SLD 30 Accelerates Pathway to the Spaceport of the Future, Delivers Five Solutions to Commander

BY KELLY SCHULTE AND NIC MELIONES

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How might we identify and address the most critical obstacles impacting our launch capacity in order to develop a Spaceport of the Future capable of launching rockets from VSFB every day of the year by 2030?

This was the question at the heart of the NSIN Bootcamp with Vandenberg Space Force Base. The goal of this innovation bootcamp was to revolutionize space launch operations. Seated within this challenge were the following questions:

- Why innovate at all? What are the consequences of not investing in a culture of innovation?

- How quickly can you spark real results on this ambitious quest to usher in the Spaceport of the Future?

- Is there a common pathway to "innovate"?

SLD 30's Innovation Quest

> The Bootcamp program was created to enable the military and Department of Defense civilians to solve their own problems. Startup founders and university professors teach our mission partners the principles of Human Centered Design (HCD). Learning the HCD process equips participants with the tools to bring to light hidden knowledge from across the organization. They then use these insights to develop actionable and iterative solutions for a command priority problem. Ultimately, organizations are presented with multiple solutions for their original problem, and a workforce that is empowered to continue solving problems on their own. This is what NSIN is all about - creating networks of innovators to solve national security problems in ways that haven't been done before.

—Kelly Schulte, NSIN Bootcamp Program Manager (Contractor)

This is how an innovation quest begins:

BEHAVIORAL MAPS

This is an example of a Behavioral Map. Behavioral Maps visualize the steps that go into a process. Behavioral Maps are one of the innovation tools critical to unearthing a real opportunity. A Behavioral Map can either show a winning process (thus making it easier for the organization to further adopt that process) or it can show the presence of a problem that impedes peoples' ability to accomplish the intended goal.

During the bootcamp, teams learn how to use a behavioral map in order to understand how their target users experience a precise problem today. To investigate the challenge statement and identify where the real pain points or obstacles exist, teams conduct user interviews. They ask questions during the user interviews to understand their interviewees' needs. Upon concluding user interviews and deciding on a precise problem to target, teams can complete a Behavioral Map to show how users experience the problem today.

"The skill I'm going to utilize the most is the behavioral map. I will apply it to certain processes we do in our unit/squadron and work toward a solution to alleviate the painful areas."

—TSgt Riley Mausbach, USAF

The **Vandenberg Space Force Base SLD 30 Digital Transformation Office (DTO)** connects with **National Security Innovation Network (NSIN)**, a problem-solving network in the **U.S. Department of Defense**, to hear about opportunities to collaborate.

SLD 30 presents problems that they identified as **command-level priorities**.

SLD 30 and **NSIN** converge on a plan: **an Innovation Bootcamp**.

Col. Mark Shoemaker, Space Launch Delta 30 commander, who commands the United States Space Force's West Coast Spaceport and Test Range, approves the bootcamp as it supports the vision he set to achieve **the Spaceport of the Future**.

Navi joins the collaboration to bring this innovation quest to life. The first order of business: finalize a challenge statement that identifies the obstacles and opportunities on **the road to the Spaceport of the Future**.

20 Airmen and Guardians commit to participating in the innovation bootcamp. **5 teams form** and the bootcamp begins.

Across 4 bootcamp days, teams learn innovation skills, adopt winning tools and strategies, conduct user interviews, and design and test solutions. **Each team architects their vision** to address a critical opportunity within the scope of the Spaceport of the Future.

5 teams pitch their solutions to **Col Shoemaker and leadership**, with **4 out of the 5 teams receiving approval and the 5th receiving clear guidance on next steps** to complete prior to achieving buy-in.

SLD 30 continues advancing solutions. The **Digital Transformation Office** meets with **NSIN** and **Navi** after the bootcamp to evaluate outcomes and precisely define the action items to advance solutions and **bring enduring change to the organization**.

BOOTCAMP

A bootcamp combines:

- **Instruction:** learning the principles of Human Centered Design through startup founders and innovation ecosystem builders

- **Application:** using Human Centered Design principles and innovation tools to address a mission critical problem with Command emphasis

- **Adoption:** driving post-bootcamp adoption of the proposed solutions and the newfound innovation skills and tools

To get there, it is critical to have a winning process.

"Bootcamps are the gateway to build your culture of innovation. The goal of a bootcamp is to empower an organization's greatest asset – its people – to become problem solvers with a repeatable toolkit to unearth and articulate problems, iterate on solutions, and define clear implementation plans."

—Nic Meliones, Co-Founder and CEO of Navi

Our Innovation Ethos: "The SD2x3"

To build a culture of innovation and extend your innovation advantage, having the right process makes all the difference.

