY SHOULD INCLUDE THE FOREGOING STATEMENT.

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Preface

I have observed, participated in, and led several bottom-up innovation projects in the federal government. These projects have ranged from implementing single employee's idea to streamlining the day-to-day tasks of a few employees to leading a multi-agency team implementing a critical data tool for policymakers. The success of each project relied more on the personalities of a few members than on an established structure. As such, each of these innovation projects recreated the proverbial wheel and, as a result, each effort took more time, energy, and resources than if it had been supported by a transparent and repeatable bottom-up innovation process and structure.

In this paper, I present and analyze lessons learned from other bottom-up innovation programs throughout the federal government documenting both the strengths and weaknesses of each approach. Then, I propose the tiered innovation structure which seeks to provide consistency, transparency, and repeatability to implement many of the great ideas the workforce.

I extend my appreciation and thanks to my Masters in Military Studies mentor and second reader for their support and guidance. Also, I must thank the Leadership Communication Skills Center at the Marine Corps University for the time they spent providing excellent feedback throughout the writing process. Lastly, and most importantly, a big thank you to my wife for her loving support and all the time she took reading and editing the many drafts. If it were not for the help from this entire support group, the ideas in this paper would not have seen the light of day.

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Introduction

In February 2016, at the Marine Corps Warfighting Lab (MCWL) innovation symposium, General Robert B. Neller, U.S. Marine Corps Commandant, told participants he wants to harness "disruptive thinkers."[1] He demanded that the Marine Corps find and support those who are often shunted for their creativity, out-of-the-box thinking, and challenging of the status quo and help them propose and implement ideas and solutions to a wide range of current and future challenges.[2] Seven years earlier, Secretary of State Hillary Clinton, at an employee town hall, announced an employee-led suggestion program and then issued an urgent request, and not an invitation, to "submit your concrete ideas for … reforms and improvements."[3] These two events bookend a recent surge of effort, that started in part as a response to the 2008 financial crisis to establish means for employees to contribute their ideas to improve the efficiency, effectiveness, agility, and resiliency of their organizations.

In the last decade, countless government agency and military service senior leaders have institutionalized programs to collect employee innovation ideas. The Environmental Protection Agency (EPA) website, "Innovation Across the federal government," captures a list of twenty such innovation programs throughout the federal government that aim to cultivate and reward innovative ideas generated by employees or through public crowd-sourcing.[4] The list is not comprehensive and does not take into account the countless other formal and informal efforts to capture, select, and develop ideas that exist in most agencies and military services. In particular,

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[1] Lance Bacon, "Permission to Make Waves: Commandant Looks to Disruptive Thinkers to Fix the Corps Problems," *Marine Corps Times*, March 21, 2016, 19. Disruptive thinkers, bottom-up, employee-led, and problem solvers are all terms used interchangeably to describe innovation efforts and programs that harness ideas and solutions from the workforce.
[2] Ibid.
[3] Hilary Rodham Clinton, "Town Hall Meeting at the Department of State," (Remarks, Dean Acheson Auditorium, Washington, DC, February 4, 2009).
[4] United States Environmental Protection Agency, "Innovation Across the Federal Government," last accessed January 14, 2017, https://www.epa.gov/innovation/innovation-across-federal-government.

the list does not reflect the ideation programs of the Department of Transportation (DOT), Transportation Safety Administration (TSA), Department of State (DOS), U.S. Census Bureau, and Department of Health and Human Services (HHS). Many government and innovation industry publications regard these five agencies as leaders of employee-led innovation efforts in the federal government.

However, the details reveal that the agencies running these innovation programs are drastically underperforming in actual innovation. In total, the five programs implemented only 1.5% of the nearly 21,500 ideas captured.[5] To put this into context, in Fiscal Year 1992 the implementation rate of federal employee suggestions was 28% out of 91,000 ideas submitted.[6] The current low rate appears to indicate that organizations are not developing, cultivating, and managing innovative actions, behaviors, and structures that promote an organization's innovation culture. As General Neller identified to the innovation symposium audience, the current culture in the Marine Corps does not support innovation, and that needs to change.[7] If change does not occur, then participating employees may no longer see value in their efforts, which may result in further stagnation of bottom-up innovation.

This paper will critically examine bottom-up innovation programs at DOT, TSA, DOS, the Census Bureau, and HHS as representative programs within the federal government. These five programs all demonstrate similar failures to balance ideation, leadership, and implementation, the three leading factors of innovation, which is contributing to the individual and collective underperformance in innovation implementation. Lastly, this paper proposes the

[5] Percentage calculated using innovation program data at DOT, DOS, HHS, TSA, and Census Bureau to determine total number innovation ideas submitted and implemented.
[6] Committee on Performance Management and Recognition, *Good Ideas: A User's Guide to Successful Suggestion Programs* (Washington, DC: Interagency Advisory Group, 1995), 34, https://www.opm.gov/policy-data-oversight/performance-management/reference-materials/historical/successful_suggestion.pdf.
[7] Bacon, *Marine Corps Times*, 22.

tiered innovation structure program as a new comprehensive approach to bottom-up innovation that incorporates equally the factors of innovation while also increasing the implementation rate of bottom-up innovation ideas. The tiered innovation structure program establishes elements at the workforce-level, mid-level, and enterprise-level to empower the workforce and create opportunities to explore, select, and implement proposals of varying scope and impact. Each level working individually and in concert with the others will vastly increase the number of proposals evaluated and supported. An organization that establishes this type of program should anticipate an increased rate of innovation ideas implemented and a supportive innovation culture throughout the organization.

