Good News From Iraq

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Building a data center in a war zone is an extreme challenge requiring creativity, diplomacy, statesmanship, and the can-do spirit. This is the story of an Iraqi and American mixed team that, with uncommon persistence and under extreme duress, built a world class data center and fully functioning office complex.

The rebuilding of Iraq effort, which was funded by the United States Congress in 2003, allocated about $18 billion for Iraqi reconstruction and aid. Of that, about $7 million went to funding the building of a data center. In addition to software, the entire system included the buildings, air conditioning, elevators, office furniture, electricity; and the infrastructure for all the sites that needed the information. This was not a typical data center building project like one in the United States; this literally started with nothing.

“It won’t do any good to build facilities if they can’t be managed,” said Dennis Plockmeyer, a retired Navy Construction Battalion Captain, and now, the Chief Information Officer for the Project Contracting Office Iraq, which oversees logistics for all of Iraq’s $18 billion reconstruction initiatives.

Plockmeyer had been in Iraq since September 2003 and in Baghdad’s green zone, a section of the city from which the coalition forces managed their major reconstruction efforts. I, a Navy Surface Warfare Officer Captain, had been in Iraq since December 2003 and had worked in and around Baghdad and other key cities for the Coalition Provisional Authority before joining Plockmeyer’s team in July of 2004 as his Operations Director. We both served the Department of Defense (DoD) as senior civilians.

At the heart of the data center building plan was an effort to introduce an asset-management system to Iraqi public officials who, in many cases, had never used anything more than pencil and paper to manage vital national assets. “It doesn’t do any good if you build all of these facilities and then walk off without giving the recipients the tools and the wherewithal to manage them,” said Plockmeyer.

Problems and Issues
The Information Technology (IT) team, which consisted of contractors from the United States, including the native small business association firms, and local Iraqis, could have built an IT system to solely run the coalition’s reconstruction effort. That would have been cheaper and easier, since it would function entirely in English and run on off-the-shelf and DoD-supplied software. Instead, they opted for the complexity of writing additional code that let the system run in parallel with Arabic and Kurdish. This option ensured that the investment in technology and processes needed to manage the reconstruction had ongoing value that could be transferred to the Iraqis, focusing on what happens the day after the contractors leave. The master database built by the combined team was named the Iraq Reconstruction Management System (IRMS).

The major components of the IRMS system included Maximo (owns the requirements/assets); ESRI (defines the location); Oracle e-Business (exhibits cost and performance), Primavera P3ec (develops the schedule), DoD standard procurement system (authors the contracts), DoD Corps of Engineers (ACE) financial management system (manages the finances), DoD requirements management system (captures the construction), Oracle e-Success (delivers the estimates), Expedition (provides project controls), and Oracle Portal (spans the program, gateway to the solution) all running on Unix, Linux, and Microsoft (MS). Net operating systems were accessed via MS Office on the desktop. Connecting the various components that comprise the system was relatively easy compared to the logistics and danger to workers building the data center and offices. Regarding the software build, the distance and time zone differences had to be taken into consideration because Iraq as well as Virginia, California, and Washington had to be linked and functioning in real time. Personnel in Iraq often worked 18 hours a day, seven days a week in the software effort. Configuration management was a central issue to ensure success.

Harder to accomplish than building the software was building the data center and its infrastructure. Many of the Iraqi men had limited education due to what Iraqis reported as Saddam Hussein’s tendency to restrict education for the males to the sixth grade. This made it difficult because the team had to find qualified locals who turned out to be educated females. This presented a problem in a culture dominated by men where women were not valued for their knowledge or ability to work outside of the home. Overcoming these cultural differences by use of relationship management, statesmanship, diplomacy, and trust building allowed the formation of a world-class team.

By working with the Iraqi Console for Employment, the project received a steady flow of resumes from young Iraqi men and women who wanted to participate in what they called a privilege to work environment. There were many technologically literate Iraqis anxious to apply their skills to the rebuilding effort. They understood their skills might not be the most current, but they were ready to learn. While few of the workers had worked with advanced applications such as Maximo, many had basic technology skills and were familiar with Oracle and other common IT environments. The issue of training and mentoring the basics of Software Engineering Institute/Capability Maturity Model® Integration and Computer Society for Software Engineering by the Institute of Electrical and Electronics Engineers, Inc. for the software teams posed little problems in understanding by the Iraqis. However, using Project Management Institute concepts for the teams that were involved with the physical building and plant layout was one of the hardest things to do because most Iraqis and some contractors in the building trades knew very little of how projects needed to be executed using a repeatable method.

