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**So it's connected...now what?**

*C2, Effects-Based Operations, and Whole of Government Action*

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## **Introduction**

Our world is complex, an ever-changing mass of interdependent challenges. Until recently, most nations have been able to deal with these challenges using compartmented “stovepipes”<sup>1</sup> of governmental capabilities variously labeled military, diplomatic, economic, law enforcement and so on. But, the post 9/11 era poses a new kind of threat. Whereas we could once assume that a robust military stovepipe was sufficient to hold all external violent challenges at bay, we now find ourselves subject to attack in our homelands. Whereas we might once have relied on a military-diplomatic “balance of terror” stovepipe to deter mass attacks, our current adversaries cannot so be deterred. Whereas once our prowess in large scale, high technology attrition warfare was sufficient to “win,” we now find ourselves in asymmetric crises and conflicts from Afghanistan to Haiti whose metric of success is more psychological than physical. Whereas once we could largely ignore the interwoven complexities of confrontation and conflict, we can no longer do so. Instead, we face a pressing need for a “whole of government” approach that bridges traditional stovepipes. This need is not restricted to issues of national security. Disasters the scale of Hurricane Katrina for example clearly exceed the capabilities of state and local government and of any single national stovepipe. They mandate an integrated whole of nation response with extensive cross stove-pipe efforts – something which for all the post 9/11 efforts the United States was not prepared.

## **Hurricane Katrina**

When Hurricane Katrina made landfall in Louisiana on August 29<sup>th</sup>, 2005 the U.S. had to execute a whole of government response to a fast evolving natural disaster. Multiple layers of government as well as international and non-governmental (NGO) entities needed to work seamlessly together, but they did not. What happened?

The United States’ post 9/11 arrangements included an elaborate system to coordinate disaster recovery efforts by local, state, federal and non-governmental responders: a National Response Plan (NRP), an Incident Command System (ICS), National Incident Management System (NIMS), Emergency Management Assistance Compacts (EMAC) and a Catastrophic Incident Annex (CIA). Together this alphabet soup was to provide a more integrated national approach to a catastrophe. In the arrangements, those closest to the action were expected to act first and call for re-enforcements if and when needed, a classic “pull” system. If local and state responders were overwhelmed, then higher echelons would “push” support.<sup>2</sup> Yet, Katrina so overwhelmed responders that these preparations were ineffective. There was confusion as to who had “the lead.” Federal officials executed “hurricane business as usual” when the locals were literally up to their necks in water. The Federal Emergency Management Agency (FEMA) Director, a subordinate agency within the federal Department of Homeland Security (HLS), even “called the state

of Louisiana ‘dysfunctional’” and cited its lack of unity of command as a main reason for delays in relief efforts.<sup>3</sup> As the disaster evolved, the vertical and horizontal disconnects gave rise to multiple competing emergency command centers with varying degrees of effectiveness.<sup>4</sup>

Homeland Security was supposed to coordinate interactions between the local and federal stovepipes and across federal agencies as well.<sup>5</sup> But, this mandate was undermined by bureaucratic rivalries in multiple agencies at different levels of the federal, state and local governments.<sup>6</sup> Within HLS as a case in point, the FEMA director had made bureaucratic enemies in his fights to increase his organization’s power and budget and as a result was on the verge of resigning when Katrina struck.<sup>7,8</sup> Similar problems could be seen across departmental stovepipes. The Department of Defense (DoD) had capabilities and capacity to offer, but the process to request DoD help was so unwieldy that it was unresponsive in dealing with the short timelines imposed by the humanitarian disaster in New Orleans.<sup>9</sup> Effective coordination was compounded by difficulties communicating across cultural and terminology barriers.<sup>10</sup> Additionally, while Joint Task Force (JTF) Katrina, Defense’s military effort, reported to the US Northern Command (NORTHCOM)<sup>11</sup> which had built interagency, local and state relationships, these commands like DoD as a whole continued to reflect a military culture focused on deliberate planning process and a penchant for definitive action.