Review of Existing Innovation Programs

The demand and surge of innovation programs in the federal government is not new; similar programs have existed under different names, with similar goals, since the Government Employees' Incentive Awards Act of 1954. The Act established the means and legal ability for Agencies to encourage employees to provide suggestions that enhance the effectiveness and efficiency of government operations.[8] Programs that grew out of the Act focused primarily on collecting, evaluating, and awarding employees for suggestions that yielded large-scale cost saving. In 1992, President William J. Clinton initiated the National Performance Review program that, in part, challenged federal employees to identify and recommend cost saving ideas.[9] By the end of the 1992 Fiscal Year, the program implemented a much higher percentage of ideas, 26,000 out of the 92,000, submitted by federal employees.[10]

[8] Committee on Performance Management and Recognition, *Good Ideas, 3.*
[9] *Ibid,* 1.
[10] *Ibid*, 34.

While most innovations and suggestions focus on cost-saving efforts, the workforce has many more un-adopted innovation ideas to improve services, efficiencies, and effectiveness of an organization. Yet, these ideas are typically disregarded because the impact is not associated with cost-saving measures or the scope and impact are too small or insignificant to justify the effort. Bottom-up innovation programs need to focus effort on capturing and implementing ideas that provide a wider range of benefits, anywhere from streamlining an individual's day-to-day tasks to saving millions of dollars across the organization.

Innovation programs at the Department of Transportation, Transportation Safety Administration, Department of State, the Census Bureau, and Health and Human Services all epitomize the current employee-focused innovation programs in the federal government. The following pages provide a general overview of each agency's bottom-up innovation program, focusing on organization goals, methods, and implementation rates. Former President Barack Obama encouraged other agencies to use these programs as models to implement new innovation programs across the government.[11]

The Department of Transportation established IdeaHub in 2010 as an online tool for employees to submit, review, comment, and rate ideas that focus on improving how the organization achieves its mission.[12] IdeaHub goals are to provide the venue to identify ideas that do any of the following for the Department: cut costs, increase productivity, or increase agility.[13] Additionally, the program aims to provide a platform for greater engagement and collaboration, without filtering, vertically and horizontally, across the organization.[14] Employees submit,

[11] Brian C. Deese, Acting Director, Office of Management and Budget, to Heads of Executive Departments and Agencies: Management Agenda Priorities for the FY 2016 Budget, memorandum, July 18, 2014; Best Places to Work in the Federal Government, *Innovation*. (Washington, DC: Partnership for Public Service, 2015), 5.
[12] US Department of Transportation, "IdeaHub: A World of Ideas," *Office of the Chief Information Officer*, last accessed January 14, 2017, https://www.transportation.gov/cio/ideahub.
[13] *Ibid*.
[14] *Ibid*.

comment, and vote on innovation ideas using the online tool. The IdeaHub Liaisons and Innovation Council then select the most popular employee-rated ideas for the leadership to implement.[15] By 2015, the IdeaHub adopted 100 innovation ideas out of the 7,500 submitted by employees.[16]

In 2007, the Transportation Safety Administration introduced IdeaFactory as a digital forum for employees to submit and collaborate on innovative ideas across the organization.[17] The goals of the program are to enhance employee engagement, improve organizational agility to meet mission goals, and establish a forum for effective communication across the workforce.[18] IdeaFactory focuses specific attention on the communication aspect of the program by providing Senior Leadership with the venue to debunk myths and provide detailed explanations and details to specific submissions.[19] IdeaFactory relies on self-policing and moderators to ensure civil, productive, focused participation.[20] Participation data is only available for the period of 2007 through 2009, in which the IdeaFactory Innovation Council and Senior Leadership implemented 40 of the 9,000 ideas submitted.[21]

In 2009, newly-appointed Secretary of the State Hillary Clinton created the Sounding Board program and website at Department of State as an effort for employees to share concerns and innovative ideas.[22] The program emphasized the need to enhance vertical and horizontal communication across the enterprise, provide a means to alert management of issues, allow the

