



Unlocking the Power of Shift-Left: Elevating Software Development for Defense

SAIC

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Session Overview

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5. Aligning Values
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Bio



- From Minneapolis / Saint Paul, MN
- Ph.D. Physics, UC Irvine 2008
- U.S. Army and U.S. Navy Veteran
 - U.S. Army: DA Civ Physicist, SMDC
Alabama Army Natl Guard Soldier
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1. Opening Remarks

Opening Remarks: Setting the Stage for Adoption

What we will cover today:

- Going beyond the basics of Shift-Left
- Delving into adoption challenges and innovative strategies
- Taking a gradual adoption approach
- Driving effective Shift-Left adoption requires leadership sponsorship and Champions



2. Beyond the Basics

Beyond the Basics: Embracing Shift-Left Uniquely

Going beyond the basics is about taking a strategic approach to Shift-Left adoption:



Incremental adoption
to Shift-Left



Leadership sponsorship



Addressing challenges early
with actionable solutions



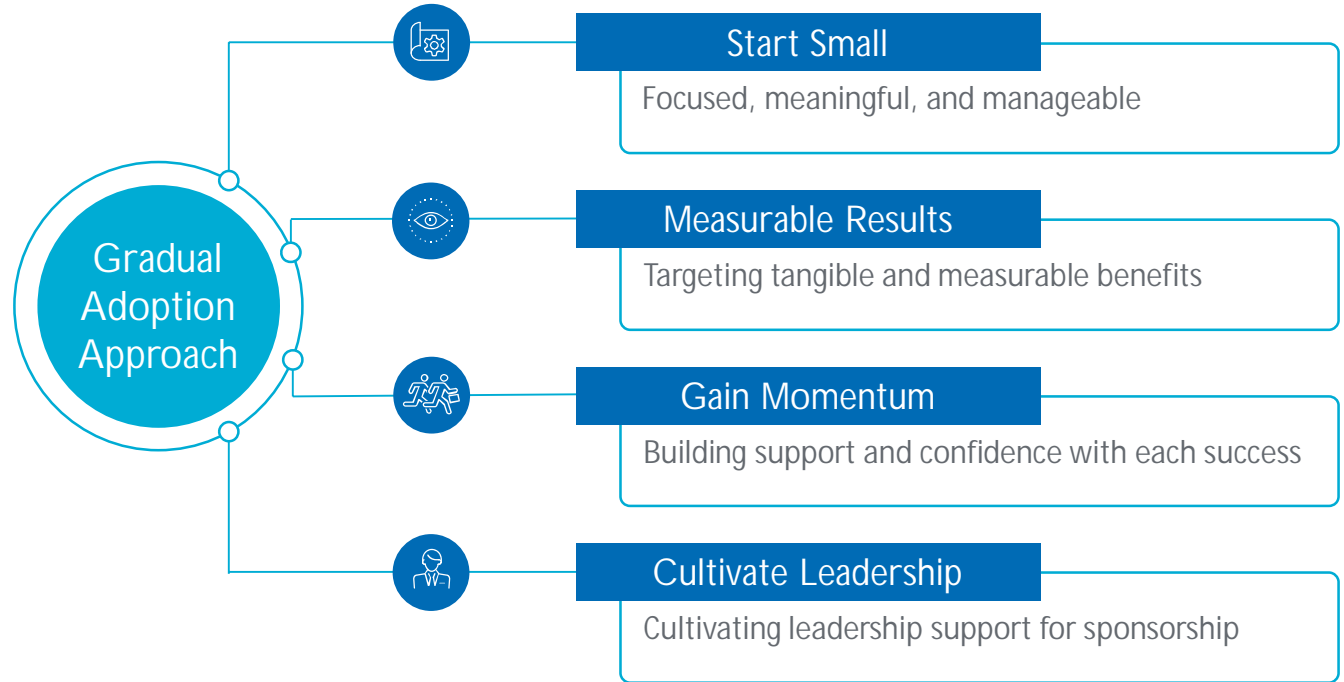
Targeting tangible
benefits



3. Gradual Adoption

Gradual Adoption: Small Steps, Big Impact

Small, deliberate shifts can pave the way for broader Shift-Left integration.

