



The U.S. military's civil affairs teams facilitate military actions while supporting civil and humanitarian operations. They have been instrumental in efforts to use supply chain analysis to support economic and social stability in Iraq.

(U.S. Army photo by Private First Class Sarah De Boise)

Desert Reform

To combat a growing insurgency in Iraq, the U.S. military adopted a nontraditional tactic: rebuilding the country's supply chains.

SUPPLY CHAIN ANALYSIS HAS BEEN AN EFFECTIVE TOOL for solving all kinds of problems in both the commercial and the military spheres. It has helped us figure out how to improve the delivery of fresh foods to consumers, provide disaster relief in remote areas, and expedite the delivery of protective equipment to soldiers in the field. In these and countless other examples, supply chain analysis has made it possible to solve challenging problems while improving the lives of people around the world.

Right now in Iraq, the United States Department of Defense (DoD) is using supply chain analysis to address a problem that will have long-term implications for the Iraqi people: how to rebuild the Iraqi economy in a way that successfully incorporates local business relationships and becomes locally sustainable. A look at the history and current status of this initiative shows how supply chain analysis can not only solve delivery problems but also be an effective tool for enabling economic development and supporting social and economic stability.

An unconventional strategy

Conventional warfare consists of army-versus-army engagements that are built on search-and-clear operations. In those operations, military units seek out enemy forces and resources, capturing or destroying them as necessary to achieve victory. In the 21st century, however, unconventional warfare has become the norm. In unconventional warfare, armies rely on counterinsurgency operations, rather than on armor and heavy artillery, in both warfare and post-warfare

stabilization operations. According to the U.S. Army's *Counter Insurgency Field Manual*, this type of operation involves "the application of national power in the political, military, economic, social, information, and infrastructure fields and disciplines."

To help the military employ its counterinsurgency strategy, the U.S. Department of Defense established the Task Force for Business Stability Operations—Iraq (TFBSO) in 2006. The task force's mission is to revitalize the Iraqi economy and reduce the rampant unemployment—estimated to be upwards of 60 percent—that is a significant factor fueling the insurgency. The TFBSO's methodology focuses on restarting idle public and private industrial enterprises through three lines of operations:

1. Directing a percentage of the demand for materiel required by U.S. and coalition forces to Iraqi industry;
2. Re-establishing domestic and regional demand; and
3. Re-establishing supply relationships with U.S. and international industry.

To help it carry out these objectives, the TFBSO hired supply chain experts.¹ These experts were charged with conducting a supply chain analysis with an eye toward creating and fostering supply chains based on local production, retailing, and transportation.

No manufacturing = no jobs

It would have been impossible to effect positive change in Iraq by forcing the adoption of Western business practices and technology. The experts there-

[BY SHAWN WINN]

fore began their analysis by studying the local culture and history. They collaborated with the U.S. military's civil affairs teams, whose job is to facilitate military actions while supporting civil and humanitarian operations. They also worked with the local Iraqis to understand their concerns, needs, and—just as important—the business practices and relationships that formerly distributed wealth throughout the economy.

Iraq had had one of the strongest economies in the Middle East when Saddam Hussein took control in the late 1970s. Saddam brought the principal industries of the country under government control, and government institutions became the main drivers of the Iraqi economy. Government offices and departments would buy items such as furniture from a small number of large, state-owned enterprises, each of which employed thousands of people.

After Saddam began a military campaign against neighboring countries in 1980 (the Iran-Iraq War), the economy faltered. Infrastructure and supply bases that did not directly support the war efforts suffered from underinvestment. This led to the degradation of equipment and facilities, which in turn limited commercial production.

When government purchases ceased, the manufacturers struggled to find another customer base. The country's primary demand points became small, local markets instead of the national institutions. Many factories continued to operate, selling to the commercial sector until their facilities and equipment became inoperable. This happened partly because government funding had dried up and partly because factories could no longer obtain spare parts. The result was a drastic reduction in both the number of people with jobs and the number of products available for sale in the markets.

During this time of neglect, the Iraqi workforce was disrupted and weakened by the high rate of casualties among working-age men. With fewer breadwinners at home, extended families came to rely on single wage earners, who had to spread their income over large numbers of dependents. By some estimates, the ratio is 7 to 13 dependents to one wage earner. Whether the actual number is 13 or half that amount, it is widely understood that each job created in Iraq will have a large impact on the economy.