[15] US Chief Information Officer Council, "Making the Web Work for DOT: IdeaHub," *CIOC Blog*, October 8, 2010, https://cio.gov/making-the-web-work-for-dot-ideahub/.
[16] *Ibid*.
[17] The White House, "IdeaFactory," *Open Government Initiative*, last accessed January 14, 2017, https://www.whitehouse.gov/open/innovations/IdeaFactory.
[18] *Ibid*.
[19] *Ibid*.
[20] Ben Bain, "Case 2: TSA's IdeaFactory," *Federal Computer Week* 22, no. 5 (2008): 27.
[21] The White House, Open Government Initiative.
[22] Kerry O'Connor, Molly Moran, and Corey Martin, "Sound Ideas: Department Uses Social Media to Make Improvements," *US Department of State: State Magazine*, December 2008, 18.

management to provide feedback and dispel myths, and harness ideas that improve how the agency executes its mission.[23] Innovation ideas submitted need to address both the benefits of implementation, to include potential cost savings, as well as any requirements and hurdles.[24] Between 2009 and 2012, the Sounding Board implemented 82 projects out of the 2,840 ideas submitted.[25] In 2009, a mere ten months into the program, the Sounding Board staff reported that it was unable to respond to the high volume of submitted ideas which slowed its ability to meet the demands to review and recommend suggestions for implementation.[26]

The U.S. Census Bureau created the Innovation and Operational Efficiency (IOE) program to harness employee led solutions for specific leadership identified problem sets. These challenges range in focus from creating cost-savings efforts to enhancing operational efficiency.[27] However, the program does not restrict participation and suggestions to just the identified challenge areas.[28] The IOE team sends all ideas not related to open challenge areas to the Census Solution Box (CSB) for future consideration.[29] Additionally, the IOE team is responsible for the reviewing all submissions, regardless of application toward an open challenge area or for the Census Solution Box.[30] The team then selects ideas for consideration and possible implementation by Bureau leadership.[31] The IOE team communicates trends found in the CSB that may identify areas for leadership to address either through communication, non-challenge-related implementation, or creation of a new challenge area.[32] In the six years since it began, the

[23] *Ibid*, 18-19.
[24] *Ibid*, 19.
[25] Fergus Hanson, "Baked In and Wired: eDiplomacy@State," *Brookings Institute Report*, October 25, 2012, 35, https://www.brookings.edu/wp-content/uploads/2016/06/baked-in-hansonf-5.pdf.
[26] O'Connor, Moran, and Martin, "Sound Ideas," 19.
[27] Jane Callen, "The U.S. Census Bureau: Driving Cost Savings and Operational Efficiency by Leveraging Employee Creativity and Innovation," *Department of Commerce* (blog), July 13, 2016, https://www.commerce.gov/news/blog/2016/07/us-census-bureau-driving-cost-savings-and-operational-efficiency-leveraging.
[28] *Ibid.*
[29] *Ibid.*
[30] *Ibid.*
[31] *Ibid.*
[32] *Ibid.*

program has implemented 113 projects out of 2,145 ideas submitted, resulting in over $33 million in savings.[33]

The Health and Human Services (HHS) agency innovation program Ignite Accelerator provides a unique approach to bottom-up innovation, and it takes a similar approach to entrepreneurial challenges. Ignite Accelerator participants submit idea proposals, that range from testing new business theories to developing a new product or service, for selection in one of two development cycles each year.[34] Selected proposals receive a budget of $10,000 and access to business and academic mentors to refine, experiment, test, and mature the idea for six months.[35] At the conclusion of the six-month period, the team meets with leadership to report the findings and propose next steps, which might include continued research, implementation, or termination of the idea.[36] Between 2013 and 2016, Ignite Accelerator selected seventy-one team proposals out of 362 submitted.[37] Ignite Accelerator's unique benefit is the end-to-end approach that includes the employee through the entire process, whereas other programs summarized above appear to use a separate team, that does not generally include the employee, for implementation.

Employee feedback is an effective method to measure the value and benefit of employee engagement and bottom-up innovation programs. Annually, the Partnership for Public Service, Deloitte, and Hay Group analyze the Office of Personnel Management's annual Federal Employee Viewpoint Survey and compiles survey questions into ten categories, of which half provide measurements of employee perception of the organization's ability to empower, support,

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[33] National Academy of Public Administration, "Implementing Innovation in Government," *Political Appointee Project*, last accessed January 14, 2017, http://politicalappointeeproject.org/commentaries/your-agency-operations/5-implementing-innovation.html.

[34] U.S. Department of Health and Human Services, "Ignite Accelerator: About," *HHS Idea Lab*, last accessed January 14, 2017, https://www.hhs.gov/idealab/ignite-accelerator/.

