

A User's Perspective of GCSS-Army

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Global Combat Support System-Army will enable the Army to transform its logistics processes by integrating legacy system functions into a single repository to store and view logistics data. The authors describe how users have responded to using the system.

The Army has been working to transform its logistics capabilities since the 1990s.¹ In a May–June 2001 *Supply Chain Management Review* article entitled “Logistics Transformed: The Military Enters a New Age,”² Lieutenant General John McDuffie and others expressed the need to transform Army logistics capabilities. The authors identified some of the challenges associated with a transformation, including diverse requisitioning requirements and a large and highly mobile customer base.³ As tough as these challenges are, the Army continues to work diligently to transform current and legacy logistics information technology (LOG IT) systems used to conduct sustainment activities.

The Global Combat Support System-Army Solution

This transformation is becoming a reality with the introduction of the Global Combat Support System-Army (GCSS-Army). GCSS-Army is an enterprise resource planning (ERP) system that will enable the Army to transform its logistics processes by subsuming legacy system functions into a single repository to store and view logistics transactional data.

The Army Combined Arms Support Command's (CASCOM's) Enterprise Systems Directorate (ESD) and the Project Manager (PM) GCSS-Army, with its systems integrator, Northrop Grumman, is developing a tactical ERP system to replace legacy LOG IT systems. This system is based on the commercial off-the-shelf Systems, Applications, Products in Data Processing (SAP). Using SAP allows the Army to begin LOG IT transformation with a specific baseline that fits the logistics processes that the Army is accustomed to with minimal custom coding. Using SAP's capabilities, logistics can be reengineered to provide more effective and efficient processes to conduct business and enable seamless transformation.

The Business Transformation Agency has stipulated that GCSS-Army will provide logisticians with increased equipment readiness through near real-time maintenance and supply status. This is possible through the GCSS-Army integrated solution, which maintains a single database for the storage of all logistics and tactical financial information. This single database eliminates the need to seek information from other systems or databases for logistics information.

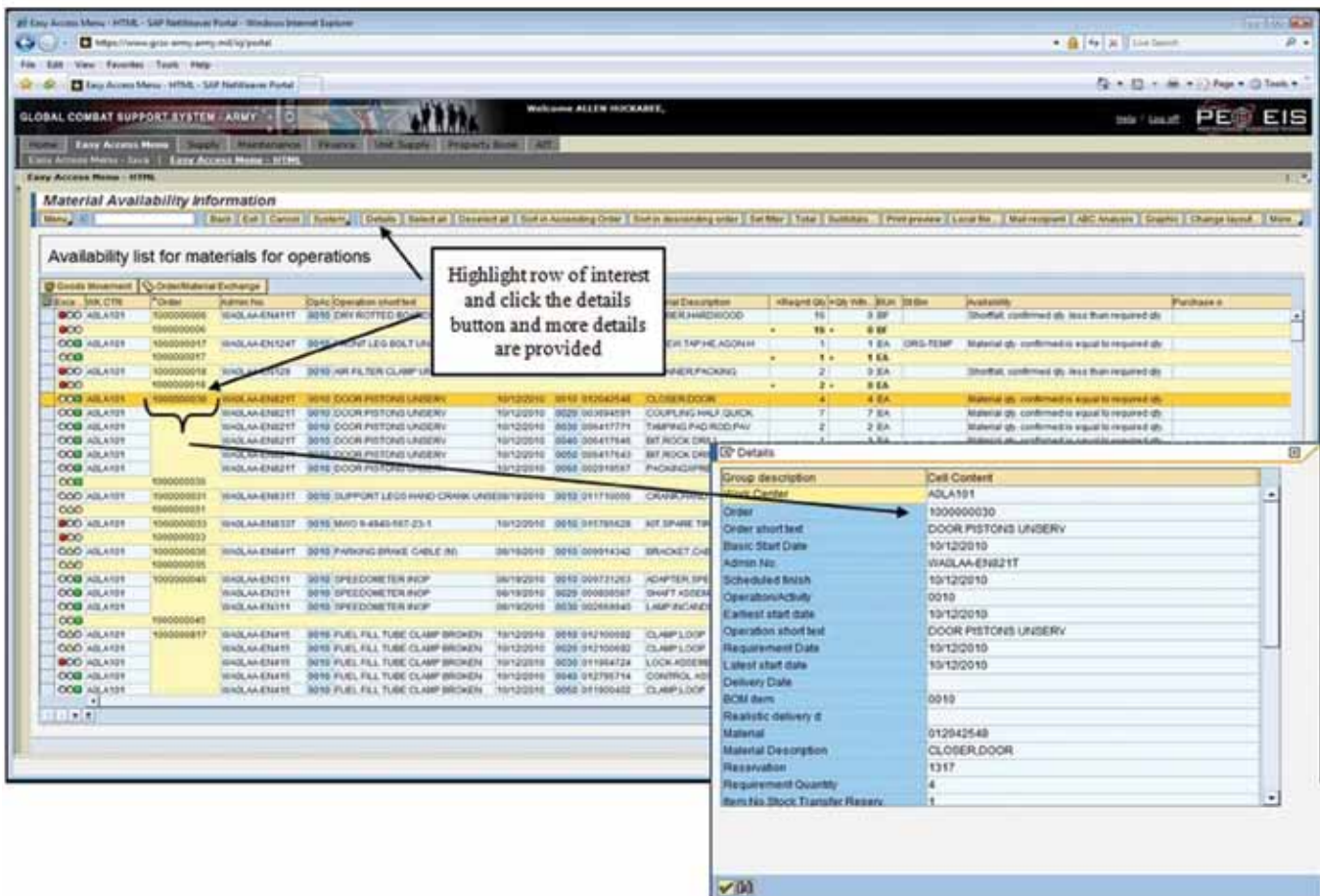
GCSS-Army provides the logistics community with several benefits, including increased service, decreased cost, decreased logistics cycle time, and increased asset visibility.⁴ PM GCSS-Army goes further to suggest that GCSS-Army will standardize logistics processes

