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End of Assignment Report

Reconstruction in Iraq: Telecommunications

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The telecommunications sector in Iraq is widely considered to be a reconstruction success. It's no exaggeration to suggest that the telecommunications system is the fundamental civilian instrument of stability. It enables food and fuel distribution, emergency services, government coordination, and is used by Iraqi and Coalition military forces extensively. It is a growing source of jobs and careers for the numerous graduates of Iraq's technical colleges and universities.   It's the portal for Iraq's youth and next generation of leadership to the global Internet and social network communities.

Gaps and deficiencies remain in the Ministry of Communications and the Communications and Media Commission, the regulatory agency. Both organizations have been without permanent professional leadership for several months. But the foundation is in place for a modern telecommunications infrastructure that within five years, at current levels of progress, can be equal to many countries in the Middle East and Central Asia.

Under the previous regime the limited communications infrastructure in Iraq was an instrument of state suppression, overseen by Iraq's intelligence services. Only a relatively small landline system existed, primarily for command and control of the Iraq military, and for use by the political elite. Since 2003 over $4 billion of private equity has been invested in the telecommunications sector, providing wire and wireless communications and connection to the Internet in most Iraqi cities – where none existed before. The system is controlled by civilian government officials, regulators and private investors. Continued private investment in Iraq telecommunications can be expected given the exceptional liquidity available to Middle East investors due to rising oil prices.

US contributions to Iraq's telecommunications development were managed by the Iraq Reconstruction Management Office (IRMO), renamed the Iraq Transition and Assistance Office (ITAO) in May 2007. The Office of Communications had a small but skilled and resourceful staff of specialist program managers and excellent policy support at the State Department in Washington. We worked as a team for nearly two years. Any successes

were team successes. But I made the key decisions. I stress that because one of the themes in this paper is the need in Iraq reconstruction for decisive and consistent executive management. If this paper seems critical, it is the processes I'm criticizing, not individuals, who live in constant danger and make extraordinary efforts and contributions during their time in Iraq.

Critical sectors of Iraq's national civilian telecommunications infrastructure were destroyed or severely damaged by the US Air Force a few days before the end of major combat operations in 2003, including the 12 major switching centers in Baghdad. There are many ways to disable a telecommunications system. Special forces can take out fiber links that can be restored in days. Transit centers can be cut-off. A JDAM makes it impossible to restore a telecom exchange. Good strategy can include the concept of restraint. Five years later only one telecom center is in the process of being rebuilt, inhibiting the development of a needed fiber optic metropolitan network in Baghdad and completion of the national fiber grid. It's useful to remember that a functioning communications capability is necessary to restore order and begin reconstruction when the fighting stops.

Major Telecom Projects – Good News and Bad

1. **Mamoun Telecom Center**

The Mamoun Telecom Exchange was one of 12 telecommunications exchanges in Baghdad destroyed by the US Air Force toward the end of hostilities in 2003. As a consequence the US government had no civilian communications in Baghdad when the fighting stopped and reconstruction was supposed to start.   Fortunately, much of the transmission equipment was removed before the attacks and taken to the homes of Iraq Telephone and Postal Company (ITPC) employees. Before the equipment was re-installed looters ransacked the exchange buildings. Thanks to the prescience of ITPC managers enough equipment was saved to provide rudimentary communications within weeks.

In May 2003, soon after hostilities ended, Mamoun was selected as the major reconstruction hub for telecommunications in Iraq for its central position in Baghdad and proximity to telecommunications reconstruction officials in the International Zone. USAID funded the purchase of Lucent switches in temporary mobile trailers to be placed at the destroyed exchange site for international traffic and transit switching in Iraq. This remains in my view a contestable decision. Replacements for the existing Chinese equipment, in which Iraqis were already trained, were readily and cheaply available. After training delays, ITPC officials were able to work with US engineers to install the new switches and re-install the protected inter exchange transmission equipment. A basic urban system using the installed fiber network in Baghdad - Chinese cable installed during the period of UN sanctions - was working again by the end September 2003.