Then there was the question of who was in charge. A Federal Coordinating Officer (FCO) from Homeland Security was supposed to be the single federal point of contact for the State Coordinating Officer (SCO) with an additional Principle Federal Official (PFO) designated to “coordinate” vice direct federal operations. The Department of Homeland Security appointed as FCO a US Coast Guard Vice Admiral,<sup>12</sup> that is, someone whose training and experience made him familiar both with the military culture and with state and local government, and he promptly assumed the PFO role so as to better unite and coordinate efforts, but still met with resistance from local officials.<sup>13</sup> Similarly, problems between locals and the DoD Katrina Task Force were greatly improved by the appointment of a locally well known and respected Louisiana born Army officer, General Honoré, to command Task Force Katrina. He understood both the military and local government stovepipes and was able to smooth over divisions between the military and local decision-makers.<sup>14</sup>

In short, the post 9/11 effort to engender “whole of government” action failed.

### **Complex Problem Sets**

Katrina raises hard questions. How do we make whole of government action work? What makes the problem so hard? And, more specifically, how do we need to think anew about networking, command and control, and the best use of information age capabilities?

The starting point in answering these questions is the realization that Katrina ... and Iraq, Afghanistan, Kosovo, Tsunami Relief, and a long list other examples, present complex challenges that are ultimately about people. All are either caused by or affect humans and all demand solutions by humans. Such human involvement in either the problem or the solution makes the result complex.<sup>15</sup> It introduces very large numbers of interdependent variables whose number, identity, and interrelationships continually change. The range of these variables is so vast that no single stovepipe can handle more than a small fraction of the whole. Moreover, the challenges are not static but continually mutate so that there is no onetime “solution” or “one size fits all” answer.<sup>16</sup> Thus, any whole of government action must deal not only with complex problems spanning multiple stovepipes but with requirements that continually change over time as we learn and adapt our collective response to those changes. In Katrina, these stovepipes spanned federal, state and local government as well as non-governmental and international organizations (Figure 1). Each stovepipe presented both a different chain of authority/ responsibility and different often mutually unintelligible and sometimes hostile bureaucratic culture with its own concepts, priorities and processes, its own bureaucratic language, and its own timelines -- often with little connection to the local pace of actions or to what is actually going on. Coordination and cooperation must then proceed from the action level either:

- To a level where the lines of authority converge – a decision-maker whose authority spans all the stovepipes in question, or
- To an on-going, functioning interagency coordinating process ... and then back down another stovepipe.

### **Katrina: Multiple Stovepipes**

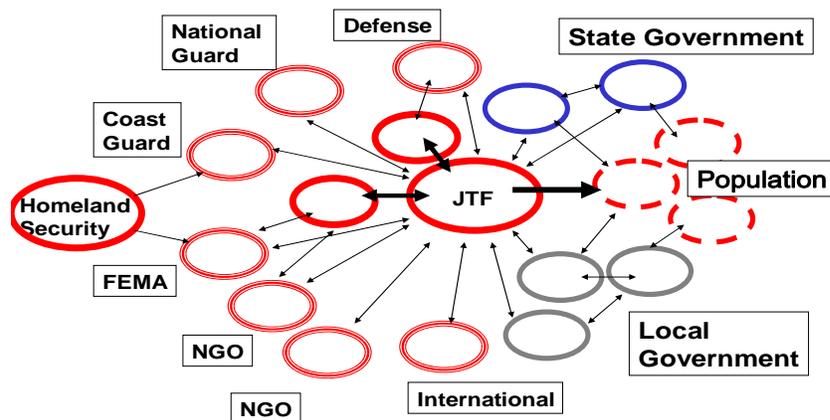


Figure 1

The good news is that – if used collectively – the resources of nations and coalitions should be adequate for the task. Ashby’s Law of requisite variety clearly applies: the greater the variety of potential