The Navi team members have been co-founder or first hire for 10+ startups, several of which have resulted in acquisitions with others continuing to grow. The Navi team members have also built innovation and entrepreneurship ecosystems at top universities.

Through years of building companies, supporting other startup founders, and empowering defense innovation, Navi architected its innovation framework:

SD2x3

There are three bootcamp stages: Problem, Solution, and Pitch. In each stage, teams follow our SD2 innovation process:

Spark	Evaluate Initial Context
Discover	Unearth and Brainstorm Diverse Potential Avenues Forward
Select	Make the Key Decision and Prioritize Your Avenue Forward
Document	Document the Final Output

Big Problems Require a Narrow Focus

Each team evaluates the challenge statement, conducts user interviews, and defines their own "narrow problem focus". Next, they ideate a new product, process, or method to address the narrow problem. Teams start small and collect evidence by testing the v0.1 of their solutions. To conclude the bootcamp, teams pitch to senior leadership, highlighting the narrow problem critical to address, their vision for the solution, evidence, and their recommendation on the next steps for the organization to take in order to advance the solution.

Strike a Balance Between Individual Brainstorming and Group Decision-Making

The best innovation processes support diversity of thought and objective ways to surface several possible avenues for a decision.

We do this through:
- Individual skills development and brainstorming
- Then team members review each other's insights to collaboratively make decisions

This framework results in a bootcamp with the following components:

- **The Problem route:** 3 units of instruction + user interviews + synthesis so that each team can decide on the narrow problem they want to solve and complete the corresponding documentation

- **The Solution route:** 2 units of instruction + testing v0.1 of solution + synthesis so that each team can ideate and complete the corresponding documentation for their proposed solution

- **The Pitch route:** 1 unit of instruction + testing the pitch story + synthesis so that each team can finalize their pitch, complete the corresponding documentation, and pursue buy-in from senior leadership

...and tons of "jazz hands" along the way.

The goal of a bootcamp is to drive real outcomes. The SLD 30 innovation quest resulted in:

- Teams completing a combined 73 user interviews

- Teams testing the v0.1 of their solutions with 31 stakeholders

- An out-briefs pitch event with Col Shoemaker, Mr. Stevens [Civ – Executive Director], and William Prenot [SLD 30 XP – Plans and Programs Chief] evaluating teams' proposals

- Col Shoemaker approving 4 out of 5 teams' proposals

- Col Shoemaker providing clear clear guidance on steps for the 5th team to complete in order to achieve buy-in

Here is a synopsis of the five solutions the SLD 30 teams generated. So that we do not disclose sensitive information about each team's proposals, we have shared only brief details. Please contact the SLD 30 DTO for a more precise view into their Bootcamp solutions!

- **The Coalition:** Accelerates launch partners' ability to increase their capacity.

- **ARTIFACT:** A financial model as advanced as the spaceport it supports.

- **Something Else:** An UMBRELLA method framework to bring agency to key Spaceport policy decisions.

- **WROCC STARZZZZZ:** Empower individuals to identify opportunities for organizational performance improvements.

- **The 4th Awakens:** Create an org chart advanced enough for orbit.

"This NSIN effort directly supports the SLD strategic plan across all lines of effort including: Spaceport and test range mission success; support to installation partners; improved quality of life for the workforce and families; and digital transformation and innovation. The NSIN bootcamp helped advance these efforts by providing a forum for our people to come together, learn about where the base is headed and giving them a forum to collaborate on solutions that can help close the gaps between where we are and where we want to be. Out of the bootcamp came five proposals on how we can start to address the challenges that are holding us back. But more important than these specific recommendations, was the act of getting the workforce involved in helping shape the future and allowing them an opportunity to experience the value of collaborative problem solving."

—Mr. Steven Rogers, Technical Director, SLD 30

The "So What": Why Incorporate Innovation Into Your Organization's Identity?

"The outcome, and more importantly the solutions developed, exceeded my expectations on every point. This bootcamp challenged a highly diverse set of professionals - each with unique experiences, education, and mission functions - to conceptualize meaningful solutions to accelerate our pathway towards building the Spaceport of the Future. Humanity has never seen or built a Spaceport of the Future, yet these individuals came together with the support of NSIN and Navi's human centered design methods to create meaningful tactical solutions at an unexpected scale. Another organizational bonus was the value NSIN and Navi provided the Vandenberg work force, through the arc of the bootcamp process, to transform how people think about solving mission critical problems going forward."

—Christian Nightingale, Digital Culture Lead, Digital Transformation Office, SLD 30

Innovation is the process and skill set that allows people and organizations to generate a new method, product, or idea to solve a problem. Innovation gives the critical edge that is essential to success in the world of tomorrow.

