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Innovators By Design

Synthesis Essay

Recommendations for Structuring Units, Enhancing
Communication, and Operating Innovation Cells in the USAF

"The conclusions and opinions expressed in this research paper are those of the author and do not necessarily reflect the official policy or position of the U.S. Government, Department of Defense, or The Air University."

United States Air Force (USAF) Chief of Staff, General David Goldfein, announced during the 2018 Air Warfare Symposium that the USAF will create a \$68 million “Squadron Innovation Fund” to help squadrons overcome resource barriers that would prohibit them from enhancing readiness. Wing Commanders were told to “kick start squadron-level innovation at the tactical edge” and that squadrons “need to think like startups, and this is the seed money to get them started on finding new ways to do things.”¹ While General Goldfein’s initiative sounds like exactly what the Air Force needs to begin to overcome some of the readiness stagnation that has occurred due to a complicated acquisition process and difficulty in finding money to implement new ideas, will simply handing money to squadrons fix existing issues? While resourcing units is a good start, but the USAF needs to look beyond money and acquiring new hardware to the “wetware,”² the minds of the Airmen who will imagine and implement innovative solutions to the problems USAF squadrons are facing.

Tailoring the Force

The Air Force accessions and assignment systems are largely based on numbers, finding the right number of bodies to fill billets as members PCS to new assignments, separate, or retire. While new systems like Talent Marketplace allow billet owners to bid on potential unit members, those bids are made solely on the person’s experience as reflected in the Talent Marketplace system rather than the personality that a person would bring to a new unit. Likewise, accessions are based largely on objective metrics, how

well a person performs on an Air Force Officer Qualification Test (AFOQT) or Armed Services Vocational Aptitude Battery (ASVAB) with little regard for a potential member's personality type. What if accessions and assignments could be tailored to account for personality types as well as aptitude in order to build a force that is structured in a way that makes it innovative by design?

Air Force Instruction (AFI) 36-2005 details criteria to be considered in determining an applicant's suitability to receive a commission in the U.S. Air Force. Among the criteria listed are an applicant's age, citizenship, moral conduct, physical condition, AFOQT scores, and history of drug use, but there is no mention of the applicant's personality type as a factor for consideration.³ In his book "The Innovation Code," Jeff Degraff presents four types of dominant worldviews, "the collection of deeply held beliefs about how we interpret and experience the world,"⁴ along with the strengths and weaknesses of each. Degraff describes Engineers, people who "seek efficiency and quality and who depend on processes," Artists, those who "embrace revolutionary growth through wild experimentation and an extreme rejection of convention," Sages, who "seek out connection, harmony, and togetherness," and Athletes, whose focus is on "competition where the strong prevail at the expense of the weak."⁵

While the criteria listed in AFI 36-2005 are important when considering applicants for commissions in the USAF, the addition of personality criteria such as those outlined in Degraff's book could allow the USAF to further tailor the force to include a more broad representation of different perspectives. The benefit to this, Degraff argues, is that when each type is represented, organizations experience "a positive tension, a type of

constructive conflict that generates sustainable growth.”⁶ In other words, while people with different dominant worldviews working in a group may clash at times, their different perspectives and approaches to problem solving will allow the group to identify and implement solutions that a group of people with the same dominant worldview may not have been able to.

Going a step beyond determining whether an applicant is suited to receive a commission, one could begin to match applicants to career fields based on the desired traits for each Air Force Specialty Code (AFSC). For example, what would be the ideal mix of types for career fields such as Pilot, Navigator, Air Battle Manager and other highly checklist oriented career fields? The answer more likely lies in a mix of predominately process driven engineers who are likely to run checklists and operate in accordance with AFIs and technical orders (T.O.s) but with a mix of the other personality types in order to be able to identify processes that while conducted in accordance with governing regulations, could be bettered by changes and improvements to processes and procedures. While an extreme example, if a flying squadron manned entirely with Artists was told to innovate, those people may be inclined to accept risk due to their predisposition for “wild experimentation and extreme rejection of convention”⁷ while a squadron consisting completely of Engineers may bind themselves too closely to existing Tactics, Techniques, and Procedures (TTPs), limiting their ability to identify solutions that will make impactful improvements.