responses an actor – military, economic, health, social, political or otherwise – can generate, the more likely he will be to succeed. The problem, however, is not a lack of variety but the inability to tap the potential this variety presents, as exemplified by bureaucratic and organizational “stovepipes” seen in the Katrina response. The same problem can be seen in the on-going confrontations and conflicts of the post-9/11 world. A diagram of stovepipes confronting a commander or ambassador in Afghanistan, for example, might look very similar to that in Katrina only in this case representing different governments each with its own rules of engagement (Figure 2).

### Afghanistan: Multiple Stovepipes

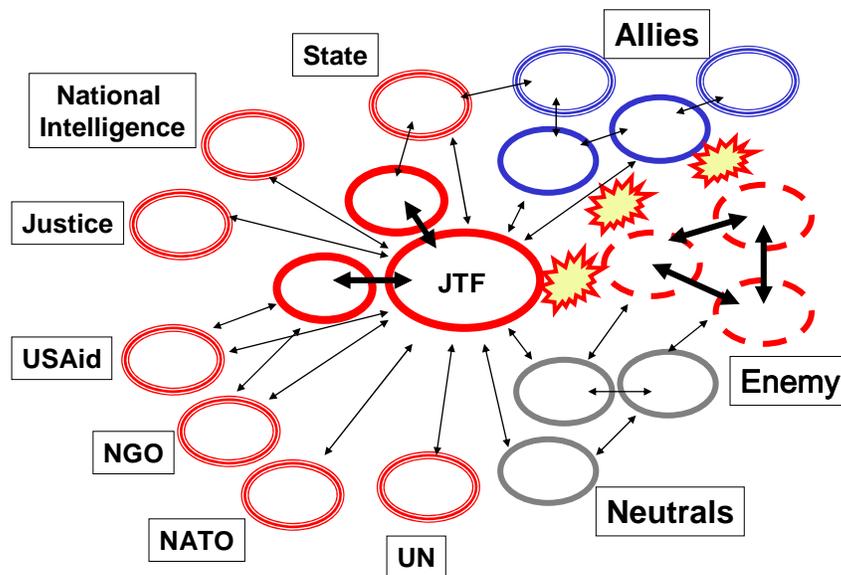


Figure 2

Logically, the larger the country and government and the more layers in the organization, the farther removed the decision maker will be and the longer the delay.

#### **Down with Stovepipes?**

Governments habitually create “inter-agency” processes to bridge stovepipes. The US did so to enhance its internal security and ability to deal with natural or man-made disasters in the aftermath of 9/11. This was the “solution” that failed so visibly in Katrina, but whose limitations in a different guise are apparent in Iraq as well. One key to understanding the limitations involved is the use of the prefix “inter.” It suggests a dialogue among equals in which one or another actor may be a “first among equals” but in which no actor has the authority to force action on another agency or department, e.g. the DoD response to Homeland Security needs or the reluctance or inability of State and other agencies to staff needed advi-

sory positions in Iraq.<sup>17</sup> In federal governments in which power is shared with state and local governments, the stovepipe problem is aggravated by the need to deal with multiple sets of additional stovepipes over which the central government may exert only limited authority. Coalition actions demonstrate a similar problem at the nation-state level. The result has been an extension of the stovepipes down to the lowest levels of decision-making.