¹ David W. Coker and J. Gary Hallinan, “A Logistician's Primer on GCSS-Army (PLM+),” *Army Logistician*, May–June 2006, http://www.almc.army.mil/alog/issues/may-june06/logistic_primer.html, 2006, accessed on 6 July 2011.

² John M. McDuffie, Scott West, John Welsh, and H. Brent Baker, “Logistics Transformed: The Military Enters a New Age,” *Supply Chain Management Review*, May 2001.

³ *Ibid.*, p. 92.

⁴ Business Transformation Agency, “Global Combat Support System-Army (GCSS-Army),” 2007, http://www.bta.mil/products/bea/bea41/etp/App_E/QuadCharts/GCSS-Army_Chart.html, accessed on 16 June 2011.



This screenshot from Global Combat Support System–Army shows how the user is provided with information on the availability of repair parts and other supplies.

across all functional areas, which should help streamline logistics training for all logisticians.⁵

Functional Business Modules

The current logistics functional areas will remain the same under GCSS–Army. However, each business area will employ new logistics management processes. The Army selected five functional business modules to implement, which are currently in use at the 11th Armored Cavalry Regiment (ACR) at Fort Irwin, California. The modules chosen by the Army are warehouse management (retail supply), inventory management (property book and unit supply), plant maintenance, finance, and Defense Forces and Public Security (DFPS). Together, these modules provide enhanced logistics capabilities and enable better logistics management at reduced costs.

DFPS is the heart of GCSS–Army. It uses force

structure data from the Army Force Management Support Agency to create and manipulate a force element structure. This structure mirrors the Army’s hierarchical structure for the sole purpose of conducting sustainment operations.⁶ DFPS will provide the Army with a streamlined process to task-organize and conduct split-based operations and enable defense organizations to plan for, build, and operate a mobile force using flexible systems architecture.

The warehouse management module employs a materiel requirements planning function, which provides enhanced demand planning and forecasting, net asset computation, planned delivery times, and excess management capabilities. The inventory and warehouse management modules together provide intelligent stock placement, full traceability and visibility, deliberate excess and reparables management, and proof-of-delivery capabilities. The procurement and distribution

⁵ Project Manager Global Combat Support System–Army, “Global Combat Support System–Army,” <https://gcss.army.mil/index.html>, accessed on 16 June 2011.