In 2004 reconstruction officials decided that the US government would fund the building of a new Mamoun Telecom Center as a modern landmark in Baghdad. The site was already highly visible as the site of Mamoun Tower just outside the Green Zone. Little progress was made beyond site clearance until November 2006 when, after attending two meetings where no progress was made on achieving a consensus on minor design details, I placed a deadline of 20 November 2006 on further discussion of changing architectural plans. On 21 November 2006 I signed off on the $38 million project. By the end of November Gulf Region Division of the US Army Corp of Engineers ordered the builders to execute on their current plans.

As of 31 March 2008, following extensive foundation work, the building is now up to the fourth floor and – incredibly after five years - the only visible sign of major building construction in Baghdad. Anecdotally, it is reported that on weekends families are visiting the area near the site with picnics watching the construction develop.

The building is scheduled to be topped out by September 2008 and new switching and transmission systems installed throughout 2009. This timeline most likely will be extended. But without firm management action by a single responsible reconstruction executive in November 2006 there would still be a hole in the ground today at Mamoun, probably under the control of a Mamoun Fusion Cell, the reconstruction management by committee style preferred by senior officers in MNF-I, still trying to achieve a consensus on design of the parking lot.

2. The Iraq Mobile Phone Industry

The existing fiber optic infrastructure in the ground is being extended throughout Iraq – but slowly. In 2008 is it still hard to get a complete picture of its capacity and uptime around the country. There in an incomplete network management and fault reporting system and also recurring insurgent attacks on the network. Long term plans for long haul infrastructure envision a redundant series of large metropolitan ring networks covering the seven largest population centers in Iraq overlaid with three donor funded microwave networks from the Turkish border to Basra in the South.

National infrastructure development has been overshadowed and perhaps slowed somewhat by the fast growth of the GSM mobile phone network in Iraq. In 2003 there were no civilian mobile phones systems in Iraq. Today three licensed carriers serve around 10 – 12 million customers. It is hard to be accurate because each of the three companies report customer and traffic statistics differently. Customers pay mostly by prepaid cards, which makes it even more difficult to be precise on customer numbers. However, there is no disputing the fact that there is a national mobile service in Iraq and it will reach, like in most countries , nearly a 100% teledensity, i.e. phone service per capita of population, since also like most countries, more affluent citizens in Iraq will have more than one phone.

It may seem churlish to criticize such success, since every Iraqi who has a cell phone also considers it an essential tool of personal security that also provides the ability to keep

track of family members in a hostile environment. Still, the economic security of the country may have been served better by assuring that the national fiber infrastructure was completed, or at lease fully funded, before actively soliciting bids for cell phone services. After five years the US military and other large Iraqi and foreign companies and agencies cannot get access to reliable business class broadband data services that are available in most countries. Success of the GSM industry has masked many weaknesses.

The main problem is that the higher pay of private cell phone companies sucked engineering talent from the national long distance provider Iraq Telephone and Post Company (ITPC) at a time when it was needed to rebuild the long distance and metropolitan fiber networks.   In a stable country like the United States or Germany the introduction of cell phones led to a gradual migration away from fixed line to mobile operations. In these stable countries many of the companies winning licenses were already highly profitable Regional Bell Operating Companies or profitable state run enterprises like Deutsche Telekom or Verizon. What resulted was an internal re-allocation within these corporations of intellectual and capital resources. In Iraq it had the effect of damaging the long haul telecommunications and data development in the country.

Early introduction of private mobile services has benefited investors handsomely but has cost the US taxpayer hundreds of millions of dollars. The extra cost of approximately $200 million per year is in telecommunications equipment and satellite services for traffic not needing high levels of security which would normally be carried at much lower cost over national fiber networks.   Also, the lack of a core fiber infrastructure has limited the development of numerous advanced data services that are useful in any society such as telemedicine, banking clearances, inventory and manufacturing control systems.

   3. **The CIO Council Fiasco**

A national Chief Information Officer (CIO) Council for Iraq has been an idea in the making for four years. The initial formation in 2004 was supported by a Bearing Point contract in association with the Ministry of Science and Technology. Meetings were held several times a month. A leadership cadre was forming. Just as the Council was becoming active, and legislation proposing the formal establishment of the Council was entered into the legislative agenda in early 2006, Bearing Point's contract for the activity ended, and the Council lost momentum.

At the request of an advisor to the Prime Minister, the IRMO Office of Communications replaced Bearing Point as the lead coordinating agent for the CIO council in late 2006. Meetings started again and a senior program manager was assigned to work closely with the Council to determine its needs and assist with implementation of programs where this seemed necessary and helpful.