Given the problems of communicating and collaborating among such disparate entities, there is an understandable temptation to jam as much of the problem as possible into the stovepipe with the greatest capacity and an ability to force compliance upon its components. In the U.S. case, this usually means the well funded and equipped military stovepipe – which has been pushed to face a series of broad asymmetric challenges and to undertake broad “nation building.” The more capable the military, the greater is the temptation.<sup>18</sup> Yet, each such challenge from Afghanistan to Kosovo and beyond presents problems that lie well beyond “fighting and winning the nation’s wars.” Each reflects metrics for “victory” that are fundamentally psychological in nature and that revolve about continually changing observer perceptions that include social, cultural, economic and political factors far removed from traditional warfighting doctrine and capabilities. Clearly an evolution and broadening of military capabilities, thinking and doctrine, although often vocally resisted, is in order. But in fact, the military stovepipe alone will never contain all the options needed. So we are left with the same question: how are we to tap the resources of a whole nation, coalition, or organization and then adapt that response to a continually changing situation or the continually evolving complexity of the post 9/11 world?

### **Networking the Humans in the Loop**

New information age capabilities are often seen as a panacea for the problems of stovepiping. Simply create a communications architecture that connects all the nodes and then either abolish the stovepipes altogether and direct everything from on high, or leave it to the “human in the loop” to figure out how to connect the new tools. The Katrina relief efforts provide a reality check.<sup>19</sup> The efforts’ failures make it plain that inability to communicate via e-mail, message, or commercial phone lines was not the real problem any more than it was in Iraq, Afghanistan, or a score of other complex crises. Rather, the problem was the inability to understand the complex perceptions, assessments and ideas that needed to be communicated and an all too frequent unwillingness to cooperate as needed. This is to say the problems were fundamentally human in nature.

### **The Human**

Complex problems like those encountered in Katrina mean dealing with large numbers of changing interdependent variables that in great part center on interactions, decisions, and behavior of individual

humans, groups of humans, and human institutions. Because the problems revolve about an ever-changing constellation of interdependent variables, they are not reducible to simple “if then” equations, but rather demand a “sense” of what is going on and how the pieces of the puzzle fit together. This sense rests on *knowledge*, that is, an internalized understanding of the problem in its entire complex context rather than on particular sets of data and information. Successful “networking” to respond to complex natural or man made challenges then means combining and exchanging knowledge among those human actors with a sufficient common understanding to appreciate the complex knowledge to be addressed. Thus, an “if you build it” architecture that links nodes on an organization chart may bear little resemblance to the real informal networking needed for an evolving “whole of government” action. Rather, the communications networking must ensure that the right people are connected and, therefore, must reflect and support the changing and evolving social networking that is represented both in the informal organization and in the stovepipe.

The need for such human networking alters how we approach stovepipes. Stovepipes, to be sure, tend to be sluggish, often reflect bureaucratic concerns, fail to grasp the larger picture beyond their particular expertise, and have difficulty communicating their specialized knowledge to other stovepipes. Yet, despite these obvious frustrations, stovepipes also represent an in-place social network with a wealth of experience and knowledge that, in its aggregate, can provide much of the diversity needed to deal with the numbers and kinds of interdependent variables that a given situation may present. Within this social network, actors generally share a common experience and usually a common educational base and a common organizational culture, that is, the stovepipes are “communities of expertise.” These communities are important reservoirs of complex knowledge, but the transmission of this knowledge and expertise presents a challenge because it is usually expressed in a verbal short hand of analogies and metaphors. These may be commonly understood within the community but not outside it. Successful “knowledge networking,” therefore, demands capable human interfaces with the experience and education to appreciate the analogies and translate them for others both between levels of the same stovepipe and between stovepipes, much as General Honoré did during Katrina.<sup>20</sup> The whole of government challenge thus becomes tapping the stovepipe for the expertise it can bring to bear and then integrating that knowledge and expertise so derived across the multiple stovepipes of a whole of government effort.

The thrust of all of the above is that the problem is not with the existence of communities of expertise. The problem is with breaking down the stovepipe barriers that keep them from communicating and cooperating with each other. The real questions are: how do we communicate the complex problems and understandings across the stovepipes; and how do we best use the tools of the information age to enable whole of government action -- bridging the stovepipes.

