Jan 11, 2019 5

# Software is Never Done: Refactoring the Acquisition System for Competitive Advantage

Defense Innovation Board

**TL;DR** (v1.5, 11 Jan 2019)

**Key themes:**

- **Software is ubiquitous and U.S. national security relies on software.** Well-equipped and well-trained warfighters provide the capability necessary to defend the nation, but software critically enables that mission. The ability to develop, procure, assure, and deploy software is central to national defense and integrating with allies and partners.
- **Speed and cycle time are the most effective metrics for software.** Software is a critical element of the Department's approach to executing missions, collaborating with allies, and managing its operations. DoD needs to deploy & update software at the speed of (mission) need, and execute within the OODA loop of our adversaries to maintain advantage.
- **Software is made by people, for people, so digital talent matters.** DoD's current personnel processes and culture will not allow its military and civilian software capabilities to grow nearly enough. New mechanisms are needed for attracting, educating, retaining, and promoting digital talent, and providing the ecosystem that enables them to succeed.
- **Software is different than hardware (and not all software is the same)**. Hardware can be developed, procured, and maintained. Software is an enduring and evolving capability that must be supported and continuously improved throughout its lifecycle. The DoD acquisition process and culture need to be streamlined for effective delivery and oversight of multiple types of software-enabled systems, at scale, and at the speed of relevance.

**Why it matters:**

- **The threats that the U.S. faces are changing rapidly**, and DoD's ability to adapt and respond is defined by its ability to develop and deploy software to the field rapidly.
- **The current approach to software development is a leading source of risk to DoD;** it takes too long, is too expensive, and exposes warfighters to unacceptable risk.
- **Software should enable a more effective force,** strengthening our ability to work with allies, and improving the business processes of the Department.

**Who needs to do what to fix this:**

- **Congress**: **Create new statutes streamlined for software,** providing increased insight to reduce the risk of slow, costly, and overgrown programs, and enabling rapid deployment and continuous improvement of software to the field.
- **OSD**: **Create cross-program/cross-service digital infrastructure** that enables rapid deployment, scaling, testing, and optimization of software as an enduring capability; manage them using modern development methods; and eliminate the existing hardware-centric regulations and other barriers.
- **Services**: **Establish SW development as a high visibility, high priority career track** with specialized recruiting, education, promotion, organization, incentives, and salary.
- **Contractors**: **Adopt DevSecOps practices/culture;** prioritize speed as the critical metric.

**Timeline for action:** We need to start now (FY19-FY20); inaction has serious consequences.

**Table of Contents**[1]

v1.4, 5 Jan 2019



**List of Vignettes** (tentative)



**Supplemental Information** (separate document)

[1] Draft outline for the report; page numbers reflect target length for each chapter

End of Overall Report: 32 pages (main) + 160 pages (SI) = 192 pages