Determining the actual composition of career fields and organizations would require additional study, but just as the USAF values diversity among its members to create a representation of a cross-section of the nation, the prospect of tailoring the

accession and assignment processes to deliberately build an overall force and individual units that are representative of the four predominate worldviews could be a step towards making a more innovative and flexible force. As part of its initial acquisitions for both officers and enlisted personnel, the USAF should consider adding personality testing to the acquisition criteria when evaluating applicants. This information, as part of an individual's personnel file, could then be used as part of the whole Airmen concept to inform future decisions on training, assignments, and career progression to aid in pairing the right people to the right career fields and organizations to maximize their contributions to the overall force.

The major benefit from this concept is in its relation to implementing General Goldfein's direction for squadrons to think like start-ups. In Degraff's model of the innovation cycle, he illustrates how each primary worldview is necessary to generate ideas (Artists), develop plans of action to move the idea forward (Athletes), find the right people and relationships to implement the plan (Sages), and then structure the organization as it grows and operates (Engineers).⁸ The process is cyclical, and in order to continue to grow and evolve to meet future challenges, organizations will need a steady supply of each dominant worldview or risk stagnation and eventual failure. This is why the continuous management of personalities through the assignment process is critical to the future success of the organization.

What comes next though? Is building a unit based on an ideal blend of personalities alone enough to kick-start innovation and generate continued growth? While tailoring the accessions and assignments is a good start, organizations need to learn to be mindful of how they communicate with people who view the world differently than they

do in order to effectively communicate ideas, win over champions, and transition their ideas to real-world application. A portion of this can be accomplished by knowing one's audience and tailoring presentations and pitches to the worldview type that one is pitching to, but another aspect of this is enhancing communication within units.

Enhancing Organizational Communication

The way we communicate with one another can have deep impacts on how effectively we are able to convey ideas and gain support for them. Some people are natural communicators while others find it difficult to connect with other people. This can result in an over-representation of ideas from natural communicators while other ideas may be stifled simply because their originators aren't able to connect with other people and convey them. The issue lies with both the communicator and the receivers in that people aren't always aware of the different ways people communicate. Further, many people may not even be aware that people communicate differently than they do.⁹

In order to ensure effective communication and the free flow of ideas within an organization, members can look to the 5 Voices, which details the different ways people communicate. Unsurprisingly, the different voices relate to the four dominant worldviews detailed in "The Innovation Code." The Nurturer voice, who cares for others, builds relationships and guards values can be likened to the Sage worldview.¹⁰ The Creative voice, a champion of innovation and new ideas can be paired with the Artist worldview.¹¹ The Guardian voice, a protector of what is already established who respect order and procedure is most closely linked to the Engineer worldview.¹² The Connector voice is someone who excels at connecting people and resources can also be paired to the Sage worldview¹³, and the Pioneer voice, people who approach life with an "anything is

possible” attitude and seek to find the quickest and most efficient way to do things can be compared to the Athlete.¹⁴

Something that makes the 5 Voices model so interesting however, is that one can possess traits of more than one voice. Kubicek and Cockram simplify this using a stoplight format in which green represents voices that a person immediately identifies with, yellow represents voices that a person can understand but the connection is not automatic, and red representing voices that are foreign to a person, they cannot understand that voice at all.¹⁵ This is intriguing because it highlights the importance not only of understanding one’s own primary, their “foundational voice,” but also the “voice order” of the one’s understanding of the other voices.¹⁶ In doing this, one can understand how they communicate, how their communication is likely to be perceived by others with different voices, and remain mindful to actively translate the voices that are lower in the voice order in an effort to fully understand those who communicate in different voices.

The importance of understanding one’s foundational voice and voice order is highlighted once you begin to explore how each voice is positioned in regard to openness to new ideas, making connections, following procedures, and approaching problems. For example, consider a fictional flying squadron commander tasked with carrying out General Goldfein’s direction to kick-start squadron innovation and execute allocated squadron innovation funds to increase her squadron’s readiness. For the sake of argument, let’s say that this commander’s foundational voice is Guardian with a voice order of Guardian, Nurturer, Creative, Pioneer, and Connector but that she isn’t aware of this fact or of the 5 Voices model.