It struck me that the core of the CIO council, consisting of senior information technology professionals mostly with PhDs, required little assistance from the US government. The

Ministry of Defense and Ministry of Interior were running sophisticated enterprise network systems from leading international vendors successfully. Top officials were afforded many opportunities for international travel to conferences and for training. However, there were limited numbers of trained middle managers, and many were leaving the country with their families to avoid increasing violence.

In late 2006, at the request of senior CIOs on the Council, the Office of Communications agreed to fund a CIO train-the-trainer program at $300,000 for a three week course at the National Defense University's Information Resources Management College. The attendees would become the trainers and mentors of a new generation of senior information technologists in Iraq. Iraqi managers were involved in all course selections and curriculum planning. The first course, scheduled to be held at the NDU in Spring 2008 was delayed for visas, as was the second set of dates. Finally all visas were processed, many taking three months or more, and the course was ready to be presented at Ft. McNair, Washington DC, beginning in the last week of October 2007.

Ten days before the course was to start, and six days before the participants were scheduled to start their travel, I was told that the Ambassador had said at a morning meeting that henceforth all US funded training would be held in Iraq. I had no objection to that in principle. In fact I had already stopped all US funded training in telecommunications and IT outside of Iraq. All of the training funded by the Office of Communications was being conducted in Iraq by Iraqi professors and training companies owned and managed by Iraqis.

The CIO course was much more complicated and required that at least one group attend the course so they would understand the context, and be able to design courses based on it for particular audiences and technical levels in Iraq. I was told to write a memo to the Ambassador outlining my arguments. Two days later I was told that the Ambassador didn't find my arguments persuasive and the course should be canceled.

Many of the CIOs of the main ministries were angered and disappointed by this decision. The United States Embassy lost credibility with the senior officials affected, many of whom will be responsible for purchasing decisions for millions of dollars of IT related equipment, services and systems in the future. These systems will be the foundation of government in Iraq. The Council didn't meet again for six months. It was restarted again in early 2008 by Iraqis without US participation.

Much of this was caused by the increasing bureaucratization of the US Embassy in 2007, which I discuss later from a different perspective. When I arrived in September 2006 as the Senior Consultant for Telecommunications the chain of command was the Ambassador, the IRMO Director and myself. By late 2007 there were seven levels of foreign service bureaucracy between the senior Ambassador and I. This is described as normalization of Embassy functions. Not one of those seven is qualified to make a decision about telecommunications or information technology in Iraq. I was informed the night before I left Baghdad at the end of my assignment that the Ambassador was not briefed on the CIO training program or was aware that I had written to him.

4. **Ministry of Communications Technical Training**

Currently the Office of Communications oversees a $2 million technical program for Ministry of Communications entry level engineers and managers. The training is conducted by an Iraqi company using professors and experts from Iraqi universities. Over 700 managers and engineers are undergoing or have been selected for the training which takes place in Baghad and Erbil.

A huge training requirement remains. The situation in Iraq is comparable in effect to the period following the Cultural Revolution in China. A 15 year gap in technical knowledge and management capability is evident in Iraq, especially in middle managers who were not able to keep up to date in the most modern telecommunications technologies in the later years of the former regime. The Office of Communications believes 200,000 to 300,000 telecommunications and information technology specialists will need training to support a modern information economy in Iraq. The United States is not prepared for this requirement in terms of visa administration or price per student.

China is the best place to conduct this training. After the Cultural Revolution a system of telecommunications universities was set up to improve quickly China's telecom infrastructure. Today this system produces the equivalent of one Regional Bell Operating Company a year. China today maintains the largest cell phone, Internet, landline networks, etc. in the world. The training requirement within China has peaked and there are sufficient places for thousands of Iraqi students a year at price points that can't be matched in other countries.

The Office of Communications, with the knowledge of the China desk at Main State, has introduced the Ministry of Communications to the key telecommunications education officials in China. Coordination in Iraq is necessary between the Ministry of Communications, Ministry of Foreign Affairs and Ministry of Higher Educations. The Chinese appear willing to consider training large numbers of technicians and the planning for the program is underway in 2008.

The China training programs should be limited to specific technical and operations training requirements. Bachelor level education should be conducted in Iraq, since the education system produces acceptable entry level engineering graduates. Graduate level training and research should remain in the United States.