⁶ Ibid.

functions provide dynamic reporting tools, activity monitoring (due-ins/due-outs), in-transit visibility, and full order history capabilities, among others.⁷

Property book enhancements provide the Army with a complete picture of organizational assets, and based on their roles, property book users have visibility of property assignments down to the lowest level. The commander's sub-hand receipts are aligned with modified table of organization and equipment (MTOE) and table of distribution and allowances (TDA) paragraphs. The integrated GCSS-Army single database solution enables the assessment of redistributions almost instantly. Users with the appropriate security roles can search for single or multiple unit items. The functional integration of GCSS-Army enables property book users to view maintenance-related information for all assigned assets.

The plant maintenance module provides users with equipment readiness and enhanced personnel qualification management capabilities. The Equipment Situation Board provides a single screen where users can view equipment status. (See screenshot at right.) With the click of a mouse, users can view work order status, parts status, and other information related to the equipment.

GCSS-Army allows users to view or pull details on any item an organization owns. For example, the screenshot shows an equipment situation report displaying the equipment assigned to an organization within the 11th ACR. The first two columns display the equipment administrative number and the operational status of the equipment: fully mission capable, not mission capable (supply), or not mission capable (maintenance). Next, there are two icons that provide a visual representation of the operational and technical status of the equipment.

Finance is an entirely new process for logisticians, and the focus is on tactical costs, not on budget execution. Logistics costs are captured automatically without the intervention of logistics users. For example, tactical equipment maintenance costs are collected by unit, which allows users to determine the potential cost of an exercise. This new capability enables the appropriate personnel to review requisitions by national item identification number, price, or priority before they become

obligations. The finance module can be a robust tool for commanders in forecasting budgeting requirements.

Why Transform?

The system just described is the result of Joint Vision 2010 and Focused Logistics, which signaled the beginning of the transformation process.⁸ The logistics capabilities of the future are akin to a paradigm shift or what has been called the "Revolution in Military Logistics." A transformation is needed because the Army can no longer afford to work within functional boundaries and win on the battlefield. Maintaining stovepiped systems dramatically reduces the effectiveness of an organization in meeting its strategic goals.⁹

A complete transformation is underway; it is based on business process management, which will require logisticians to cross functional boundaries to perform logistics tasks. This transformation has strategic implications in the form of streamlined processes, increased customer service levels,¹⁰ reduced customer wait time,¹¹ reduced inventory, increased productivity, better financial management,¹² and reduced logistics costs, among others.

To be successful, transformation on this scale will require a culture shift from stovepiped functional logistics areas to crossfunctional business areas using enterprise data and information for decisionmaking. This transformation will require every logistics process to be analyzed, diagnosed, and then reengineered into a more efficient and effective process.

In an organization such as the Army, reengineering must blend process management, which is the use of workflow and application integration to ensure management methods that were successful in the past continue into the future.¹³ The result of these reengineering and integration activities will provide the logistics community with visibility over the statuses of transactions, equipment, and materiel. Visibility will enable the Army to identify critical mission functions (CMFs) in logistics business areas. This will allow enterprise transformation by connecting these CMFs to Army and joint strategies, increasing the Army and Department of Defense's (DOD's) ability to transform logistics at the enterprise level.

GCSS-Army is complex, with more than 700 ac-

⁷ Project Manager Global Combat Support System-Army. "GCSS-Army: Education," <https://gcss.army.mil/education.html>, accessed 16 June 2011.

⁸ Aundree F. Piggee, "Transformation—Revolution in Military Logistics," U.S. Army War College Strategy Research Project, Carlisle Barracks, Pennsylvania, 2002, pp. 1–2.

⁹ Thomas R. Gullledge, Jr., and Rainer A. Sommer, "Business Process Management: Public Sector Implications," *Business Process Management Journal*, Vol. 8, No. 4, 2002, pp. 364–376.

¹⁰ Vincent C. Yen, "An Integrated Model for Business Process Measurement," *Business Process Management Journal*, Vol. 15, No. 6, 2009, p. 867.

¹¹ James Y.L. Thong, Chee-Sing Yap, and Kin-Lee Seah, "Business Process Reengineering in the Public Sector: The Case of the Housing Development Board in Singapore," *Journal of Management Information Systems*, Vol. 17, No. 1, Summer 2000, p. 257.

¹² Fethi Calisir and Ferah Calisir, "The relation of interface usability characteristics, perceived usefulness, and perceived ease of use to end-user satisfaction with enterprise resource planning (ERP) systems," *Computers in Human Behavior*, Vol. 20, No. 4, July 2004, p. 506.

