LESSONS OF MODERNIZATIONS PAST MOVING US TOWARD THE FUTURE

Modernization. The process of updating and innovating. It's certainly a trending topic in the industry lately. You can't go to a defense conference or read an article about military advancements without someone touching on modernization. As the Army continues to emphasize the importance of modernization, we must remember the lessons we have learned from our previous innovations. For this is not the first time that we have initiatives that push for Army modernization.

In order to stay ahead of and outmatch the constant ever-changing threats that face our armed forces, we must also be consistently modernizing the platforms, technologies and capabilities. Modernization is a constant requirement to ensure effectiveness and readiness. The threat environment dictates the urgency, tempo and funding levels associated with force modernization.

The U.S. Army had significant modernization in the early 1980s when "big five" systems were fielded. Arguably, the next wave of modernization was the "Network and Information" wave. The U.S. Army was looking for the best way to gain an advantage by using computing, networking, and new position location navigation technologies to gain advantages on the battlefield. There were concerns that the Army couldn't keep up with the pace of change in the commercial marketplace, and that eventually, that change would outpace the Army's ability to deliver capabilities completely. To combat this, the Army instituted a series of experiments and a plan forward, resulting in the delivery of new game-changing capabilities. These capabilities proved themselves in combat and continue to provide our soldiers with a battlefield edge. This included the Force XXI Battle Command Brigade and Below program (FBCB2) that began in the 1990s to improve situational awareness.

Over time, trade-offs were made and over 165,000 of the fourth version of FBCB2 systems were fielded across the U.S. Army and the Marine Corps. The challenge of this fielding was remaining cost-effective AND relevant. This required a tight linkage between industry and the commercial electronics component suppliers to ensure that products delivered to the forces were leveraging the latest technologies available for processing, memory, storage, etc. The PM for FBCB2 even used a vehicle processor unit from FBCB2 as his office desktop, because it was more modern and up-to-date than the commercial computer he was issued!

Naturally, the Army had concerns about jumping headfirst into this new technology wheelhouse. The challenge for the industry then became not only to deliver a rugged product that could be depended upon to provide situational awareness in a mission-critical way but also to harness the introduction of new technologies to "evergreen" the offering. All the while, ensuring the Army's platform computing was always ready to take on new challenges. Then FBCB2 morphed into a program known as Joint Battle Command-Platform (JBC-P). A PEO C3T initiative to identify a common set of mission-critical platform computing hardware called Mounted Family of Computing Systems, or MFoCS. MFoCS was meant to meet the narrow needs of situational awareness while also providing a robust and extensible platform for the integration of communications, platform sensors and simultaneously support other application software and operating systems via Virtual Machine (VM). MFoCS, as part of the Mounted Computing Environment (MCE), is meant to support the evolution from situational awareness to improved levels of situational understanding.

In 2018, MFoCS II was awarded and production is underway of the next generation of a proud legacy of mission-critical platform computing systems—powered by quad-core Intel® Xeon® server-class processors and multi-touch sunlight-readable displays. As a key element of the Army Network Modernization Initiative, MFoCS II pure-fleet fielding in support of Joint Battle Command-Platform (JBC-P) will ultimately field more than 90,000 systems across the U.S. Army and Marine Corps.

Modernization, driven by the threat environment, informed by soldier system experimentation, and enabled by leveraging the speed and cost-effectiveness of commercial electronics, delivered the world's leading platform situational awareness systems to the U.S. Army and Marine Corps. As new threats and technologies spur requirements for the next phases of modernization, the FBCB2/JBC-P case study provides strong evidence that the Army knows how to cost-effectively modernize AND keep the battlefield edge.