This may not sit well with those in the Department of Defense who consider China to be the next strategic enemy. However, pragmatism should be the guiding principle in Iraq to achieve order, stability and rapid reconstruction, certainly in essential services. The major Chinese communications equipment vendors Huawei and ZTE already train hundreds of Iraqi students a year at their commercial training facilities in Shenzhen. Several times a year Government of Iraq ministerial officials with telecommunications and IT portfolios , in groups of 24 or so, are invited to China, flying first and business

class, staying in five star hotels in Beijing, the latest limos provided and spending money passed out. The Chinese have a long term commercial and diplomatic plan for Iraq.

Pragmatism leaves room for regret in telecommunications reconstruction in Iraq. Chinese telecommunications companies are selling equipment into every city and province in Iraq. Few, if any, American equipment vendors sell in Iraq outside the Green Zone. Chinese sales people and engineers seem to have freedom of passage. While subject to the same random dangers as everyone in Iraq, they aren't picked out for immediate assassination at checkpoints. This is a controversial statement, perhaps more anecdotal than based on fact and research. But according to Chinese telecom executives in Iraq the last problem experienced by a Chinese telecom person was a relatively gentle mugging on the way to the airport in October 2007. If you ask MoC officials if the Chinese have freedom of passage they will say no. If you phrase the question another way - why do the Chinese have freedom of passage? - the answer is that their relationships go back to the mid-1990s, and that they are our friends.

5. International Connectivity

The international telecommunications system has a major structural flaw. From the Eastern Mediterranean to Singapore there is no north south connectivity for Internet transit traffic. All internet and voice traffic flows along a path that follows a circular path around the center of the globe from the Mediterranean through Suez into the Arabian Sea and Indian Ocean and through the Malaccan Straits between Indonesia, Malaysia and Singapore..

The problem was identified very quickly in late January 2008 when several undersea cables in the Mediterranean, Persian Gulf and near the Malaysian coast were cut. India, Pakistan and several Gulf countries lost significant amounts of telecommunications capacity, causing widespread outages, and raising concerns of governments, militaries and business communities. Whether accidental or intentional the vulnerabilities in the system were exposed to terrorist groups around the world. Jihadist websites began advocating the cutting of undersea cables as a tactic of disruption.

Since January 2008 it is recognized that Iraq is an essential factor in a secure international telecommunications system. There is growing private sector and government interest in the countries affected by the January cable cuts to work with Iraq in adding transit capacity from the Gulf and South Asia through Iraq and Turkey into Europe. This is likely to bring in large international carriers that will bring with them the management and operations systems needed to run a modern telecommunications infrastructure.

II. Management Problems in Reconstruction

There are four key problems with US telecommunications reconstruction – and all essential services reconstruction - in Iraq. First is the constant rotation of staff after one year or less of functional experience in one position. Second is the pernicious impact of

"slot-ism". Key slots are filled by military or state department rank rather than experience or functional expertise. These two combine into the third problem; a tendency towards management by committee, sometimes called fusion cells, rather than appointing an executive in charge . All of these are exacerbated by the professional disputes and jealousies between the Foreign Service of the State Department and the professional experts hired to manage reconstruction.

1. Rotations and "Slot-ism"

The US Mission has become an archipelago of committees. This is related to rapid personnel rotations. Someone is always coming and going. Since the US mission in Iraq is a hierarchical enterprise many positions are reserved for specific ranks. The leader of a committee is quite possibly an ambassador or general officer with little experience in Iraq or post-conflict reconstruction who arrived yesterday with their own ideas on how to save Iraq and win the President's Global War on Terror.

I call this "Slot-ism" – a pernicious and enervating affliction. With Slot-ism and rapid rotations it's impossible to put one person in charge of a program management team that stays together beyond a few months. Drifting committees result. Unfortunately, a theme, the shorthand description used in the Green Zone for counterinsurgency programs, such as reducing unemployment, usually runs longer than six months. So we continually circle back to day one, month after month, year after year.

Senior consultants, the civilian advisors for reconstruction in Iraq, are just becoming effective after one year. Civilian senior consultant assignments should be open ended, or three year contracts, since it is essential to build an institutional memory by industrial sector. Senior consultants with an understanding of Iraq government funding, ministerial processes, and a growing number of high level contacts should be considered for senior policy positions at the Embassy and within MNF-I.