¹³ Jurij Jaklič, Mojca Indihar Štemberger, "A Methodology for a Business Process Change in Public Sector," 2005, p. 39, <http://si.vse.cz/archive/proceedings/2005/a-methodology-for-a-business-process-change-in-public-sector.pdf>, accessed on 16 June 2011.

The screenshot displays the Equipment Situation Board interface. The table lists equipment items with columns for Op. Sts, Op. Station, Tech Station, Tech. Sts, and Status. Callout boxes provide explanations for various icons used in the table:

- Equipment is in a maintenance status:** Points to a green square icon in the Op. Sts column.
- Equipment is operational with a deficiency:** Points to a green square with a red diagonal line icon in the Op. Station column.
- Equipment is not dispatchable:** Points to a red 'X' icon in the Tech. Sts column.
- Equipment has exceeded service tolerance:** Points to a red circle with a white 'X' icon in the Tech. Sts column.
- Equipment is dispatchable:** Points to a green circle with a white checkmark icon in the Tech. Sts column.
- Equipment is in a supply status:** Points to a red circle with a white 'X' icon in the Tech. Sts column.
- Equipment is deadlined:** Points to a red circle with a white 'X' icon in the Tech. Sts column.

Item ID	Op. Sts	Op. Station	Tech Station	Tech. Sts	Status
EMC	Green Square	Green Square	Green Square	NS	No Dispatch
EMC	Green Square	Green Square	Green Square	NS	No Dispatch
EMC	Green Square	Green Square	Green Square	NS	No Dispatch
WA0LAA-EN105	Green Square	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)
WA0LAA-EN111	Green Square	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)
WA0LAA-EN112	Green Square	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)
WA0LAA-EN113	Green Square	Green Circle with Red Line	Green Circle with Red Line	DI	Available
WA0LAA-EN118	Green Square	Green Circle with Red Line	Green Circle with Red Line	DI	Available
WA0LAA-EN121	Green Square	Green Circle with Red Line	Green Circle with Red Line	X	Available
WA0LAA-EN124M	NMCM	Green Circle with Red Line	Green Circle with Red Line	E	Available
WA0LAA-EN126M	NMCM	Green Circle with Red Line	Green Circle with Red Line	E	Available
WA0LAA-EN128	EMC	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)
WA0LAA-EN129	EMC	Green Circle with Red Line	Green Circle with Red Line	X	Available
WA0LAA-EN132	EMC	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)
WA0LAA-EN133	NMCS	Green Circle with Red Line	Green Circle with Red Line	X	Available
WA0LAA-EN211	EMC	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)
WA0LAA-EN212	EMC	Green Circle with Red Line	Green Circle with Red Line	DI	Available
EMC	Green Circle with Red Line	Green Circle with Red Line	Green Circle with Red Line	DI	Available
EMC	Green Circle with Red Line	Green Circle with Red Line	Green Circle with Red Line	DI	Available
EMC	Green Circle with Red Line	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)
EMC	Green Circle with Red Line	Green Circle with Red Line	Green Circle with Red Line	DI	Available
EMC	Green Circle with Red Line	Green Circle with Red Line	Green Circle with Red Line	DI	Available
WA0LAA-EN225M	EMC	Green Circle with Red Line	Green Circle with Red Line	DI	Available
WA0LAA-EN229	EMC	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)
WA0LAA-EN231	EMC	Green Circle with Red Line	Green Circle with Red Line	DI	Available
WA0LAA-EN232	NMCM	Green Circle with Red Line	Green Circle with Red Line	X	Available
WA0LAA-EN235	EMC	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)
WA0LAA-EN239	EMC	Green Circle with Red Line	Green Circle with Red Line	DI	In Use (Dispatched)

This screenshot shows the Equipment Situation Board, which allows users to see equipment status for a particular organization based on established roles and permissions.

tive transaction codes used in various business areas at multiple levels throughout the Army. The visibility this system offers requires a high level of data integrity. Access is no longer limited to the logistician; commanders, decisionmakers, operators, and their supervisors will now have access. The complexity of the system requires extensive training because user satisfaction with information systems is a key factor in a successful ERP implementation.

CASCOM ESD, PM GCSS–Army, and Northrop Grumman understand that usability is a key factor affecting user satisfaction, so they have been working together to prepare superior training products. These products are tailored to assist users in becoming effective and efficient. However, after completing two “go-live” software fielding events, and with a third underway and more functions under development, feedback from users indicated that they are skeptical of the products’ individual contributions.