[35] *Ibid.*

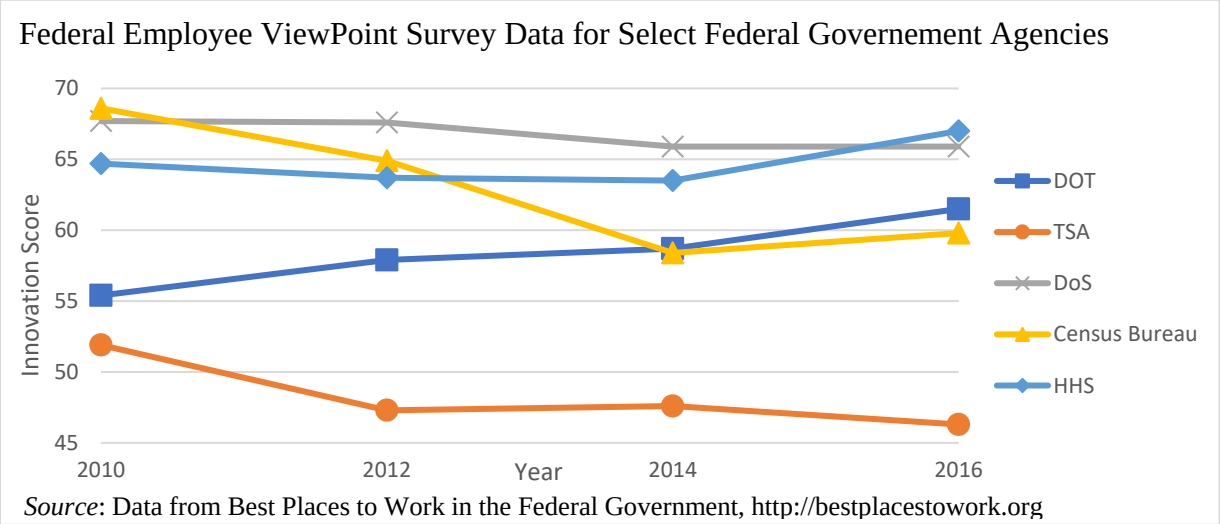
[36] *Ibid.*

[37] U.S. Department of Health and Human Services, "Ignite Accelerator: More Information & FAQS," HHS Idea Lab, last accessed January 14, 2017, https://www.hhs.gov/idealab/ignite-accelerator/more-info/.

and implement innovation.[38] Though they provide an innovation score, the combination of effective leadership, supervision, work-life balance, and empowerment scores all combine to measure an organization's innovation culture.[39]

Applying the Partnership for Public Service data and analysis to the innovation programs at DOS, DOT, TSA, HHS, and Census Bureau reveals that only DOT and HHS have positive innovation score trends while the remaining agencies are strongly declining (figure 1).[40] DOS, TSA, and Census Bureau all demonstrate consistent declines in support for creativity and empowerment (effective leadership), involvement in decision-making (empowerment), and work load (work-life balance). In contrast, both DOT and HHS scores in these same three areas increased at the same rate as the overall innovation score.[41]

Figure 1. Innovation Scores by Year



Source: Data from Best Places to Work in the Federal Government, http://bestplacestowork.org

The innovation programs at DOS, TSA, and the Census Bureau have similar characteristics that may explain the changes in employee perception and declining scoring of

[38] Best Places to Work in the Federal Government, *Innovation*. (Washington, DC: Partnership for Public Service, 2015), 1.
[39] Best Places to Work in the Federal Government, *Innovation*, 2.
[40] Best Places to Work in the Federal Government, "Government-wide analysis: Category Findings," Partnership for Public Service, last accessed January 15, 2017, http://bestplacestowork.org/BPTW/analysis/categories.php.
[41] Ibid.

their agency's innovation culture and may provide lessons learned for other agencies. First, both DOS and TSA use the innovation program primarily as a means of communication between leadership and the workforce and to a lesser amount a means of generating bottom-up innovation. Specifically, leadership in these two agencies use the venue to dispel myths that may arise when employees submit or comment on innovation ideas. Second, although the three agencies have established effective ideation efforts (collectively the programs generated 14,000 ideas), each uses highly restrictive selection and approval processes required for implementation. The workforce may interpret these actions by leadership as undermining the intent of bottom-up innovation efforts because leadership focuses on dispelling myths or selecting and implementing only a small percentage of workforce-led ideas. The Partnership for Public Service analysis of government-wide innovation scores draws similar conclusions: the data show that 90% of the workforce strive to do their jobs better, while only 54% feel encouraged by management.[42]

Leading Factors of Innovation

At its core, bottom-up innovation is about ideas: how employees generate and capture ideas, how leadership reacts and supports ideas, and how the program selects and implements ideas. To establish or improve an innovation culture, each of these factors must operate and perform in a supportive manner. If they do not, then each will inhibit innovation and eventually erode the organization's innovation culture. This section will briefly review the role and importance of ideation, leadership, and implementation as they apply to bottom-up innovation.

[42] Best Places to Work in the Federal Government, *Innovation*, 2.