The impact of rotations can be downright weird. In extreme cases, people will work for 365 straight days, 16 hours a day, until their last day and then they are gone. They go whether or not their replacements are here, or if they are in the middle of projects that are important to reconstruction in Iraq. Relationships with their Iraqi counterparts, often on the way to becoming friendships, are broken.   At some point someone will pick up the project, perhaps after a month or two, but the Iraqis are wary of the new commitment, because that person will be gone soon too. It's tough to build trust this way.

Since the introduction of the counterinsurgency strategy the military is attempting to replicate the civilian reconstruction effort with its own people. This causes problems of a different order. Assigned to fifteen month tours, the Army and Navy each get a 4 day pass to a military base in Qatar after three months, a two week home leave in the middle and another 4 day pass later in their tour. Generally they work 12 hour days, six and one half days per week, mostly in very dangerous conditions. The Army is rotated in and out of Iraq from their home bases too frequently, without sufficient re-training and recovery time. No one can withstand this kind of recurring duty and its accumulated stress. I

know this for a fact because intense troubleshooting and turnaround work, often in developing countries, is how I make my living. Burnout sneaks up on you. The military mission is permeated with depression, homesickness, lack of focus and concentration, and erratic and skewed decision making. After five years how could it be otherwise?

Within the counterinsurgency effort insufficient attention is given to expertise. I met once a very pleasant buck sergeant assigned by the Army as the telecommunications advisor to the Ministry of Communications regional director in Tikrit. His job in Arkansas was to stock shelves in Wal-Mart overnight. He didn't have the education, technical knowledge or experience to qualify him for his position. My advise to him was to keep his mouth shut, his ears open, and listen to everything the Iraqi director told him for the next year. If he did he might get a better job at Wal-Mart after his tour.

Even worse I met a reserve Navy Captain software executive from California whose job was making travel and meeting arrangements for a Deputy Undersecretary of Defense. This was at a time when my office had a shortage of people who could deal with senior information technology executives in Iraq ministries.

There seems to be little effort to relate experience to position in Iraq, especially for reservists. One way to improve this situation is to have two military specialties, one for primary military activities, and one based on civilian professional expertise. In reconstruction the civilian professional expertise becomes the primary specialty and assignments are allocated accordingly.

 2. **The Problem of Fusion Cells**

A fusion cell aggregates all the Iraqi, Coalition military, and US Chief of Mission personnel involved in an industrial or technology sector under one coordinator, perhaps a brigadier general from the tank or artillery services, another example of slot-ism. A consensus is then developed on how management decisions should proceed.

Fusion cells began to appear in Iraq in early 2007 under the surge and counterinsurgency strategy to accelerate the development of essential services.   Heretofore, the ministerial capacity development and technical expertise was led by civilians with many years of management experience in key sectors, such as water, electricity, oil, transportation and telecommunications.

There is no reason to believe that military fusion cells, designed to influence the civilian telecommunications sector, staffed and led by military officers with little civilian telecommunications sector experience in Iraq or anywhere else, will accelerate the development of the telecommunications sector in the country. Fusion cells are products of a counterinsurgency mentality - a nice cultural gesture - but they delay the making and execution of important decisions.

There are several potentially negative consequences related to military leadership of civilian telecommunications reconstruction. First, Iraq's civilian telecommunications sector may feel compelled to rely on US military communications specialists for its national network design, operations support and emergency funding, thus slowing natural commercial development. This is because US military support comes with a high degree of "imposing influence" – the expectation by Iraqis that they must agree to military and DoD suggestions, which come under force of arms, because those providing the suggestion are armed, and the personal history of many Iraqis is that the arms may be used.

Second is a perception that the US over reaches in relation to its investment in Iraq. US investment in the telecoms sector in Iraq is approximately 10% of the total and the relative percentage is decreasing. Ministry of Communications officials give increasing attention to Asian, European and Arab investors and their strategic concerns. The military's "imposing influence" is increasingly likely to be resented and rejected.

Third, the fusion cell concept creates confusion over direction of US reconstruction policy. Who is in charge of reconstruction policy, the Department of State or Department of Defense? Fusion cells are Green Zone centric operating from the offices of the US Army Corps of Engineers.