**Effects-Based Approaches:  
Common Concepts, Common Processes, Common Language**

Effective communications between humans in disparate organizations requires some form of common understanding upon which to rest the inter-stovepipe networking and team-building. That is, we need to provide a non-threatening commonly understood concept, an agreed upon process, and a way to communicate knowledge and information.

**Common Concept**

Concerted whole of government action requires some level of agreement as to what the “federation of stovepipes” or the collective organization believes and is trying to accomplish. Indeed, one reason for breakdown is the absence of a common agreed concept, which leads to clashes and misunderstandings ... from “who’s in charge” and “what is the metric for success” to “ain’t my job.” One aspect of any solution, therefore, must be to provide some common, meaningful conceptual baseline, noticeably lacking in the Katrina debacle where each agency actor seemed to have its own concept of what was required and how to go about dealing with the problems posed.

A concept universal enough to be applicable across the breadth of a nation’s efforts must address the most fundamental concerns of each of the component stovepipes. But can a concept be literally all things to all people without becoming meaningless in execution? One reason much of the international movement toward whole of government and whole of nation has coalesced about “comprehensive” effects-based thinking is that it offers a theoretical and conceptual baseline common to all the potential actors. Such effects-based thinking has four key characteristics:

- First, the focus both of the actions and outcomes and of the problems and solutions is their human dimension, the reactions and behavior of individuals, groups and organizations whether small teams, national governments or the international community.
- Second, the concept looks across a full spectrum of human interaction from day-to-day activities through responses to man-made or natural crises and disasters, to competition and conflict, to efforts to stabilize and build a strong peace or re-build a devastated area, that is, it embraces the issues and concerns of all the stovepipes.

- Third, it acknowledges that the efforts required are not and cannot be separate from one another but are all irrevocably intertwined in a whole of nation perspective and a commonly shared fate – the basis for an enlightened self-interest.
- Fourth, it recognizes the fundamental complexity of these interactions and thus, that there can be no perfect awareness, no perfect answer, and no perfect prediction of the outcome. Rather, we seek a pragmatic ability to cope with a complex world.

Taken together, these ideas provide a unifying base for integrated national or coalition action. This baseline is not limited to external problems but applies as well to internal challenges from homeland security to disaster relief.

### **Common Language**

A common concept cannot by itself prevent miscommunication and misunderstanding. Stovepipes are a Babel of mutually unintelligible yet jealously guarded bureaucratic or doctrinal languages and by a maze of internal processes and procedures not apparent to the non-initiate. One has only to glance at the US Joint Staff's glossary of military terms or to listen to the debates over military doctrine to realize that accepting a common concept will mean little if the expressed words are unintelligible to other stovepipes. However, the common concept can help. The concept revolves about a focus on *actions*, a term neutral enough to cover diplomatic, economic, political, cultural, social, homeland security, first responder, military or other activities and, therefore, broad enough both to encompass what any departmental, agency, national, international or non-governmental player might do and to provide a basis for understanding the how actions of each will together affect outcomes. Also, the approach focuses on *effects* or *impacts*. These terms take in all the potential actions of a government or coalition. Accordingly, they provide the basis for assessing the aggregate impact of all actions – intended and unintended – in creating the desired physical impact and psychological perceptions and reactions by observers. This is to say the effect sought is ultimately an *end-state* denominated in behavior of a physical system of systems, and/or individual or group behavior. As breadth of this suggests, end-states can take many forms: physical and psychological; diplomatic, political, military and/or economic. And, they can range from tactical to geostrategic and from state and local first response efforts to international coalition actions. In each case, translating a straightforward concept into straightforward action provides the base for common understanding and action.