Ideation

The foundation of innovation programs is the generation and capturing of ideas. Without ideas, be it creative, disruptive, or problem-solving thinking, innovation does not exist. Therefore, bottom-up innovation programs must focus on cultivating innovation ideas from the entire workforce. The unique nature of an organization's workforce and innovation culture makes cultivating ideas more of a nuanced art than science. Leadership plays a significant role in establishing trust and empowering the workforce to participate. Although not everyone will consider themselves creative, disruptive, or problem-solving thinkers, leadership should focus on maximizing workforce participation in the ideation process. The state of ideation in an organization can inform leadership of the health and needs of the innovation culture by examining the volume of ideas and the ratio of workforce participation

A workforce that generates and submits too few ideas may point to a disenfranchised or demoralized workforce who have experienced unsupportive conditions in the past. These individuals withhold ideas and suggestions because past experiences have not yielded returns on time invested and therefore become resistant to wasting any more time with new unproven programs. Alternatively, some individuals may have experienced supervisors that have directly or indirectly labeled them as troublemakers for their out-of-the-box thinking. In these cases, the individuals, and potentially others who have witnessed but were not subject to ridicule, may resist providing ideas. Demonstrating value and equal consideration for all ideas may start building the employee's trust in leadership. Leadership needs to establish trust, and the workforce needs to experience return on their invested time.

An innovation program that generates too many ideas is at just as much of a risk of failure or success as one that generates too few ideas. The crossing point between success and

failure lies in leadership and the implementation program. Leadership that focuses too intently on generating high volumes of ideas, without an equally robust implementation program, is likely to underestimate the issues that may result. The DOT IdeaHub is a prime example. The program boasts of a catalog of over 7,500 ideas, yet has only implemented 100 over a six-year period.[43] While detailed statistics are not publicly available, it is not a stretch to infer that a significant portion of the remaining ideas have little applicability to the goals and objectives of the program and therefore will never be selected for further review or implementation. The result is similar to organizations that generate or submit too few ideas; researchers found that over time employees who do not experience validation or return on the time invested will become disenfranchised with the process and will stop participating making the current and future ideation programs less successful.[44]

Leadership

In the article "The Imperative for a Culture of Innovation in the U.S. Army: Adapt or Die," Brigadier General David A. Fastabend and Robert H. Simpson suggest that "all members of an organization need to feel their contributions toward improved organizational capability are welcome and taken seriously."[45] This statement perfectly captures the ideal role and responsibility of all leadership in the innovation process of the organization – providing a supportive environment to create, explore, experiment, and implement innovative ideas. If employees are the core of bottom-up innovation in an organization, then the leadership must

[43] US Chief Information Officer Council, "Making the Web Work for DOT: IdeaHub," *CIOC Blog*, October 8, 2010, https://cio.gov/making-the-web-work-for-dot-ideahub/.
[44] Julian Birkinshaw, Cyril Bouquet, and Jean-Louis Barsoux, "The 5 Myths of Innovation," *MIT Sloan Management Review* 52, no. 2 (2011): 45.
[45] David A. Fastabend and Robert H. Simpson, "Adapt or Die," *Army* 54, no. 2 (2004): 22.

provide the means and support for innovation to flourish. Table 1 summarizes leadership roles and responsibilities that typically develop and support innovation cultures.

Table 1. Leadership Roles and Responsibilities

Trust	• Support risk taking • Support failure as an acceptable and valuable part of the innovation process • Support capture of lessons learned • Demonstrate all innovation ideas have value
Accountability	• Hold all leadership accountable for supporting and empowering innovation • Provide meaningful recognition
Empowerment	• Provide autonomy to employees for innovation efforts
Time & Space	• Provide room for experimentation and implementation • Provide room for declaration of success or failure
Communication	• Provide clear, frequent, and consistent messaging • Provide positive messaging of successes, failures, and lessons learned

Leadership, through these roles and responsibilities, impacts the entire innovation process to include initially establishing the program; empowering employees to develop and submit ideas; providing room and means for idea development and experimentation; providing the tools, processes, and authorities for idea implementation; and finally communicating and recognizing the efforts, successes, failures, and lessons learned across the organization. While these leadership activities are supportive of innovation in an organization, if they are performed poorly, incompletely, or inconsistently, these activities can become inhibitors to the innovation process.

Implementation

Thomas Edison suggested that 99% of innovation is in the implementation of ideas. Yet, as demonstrated by the innovation programs at DOT, DOS, TSA, and the Census Bureau

implementation makes up less than 2% of the effort.[46] In order to achieve the stated goals of each of these agencies to leverage bottom-up innovation to increase the effectiveness, efficiency, and agility of the organization, implementation efforts must increase significantly. This is achievable by opening the aperture during the selection process and providing flexibility to address the range of resource needs for implementation.

Innovation ideas the workforce provides can range from improving a day-to-day task that impacts an individual or small group to developing a tool or process that may impact a significant portion of the enterprise. Innovation programs at DOT, DOS, TSA, and Census Bureau rely on small groups, or councils, to handpick candidate ideas as proposals for senior leadership to select and implement. This becomes a highly selective and restrictive process that arguably will focus on ideas with the largest cost-benefit ratio.

