

Superior on the war front, the U.S. military and its contractors have the same problems as everyone else—how to manage personnel, documents, and data.

MILITARY MIGHT

By Jennifer M. Sakurai

Technology does amazing things for the military. It's mind-boggling to think that our armed forces can launch something like a scud missile and effectively take our opponent's best shots out of the sky before they can hit their intended targets. On a more mundane level, keeping track of the sheer numbers of our troops, who's moving where and how to get the necessary equipment, supplies, and food to them can involve software, satellites, RFID (radio frequency identification) tags and the constant ingenuity of designers and engineers.

However, even our mighty and brave run into glitches. Well, hopefully not the actual men and women in combat, but a lot of the work that goes on behind the scenes—personnel training, product manufacturing, and data sharing and storage suffer from the same processes—or lack thereof—of every large corporation in the country. As you might expect, though, Uncle Sam

and its contractors are hard at work to improve their lot so they can focus on the important tasks at hand.

Your most valuable resource

It's a well-known tenant that any organization is only as good as the people behind it. When you're depending on the youth of this country to defend your nation's security, you need to be secure in the knowledge that they received the necessary training in order to fulfill their tasks with confidence, skill, and without hesitation. The National Guard personnel goes through training to maintain a cohesive unit and structured line of command.

The Vermont National Guard's training depends on assistance from mGen (Foxborough, Mass.; www.mgen.com), which has helped the Guard develop some of its content as well as information assurance courseware. According to Major Dan Molind, a primary purpose of its use of mGen's product to facilitate training is to get its students on a level

playing field before they arrive for resident courses. "We're using a blended training approach, if you will," explains Molind, "because everybody starts with their own individual level of expertise. We can bring all these different skill levels up to a common standard so that when we start our resident training, we don't have to go back and reteach people and lose the momentum of the classroom. It allows us to bring everybody to a common standard from the first day they arrive to really get into some aggressive hands-on training that we can't do in a virtual-type environment."

mGen's CRXXI (classroom 21) learning management system is also being used at Ft. Leavenworth in Kansas. Major Floyd Lucas belongs to the Battle Command Training Program, referred to as BCTP, which trains all the combat National Guard brigades in the United States and Puerto Rico. Every unit (about 44) goes through a training program that consists of a seminar at Ft. Leavenworth where



select members of the unit, which equates to about 88 personnel or positions per unit, come to train.

“We’ve created a seminar preparatory course that’s an online, Web-based distance learning program,” says Lucas. “We created it in the mGen environment using their Producer, where we take the content that our observer trainers upstairs created. These observer trainers, called OTs, pretty much equate to an instructor or a professor in a college somewhere. They have material and instruction that they created, and we take that content and we take it to the Web for our units to train with.”

According to Lucas, the courses are self-paced, commander-directed type programs that each individual can take at his convenience. A unit, once it comes into the window for training, has about six to eight months to complete this seminar preparatory course, and at any given time, there are about 400 people in different stages of the course.

“The beauty of the thing is, CRXXI has allowed us to take the content that we have and take it directly to the Web and bring it inside their learning

Beyond the content

For about a year-and-a-half, units coming to Ft. Leavenworth for their Battle Command Training Program (BCTP) used to receive their distance learning in a CD-based program, and that just wasn’t doing the trick. “It wasn’t supporting the soldier out there in the field, nor was it providing any feedback to our folks upstairs,” Lucas explains.

“The soldiers out there can take this course and get immediate feedback; they go to their gradebook and see exactly how they’re doing in a course and how they’re doing overall. That type of information will fall into the reports that our OTs upstairs get so that they can make an analysis and determination how to work with the unit once it gets here. It’s cost us no money at all. We just did a little reconfiguration here in-house and we’re running with it.”

BCTP consists of about 21 core classes; how many an individual takes depends on his position. “One of the things that we get from it is the accessibility of the training,” says Lucas.

“Our old CD-based distance learning was cumbersome, there was a lot of logistics involved in trying to get the CDs produced and sent out to all the

remainder is broken down into battle-field operating systems (BOS). All those classes are geared toward the soldier being able to conduct the military decision-making process. Those BOS systems consist of the maneuver system, the intelligence system, the fire support, the mobility and survivability system, the air defense, the command and control, and the combat service support system.