As a Guardian, she will tend to be present-minded and want to protect what is already established and working. Having read about General Goldfein's direction for innovation, her squadron's weapons officer, a Creative (Creative, Nurturer, Pioneer, Connector, Guardian), who is also unaware of the 5 Voices model, is excited to pitch a project he has been working on which would replace paper charts and publications with issued iPads equipped with GPS dongles to enable moving map software in flight. In the long run, this idea would save man hours by reducing the time pilots spend checking and updating charts and publications because updates will be pushed automatically via Wi-Fi, reduce operations interruptions caused by delayed chart and publications deliveries, and is expected to pay for itself over a four year period via the cost savings from reduced printed chart and publications orders. The plan comes with an up-front cost of \$100k to outfit the squadron with iPads, software licenses, and support equipment.

The weapons officer schedules an appointment with the commander and pitches his idea but is surprised when the commander, instead of enthusiastically supporting his idea, asks him if he has coordinated for Approval to Operate (ATO) iPads on the jet, waivers from the MAJCOM to replace paper publications required by AFI with electronic copies, and expresses that she is concerned with the cost of the project. Further, she doesn't see any major issues with how the squadron has been operating with hard copy charts and publications and isn't in any rush to change something that isn't broken. The weapons officer on the other hand, can't understand why the commander didn't immediately support his idea.

We can unpack some of what happened by our understanding of how people with different dominant worldviews and functional voices view situations and communicate

differently. This scenario could have gone much differently if even one of the involved parties had been aware of the 5 Voices and understood how different types communicate and dissect information. For example, if the weapons officer had been aware of the 5 Voices model and through his interactions with the commander had recognized that she is a Guardian, he could have tailored his pitch to highlight the information that she was likely to be most interested in.

By being mindful of the commander's functional voice, the weapons officer would have known that Guardians value what is already working and will need to be convinced that the change from a system that is already working is worth the risk. Further, Guardians tend to be cautious of investments where resources could be wasted and are likely to ask detailed questions to ensure they make an informed decision.¹⁷ In light of this information, the weapons officer would have known to link his innovation directly to how it maintains the functionality of the current system but improves upon it in ways that justify the cost. He then could have focused on a cost breakdown showing how the upfront cost is recaptured over the next four years to demonstrate that his plan considers good stewardship of resources. Finally, by including an overview of the next steps to anticipate and address some of the commander's potential concerns, he could get ahead of some of her questions to demonstrate that he has considered the fine details implementing the plan.

Moving a step further, if the commander was also aware of the 5 Voices model and her functional voice as well as the weapons officers' functional voice, she could have been aware of her predisposition to resist change and been more open to new ideas. The bottom line on enhancing communications within organizations is that the more members

who are aware of their own voices and the voices of others, the better. By being mindful of how we and others communicate, we can actively work to better understand those with voices that are lower in our own voice orders and tailor our own communication to help others understand and accept our own messages.

With a tailored unit consisting of an optimal mix of dominant worldviews and people who understand how to effectively communicate with one another can we now set everyone free to innovate and make changes? Organizations, especially military organizations, have a commitment to continue to accomplish their primary mission while they move forward and innovate, and because of this, only a small portion of resources and personnel can be dedicated to innovating. How can we ensure continued mission accomplishment while also taking the time to identify areas for improvement and implementing innovative solutions? The answer lies in dedicated innovation cells, people and resources dedicated to innovation.

Building and Operating Innovation Cells

Assembling the Team

What should innovation cells look like to ensure that their innovations are relevant and not just another purchase of flat screen TVs to mount behind the ops desk to display the flying schedule or latest Excel “tracker”? Do we need our most experienced people taken off the schedule and sequestered? Our newest people, those who can put fresh eyes on squadron operations? The ideal solution for a USAF squadron will be dependent on the squadron’s function and ability to cut people loose while continuing its mission. For the purpose of this argument, we’ll examine what an innovation cell might look like for an

AWACS unit, which is composed of a mix of officer and enlisted personnel from many different crew positions and specialties.

When seeking to encourage innovation, Degraff's advice is for leaders to "seek out the voices of those who have little stake in tradition—usually the younger, more vibrant individuals. Ask them how to update the old and make the homogenous a little more heterogeneous. Encourage them to push existing boundaries."¹⁸ In this case, the ideal innovation unit would be composed of junior Captains and SrA/SSgt enlisted personnel with a Major or Lt Col acting as a mentor overseeing and guiding the group. The reason for selecting this range of officers and enlisted members is to get a fresh look at operations from those who have enough experience to understand the mission but who have not been around long enough to adopt a "we do it this way because this is how we've always done it" outlook while leveraging the experience of the mentor to help guide the group through the innovation process. Additionally, if possible, the innovation cell should include members whose primary worldviews differ in order to create positive tension within the group. In future iterations of the innovation cell, the mentor may be someone who had participated as a past member of the innovation cell.

