

[00 - 1:00]

My background is as a software architect and hands on software engineer. Through years of working the full lifecycle, from vision & objectives definition, through design, build, test, deliver, operate, and improve, I've worked across all facets of Software Modernization and DevSecOps.

Most of you have heard the hype-term “**DevOps**” or “**DevSecOps**”. Quite frankly, DevSecOps is not a methodology. DevSecOps is also not something you buy or acquire. It is a set of principles and capabilities that include culture, people, process, and technology.

As industry and government have attempted to modernize by leveraging DevSecOps principles, there have been a few dramatic realizations. In the next few minutes, we'll do a whirl-wind tour of those topics..

In getting to know the panelists, I've learned that the FAA has had similar experiences and we've all come to the same general conclusion: that the goal is not to “do DevSecOps”. The goal is to deliver value.

[1:15 - 1:30] There is an evolution in your midst!

I'm going to touch on the following topic areas

- having a platform mentality
- delivering value and measuring outcomes
- olive development,
- voice of the stakeholder
- bending the organization
- the importance of taxonomy
- security , security, security

[1:45 - 3:00]

- **In the past, we talked about systems and solutions.**
- **Now, platforms and ecosystems replace systems**
 - We are at an interesting and exciting place in the history of software development.
 - The ability to represent “everything as code” is fueling an explosion in automation, audit, and cyber threat detection.
 - There is also the ability to have a *comprehensive* view of an organization's data assets using tools like data virtualization.
 - Incorporation of analytics, AI and machine learning into all facets of the software as well as the software development lifecycle

- APIs - application programming interfaces - while not a new concept ... tooling like data fabrics and API gateways both simplify and secure how we build our building blocks
- The result of the rapidly changing technology is a need to focus on evolutionary architectures that are built to accommodate change
- These are our platforms or capability ecosystems
 - Martin Fowler and others began talking about our efforts to deliver software as designing our software platforms that we use to deliver mission or business value.
 - **How?**
 - Make architecture core to your work: decoupled architectures that implement design patterns like facade, adapter, and possible microservice patterns can reduce the brittleness of your existing investments as they are integrated with your new capability platform or ecosystem

[3:00- 4:30]

- **Delivering Value; Measuring Outcomes**

- I've worked with multiple software delivery organizations (sometimes called software or feature factories)
- That has given me visibility into opportunities and challenges facing organizations who are seeking to deliver software or software intensive systems
- From the bottom-up, we have passionate developers, quality engineers, and others able to rapidly build.
- What I've observed is that simply building something quickly, even if it is defect free, does not mean it is usable, meets expectations, or delivers value.
- **How do you measure value?**
 - Is it through metrics? Performance measures? Or some form of return on investment (whether schedule, cost,) or paying down of debt
 - IT DEPENDS!
- The key is to clearly articulate what is needed and why then measure against that realization.
 - Performance measurements and metrics matter
 - Working with an air-force program right now on defining metrics for the different levels of stakeholders that help the organization
 - All metrics don't roll-up
 - Metric can be used for good and for evil

In general, if you are attempting to improve your cardio health, measure for shoe size for taking your temperature are not the most effective indicators of health.

[4:30 - 6:00]

- I'd also like to talk about **OLIVE development**

- What is **Olive**?
- You probably have heard the terms **greenfield**
 - Greenfield that means you are not constrained by the past.
 - Your “parcel of land” is just that, an open opportunity to experiment, innovate, unconstrained.
- Given decades of investment, more often than not, software and systems to be delivered are **brownfield...**
 - There are existing hardware constraints, policy, technical debt to address
- More often than not, greenfield is reserved for pilots, prototypes, and innovation spikes.
- In diverse enterprises, there is a mix of old and new, of green and brown... ergo calling this situation OLIVE
 - Your shade of olive will influence your software platform
 - You need to have an integration strategy that is designed to handle change
 - Gone are the days when pushed to get a system into production before the next technology refresh
 - Designing for building and change is influenced by a mix of your north star vision, the evolution toward platform, and your current shade of OLIVE

[6:00- 8:30]