The Vermont National Guard’s pre-residency courses include those that are doctrine-based and definition-based (terms and acronyms) as well as procedural-type courses. The latter shows them “how to proceed through things, which allows everyone to get to that common standard,” he says. “When people arrive here, then we can actually give them physical pieces of equipment that they would need to manipulate, and they have all the background information about what all the terms mean, what the procedure is and all that before they arrive. One course in particular is an information operations fundamentals course, which teaches the student what information operations is; it’s a relatively new method of employing a combat force, and so we need to start off at a very fundamental level. Then when they get here for the residential course, we can do some applications.”

Molind is also taking advantage of mGen’s platform to become a more data-driven organization. “Previously, it was difficult to compile a database of how students were performing, where they were really starting from, even regular demographic information,” he says. “Where are they coming from, what times do they log on, how much time do they spend in the chat room—all that kind of stuff is recorded in mGen so that courses can be designed to best facilitate the needs of the student.”

Added benefits include being able to go back and access old course material for review purposes; added interactivity, which has increased the attainment of course objectives to

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management system,” says Lucas. “We can keep it in-house, we have not had to turn our content over to someone else to take it to the Web.” Lucas liked the flexibility of maintaining control over the content, which makes it easier if changes needed to be made, and he said that they had trouble finding another vendor that could accommodate that desire.

individuals, and it lacked the ability of our OTs upstairs to mentor the people or the units in the course.” The reporting capabilities within the mGen product enables the OTs to make adjustments to the onsite training plans based on results gathered during their preridency seminar training.

Of those core 21 classes, there are four general study courses, and the



about 80 percent compared to the 50-percent average reached with their prior LMS; and automatic grading and posting of multiple choice-type exams, which enable immediate feedback and assessment of current skills.

Both Majors seem very pleased in their dealings with mGen and are looking forward to adding additional capabilities to their platforms. “I can’t say enough for them,” says Lucas. I’m not trying to promote them or anything like that; I’m a standalone officer in the Army who simply sees a company that really understands what we’re trying to do, and just by virtue of them trying to make what they do successful, they’re here providing customer support and service to us. And that type of customer service is not ‘we sold you this product; we’re not here to support you anymore.’ And you do find that sometimes.”

Lucas says that he even gets the occasional e-mail from Jack Battersby, mGen’s president and CEO. Battersby and a fellow electrical engineer founded mGen in 1995, and they’ve always had a strong connection to the military. “They tell us what it is that they want to get done,” says Battersby, “and that’s why we love [working with them]. They’re very mission oriented, they have a job to do, people they need to get trained, they know when that needs to happen, how that needs to happen. So their job is to beat up on us and say, ‘This is what I need to get my job done.’ We really enjoy working with folks like that. I love the mission. There’s nothing more frustrating than working with a customer who does not have a mission.”

Although Lucas said that the mGen team’s customer service is excellent and they worked hard to make sure that the system is very easy for them to use, Battersby is the first to admit that you can’t just load the system and be off and running. “We’re not a simple software that you launch,” he explains, “although we’ve certainly

crossed all the Ts and dotted all the Is to make sure that it’s well packaged. We’re talking about enterprise class software that does knowledge management, news and information, learning management, human capital, [and] content management. We really circled the wagon on basically all ways that people like to learn.”

From people to projects

Training people is an important part of the military world, to be sure. Nowhere else does one’s very existence hang in the balance of trusting your fellow workers (in this case, soldiers), confidence in the proper execution of dangerous missions, and an unquestioned understanding of everyone’s role and place in the chain of command. However, without the proper equipment, your strength immediately erodes.

Collaborative technology is making it a little easier for the support teams behind the military effort to do their jobs using data and document tracking that cut down on wasted efforts spent trying to recreate a job—often not one that you started but rather inherited—in the design and manufacture of a product.

for C4 Systems. “They’ve bought companies and pieces of companies to build that capability,” explains Dutton. “They really did not have any technology capabilities. And they bought three pieces, including us from GTE in 1999, which was basically the government or defense piece of GTE, which then merged with BellAtlantic and became Verizon. They also bought a piece out of Motorola, most recently, and a number of different business units make up this IST organization.

“We just, in fact, at the beginning of this year, changed our name from General Dynamics Communications Systems to General Dynamics C4 Systems. C4 is a defense acronym. What we were before was principally communications, and what we now do is four Cs, which is communications; command and control; which is battlefield management and also network management; and the fourth is computers.”