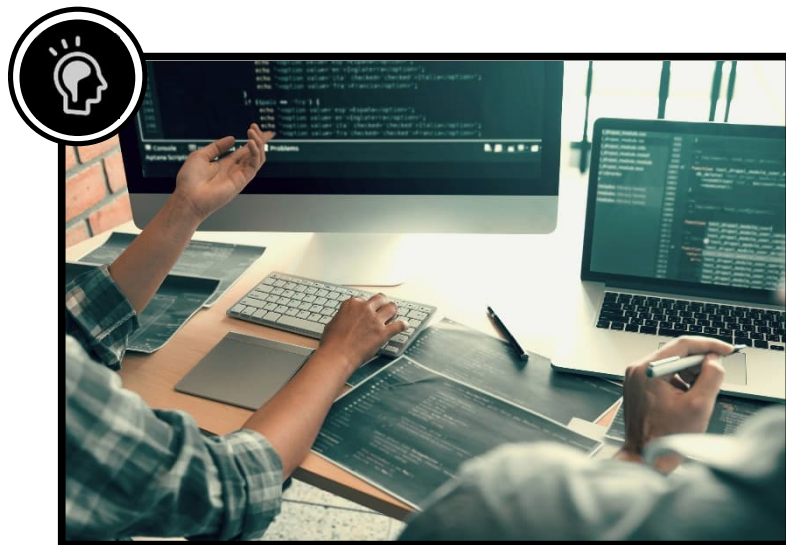


Gradual Adoption: Shift-left with Developers In Mind

Despite the benefits of Shift-left, it can negatively impact developers.

Mitigate developer impact by:

- ▶ Collaboratively defining what processes, practices, or responsibilities will Shift-left
- ▶ Establishing a blameless culture - the team as a whole shares collective responsibility for problems and resolution
- ▶ Monitoring Shift-Left impact to developers



4. Leading the Shift

Leading the Shift: The Role of Leadership Sponsorship

Leadership sponsorship is crucial for:

- ▶ Triggering Shift-Left adoption
- ▶ Navigating resistance effectively
- ▶ Elevating customer satisfaction levels
- ▶ Aligning stakeholders
- ▶ Sponsoring broader adoption



Obtaining leadership buy-in, advocacy, and support will shape organizational culture towards Shift-Left.



The Leadership Ramp: A Strategic Approach to Gain Gradual Buy-in and Support for Shift-Left

- ▶ Align leadership with scope of adoption
- ▶ Gain momentum
- ▶ Move up the organizational hierarchy
- ▶ Patience, takes time to make Shift-Left a fundamental practice

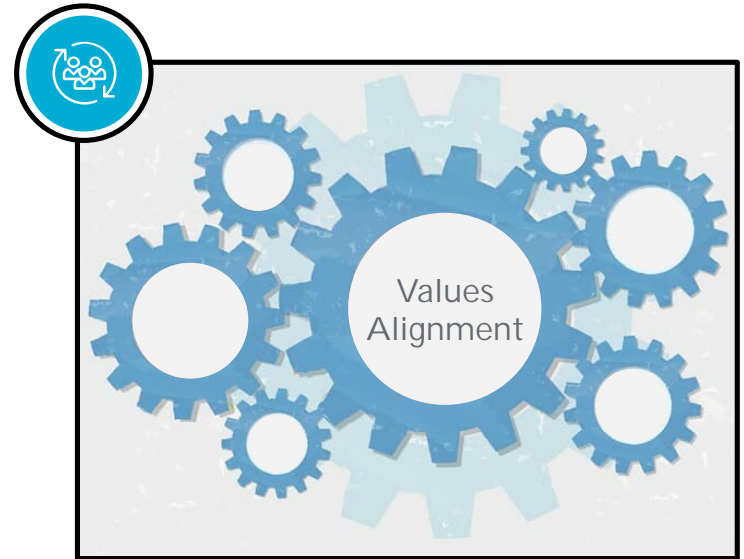


5. Aligning Values

Aligning Values: Stronger Foundation for Collaboration and Adoption

Stakeholder alignment of values can foster a more cohesive working relationship and a better understanding of mutual goals, leading to:

- ▶ Collaboration and Trust
- ▶ Long-Term Partnership
- ▶ Ethical and Security Prioritization



6. Challenges

Addressing Challenges Early

In software development, proactive challenge management is not just a best practice; it's a strategic advantage, including Shift-Left initiatives.