The SLD 30 Digital Transformation Office has "innovation" at its core. Furthermore, SLD 30 – and more broadly, the Vandenberg Space Force Base – has demonstrated a clear commitment to empowering its people to drive meaningful change.

Not only is innovation at the heart of NSIN's mission, it's in its name! The National Security Innovation Network combines service, collaboration, and speed to accelerate the pathway towards a better, safer, and stronger world.

Navi's thesis is that the skills that make the best founders are the same skills that everyone needs to succeed in the world of tomorrow. This means that innovation – which includes problem solving, collab-

oration, and generating buy-in – is the "skill of the future", and the organizations that adopt these processes and tools will be the ones shaping the world of tomorrow.

So, why innovate at all? What are the consequences of not investing in a culture of innovation?

"Innovation is the golden ticket to continuing to build our advantage in the Great Power Competition. With human centered design, you look at problems differently and you expand the realm of the possible. One of the major outcomes from the bootcamp is that participants will take these tools back to their units and empower others to look at the world differently. In short, innovation helps us transform the way we do business and continuously build an advantage."

—Todd Lefebvre, Innovation Officer, Digital Transformation Office, SLD 30

How quickly can you spark real results on this ambitious quest to usher in the Spaceport of the Future?

With Command-level buy-in, a mission critical problem in the form of a challenge statement, and passionate participants and program leaders, you can spark real results in days and weeks.

Innovation is complex. Building the Spaceport of the Future is a "never-been-done-before" type of goal. A rigorous combination of instruction, tools, coaching, and "talking to users" makes it possible to simplify the complex and bring solutions to life.

A winning culture of innovation requires both Command-level buy-in and a bottom-up, inclusive approach. Col Shoemaker set the tone for this process from start to finish. Col Shoemaker committed to the process and paved a compelling vision for the Spaceport of the Future. During out-briefs, he was attentive, he provided targeted feedback, and he worked collaboratively and creatively with participants in real-time. In doing so, Col Shoemaker approved aspects of nearly every solution and proactively paved the road forward to continue this innovation process.

So, how important is it for Senior Leadership to support innovation programs?

"It's extremely important! Sometimes, an innovation Tiger Team will present recommendations that are met with a lackluster response. Our enthusiastic reception showed not just us, but the entire base community, that creative thinking and thoughtful recommendations will be carefully considered and, when feasible, adopted."

—David Rickards, Senior Executive Consultant/ Technical Expert, Vandenberg Space Force Base

Is there a common pathway to "innovate"?

The common start for all innovation quests is "the problem". Through user interviews, building empathy with customers and contributors, behavioral mapping, and each participant's unique perspective on the challenge at hand, each team unearthed and precisely documented the specific problem to focus on. With a "narrow problem", it is much easier to design and test solutions.

This process of incremental advancement helps assure that teams validate the riskiest assumptions early while regularly testing, iterating, and improving their plan.

"In any workplace, innovation is crucial to how a company succeeds, especially as we're moving from an "Information Age" to an age where AI/ML are proving useful from personal to corporate capitalization. More importantly, innovation as a culture needs to be embedded from the top down to the roots of the organization. Continuing to find and implement needed changes and improvements in an organization is only part of driving innovation; you need to ensure the affected people want to maintain and continue improving their process. Taking what I've learned in NSIN on human-centered design, I'm engaging with every team here that I can to continuously drive innovation culture into what we do every day."

—Matthew P. Wood, 2nd Lt, USSF

Innovation is a compounding advantage. Start your compounding advantage with a bootcamp.

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Vandenberg Space Force Base is headquarters to Space Launch Delta 30.
SLD 30 manages Department of Defense space and missile testing, placing
satellites into polar orbit from the West Coast using expendable boosters
(Falcon, Pegasus, Minotaur, and Atlas V), and supporting the Minuteman III
Intercontinental Ballistic Missile Force Development Evaluation program.
https://www.vandenberg.spaceforce.mil

Navi Co.
Navi is the gateway to the innovation economy. Navi's solutions make it possible
for people and organizations to start their innovation quests and build an
enduring innovation advantage. We do this through bootcamps, accelerators,
and our digital coaching platform.
https://heynavi.com

**NATIONAL SECURITY
INNOVATION NETWORK**

NSIN is a program office in the U.S. Department of Defense, nested within the Defense
Innovation Unit (DIU). We are set up to collaborate with a wide variety of innovators to include
universities, researchers, students, entrepreneurs and start-ups. We create opportunities for
collaboration across communities and connect those that might not traditionally work in national
security. Together, we help drive national security innovation and develop technologies that
directly support the individuals responsible for protecting our country.

nsin.mil | nsin.mil/bootcamp