General Dynamics started working with Open Text (location? www.opentext.com) several years ago to develop a virtual community within the corporate knowledge network to do

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For example, General Dynamics (GD), a defense contractor that does the vast majority of its work for the military (Gulf Stream corporate jets being the major commercial exception), embarked on a conscious strategy to develop a technology group about five years ago, according to Robert Dutton, vice president of information technology and systems

two things—provide some basic collaboration framework such that different General Dynamics business units could work together and share information about projects or proposals. The difficulty is compounded because there are 20-some odd business units, each its own profit center and basically each is in a different business—in other words, they don’t



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compete against each other—they're off doing their own thing with their own projects and products and customers. However, GD was really looking to get the business units cooperating and working together with each other more instead of working with Lockheed, Raytheon, or other companies to provide the technology parts of some of their major systems.

Conceptually, that all makes sense. "But what they ran into," says Dutton, "because of the nature of the business that we're in, each of the business units has their own information environment buttoned up pretty tight, both because of commercial sensitivity of information and because its DOD [Department of Defense] type of information." The approach that made the most sense was to create a virtual community using OpenText's LiveLink.

The company then decided to offer the product to business units because they felt that business units could also get value from it. So negotiated some licenses with Open Text at the corporate level such that business units that chose to could implement it for a pretty modest investment.

Sikorsky, a manufacturer of helicopters, employed a similar strategy when it signed on with NexPrise (www.nexprise.com) to speed up its design and production processes and to share information with its subcontractors. "We had the chance to do the engineering on this program twice—once the old way, once the new way," says Darryl Toni, lead structural engineer working with the Comanche helicopter. "In 1999, we adopted the NexPrise database system, and we use that to collect information from the original groups and have it catalogued and searchable so that downstream users get to the information. We've also tied in one of our major engineering subcontractors to be able to pass information back

and forth through the database as well as our customer down in Huntsville, Ala. They have direct access, real time, with the information that's stored up there."

In both the traditional and current formats, engineers had to develop drawings, analyze the performance of the different parts, and come up with the final configurations to create the engineering data that gets submitted to the customer to be able to assure the customer that the aircraft will be able to perform properly and is safe to fly—that there's sufficient strength, and fatigue life and things like that.

According to Toni, several hundred engineers worked on that original prototype in the early 1990s, and that team works for a period of about a year or so to develop the drawings. "But then the way the contract is phased," says Toni, "you go through manufacturing, you go through testing and sometime later on in the program, typically a year after the designs are completed, you submit the final reports in paper form. And it's thousands of pages of paper to document all the different parts and the simulations that were done, the calculations, the test data, and so on that get submitted to the customer. The customer reviews it in 60 days and tells you whether the aircraft is safe to fly or not. All that is done way downstream of when you've created designs, created tooling to make the parts, and created parts, and in some cases if the issue is identified, then parts have to be either reworked or scrapped, and there's quite a bit of cost associated with that."

The enemy within

Sometimes the hardest group to win over are the ones who wear your same company logo. "The kind of lessons learned over this first year is

that there's a real culture problem," says Dutton, "that the initial inclination of somebody who now has the ability to manage the space is 'I'm going to set it up, and I'm only going to let my friends see it.' It took us a while to really see that happening, and it wasn't surprising once we figured it out. What we're working on now is trying, over time, to reverse that and say 'what we'd like you to do is instead of starting with the question 'Who should be able to see or change this information?' we'd like to start to have you think that everyone within the company should be able to see this information as the default. Now, how far do we back off of that? In other words, instead of defaulting 'no one can see that and I'll add a few people,' the default is 'everybody can see it unless there's compelling reasons that I should restrict it.' And that's going to take time, because that's culture shift and that's the whole 'knowledge is power' and 'control of access is how I justify my existence.'

Once everyone gets used to the efficiency, decreased costs, added speed, ease of information retrieval—need I go on?—it seems that there's little basis for argument against implementing such technologies, especially over such large, spread out organizations. As for the military, they're in the lead. Now if we could only hurry up and get the news we most want to hear from them on our nightly news broadcast.... ■

For more comments from all of the end user sources interviewed for this article, as well as from SiteScape, mGen, and BroadVision executives, please log on to our Web site and go to the link to this issue.