For example, the simple idea of grounding the data center and all the sys-
Building a System That Would Work for Iraq

Plockmeyer focused on making sure that modules could be added that would monitor the health of oil pipelines and would alert authorities to a drop in pressure caused by mechanical failure or sabotage. The coalition's asset-management system also was able to capture data from remote diagnostic and management technologies being built in some of the newer Iraqi buildings. Plockmeyer said that some of the construction blueprints he had seen called for utility plants to incorporate advanced supervisory control and data acquisition technologies—a first in Iraq.

Coalition officials wanted to introduce the asset-management system to Iraqi administrators in small doses. For example, the system was built to manage the building of the electricity sector around Baghdad and then later to all of Iraq.

After four years, Plockmeyer and I believe the progress the coalition made in Iraq has been largely obscured by news that focuses mostly on the day-to-day violence. The list of projects completed or initiated under the coalition's watch—and managed through the asset-management system—is lengthy. Each week, about $75 million in new construction work begins on projects ranging from water-treatment and waste-management systems to new schools.

Ever-present in a war zone like Iraq was the threat of attacks on coalition personnel and any Iraqis working with them. Even from the living quarters, personnel could hear and feel the rockets and mortar shells that Iraqi insurgents occasionally fired into the green zone. The violence did not delay the implementation of the core asset-management system. Plockmeyer said the following about my work:

Lucks made sure that the Internet access was widely available so that the modules were fully utilized by some of the more far-flung Iraqi ministry outposts and saved $2 million in operating expenses.

U.S. Government Makes IRMS the Standard

An interagency Information Technology Working Group (ITWG) was formed in August 2004 with the mandate to consolidate all U.S. government-funded and managed relief and reconstruction project information across all sectors and organizations throughout Iraq into one database for reporting to the U.S. Congress through the U.S. Ambassador to Iraq and the
Coming Events

September 4-5
Disruptive Technologies Conference
Washington, D.C.
www.ndia.org

September 11-13
MODSIM World
Conference and Expo
Virginia Beach, VA
www.modsimworld2007.com/

September 17-20
2nd Annual Software Engineering
Institute Team Software Process
Symposium
Lake Buena Vista, FL
www.sei.cmu.edu/tsp/symposium.html

September 24-26
Air and Space Conference and
Technology Exposition
and Global Air Chiefs Conference
Washington D.C.
www.af.org/events/conference/
2007/conference.asp

September 30 – October 5
MODELS 2007 ACM/IEEE
10th International Conference on
Model Driven Engineering Languages
and Systems
Nashville, TN
www.modelsconference.org/

October 2-3
Department of Homeland
Security/Department of Defense Software
Assurance Forum
Tysons Corner, VA
https://buildsecurityin.
us-cert.gov/daisy/bsi/events.html

LETTER TO THE EDITOR

Dear CROSSTALK Editor,

I am writing in regards to the Sponsor’s Note by Kevin Stamey titled Lead, Follow, or Get Out of the Way in the April 2007 issue of CROSSTALK.

I have heard this expression so many times and it drives me crazy to hear it spoken, as I would claim, improperly. I don’t know that Lee Iacocca did not actually say lead or follow, BUT get out of the way, but I am sure that is what he meant.

Too many times people and organizations stand in the middle of the road drawing a crowd, talking the talk, taking the focus, taking the credit, promising the world, and churning out reworked platitudes. Leadership means knowing where the pack should go and having the right stuff to pull them there.

There is nothing wrong with following, of course, because without actually implementing the plans of leaders, we would have no progress. So I would say to the talking heads, lead with insight and wisdom, or follow with respectful allegiance, but do not just stand there. Drawing a crowd causes a distraction.

So, over my desk is MY version of the expression:

Lead or follow, but get out of the way!

– Julian Opificius
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About the Author

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October 2-3
Department of Homeland
Security/Department of Defense Software
Assurance Forum
Tysons Corner, VA
https://buildsecurityin.
us-cert.gov/daisy/bsi/events.html

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Systems and Software Technology
Conference
www.sstc-online.org

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