Benefits of leveraging actionable solutions



Minimizing and controlling risks



Boosting leadership confidence



Enhancing reputation



Strengthening client relations



Fostering collaboration



Nurturing a positive team environment



Potential Challenges You May Encounter

Confront challenges head-on and early, as others may rise on the horizon.





Source: Warner Bros.



Big concerns grow from small concerns. You plant them, water them with tears, and fertilize them with unconcern. They grow.

Ambassador Londo Mollari, Babylon 5 (1994)

Potential Challenges You May Encounter

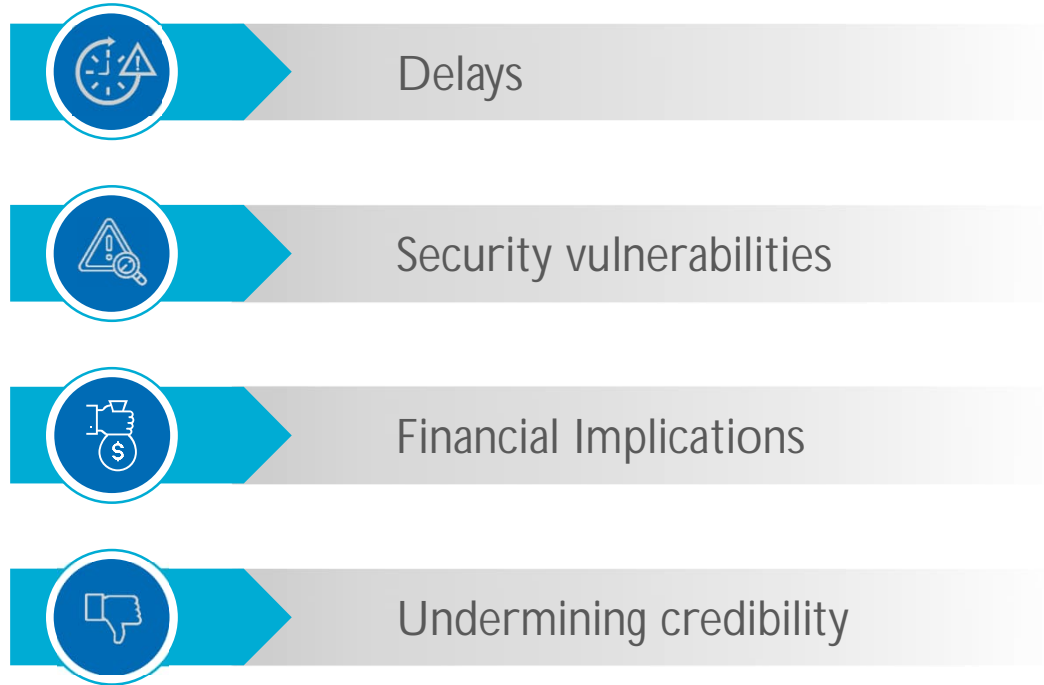
Confront challenges head-on and early, as others may rise on the horizon.



7. Revealing the Consequences

Revealing the Consequences: The Impact of Neglecting Shift-Left

Neglecting Shift-Left practices introduces potential risks, vulnerabilities, and financial implications.



Example where Shift-left would have benefited the F-35 Lightning II Joint Strike Fighter program

Software upgrade flaws and impacts:

- ▶ Up to 857 deficiencies reported
- ▶ Critical deficiencies in weapons, communications, navigation, cybersecurity, targeting...
- ▶ Overbudget
- ▶ Delays in software releases



SOURCE: WIKIPEDIA

Agile software development addresses the need for quick releases but not software quality and security.



8. Pilot Programs

Pilot Programs: Catalyst for Cultural Transformation

Initiating a Shift-Left pilot requires careful planning and a solid foundation.

Remember, gain the benefits, but do not make the developer's job harder.

Pilot Program Planning Considerations

- ▶ Leadership Sponsorship
- ▶ Culture of Collaboration
- ▶ Champion Selection
- ▶ Feedback Mechanisms
- ▶ Cross-Functional Team
- ▶ Continuous Monitoring
- ▶ Risk Assessment
- ▶ Metrics
- ▶ Pilot Scope
- ▶ Continuous Improvement



Example Pilot Program: Shift-Left Security Practices

Plan for a continuous process of security improvements over the long term.