Independent Government Test

GCSS–Army, in its current configuration, has been employed at the National Training Center (NTC) at Fort Irwin, California, since 2007. Originally, the Army fielded the supply support activity (SSA) portion of GCSS–Army to Bravo Direct Support Unit, 11th ACR. This fielding has been successfully employed to ship, store, and receive supplies. The July 2010 go-live event implemented maintenance, property book, unit supply, and finance capabilities in the 11th ACR. During this implementation, PM GCSS–Army, in coordination with CASCOM ESD, and the Army Test and Evaluation Command, conducted a limited-user test and an independent Government test (IGT) to evaluate the capabilities of GCSS–Army in a battlefield environment. The results of these events were positive.

At the conclusion of the IGT event, PM GCSS–Army asked the users who participated in the IGT to complete an end-of-test survey; the results of the survey gave

PM GCSS–Army and CASCOM ESD a glimpse of how the system will be received in the field.¹⁴ The IGT participants were a mix of Army National Guard and Army Reserve personnel with over 60 years of combined logistics and financial management experience using legacy LOG IT and automated financial management systems. The diversity of these users was critical in testing the system.

The survey was intended to help the development team enhance GCSS–Army’s effectiveness and quality. The survey addressed each functional business area by allowing users to provide responses to open-ended questions that addressed various categories. The survey found that most users agreed that GCSS–Army provided a “greater level of visibility and data accuracy” than legacy systems, especially when it came to total asset visibility of classes II (clothing and individual equipment) and VII (major end items).¹⁵

IGT Results

Users thought that being able to immediately hand-receipt equipment to the user level as soon as equipment is received was a capability that legacy systems did not provide. But these same users found the dispatch process to be time consuming. One respondent suggested that a legacy dispatch that took less than 5 minutes takes 10 to 15 minutes in GCSS–Army.¹⁶

Because of this observation, CASCOM has been working with developers to enhance many of the system’s processes, including the dispatch process. For instance, by reviewing the process log for each completed dispatch, an analysis can be conducted to determine the length of time a dispatch notification takes. This process includes the time from when a user begins the dispatch notification until the notification is completed and the dispatch is put in process.

During the period from 31 October to 30 November 2010, 893 dispatches were processed at the 11th ACR. A random analysis of 63 of the completed dispatches revealed that the average time to put a dispatch in process was 5 minutes 12 seconds.

During the period from 30 May to 30 June 2011, 361 dispatches were completed. A random analysis of 63 completed dispatches revealed a reduction in the time it took to put a notification in process from 5 minutes 12 seconds to 3 minutes 51 seconds.

One explanation for the improvement could be that leaders implemented local policies and procedures to improve the processing of dispatches. Or CASCOM and the developer may have streamlined the dispatch

process. Another possibility is that 11th ACR users are more experienced with GCSS–Army. A final possibility is the switch from the SAP graphical user interface (GUI) for hypertext markup language file (HTML) to the SAP GUI for Java.

The SAP GUI for HTML reduces the usability of the system because a webpage will load each time a user requests or updates data. But when SAP GUI for Java loads a webpage, all of the data needed is loaded at one time, speeding up the associated processes. After making the switch to SAP GUI for Java, there was a “77% improvement in overall transaction duration over SAP GUI for HTML.”¹⁷

Users indicated that operator qualifications management significantly improved in GCSS–Army over legacy systems. The human resources (HR) management capability is not a major module within GCSS–Army, but it does play a part. Without the HR processes, vehicles could not be dispatched and materials could not be assigned. HR processes also facilitate security role management in the enterprise using MTOE and TDA data from the Army Force Management Support Agency.

For example, through an interface with authoritative HR sources, such as the Electronic Military Personnel Office, when personnel are assigned to MTOE or TDA positions through an interface with these agencies, users inherit specific security roles and permissions and access GCSS–Army with a security-enabled common access card. In legacy LOG IT systems, operators had to have their operator permits regenerated or rebuilt when they arrived at their new duty station. GCSS–Army maintains qualifications on all personnel, eliminating the need to recreate qualification records.

