

# How Technology and Data Affect Mission Command

Data can empower or impede decision-making. What matters is how much data there is and whether or not it is accessible.

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Army Doctrine Publication 5-0, Mission Command, breaks mission command into two distinct but mutually supportive parts. The first part is “the exercise of authority and direction by the commander using mission orders to enable disciplined initiative within the commander’s intent to empower agile and adaptive leaders in the conduct of unified land operations.”

This first part is generally referred to as the art of mission command. The goal is effective communication of the commander’s intent and subsequent empowerment of subordinate elements to accomplish an objective.

The second part is the mission command warfighting function, which is defined as “the related tasks and systems that develop and integrate those activities enabling a commander to balance the art of command and the science of control in order to integrate the other warfighting functions.”

Generally referred to as the science of mission command, the goal of the warfighting function is to synchronize actions across all warfighting functions in time and space to support the decision cycle of the commander.

Technology supports and enables both the art and science of mission command, but it is in the warfighting function that technology carries the load. Technology, as a critical enabler, allows the commander and staff to see farther and faster, analyze and communicate with greater efficiency, and maintain a common operational picture that would oth-

erwise be too time-consuming or difficult to maintain. Conversely, technology can overwhelm or hinder the decision-making process, causing “paralysis by analysis” if not used wisely.

## Technology’s Role in Planning

It is critical to understand that technology is not a decision-making process. Technology is simply an integrating resource. Information is great, but it must enable decisions to be relevant. For example, a concept of support developed using the Operational Logistics Planner is not a complete list of detailed decisions by phase, but it is a useful baseline for beginning to understand and integrate operations across all warfighting functions.

For sustainment planners, synchronizing the numerous systems that support analysis and operate in real time to support the warfighting commander’s decision cycle is challenging for two reasons: the number of overlapping systems and the sheer volume of data generated in the course of an operation.

## Overlapping Systems

In a perfect world, the Army would have one system for collecting, analyzing, and distributing the common operational picture in real time. This system of record would be fully capable of monitoring and interacting with the various subsystems to form a cooperating network of networks. What the Army actually faces is an overlapping, sometimes

confusing, sometimes competing, sometimes cooperating plethora of systems that support planning, analysis, and decision-making.

The landscape is not all bleak. Strides have been made to consolidate and coordinate the disparate platforms into a single system, the Global Combat Support System–Army (GCSS–Army). For core sustainment tasks, GCSS–Army consolidates and, for the most part, coordinates across information stovepipes. As a software-based technology, it can be run on any system that meets the minimum requirements and does not require stand-alone hardware or information technology services.

The future is bright, but it is still a little fuzzy. Coordinating efforts across systems requires units and capability developers to answer questions like, “Should we continue to apply new modules and patches to existing systems to extend their life-cycles?”

Most military organizations, sustainment ones especially, run different applications and systems to support everything from day-to-day operations to human resources to finance—a veritable acronym soup of separate and distinct systems. The technology landscape is a confusing mix of legacy systems with open platform systems coupled with commercial off-the-shelf technology.

Can we simply transition stand-alone legacy systems to web-based platforms and integrate those programs as applications on common

platform architecture in a realistic time frame? Organizations struggle to create patches, normally requiring significant human interaction, to allow subsystems to share data across systems.

Would it be better simply to bite

comes from data usage all use and create a lot of data. Multiple layers of vertical reporting requirements simply add to the pile and the confusion.

Sustainment operations are largely about prediction—turning reams of data into tangible assets on the

- Can everyone see the data?
- What information is presented and how is it as important as the data itself? The more clicks that are required to access the data, the less likely the information will be monitored.
- Do we have systems in place to separate the signal from the noise?

It is not enough to simply track how much data you have. To be useful, the data has to be segmented by data type in a timely manner. This stresses any mission command or decision-making process that relies on technology.

the bullet, take the pain, and build a better mousetrap? The goal is always a single system of record that will communicate with all subsystems and have access to all available data with minimal human interaction. Building a better mousetrap will likely exceed the risk tolerance allowed by commanders.

### Data Volume

Driving toward that single system, we run headlong into the second challenge: the sheer amount of data that is now available. By analyzing, combining, and applying data, more data is created. Put another way, as you interact with data, you are literally adding to the pile.

Data is both a difference in scale of information and in the kind of information. It is not enough to simply track how much data you have. To be useful, the data has to be segmented by data type in a timely manner. This stresses any mission command or decision-making process that relies on technology.

For military organizations, sustainment organizations in particular, the amount of data is problematic because sustaining forces at home station and in route to and on the battlefield are all data-intensive operations. Forecasting, tracking, and disseminating the information that

battlefield in the right place, at the right time, and in the right quantities. Constant, complex interactions with the area of operations further complicate the challenge.

In-depth, detailed analysis of every decision has to be balanced with the time available in the plan to make decisions. Waiting until you have perfect information before making a decision or presenting the information to a decision-maker will put you behind. A data point can also be completely relevant for intangible or residual effects and simultaneously irrelevant for tangible effects that drive toward achieving objectives.

### Recommendations

A focused understanding of the strengths, weaknesses, and challenges that technology and data present can go a long way toward mitigating or even eliminating the challenges. Answering the following questions will help ensure that technology and data analysis supports mission command:

- Are we measuring the right things? When dealing with large amounts of data from multiple levels of the organization, it can be helpful to break the information down into two or three manageable types or categories.

In addition to asking these questions, planners must trust but verify data. Use the available platforms but continually incorporate feedback from the battlefield to validate that the data is still relevant and timely to achieving the objective.

Also, never, ever throw away your pencils. A tactic many units face at the combat training centers is for the observer-coach/trainers to simply walk behind the tactical operations center and turn off or unplug the generators to simulate power loss due to enemy action or simply Murphy's law. In the scramble to account for the challenge, units quickly find that the best technologies they own are a standard issue green notebook and a good mechanical pencil.

Technology and the analysis and mobilization of data can enable or disrupt mission command. If current trends are any indicator, the rate of technology advancement and the sheer volume of data will continue to increase, exacerbating the problem. There is no simple solution for making data more accessible and useful, and addressing the challenges requires more than just technology.

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