Fourth, military communications specialists have little experience in civilian commercial communications where customer services, billing, sales and marketing define success. The Iraqi cell phone companies are the prime example. Without any US involvement they serve over 10 million people in Iraq.

Fifth, since mid-2003 the military has been singularly unsuccessful in forming an effective operational relationship with Iraqi telecommunications officials and operations staff in the state-owned telecommunications service providers. The record is so bad that one is forced to conclude that the lack of cooperation is a Government of Iraq strategy. By not cooperating with MNF-I it will be more difficult for the US to operate in Iraq. They will leave sooner.

Fifth, and most important, fusion cells present a danger to civilian leadership in Iraq. If Coalition forces decide in 2008, after five years of occupation, that military leadership of the telecom sector is necessary, what is to prevent the Iraqi military – or the intelligence services that controlled it previously - from drawing the same conclusion as US forces withdraw? .

Iraqi's are capable of managing their telecommunications interests. In March 2007, nine months before a new MNF-I telecommunications fusion cell was formed, I recommended eliminating the Telecommunications Senior Consultant position and closing the ITAO Office of Communications in early 2008. There was no longer a need for my position or my office. Consequently, there isn't a need for a military telecommunications fusion cell to advise Iraqi civilian telecommunications agencies on reconstruction beginning to operate in 2008.

An argument is being made by the proponents of fusion cells that "despite some successes" the Iraqi network is "disjointed, lacking vision, unsynchronized" and prone to problems - which describes every new national network ever built. When a civilian network in Iraq fails, it isn't the responsibility of the United States military or the Office of Communications to repair it. Private owned network operators in Iraq have installed fault tolerant systems. When a state owned company experiences an operations failure it is up to the government of Iraq to review the problem, take corrective action, or privatize the offending company to let the market exercise its own operations efficiencies.

Reconstruction of a national telecommunications network is a civilian issue. The international telecommunications industry is clearly a successful global enterprise. It runs by its own internal dynamics, management practices, and according to strict economic and financial standards. This industry is capable of bringing Iraq into the international telecommunications system quite effectively without the support of a military fusion cell.

3. **State Department and Reconstruction**

I am not the first person to suggest that there are serious management problems between reconstruction professionals and the professional foreign service. The State Department is a distressed organization that is seeing its mission minimized in Iraq, and throughout the US government's international affairs community, by the extensive mission creep of the Department of Defense. State Department officials reflexively protect their turf wherever they can.

A common complaint among the essential services Senior Consultants is that the Ambassador became isolated from reconstruction during 2007 by a belief at high levels in the State Department that Iraq stabilization and reconstruction would be enhanced by a large influx of foreign service officers. One of the effects of this has been the downsizing and reduction of influence in Iraq of the civilian professional reconstruction corps, often replacing them with young officers on their first or second assignments. It is possible for a junior foreign service officer to be processing passports in Peru one month and have decisive influence in a technical reconstruction project in Baghdad or Karbala the next month.

Senior reconstruction officials are often in the latter stages of their careers, often coming to Iraq from similar work in other developing countries. It is difficult for a 62 year old electrical engineer with 35 years of experience in developing countries to take orders or advice on electricity capacity building from a 28 year old graduate of the Georgetown School of Foreign Service no matter how talented, intelligent or positioned for fast track advancement.

Cables and other explanatory written communications are the measure of a foreign service officer's performance, especially in the early stages of a career in the State Department. Great care is taken with language and diplomatic tone. Since most foreign

service officers aren't engineers, or have limited experience outside the foreign service, they rely on other people's input to craft into cables.   After the foreign service officer requests the information from a senior consultant or a member of the senior consultant's staff, reports on reconstruction are drafted and cleared by one of the numerous sub-Ambassadors in Baghdad and sent to Washington   Since the officer is not a subject matter expert in civil engineering, electricity production, or telecommunications the information sent to Washington is often imprecise. The implications and nuances of particular developments are lost. But it reads well.

The problem with this is that decision makers in Washington or even in Iraq are denied the opportunity to have a clear path to the senior reconstruction officials in the field. Presumably a correct level of access and transparent communications would have led to better decisions over the last five years. To emphasize this point, in my 18 months in the US Embassy compound I never heard of one reconstruction official specializing in essential services briefing a congressional delegation about reconstruction. It was done by foreign service public affairs specialists.