## Common Process

While each stovepipe may be expected to have its own specific “processes” for carrying out its work, these are likely to be based on a core process common to all humans and human institutions. Its universality arises from the fact that it expresses basic action-reaction, stimulus and response cycles that can be understood whatever the particular organizational structure or culture. Its difficulty arises from the fact that the cycles and the problems they address are complex, do not lend themselves to familiar, quantifiable cut and dried solutions, and will require new thinking, tools, and organization. The most basic such process is a stimulus and response interaction common to animals, mankind, and all human organizations – even stovepipes (Figure 3). For humans and human organizations, this response is a deliberate and purposeful act and part of a somewhat larger process best encapsulated in the Boyd Observe, Orient, Decide and Act or OODA loop, a construct developed to describe the interaction between fighter aircraft. As a tribute to its universality, it has been adapted to virtually all forms of human decision-making from individuals to nations, from economics to law enforcement, from academe to business. In essence, every organization or stovepipe should mirror these four OODA steps in one way or another.

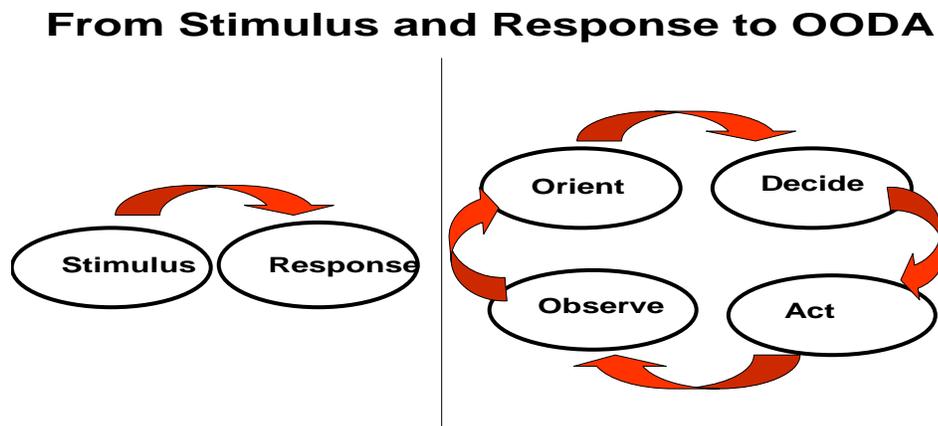
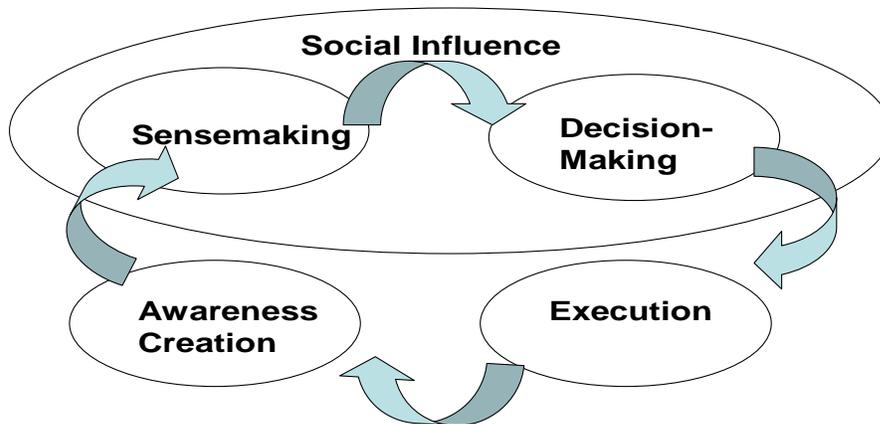


Figure 3

But the OODA loop has a major limitation. It reflects how people in general sense and react to stimuli whereas the central problem of the stovepipe is that they have their own community character and organizational culture. We therefore need to carry the OODA loop another step to portray how decision-making process differs from one group to another. In this case, we have re-labeled observe as “awareness creation” (to reflect the more deliberate efforts involved), looked at orient less in a physical sense than as “sensemaking” (literally making sense out of the created awareness), “decision-making” as the decide process, and “act” for execution / implementation. Affecting all of these and largely defining how they differ is the social influence or way in which the social networking so critical to dealing with complex problems affects the entire OODA process (Figure 4).