Just as not all innovation ideas are equal, neither are the requirements and resources needed for implementation. Resource demands can range from obtaining a manager's approval for an alternate process to requiring money, time, or specialty knowledge. An implementation process that is scalable and flexible enough to provide unique resources will increase the number and range of ideas realized.

A solution to increase the rate of implementation is to increase the number, breadth, and depth of selection councils throughout an organization. Each council will have specific authorities and range of resources to approve ideas for implementation. This will provide the innovation program with the greatest effort to realize the innovation ideas provided by the workforce and achieve the greatest scale impact.

[46] Percentage calculated using innovation program data at DOT, DOS, HHS, TSA, and Census Bureau to determine total number innovation ideas submitted and implemented.

Ideation, leadership, and implementation are all leading factors that work in cooperation with, and that are dependent on, each other. If managed and executed well, they will support an innovation culture that will provide energy, successes, and longevity to the innovation program. However, if too much or too little emphasis is applied to any of the factors then the result will likely inhibit innovation. The analogy of the three-legged stool appropriately illustrates the effects of a balanced approach. If each factor constitutes a leg of the stool and one of those legs is longer or shorter than the rest, then the stool will likely collapse when pressure is applied.

The declining innovation scores in the Federal Employee ViewPoint Survey for DOS, TSA, and the Census Bureau demonstrates the potential effect of an imbalance between the ideation, leadership, and implementation.[47] Each of the three agencies innovation programs emphasized ideation over implementation. Combined the three agencies implemented less than 2% of the 14,000 ideas submitted.[48] The ViewPoint survey data reflects the declining support by the workforce because their efforts are not appropriately supported by leadership or the program. If these agencies decreased the previously depicted bottleneck in the selection process and provided a broader, more flexible implementation program than the stool would stabilize.

Tiered Innovation Structure Solution

This paper presents the case that bottom-up innovation programs most effectively reach organizational goals of improving employee engagement and enhancing operations when the program focuses effort on exploring and implementing a higher percentage of the innovation ideas. The innovation programs at TSA, DOS, and DOT demonstrate that an unbalanced

[47] Best Places to Work in the Federal Government, *Innovation*, 2.
[48] Percentage calculated using innovation program data at DOS, TSA, and Census Bureau to determine total number innovation ideas submitted and implemented.

approach to ideation, leadership, and implementation affects the number of innovation ideas explored and implemented, which can result in an underperforming innovation program and a weak innovation culture that can become further despondent and unsupportive of future efforts. The tiered innovation structure system proposed in the following sections creates an innovation program with multiple layered components throughout an organization with balanced ideation, leadership, and implementation efforts in order to explore and implement large volumes of innovation ideas. To do this, the system places specific emphasis on providing end-to-end innovation support at the workforce level instead of innovation programs that centralize key processes at the upper levels of an organization. With focus on the workforce, the tiered innovation structure system can increase the number of bottom-up innovation ideas selected, matured, and implemented, thus achieving senior leadership goals of improving employee engagement and increasing the effectiveness, efficiency, and agility of the organization.

The tiered innovation structure system embeds end-to-end innovation processes of ideation, leadership, and implementation by establishing key groups of innovation leaders, resources, and processes strategically within the organization. The system structure, depicted in Chart 2, illustrates the three tiered components, as well as the relative size, relationship, and interaction of each across the organization. The Subject Matter Expert Innovation Committees (SMEIC) form the foundation of the system from within the workforce level and provides the bulk of innovation process and implementation support. The Mid-Level Innovation Councils (MLIC) consists of

Figure 2. Tiered Innovation Structure

middle managers who focus on providing innovation leadership, empowerment, and support to the SMEICs. The Enterprise Level Innovation Program (ELIP) is the overarching element that fosters and empowers innovation across the entire organization. Each element of the tiered innovation structure program works independently and also in concert with other tiers to achieve the organization's bottom-up innovation goals.

Subject Matter Expert Innovation Committee (SMEIC)

The first level and foundation of the tiered innovation structure program is the Subject Matter Expert Innovation Committee (SMEIC), which serves as the entry point for the workforce to submit, explore, mature, develop, and implement bottom-up innovation ideas. The primary focus and effort is to service innovation ideas that would not normally meet the highly restrictive selection, prioritization, and implementation requirements of a typical centralized innovation program. Embedded within the workforce, the SMEIC provides a platform and direct process for employees to explore, mature, and implement a broader range of innovation ideas.

The SMEIC is structured to operate and service work units of approximately 100 employees. This equates to establishing a SMEIC in each division in a civilian agency or each company in a military service. Operating at this level attempts to balance benefit of innovation demands with the impact of manpower resources required to staff the SMEIC. Placing the SMEIC any lower in the organization is unlikely to provide any more value to the workforce while requiring more manpower to create and maintain more SMEICs. Conversely, elevating and establishing the SMEIC higher in the organization will increase the distance between the SMEs and the day-to-day mission related innovation ideas the workforce is generating.