Finance will be new to many logisticians, and most of the financial transactions occur behind the scenes and do not affect the logistics users. GCSS–Army provides interface and transactional-level data to the General Fund Enterprise Business System (GFEBs). This system provides the financial visibility of the Army’s tactical assets. Overall, the respondents provided positive feedback on finance functionality. One respondent stated that GCSS–Army provides the “ability to track budget in one place and [have] an automatic mirror image,”¹⁸ which provides finance and logistics users more visibility over spending.

This control is provided by GCSS–Army through the ZPARK function, which works much like the Integrated Material Automation Program (IMAP) checkbook, which is an Army National Guard requirement. How-

¹⁴ Project Manager Global Combat Support System–Army, Independent Government Test (IGT) Exit Survey Responses, 2010.

¹⁵ *Ibid.*, p. 3.

¹⁶ *Ibid.*, p. 7.

¹⁷ Northrop Grumman, 11103–361: GCSS–Army Release 1.1 User Interface Performance Tiger Team Final Report, 2011, p. 27.

¹⁸ Project Manager Global Combat Support System–Army, Independent Government Test (IGT) Exit Survey Responses, 2010, p. 8.

ever, the finance capability is still being developed and enhanced based on the interface requirements and the mandate to have a fully synchronized federal financial template for GCSS–Army and GFEBs. This capability is one of the more difficult functions because it requires multiple agencies and programs (the Defense Finance and Accounting Service, the Assistant Secretary of the Army for Financial Management and Comptroller, GFEBs, and GCSS–Army) to agree on a standardized solution that will work for the Army as an enterprise.

Overall, the IGT participants' comments and contributions are valuable to CASCOM ESD and PM GCSS–Army. Comments and contributions from users in the lab setting provide guidance and help to direct efforts to enhance the system's capabilities, effectiveness, and quality, which affect user satisfaction with the system.

11th ACR Stakeholder Assessment

PM GCSS–Army, in coordination with Northrop Grumman, conducted a stakeholder assessment in January 2011. During this 3-day event, Northrop Grumman's Organizational Change Management (OCM) team conducted 1½-hour interviews with 46 GCSS–Army users at the 11th ACR. Leaders and managers seemed to like the capabilities the system provides. For instance, the assessment suggests this group of users appreciated the increased visibility of statuses and processes the system provides.

Unlike many legacy systems, clerks can multitask in GCSS–Army. Users in the maintenance section of the 58th Engineering Company stated that before GCSS–Army only one clerk at a time could complete a task, but now clerks can perform several functions at the same time. This level of efficiency was unheard of with legacy systems.

Maintenance users seemed to like the system; they stated that the dispatch process “. . . has improved 10-fold from legacy [equipment].”¹⁹ This was attributed to the visibility of equipment statuses, which are provided in near real time in the equipment status report. However, to maximize the benefits for users and the organization, leaders need to be brought up to speed on the enhancements made to the dispatch processes.

Supply users revealed a different outlook on the system. Users in the support operations section (SPO) had difficulties understanding the new manager review file process and how cancellations are completed. As a result of the enhancements to the process, only those users who opened a request could terminate it and only those in the SPO had visibility of the release strategy.

This created confusion and problems at lower echelons of the supply chain. Miscommunication and misunderstandings of this process created problems for users at the 11th ACR.²⁰ For instance, a materiel officer at the regimental support squadron SPO summed it up this way:

When you do the release strategy, you don't see what is there, you just see you have notifications, and then you have to click and drill down into each notification to see what it is . . . the amount of places you have to go and do research is a lot. You must have a clear understanding of each process.

It is important that leaders are aware of and understand supply statuses in GCSS–Army. A status update is provided for high-priority requests, whereas lower priority requests receive no status update unless it is provided to the user by the SSA based on a request to the supporting SSA. This inhibits decisionmaking processes and logistics planning. Supply statuses in accordance with Army Regulation 725–50, Requisitioning, Receipt, and Issue System, are provided to supporting SSAs, and when users request a status from supporting activities, the requester often believes the status being provided is inadequate for decisionmaking and planning.

Managing shop stock is an important point inhibiting GCSS–Army's adoption. Unlike legacy systems, GCSS–Army is an integrated product crossing functional boundaries. The integration of the system prohibits many of the actions done in legacy systems. In legacy systems, for example, when a part is received at the motor pool, it is not hard for users to identify which vehicle a part belongs to. In GCSS–Army, this requires a considerable amount of time and research on the user's part because the part is associated with a materiel release order containing a DOD document number not referenced to the GCSS–Army document number.²¹ This decreases the amount of repair parts processed at any given time, and leader awareness is needed to ensure that users can be successful in this process.