It's also understood that job creation will contribute to U.S. and Iraqi national security. A recent article about global migration patterns and job creation by Jim Clifton, chairman and chief executive officer of The Gallup Organization research firm, explains why sustainable employment is so important. All over the world, Clifton wrote, "the single, most dominant thought" in most people's minds is "I want a good job." All leaders—whether in government, schools, religious and judicial institutions,

businesses, and even families—should consider it every day in everything they do, he said. That includes military leaders, too: "They must ask themselves whether military strikes, occupations, or community policing will effectively build a growing economy with good jobs. The opportunity to have a good job is essential to changing a population's desperate, and violent, state of mind."²

This is true in Iraq today, where the insurgent groups primarily recruit from the ranks of young men. Many of the violent crimes in that country are committed by young men who do not hold extremist beliefs and are motivated only by the need to care for their families by any means necessary. In this environment, it is not enough to offer short-term employment such as single-project manual labor. The solution must be woven into the local economy, and it must be sustainable over the long term so that its effects can benefit a wide area. That is why increasing employment in Iraq became a strategic objective of the U.S. Department of Defense, and why the DoD focused its efforts on promoting economic growth through the revitalization of supply chains.

One link at a time

The first targets for the Department of Defense's supply chain team were Iraq's large manufacturers, including the state-owned enterprises that once were the largest employers in some of the most densely populated areas of the country. These enterprises were not only critical employment centers but also original equipment manufacturers for products sold by wholesalers and retailers. First the supply chain experts identified sources of demand and the necessary linkages back up the supply chain to these employment powerhouses. Then the task force employed a team of manufacturing engineers to support the reopening of the factories.

In many cases, there still was local demand for the products that the state-owned manufacturers had produced in the past, such as bottled water, clothing, furniture, and processed foods. The challenge was to reconnect those sources of supply with their natural consumption markets now that the state-owned transportation and distribution network was no longer in existence.

With the help of the Multi National Division—Baghdad and the civil affairs teams, the supply chain experts traveled into Baghdad and collected information from local firms that used to be large customers of the manufacturers. Through those interviews, team members identified potential partners for restoring Iraqi supply chains. They also identified current sources of demand that could be channeled toward the reconnected supply chains. These significant sources of demand included other large manufactur-

ing facilities as well as the Iraqi government and international organizations.

One immediate source of demand for many locally produced products was the Commander's Emergency Response Program (CERP). CERP is the U.S. Department of Defense's program for funding emergency-response activities that support stability operations. To support these activities, CERP purchased local items ranging from food and bottled water to construction materials. This strategy of buying locally produced products has been endorsed at the highest levels. In 2007, General David Petraeus, former commanding general of the Multi-National Force—Iraq, issued a memo stating that he expected commanders at all levels “to make every attempt, within legal and regulatory limits and operational requirements, to use available Iraqi services and products.”

Back-to-school days

Once the basic demand information had been collected and analyzed, the supply chain team had to decide where to begin its revitalization efforts. Because long-term employment growth was a priority, the team's efforts were spread over many areas, from education to agricultural equipment, and from the Iraqi military to local humanitarian assistance. However, the education sector makes an ideal example because of the many supply chains that end there.

In the city of Baghdad alone there are more than 1,600 schools, many of which were closed and looted during the years of embargoes and economic isolation. Dozens of those schools have been reopened. While it might sound simple, reopening even a small number of them was a monumental task. The schools had to be cleaned, repaired, stocked, and staffed before they could take Iraqi youths away from the violent streets.

Local residents provided the vast majority of the labor required for cleaning the schools. In many cases, local governing bodies arranged for concerned citizens to provide the labor at no cost. As the buildings were being prepared for reopening, the supply chain experts went to work. Where possible (and when it was cost-effective), the teams purchased locally manufactured supplies, including gypsum and bricks for repairing holes in the walls, paint for making the rooms hospitable, furniture, and school supplies.

One of the first products the team dealt with was paint. Baghdad had many producers of high-quality paints, but these companies, both state-owned and privately owned, had been forced to close. These enterprises were located in some of the neighborhoods that were in the greatest need of employment—in other words, those that were most violent and susceptible to insurgent recruitment.

Few organizations in Iraq today offer end-to-end

service, from raw material conversion to delivery of finished product. The supply chain experts and civil affairs soldiers therefore mapped out supply chains that included the paint manufacturers (which by this time were largely dependent on imported materials), the transportation providers, and the small shops that sell the locally produced paint via so-called “delivery” companies, which are akin to trading companies. These delivery companies provide transportation, usually buying the stock from the original owner and selling it to one or more customers along their routes.