Shift-Left security must be implemented carefully for its impact on development.

- 1 Optimize Test Environments
- 2 Monitor Pipeline Performance
- 3 Security Teams in Design
- 4 Increase Pre-Approved Tools
- 5 Develop a Culture of Visibility



Pilot Programs: Examples of Measuring Shift-Left Security Impact



Reducing Review Time

Speed up security reviews to keep pace with development, ensuring minimal delays.



Expanding Automated Testing

Integrate more security requirements into automated tests for quicker developer feedback.



Pre-Approving Development Tools

Expand tool approvals to cover the full spectrum of development tools, promoting secure choices.

Promote successes and continue broadening Shift-Left's scope



9. Championing Change

Championing Change: Understanding Shift-Left Champions

Champion for Change

- ▶ It's a role and a mindset
- ▶ Embodies commitment to proactive quality and continuous improvement
- ▶ Torchbearers of change

Why Champions Matter

- ▶ Linchpins in the Shift-Left journey
- ▶ Navigate challenges, inspire excellence, and drive commitment to quality
- ▶ Ensuring we stay the course

Role

- ▶ Champions lead by example, embodying Shift-Left principles in their work
- ▶ Act as advocates, promoting a culture of proactive quality and innovation
- ▶ They collaborate across teams, driving alignment and sharing knowledge



Championing Change: Identifying and Empowering Champions

Empowering Champions

- ▶ Identify Your Champions: Seek individuals passionate about Shift-Left principles and proactive problem-solving.
- ▶ Empower with Knowledge: Provide training, resources, and opportunities for champions to excel.
- ▶ Recognize: Acknowledge contributions as advocates of change.

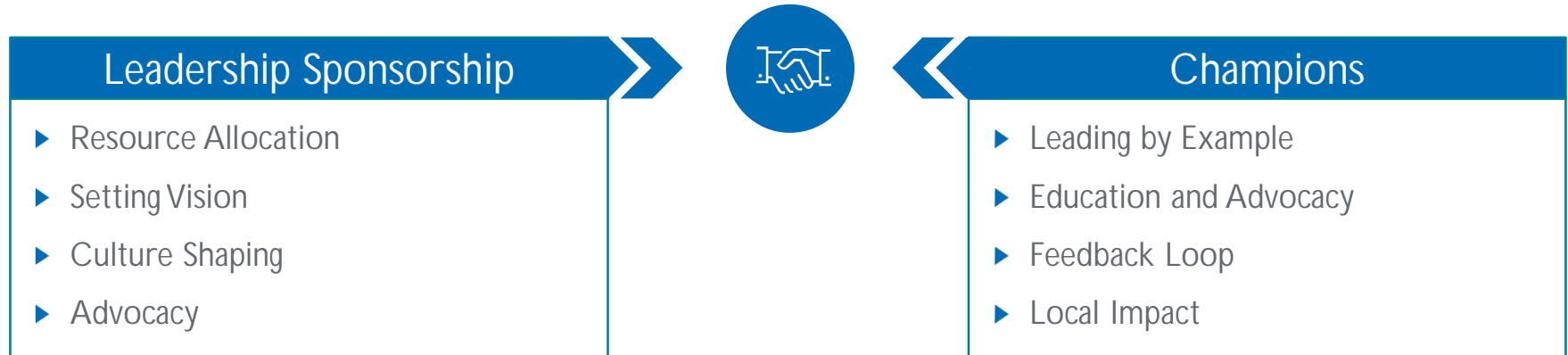
Change Agents

- ▶ Driving Adoption: Champions lead by example, promoting Shift-Left practices within their teams.
- ▶ Change Advocates: They inspire and educate team members, advocating for proactive quality.
- ▶ Positive Influence: Champions foster a culture of continuous improvement and innovation.



Championing Change: Gradual Shift-Left Adoption

Both leadership sponsorship and champions are crucial to drive gradual Shift-Left adoption from the top-down and the bottom-up.



10. Conclusion

Conclusion: Takeaway Points to Take Inspired Action

Gradual Adoption

Successful adoption doesn't require an all-or-nothing approach



Manageable Pilot

Start by selecting a big-impact, focused, and meaningful pilot



Leadership Sponsorship

Leadership sponsorship is vital as the Shift-Left scope broadens



Change Agents

Champions will promote Shift-Left practices within their teams.



Thank You