The OCM assessment indicated training and communication was an issue at the 11th ACR. Based on user responses, 26 of the respondents stated that “training was not realistic or accurate,” and 7 responses stated that new equipment training did not prepare them for their jobs.²² Early in the development process, producing quality training products for GCSS–Army was a problem. Both the PM and CASCOM combat developers have acknowledged issues with training products and have stepped up their oversight and involvement in

¹⁹ Northrop Grumman, GCSS–Army Organizational Change Management 11th Armored Cavalry Regiment Site Visit and Stakeholder Assessment, Final Draft, 2011, p. 14.

²⁰ *Ibid.*, p. 10.

²¹ *Ibid.*, p. 13.

²² *Ibid.*, p. B-7.

the preparation of training products.

One example of the progress made in the development of training products is the Electronic Performance Support System. This online help system gives GCSS–Army users access to a wide variety of tools, such as simulations, job aids, cue cards, process maps, and other tools. Another possible solution is to have representatives from the field, including National Guard and Army Reserve logisticians, participate in training evaluation activities. Having representation from the field helps the developers capture the expertise needed to develop training products that are more realistic and as close to the logistics process as possible. This also helps to ensure that training meets the standards suggested by participants from both the IGT and the site visit conducted by the OCM team.

It is apparent, despite training issues and learning curves associated with the system, that users are adopting GCSS–Army as a viable replacement for legacy LOG IT systems. Users are realizing the benefits associated with an integrated system like GCSS–Army. Leaders need to ensure that all users embrace the system by communicating their acceptance of GCSS–Army, thereby displaying confidence in the users’ abilities to adapt to GCSS–Army and perform their missions as effectively as possible.

With the transformation of legacy logistics systems well underway, a continued analysis indicates that users have both positive and negative emotions about the GCSS–Army’s capabilities. It is important for leaders to understand that users can be affected negatively by the implementation of a mandatory-use system. The implementation of a mandatory-use ERP can negatively affect a user’s job satisfaction, feelings toward leadership, and loyalty toward the organization.²³ User satisfaction is probably the most important and widely used metric used in the determining ERP success.²⁴

CASCOM, PM GCSS–Army, and Northrop Grumman have increased their efforts to address the usability and training factors necessary to increase user satisfaction with the system. Together, their efforts in developing better training products and enhancing user interfaces have made great strides toward increasing user satisfaction. But it does not end there; leadership plays an important role in user satisfaction. For example, leaders can provide guidance on how the system can increase productivity or enhance mission success. Leaders’ intervention in the form of communication is

key to increasing user satisfaction and adoption of the system.²⁵

Open and honest communication at all levels throughout the development life cycle is important for a user’s adoption of the system. A good user interface will improve learnability, thus reducing the user’s mental workload associated with completing designated tasks.²⁶ Users must realize that using the system will increase their performance and productivity, and leadership is the key to this realization.

Finally, for GCSS–Army to be successful, we all must take action in all areas of this transformation in order to increase user satisfaction with, and adoption of, GCSS–Army. CASCOM is taking action by ensuring that the factors affecting usability and learnability are being addressed. The PM is communicating system benefits in every venue available. Northrop Grumman is working to ensure, within the constraints of the program, that these same factors are being properly addressed.

For further information about GCSS–Army, visit the GCSS–Army website, www.gcss.army.mil, or contact one of the authors at william.a.huckabee.civ@mail.mil or marcus.smoot@us.army.mil.

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²³ S. A. Brown, A. P. Massey, M. M. Montoya-Weiss, and J. R. Burkman, “Do I Really Have To? User Acceptance of Mandated Technology,” *European Journal of Information Systems*, Vol. 11, 2002, p. 283.

²⁴ *Ibid.*, p. 284.

²⁵ Yujung Hwang, “Investigating Enterprise Systems Adoption: Uncertainty Avoidance, Intrinsic Motivation, and the Technology Acceptance Model,” *European Journal of Information Systems*, Vol. 14, No. 2, p. 151.

²⁶ Fethi Calisir and Ferah Calisir, p. 511.