- **Voice of the stakeholder...**
 - You’ve likely heard the term voice of the customer or voice of the user.
 - I tend to use the term stakeholder since there are so many who have needs to be met with software and software intensive system delivery
 -
 - When you are defining value, when you are gauging your shade of olive, and when you are moving toward a platform mentality there must be an imperative or mandate to involve the customer... the users... the stakeholders.
 - The FAA panel will be talking about their experiences and focus on holistic design thinking and user-centricity. I believe Shirley will touch on Project Elroy shortly.
 - It is always exciting! Agile/DevSecOps focused on having the user as part of the team defining the solution!
 - I want to take that one step further
 - In addition to the voice of the customer, your organizations should include the voice of the enabler
 - **Enablers:** cyber threat experts, operations engineers, quality engineers, developers, automated testing, fielding and training specialists
 - **Users Use the output of the platform**
 - **Enablers Enable the platform and capabilities**

- Real horizontal culture building means requirements surface from the end users, the enablers, as well as additional derived requirements that reflect what is needed for the platform. How you handle distributed logging and tracing, self-service test data provisioning and so on
- Feedback from all these stakeholders means having a reliable, repeatable feedback mechanism in place
 - This can be through bi-weekly demonstrations
 - Use of 3-5 minute videos
 - Providing collaboration tools like Atlassian's Confluence and wiki

[8:30 - 10:00]

This brings me to my next point

- **Bending the organization** - Have you heard of Conway's law? This has been observed for decades. The architecture and engineering of systems tends to eventually model itself around the traditional organizational structure.
 - I urge you to take a different approach (jokingly we call it a "reverse conway maneuver")
 - Set the vision
 - Define the work (this is at the epic level)
 - Find the right team to solve the challenge sourcing them from across the organizations.
 - Sometimes you hear this called a cross functional team
 - This is what SpaceX does.
 - I've had the luxury of meeting with the SpaceX team over the last year.
 - They focus on building the best-fit team with mixed skills and competencies.
 - They also stopped using terms like agile, sprint, and devops since they are VERY overloaded terms

[10:00 - 10:30]

- DevSecOps and software modernization requires you to create a **corporate lexicon or taxonomy**...
 - Every organization needs a lightweight living SoftwareModernization guidebook that at a minimum, clarifies terms and scope just like a data dictionary does for a data schema
 - Without this, you will encounter endless churn on mismatched expectations.

- I continue to run into this seemingly everyday
- What is under the umbrella of DevSecOps for your enterprise?
 - Does it include cloud provisioning and VCPs definitions?
 - Does it include infrastructure as code?
 - Do you have a separate and distinct team building your “pipeline” AKA your assembly like?

[10:30-12:00]

- Security, security, security
 - I'm not a fan of the term DevSecOps
 - Why?
 - It implies that somehow security is not a part of DevOps
 - Any system, solution, software, platform should always be predicated on secure design, secure testing, secure deployment
 - You will often hear folks say that we need to shift security left
 - Yes and no
 - Yes
 - Involvement of security / cyber in design
 - Visibility of design and build to cyber via pipeline
 - Educating DEV and making security scanning tools available so can tackle challenges when they are coded
 - No
 - Security beings with architecture and design... so it is a “embedd everywhere” as opposed to shift level
 - Topics that fall under security indeed to include
 - Software supply change and software bill of materials
 - Blocking “bad” OSS components from ever entering your ecosystem in the first place
 - Scanning and evaluating the open source component risks in both new and existing legacy applications
 - AppSec (application security)
 - Continuously monitoring all applications in production, automatically
 - alerting development teams when vulnerabilities arise that affect their applications.
 - We could spend a few hours on this so I'll move us forward.

[12:00 - 13:00]

- On this journey, keep you north star in sight and navigate using need and risk as your compass.
- Transformation and evolution don't happen overnight.

- If you really want to transform your health, you are aware that there are changes needed to diet, exercise, sleep, and even spirituality. The energy, planning, and intent to change starts with personal commitment. The next step is to recognize and recover from mistakes.
- In software modernization and DevSecOps, we refer to that as “learning fast”.
- I certainly have not covered every nuance, topic, and approach in our quick chat. In the following conversation, the panelists will dive deeper into these topics as well as multiple others.

This has been fast and fun...

now it's my pleasure to introduce the panel moderator today, Mr. David Almeida (all-may-da), Director of Research & Technical Strategy, at LS Technology. David...