Membership of each SMEIC is composed of a small number of non-management subject matter experts that can represent a cross-section of job functions and mission expertise of the specific work unit. The members are volunteers that may have experience, education, or training in change management processes, but it is not required. Individuals may have innovative mindsets themselves but more importantly they possess the passion and ability to serve as champions and mavens of bottom-up innovation efforts. The positions are a collateral duty in which management enables by establishing a percentage of duty time for SMEICs activities.

Organizations have flexibility to establish and maintain as many SMEICs as required to sustain the bottom-up innovation culture. Large organizations with a highly active innovation culture may require a higher ratio of SMEICs to employees while other organizations may operate efficiently with only a few. The key is to establish and staff SMEICs to develop and maintain the innovation culture. SMEICs are crucial as they are the foundation of the organization's innovation program and will provide direct assistance, resources, and experience to support the workforce and culture.

The SMEIC's mission is to support innovation within the specific workforce unit. As the principal entry point for employees into the organization's innovation program, the SMEIC will assist employees with the process of proposing new ideas, exploring applicable lessons learned, preparing the idea for experimentation, assisting with implementation, and aiding in measuring the idea's effectiveness once implemented. SMEICs also function across the entire enterprise as an interconnected community to enhance servicing its own work unit but also assisting other SMEICs. Networked together the SMEICs have at its disposal the awareness, expertise, and applicability of a wide range of existing tools, skills, processes, lessons learned, and other implemented ideas. If the innovation idea exceeds the knowledge or resources of the SMEIC,

then the SMEIC will help the employee package and present the innovation idea to the Mid-Level Innovation Council (MLIC).

The benefit of this structure is that it decentralizes the innovation program and connects the entire workforce to custom SMEICs that are aligned to their unit's specific and unique mission. The SMEIC is then able to direct efforts specifically on innovation ideas that would not normally meet the enterprise-level innovation program priorities and thus would not be implemented. Innovation ideas addressed at this level improves the opportunity that employees can make tangible improvements to their day-to-day tasks.

Mid-Level Innovation Council (MLIC)

The Mid-Level Innovation Council (MLIC) functions in the second tier of the structure and serves as the organization's innovation leadership core. As the central leadership component for multiple subordinate SMEICs and the workforce, the MLICs employ the leadership roles and responsibilities to foster the innovation culture within the group. Additionally, the MLIC assists in implementing innovation ideas presented by the SMEIC or help advance larger or resource intensive ideas to the ELIP. In total the MLIC is responsible for empowering innovation in the SMEICs and across the workforce.

The MLIC is responsible for overseeing and supporting groups of SMEICs aligned within specific organizational structure, such as an Office for civilian agencies or within battalion headquarters in the military (figure 1). For instance, in a civilian agency, the MLIC exists within the Office and will support all SMEICs within its structure. Placement at the Office level best leverages both management and non-management senior leaders, their expertise, and organizational resources. If the MLIC exists higher in the chain of command, then the distance

from the SMEIC and day-to-day mission increases and the knowledge becomes more generalized, which would likely decrease the leadership's ability to understand and influence innovation.

The MLIC is a small team staffed by managers and senior technical positions that represent a cross-section of job functions and missions performed by the subordinate SMEICs. The assigned members serve on a team for a defined period and before assuming the position must possess or complete at least an introductory level training in change management systems, such as Lean Six Sigma or Total Quality Management. Members with change management training and background should enhance the effectiveness developing, empowering, and supporting an innovation culture. Employing fixed period rotational assignments for members reduces the potential impact of performing the collateral duty.

The MLIC primary mission is to perform as the organization's core innovation leadership team. All of its actions need to work toward building the workforce's trust in the innovation program. It also needs to enforce accountability across all leadership and management to ensure everyone, regardless of level of interaction, is supporting and empowering their subordinates' innovative ideas and activities. The MLIC should expend significant effort providing clear, frequent, and consistent messaging of the across their domain

The MLIC role is greater than providing leadership, it also has the ability to take over the processing of innovation ideas that extend beyond the abilities of subordinate SMEICs. Positioned at the civilian office or military battalion level, MLICs have access, control, and authority over manpower and monetary resources to support exploration, experimentation, and implementation of innovation ideas. Allocating these resources may be reserved for ideas that have greater application and impact across the office, battalion, or larger organization. If an

innovation idea requires greater resources or has a potential for enterprise-level impact then the MLIC will assist in preparing and proposing the idea to the next level of the tiered innovation structure.

Enterprise-Level Innovation Program (ELIP)

The Enterprise-Level Innovation Program (ELIP) is the primary and overarching system that establishes and defines the tiered innovation structure program and empowers innovation across an entire organization. Comprised of a small team of full-time change management and innovation experts, its primary focus is to assist enacting the director's innovation vision, support MLIC and SMEIC elements, and implement enterprise level innovation ideas. Overall, the ELIP connects the strategic, operational, and tactical innovation elements and efforts across the organization's enterprise.