In addition to the composition of the team, their interaction with the organization as a whole and the individuals within the organization is important. The U.S. Army has had success using incubators, informal subunits which were outside of the formal hierarchy in order to provide innovators with space to maneuver and develop ideas outside of the bureaucracy of the larger unit.¹⁹ Additionally, the timeframe for the innovation cell should be considered. The innovation cell should be approached as an iterative cycle, wherein each iteration only lasts for a set period of time before members are cycled back to their

units and new members cycled in to solve new problem sets. The importance of cycling members is due to the operational relevance that is lost by remaining inside of an incubator.²⁰ Members who remain too long risk losing sight of the day-to-day realities of the organization and with this, their ability to implement relevant innovations wanes. Finally, the innovation cell should be given access to advocacy networks, the connections that will allow them to circulate their ideas throughout the organization as a whole.²¹

Entering the Problem Space

A senior leader may already have an area for the group to focus on or suggestions for improvement areas could be gathered from squadron commanders and unit members. Problems should come from an outlying mission area that is either in crisis or that is outperforming, because those are the areas where the status quo cannot be accepted or the opportunity is the greatest.²² Additionally, these outliers represent a smaller portion of the population/mission areas, and represent areas that will be more receptive to accept change under Degraff's 20/80 rule for innovation, whereby it is easier to change 20 percent of an organization by 80 percent than to change 80 percent of an organization by 20 percent.²³

In any case, the problem area should be fairly broad in order to avoid prematurely or incorrectly identifying and focusing on an area that may not be the root cause of the issue. Once given a focus area, members of the innovation cell should talk with people in the unit and conduct empathy interviews to help narrow the scope of the problem and determine the root cause. These interviews are conversational and should not attempt to lead respondents toward a preconceived notion of what the innovation cell thinks the problem might be. This will help the innovation cell to define the problem they need to solve by collecting and analyzing responses that they find to be the most interesting,

surprising, shocking, and the things that impressed them the most. From these findings, the innovation cell can determine the actual problem they need to solve and develop a problem statement on which to focus their effort.²⁴

Navigating the Solution Space

Following the development of the problem statement, the innovation cell is ready to begin working to develop solutions. The first step in the solution space is to ideate potential solutions via divergent thinking, and during this step members of the innovation cell should not be held to any negative constraints such as budgetary, AFI, or feasibility considerations.²⁵ The goal in this phase is to cast a wide net to capture any possible solution to the problem. These ideas can then be sorted and categorized to prepare the innovation cell for the next step, convergent thinking, where members of the innovation cell begin to narrow down the idea pool based on the ideas that are most likely to disrupt the organization, delight users, and the ideas that they felt passionate enough about that they would pull all-nighters working to ensure the idea became a reality.²⁶

Ideation is followed by prototyping, where the innovation cell begins to develop their solution to the identified problem. This is where constraints to feasibility must be considered. How much money is available? What AFIs/T.O.s apply to the problem and who is the waiver authority if needed? This is the time for the innovation cell to connect with experts who can help them identify and work through unforeseen problems to create a product that is ready for the testing phase.²⁷ Following prototyping, the innovation cell should test their prototype to determine if it solves the problem that they set out to solve, and if not, make adjustments to finalize the product prior to presenting their pitch to leadership.

The capstone of the innovation cell should be the pitch to leadership and handoff to an office of primary responsibility (OPR) for implementation. While members of the innovation cell could be moved to the OPR to help with implementation, the innovation cell itself should not be tasked with implementing a solution that could be executed more efficiently by an organization that already has the necessary expertise and contacts. In preparation for the pitch, members of the innovation cell should rely on what they know about the approving authority's functional voice and tailor their pitch to that person. Is the person a Creative? A Guardian? A Nurturer? The innovation cell needs to present information in that person's functional voice in order to make sure the person fully understands the idea. The pitch should include an explanation of how the innovation solves the approver's problem, an ask such as the money needed to move the idea forward, and potential OPR who can implement the idea.²⁸

Once an innovation is approved, the innovation cell should be disbanded and another group assembled restart the iterative process and solve new problems. A core cadre could be retained, however considerations about relevance remain, and cycling group members through and exposing more members of the organization to the innovation process could result in a more innovative culture throughout the organization as more members are exposed to the innovation process and share their experience with other members.

