

# The day after – priorities in reconstruction



Government silos cannot synchronise in speed and magnitude with the high pace and destructive power of a large crisis. And interoperable networks are the key to crisis exit or reconstruction, according to **Michel Nesterenko**

**D**URING MOST OF THE 20TH CENTURY the Euclidian-Newtonian mindset has fashioned our economic, political and social organisation. According to this prevalent philosophy, complex problems can be broken into independent parts. The problems and issues inherent with each part can be solved by taking only the context of the specific part into account.

The use of linear logic held that when added to each other, the independent solutions of each part would make a coherent whole. This reasoning worked fairly well for issues that were not too complex. But in highly complex or chaotic environments, Newtonian solutions and linear logic do not work. We now have the science of complexity and chaos, with its

*The legend of the Tower of Babel taught us that without communication there is no coherent nation. This holds just as true today – communication and working communication infrastructures are a vital element in reconstruction or rebuilding after a war, crisis or disaster. The Tower of Babel was in Iraq*  
Pieter Brueghel the Elder's Tower of Babel, 1563. Kunsthistorisches Museum, Vienna, Austria/ The Bridgeman Art Library

non linear logic, to explain and help manage the extraordinary crisis environments that are becoming more and more prevalent. Applying the Newtonian mindset, our governments and the military have been organised in silos, with little or no horizontal communication, except at the very top. With the increasing complexity of the technology-

based digital world, our government and military began to rely increasingly on networks for their very existence. The US military, which is at the forefront of the digital evolution, is talking in terms of network-centric warfare. The network-centric government cannot survive for long if the underlying critical infrastructure network is not functioning. In our information-based society the underlying communication network has become the most critical element. Without information and data there is no situation awareness and no decision can be taken at the top. In our search and drive for utmost productivity we are driving infrastructure networks at their peak efficiency, with little or no unproductive margin.

## DYSFUNCTIONAL MESH

When a crisis comes, regardless of its nature or origin, the increase in demand on one side – and the destruction of part of the network on the other – the systemic level of the network breaks down and the government processes become dysfunctional. This is clearly what happened during Katrina; the decision-making layer of the Federal government in Washington did not receive data through proper channels and became paralysed. This has nothing to do with inadequate plans, it is a systemic process. Data must go up the silos before the orders for the response can come back down and to other silos. If the communication mesh breaks down at the base, no data enters the silos, therefore there are no reactions from the top down.

During the hot phase of a crisis, communication may become patchy and break down completely over a span of a couple of hours when batteries run down. Emergency rescue may become haphazard and inefficient. During Katrina the Coast Guard communication network broke down and the force had to use aircraft and helicopters to relay messages. The US army itself was hampered by a lack of situation awareness and did not know fully what amount of troops were needed, where, and for what purpose. The US army tasking was disorganised because it had not trained on plans for this exact battle.

For a multitude of systemic reasons it is clear our governmental silos cannot synchronise in speed and magnitude with the high pace and destructive power of a large crisis. It follows that, whatever government plans are, they will always be too late, too little and not perfectly matched, leaving local citizens to survive the hot phase of the crisis on their own.

During the reconstruction phase, governmental silos become more efficient as the infrastructure network is rebuilt. The

science of emergency management has focused much of the attention of politicians, government circles and academia alike. But, except for NGOs, there has been little discussion about and advance planning of reconstruction systemics and logistics.

*The Beginner's Guide to Nation-Building* by James Dobbins, published by Rand in 2007, is one of the rare books on this subject, which represents the greatest financial share of the overall cost in any crisis. Since the goal of reconstruction is to bring back the damaged region into the mainstream of the economy and under the control of government silos, it would seem logical that the first government preoccupation should be the speedy restoration of critical infrastructures. Yet during Katrina's recovery phase, the Federal government was unprepared and left critical infrastructure network reconstruction in the hands of private industry which, by and large, did an excellent job. Local repair crews often had to use little known back-roads to bypass the road blocks set up by the army and out of state National Guards. Had the US Army been more efficient, recovery could have been much delayed.

One needs to look at Iraq to understand why government bureaucracy and military establishment stuck with the wrong paradigm cannot hope to master the art of recovery. There are some similarities between the lessons from Katrina and the lessons from Iraq. In Iraq it was the US Air Force strategic bombing and effects-based operations doctrine which totally wiped out the infrastructure, much like the hurricane. Immediately afterwards, misguided policies wiped out the government bureaucracy and the infrastructural management staff. All Iraqi government silos disappeared overnight and only the US military establishment's silos were left to rebuild the infrastructures.

The US military was not prepared, trained or staffed for this task.

Yet before the offensive, the US Government, contrary to popular belief, had intelligence and all the necessary recommendations to prepare for what happened. All the data was to hand. But the Federal government was stuck with the wrong paradigm and the result was a fiasco of historic magnitude.

Despite the heroic efforts of the US Army Officer Corps and the US Corps of Engineers,

after three harrowing years and 30 billion dollars, the Iraqi infrastructure is still not functioning; electricity is rarely available more than three hours a day in much of the country, so factories cannot function and paying jobs are scarce. Communication is totally haphazard outside the capital, so most of the country lies outside the global commerce mainstream. There are no precise measurements for the oil production, so state revenues can only be estimated. And there is no cement to rebuild the 350,000 homes which were bombed and destroyed during the war. Private industry also failed – contractors were paid to build new electrical plants, oil pumping stations and other infrastructure, but often the Iraqis received no training, no manuals and no spare parts and found it impossible to obtain after sales support from the manufacturers.

Two hundred million dollars were spent on a brand new emergency interoperable network which did not work because the electronic switches failed and had to be replaced on day one, so calls could not reach the command centre.

One can only wonder what would have happened to Louisiana and neighbouring states, if the military establishment had been completely in charge after Katrina and Rita?

The failure of Iraq is not the failure of the US military and its leadership, but that of the wrong paradigm choice. The systemic lesson from Iraq is that if the infrastructure and the communication network are not rebuilt first, reconstruction is hopeless.

## INTERDEPENDENCIES

It is very clear that if the military establishment may not be the best body to tackle reconstruction unless its war paradigm is fundamentally changed; this same military establishment is essential for its logistics capacity. The military is the only large organisation with appropriate equipment and disciplined staff trained to operate in degraded environments. Without powerful and efficient logistics, recovery and reconstruction will remain but a dream.

The limitations of the Newtonian system are the increasing amount of interdependencies. When systemic interdependencies between silos increase, evolutionary changes decreed by the top grinds to a halt. To emerge from a chaotic environment and re-enter the normality of Newtonian silos, the focus must be on the communication attractor.

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