If the United States is forced by circumstance into future invasion, occupation and reconstruction there is a relatively easy solution to the problem. The State Department has Political, Economic, Public Affairs and Management cones as professional avenues for advancement. A Reconstruction cone would provide much needed expertise. Engineers, technical specialists, business school graduates would be hired, promoted within their cone and eventually, become generalists, be promoted to the senior foreign service and become ambassadors. USAID would be folded into this cone. In any distressed operation, whether a company or a country, experience is essential in the particular technical competence and the ability to understand a spreadsheet and what it represents in terms of financial relationships, such as costs, capital and operations expenses, revenues, accurate financial projections and return on investment. (A "Stability Cone" has been proposed by Amb. Joseph Saloom, IRMO Director in 2006-2007 – which goes beyond essential services reconstruction to include rule of law.)

Such a cone can be justified for one reason. It is extremely difficult for the military and DoD to do reconstruction. It should be obvious that military officers who by necessity or accident destroy a country's infrastructure one day will not be accepted by the host nation populace as advocates of peaceful reconstruction the next. To think otherwise is a self-deception. The military's job is to provide security for reconstruction to take place. The State Department, in so far as administrative support is required, should be in charge of reconstruction, with an organization structured to be successful at it.

Going Forward

The experience of telecommunications reconstruction in Iraq reveals several ideas and policies that can be recommended for future reconstruction programs.

First, in retrospect more emphasis and investment should have been focused on the core fiber infrastructure. In developing countries there is always a natural inclination to leap

frog technologies. This can lead to early service improvements with relatively simple voice wireless systems but can lead to superficial network management skills and weak back office capabilities, inhibiting the growth of broadband infrastructures essential to economic development.

Second, use equipment and systems that host nation engineers know and understand, not what US officials wants them to have, or which rewards politically influential vendors. In Iraq it was a folly not to use equipment readily and cheaply available from Chinese suppliers when almost all the telecommunications equipment supplied by Western companies in Iraq is manufactured in China.

Third, provide training as quickly as possible from whatever source has the capability and visa administration to handle it. If it's in Indonesia, China, Russia, Bulgaria, use it. Understand that the United States is not the best place for much training, and certainly not the cheapest per person.

Fourth, let host nationals do as much as possible after a basic level of training. Iraq has a long history of providing technologists to global corporations, based on a national university system that still functions. In my opinion, engineering students graduating from many Iraqi universities have all the knowledge necessary to start a career in telecommunications.

Fifth, let managers manage. The State Department reconstruction official recruitment process should be changed to permit long term assignments of reconstruction officials. However, the individuals selected should be appraised and measured against a set of agreed results – as they would be in an effective international corporation.

Sixth, create a Reconstruction cone in the Department of State.

Seventh, the DoD should keep its reconstruction activities in the telecommunications sector to a minimum. Every effort should be made, however, to provide a secure environment for the technical development of the sector and the interconnection of the national network into the international system.

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Bob Fonow Biography

Robert Fonow recently completed an assignment as the U.S. State Department Senior Telecommunications and IT Consultant to the Government of Iraq. He is Managing Director of RGI Ltd., a consulting group specializing in troubleshooting and crisis management for the international telecommunications industry. Fonow has completed troubleshooting assignments as President of Sprint Japan, General Manager of Scientific Atlanta Shanghai, President of SFA

Datacomm in the United States, VP Global Operations for Red Cube in Zurich, and General Sales Manager of ITT Worldcom in London. He is an advisor to Trivon AG, a telecommunications investment holding company on Zug, Switzerland, on operations optimization in Russia, China and the Middle East.

Bob Fonow is an Adjunct Research Fellow at the National Defense University, Center for Technology and National Security Policy, writing on the geopolitics and international relations of the Internet and telecommunications industry. He remains involved in Iraq telecommunications and IT policy through a working group of several former and current Iraqi telecommunications and IT officials.

He is a long standing member of the International Institute for Strategic Studies, London, studying strategy and international relations under several of the founders following enlisted service in electronics intelligence in the US Air Force.   He holds a BA(Hons) from St. David's University College, Lampeter, University of Wales and a MSc(Econ.) International Relations from the London School of Economics.