After studying the supply chain, the team decided to purchase its paint from the local shops instead of directly from the manufacturers. While many First World supply chain optimizers might have preferred a more streamlined approach to acquiring the paints,



To promote long-term economic sustainability, the newly reconnected supply chains were designed to encompass not only raw material suppliers and manufacturers but also local markets like this one.

(U.S. Army photo by Specialist Tiffany Dusterhoft)

cost and efficiency were not the only considerations for the civil affairs and supply chain teams. By purchasing from the manufacturers' Iraqi customers, they “primed the pump”—that is, their payments sparked other economic activities that benefited the local populace. Shoppers in the markets could now find locally produced paints, along with other items the shop owners purchased with profits from the sale of paints to the U.S. military.

Because the program hired local trucking companies to deliver the paints from the factories to the shops, it subsidized the cost of transportation for other goods moving around the city. The truck operators would squeeze as much of their other customers' products onto the same vehicle in order to lower their fuel costs (which were remarkably high and usually purchased on the black market). Since the paint companies were located in either the southeast or the north-

east corners of the city, the transportation companies were able to pass many of their other customers along the delivery route.

Once the schoolrooms had been painted, the supply chain analysts worked with the coalition soldiers to order desks, tables, and chairs from local furniture manufacturers. A typical scenario: The furniture was built in the north of the city by re-employed Iraqi tradesmen. Next, a re-employed Iraqi truck driver picked up the furniture and delivered it to an Iraqi trading company that employed locals to receive, stock, and ship the furniture. The trading company also employed its own truck driver to deliver the schools' orders, and it sold additional furniture it had purchased from the manufacturer to consumers.

This reconstructed supply chain may not appear to employ many people, but when one factors in the ratio of dependents to breadwinners, it is clear that even a small business benefits a large number of people. Suppose just 10 people were re-employed—six to build the furniture; one to transport it from the manufacturer to the trading company; two to receive, stock, and ship the furniture; and one more to deliver it to the schools. With each wage earner supporting between 7 and 13 dependents, it is reasonable to

assume that the furniture for just one school provided between 70 and 130 Iraqis with income.

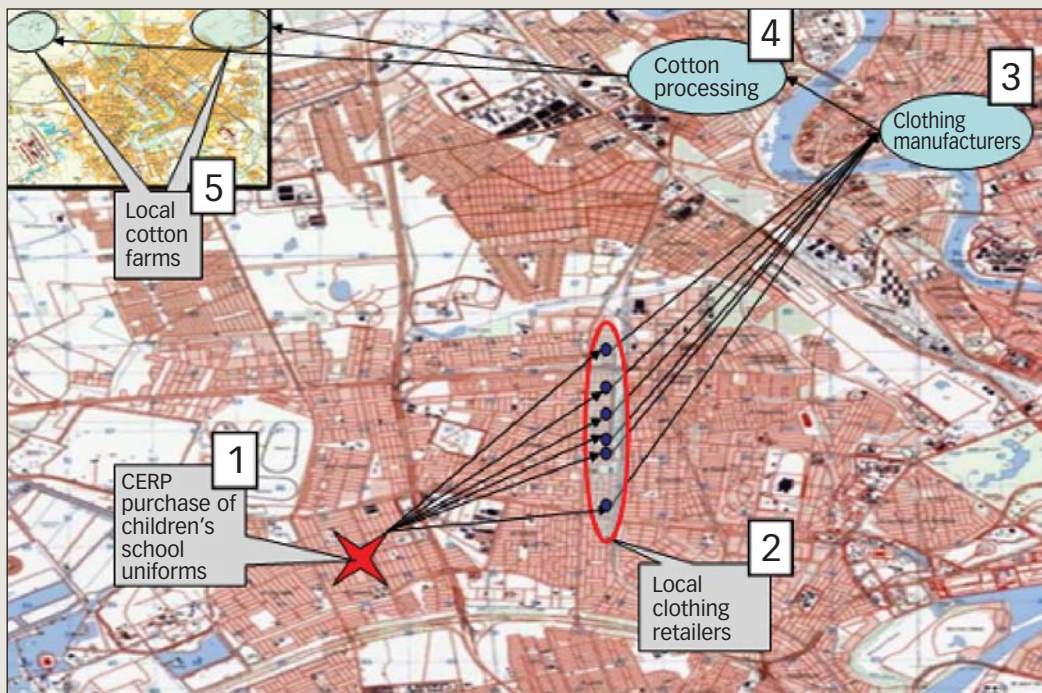
Dressed for success

After the schools were repaired, painted, and furnished, the students needed supplies—uniforms, backpacks, pencils, paper, and so forth. The supply chain analysts and a civil affairs team identified a textile manufacturer in another fragile neighborhood within the city. This factory could produce the children's uniforms as well as backpacks that would be filled with supplies for the first day of school.