The ELIP is comprised of a small team with the sole responsibility to support the entire innovation program. Some, if not all, members need to have formal training, expertise, and experience in change management programs and innovation theory and practice. These individuals are the resident experts available on staff to support, consult, and train innovators, mentors, and managers in the tools, techniques, and processes to facilitate innovation. Since the bulk of the innovation effort resides within the workforce, the ELIP team does not need to have specific knowledge or experience executing the organization's mission related functions. Not requiring prior mission knowledge opens the possibility to hire consultant groups to staff the ELIP if budget, billets, or lack of qualified applicants constrain hiring full-time permanent staff. However, relying on consultants increases the risk of eliminating or stagnating the entire

innovation program, especially if management reduces the organizational priority for innovation or if there is a forced reduction in contract workforce.

The mission and functions performed at the strategic and operational level by the ELIP remain the same regardless of who, full-time employees or contractors, staff the team. Strategic functions concentrate on executing the director's intent to ensure managers are accountable for supporting the innovation program, facilitating enterprise communication and recognition events, and assessing and reporting program performance trends. Concerted efforts by the director, through the ELIP, to hold managers and supervisors accountable for supporting innovation in their workgroups should reduce this potential barrier to impede bottom-up innovation efforts by the workforce. The ELIP facilitation of macro and micro communication and recognition events ensure knowledge-sharing occurs within and across the enterprise. The ELIP is responsible for collecting, analyzing, and publishing the innovation program performance data. These reports should emphasize trends of ideas submitted, explored, and implemented over actual performance as innovation ideas ebb and flow with mission needs and demands. Finally, the ELIP needs to facilitate the capture, retention, and dissemination of innovation lessons learned.

The ELIP operational functions are a critical support function to the MLIC and SMEIC as they focus on change management tools and processes, as well as, access to enterprise-level resources to implement large-scale large-impact innovation ideas. As the primary resident experts in change management theories, the ELIP will train the MLIC and SMEIC how to apply the theories and tools to ensure efficient, timely, repeatable, and transparent experimentation and implementation of innovation ideas. The tiered innovation structure program is specifically designed to improve the communication and allocation of manpower, money, or specific authorities required to mature, experiment, and implement innovation ideas. Specifically, the

ELIP assists the MLIC and SMEIC to prepare and submit innovation ideas to the director when other resources are not sufficient.

Conclusion

This paper presents the case that ideation centric bottom-up innovation programs in the federal government, such as those at DOS, TSA, HHS, DOT, and Census Bureau, are underperforming. These programs successfully engaged the workforce during the first few years, garnering tens of thousands of ideas; however, the combined implementation rate remained less than two percent. Employees have become weary of the program's minimal efforts to truly support innovation, as demonstrated in falling innovation scores captured in the annual Federal Employee View Point survey. Survey data suggests the cause is too much emphasis on ideation with less support from leadership and low implementation rates.

The Tiered Innovation Structure Program proposes a new structure that addresses ideation, leadership, and implementation equally through a layered organizational structure. The central component of bottom-up innovation is the workforce; therefore, the focal point of effort and resources should reside within the workforce. The Subject Matter Expert Innovation Committee (SMEIC) element is the workhorse of the program and empowers exploration, maturation, and implementation of a wide range of innovation ideas. The Mid-Level Innovation Council (MLIC) primary effort is the provision of consistent and substantial leadership support and access to resources to the SMEIC and workforce. The Enterprise Level Innovation Program (ELIP) supports the entire structure by leveraging the agency or service director's innovation initiatives and providing resident expertise in change management tools, techniques and procedures to empower innovation efforts throughout organization. Each of these components

work independently to address both tactical and operational missions within the organization. Yet, each component when working together increase the potential to experiment, implement, and apply lessons learned thereby enhancing the outcome of innovation.

The research conducted to develop the tiered innovation structure program proposal presented as many new questions as it attempted to answer. First, not all innovation ideas are good or worth implementing. What are effective methods to evaluate innovation ideas while balancing the need of the employee to productively improve their day-to-day task? Second, the information on existing federal government innovation programs originated from public reports and articles. Interviewing and observing existing innovation programs personnel and employees may reveal details that may further enhance elements of the proposal. Lastly, further research should examine conflicting analysis and theories of employee incentive programs. Some research and theories suggest that monetary rewards motivate employees while other research suggests that simply providing the means to experiment and implement ideas is sufficient.

The leadership and workforce demand for bottom-up innovation remains strong, as demonstrated most recently when U.S. Marine Corps Commandant General Robert B. Neller challenged the entire Marine Corps to embrace and help disruptive thinkers develop and employ new innovative ideas and solutions. In order to keep the Marine Corps' or other innovation efforts throughout the Federal Government from potentially underperforming, the approach and methodology to bottom-up innovation efforts need to benefit from its own innovation.

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