Conclusions

Through the allocation of squadron innovation funds, General Goldfein has given direction that points the USAF towards being a more innovative, agile force. Organizational changes to the accessions and assignment processes are the next step to

ensure the force is postured in a way which will enable it to execute his direction via the representation of the dominant worldviews, a vital factor in generating the sustainable growth that Jeff Degraff details in “The Innovation Code.” Further, Airmen need to understand how to effectively communicate with others in order to convey ideas in a way that will be understood and garner support. Finally, through the creation of dedicated innovation cells which incorporate the dominant worldviews and an understanding of the voices detailed in Kubicek and Cockram’s “5 Voices,” units can leverage the creative expertise of their Airmen in order to execute General Goldfein’s vision.



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- ¹ Brian W. Everstine, "Air Force Announces Funding for Wings to Innovate New Ways to Address Immediate Needs." Air Force Magazine. Last modified February 23, 2018. <https://www.airforcemag.com/air-force-announces-funding-for-wings-to-innovate-new-ways-to-address-immediate-needs/>.
- ² Col Pat Hoffman, 552 ACW/CC, Commander's Call, 2010.
- ³ AFI36-2005, p. 3, 2 August 2017
- ⁴ Jeff DeGraff and Stanley DeGraff, *The Innovation Code: The Creative Power of Constructive Conflict* (Oakland, California: Berrett-Koehler Publishers, 2017), 6.
- ⁵ DeGraff and DeGraff, 15–17.
- ⁶ DeGraff and DeGraff, x.
- ⁷ DeGraff and DeGraff, 15.
- ⁸ DeGraff and DeGraff, 31–32.
- ⁹ Jeremie Kubicek and Steve Cockram, *5 Voices: How to Communicate Effectively with Everyone You Lead* (Hoboken: Wiley, 2016), 22.
- ¹⁰ Kubicek and Cockram, 30; DeGraff and DeGraff, *The Innovation Code*, 16–17.
- ¹¹ Kubicek and Cockram, *5 Voices*, 32–35; DeGraff and DeGraff, *The Innovation Code*, 15–16.
- ¹² Kubicek and Cockram, *5 Voices*, 35–37; DeGraff and DeGraff, *The Innovation Code*, 15–16.
- ¹³ Kubicek and Cockram, *5 Voices*, 37–40; DeGraff and DeGraff, *The Innovation Code*, 16–18.
- ¹⁴ Kubicek and Cockram, *5 Voices*, 41–42; DeGraff and DeGraff, *The Innovation Code*, 16–18.
- ¹⁵ Kubicek and Cockram, *5 Voices*, 28–29.
- ¹⁶ Kubicek and Cockram, 44.
- ¹⁷ Kubicek and Cockram, 35–36.
- ¹⁸ Jeff Degraff, "4 Ways Leaders Can Best Encourage Innovation." Last modified January 22, 2019. <https://jeffdegraff.com/blog/2019/01/4-ways-leaders-can-best-encourage-innovation/>.
- ¹⁹ Benjamin Jensen. *Forging the Sword: Doctrinal Change in the U.S. Army*. (Redwood City: Stanford University Press, 2016), 142
- ²⁰ Innovators By Design class discussion, MGMWerx, 11 December 2019
- ²¹ Jensen, 142
- ²² Jeff Degraff, "How to Win a Bar Fight," lecture, MGMWerx, Montgomery, AL, 18 September 2019.
- ²³ Jeff Degraff, "How to Win a Bar Fight," lecture, MGMWerx, Montgomery, AL, 18 September 2019.
- ²⁴ Innovators By Design class discussion, MGMWerx, 25 September 2019
- ²⁵ Innovators By Design class discussion, MGMWerx, 22 October 2019
- ²⁶ Innovators By Design class discussion, MGMWerx, 22 October 2019
- ²⁷ Innovators By Design class discussion, MGMWerx, 1 November 2019
- ²⁸ Innovators By Design class discussion, MGMWerx, 25 September 2019