The school uniforms and backpacks could be purchased from a number of clothing vendors in local markets. Each of these small shops would purchase their inventory from the textile manufacturer, which employed Iraqis from a neighborhood just across the Tigris River (see Figure 1). This large manufacturer purchased its cloth from a cotton-conversion facility in the northwestern section of the city, and the converter purchased raw cotton from struggling farmers in central and northern Iraq. Ultimately, this value chain extended from the consumers—the children in their uniforms—all the way to the cotton farmers.

The team identified the farthest downstream point

[FIGURE 1] FROM FIELD TO FASHION



CERP = Commander's Emergency Response Program

Purchases of school uniforms at the local level created jobs and infused cash back through five levels of a reconstructed supply chain in Iraq, from consumers all the way back to the cotton farms.

where the school supply kits could be assembled: a local market with multiple vendors. It then set up (and subsidized) a contract between the Ministry of Education and a local trading company. The trading company purchased the Iraqi-made backpacks from local clothing shops and bought other school supplies from a neighborhood office-supply shop. The trading company then kitted the notebooks, pencils, and other supplies inside the backpacks and hired a transportation company to deliver them in time to surprise the children on their first day of school.

Another surprise for the children in a few schools was that their schools had power. Thanks to the supply chain team's "waste to wealth" program, some facilities were able to run coolers and fans. The program offers unwanted items (such as generators, forklifts, and other heavy equipment that were beyond economical repair) to local shops and vocational schools. Shops and schools that accept the items buy parts to repair them, with the understanding that one reclaimed generator, for example, would be donated to the local school or health clinic and the others could be sold for profit.

The "waste to wealth" program reduced the amount of waste products the coalition forces have in theater while providing critically needed equipment to local nonprofits. It also provided employment for local tradesmen and an opportunity for area youth to learn a trade. Moreover, the Iraqis who participated in the program saw it more as an opportunity to restart their businesses than as simply handouts from the coalition forces. Just as important: Community leaders who saw foreign soldiers working day and night to help repair equipment and purchase locally—and who once viewed the soldiers as enemies—now aid and lead improvement efforts.

Planning for the future

One of the weaknesses of traditional economic development initiatives is that they often are short-term programs. Accordingly, the supply chain and civil affairs teams aimed to develop programs that would lead to lasting benefits for Iraq's citizens.

The programs described in this article did produce some immediate improvements. For instance, the repaired materials were used to re-activate public works facilities and businesses as well as schools and health clinics. In the areas where supply chains have been rebuilt, schools and clinics are open, many shops are open for business, and the markets are selling fresh

produce and locally made goods. But the supply chain analysis did more than just reconnect supply chains to disseminate income and promote employment. It sowed the seeds of long-term economic development by re-establishing relationships between buyers and suppliers, thereby enabling the flow of goods back into the markets for local consumption—not just for now but also in the future.

The success of these programs so far highlights the fact that supply chains are not just about supplying goods and materials; demand is also a critical factor in every supply chain-based initiative. When identifying sources of demand, the supply chain team selected large Iraqi organizations that consistently require supplies and also have relatively strong lines of funding. In the case of the paints, furniture, and backpacks, it was the Ministry of Education department that supports local school systems that placed the orders and accepted the deliveries. Even though some of

The programs' success highlights the fact that supply chains are not just about supply; demand is also a critical factor in every supply chain initiative.

the funding for the purchases came through CERP, it was important to have the government office place the orders. For one thing, it created a sustainable link between a large local customer and downstream suppliers. For another, it strengthened the relationship between community and government, because local citizens saw the government supporting their schools. Eventually, the Ministry of Education should be able to once again fully fund and manage this local demand.

This writer and other on-the-scene observers credit the Department of Defense's and civil affairs teams' use of supply chain analysis in Iraq with dramatically improving stability and reducing the incidence of violence in recent months. The U.S. experience in Iraq demonstrates the effectiveness of supply chain analysis and reconstruction as tools for achieving military success as well as for making economic development, restoration of public services, and stability locally sustainable over the long term. △

Endnotes:

1. The author was among the supply chain experts hired to support the Department of Defense's "business stability operations" efforts.
2. Jim Clifton, "Global Migration Patterns and Job Creation," *Gallup Management Journal*, October 11, 2007.

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