# Action Reaction Cycle



1

Figure 4

We can take this another step, breaking down each of these spheres into the general functions that would be required to carry it out. All organizations, for example, will need some form of awareness creation whether it is a modest effort that simply receives subordinates' reports or monitors the media or a more elaborate effort that includes sensors and a formal intelligence collection process. In each case, we should be able to trace the process and functions of an agency, department, organization, or business and translate the idiosyncratic language involved into common understanding.

## Whole of Government Networking

The commonality of the basic processes of awareness, sensemaking, decision-making and execution is important as a first step in identifying where capabilities and knowledge in one stovepipe complement those in another and thus where interfaces are needed and, by extension, where organizational and communications networking are needed to support whole of government action. This point becomes clearer if we break down the basic into tasks and sets of questions each must address, look at how each is these are approached in different stovepipes and where each might fit into a whole of government effort.<sup>21</sup>

### Awareness

It stands to reason that any human organization must have some way of sensing what is going on around it. Without some process to create awareness of the challenges and opportunities it might face, the organization would have no way to adapt in any purposeful manner and would ultimately not survive. We can break this fundamental process into its basic component parts and into a set of basic questions

that must be answered and tasks that must be undertaken for the process to succeed (Figure 5). If we break the

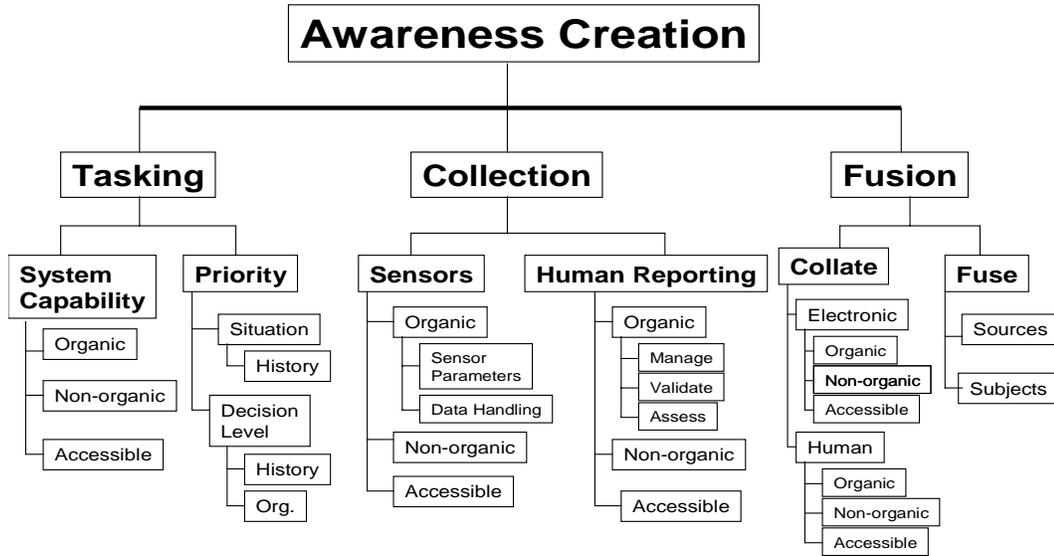


Figure 5

process for creating awareness down, we can see three component functions. Since the organization cannot long exist in a purely reactive state, it must have some way of *tasking* or directing the gathering of the information it needs, a means of *collecting* the information, and a means of fusing the whole together. Each task can also be broken into a series of questions that must be answered if the organization is to act, react and ultimately survive. In the *tasking* function, the first series of questions centers on the capabilities available whether organic, non-organic, or accessible. A prioritization process helps decide what information will be needed, for whom, and when. *Collection* includes both the rather linear inputs of sensors, our own and others. Then all of this information must be fused by answering questions as to what electronic and human information agrees with what and how it all fits together.

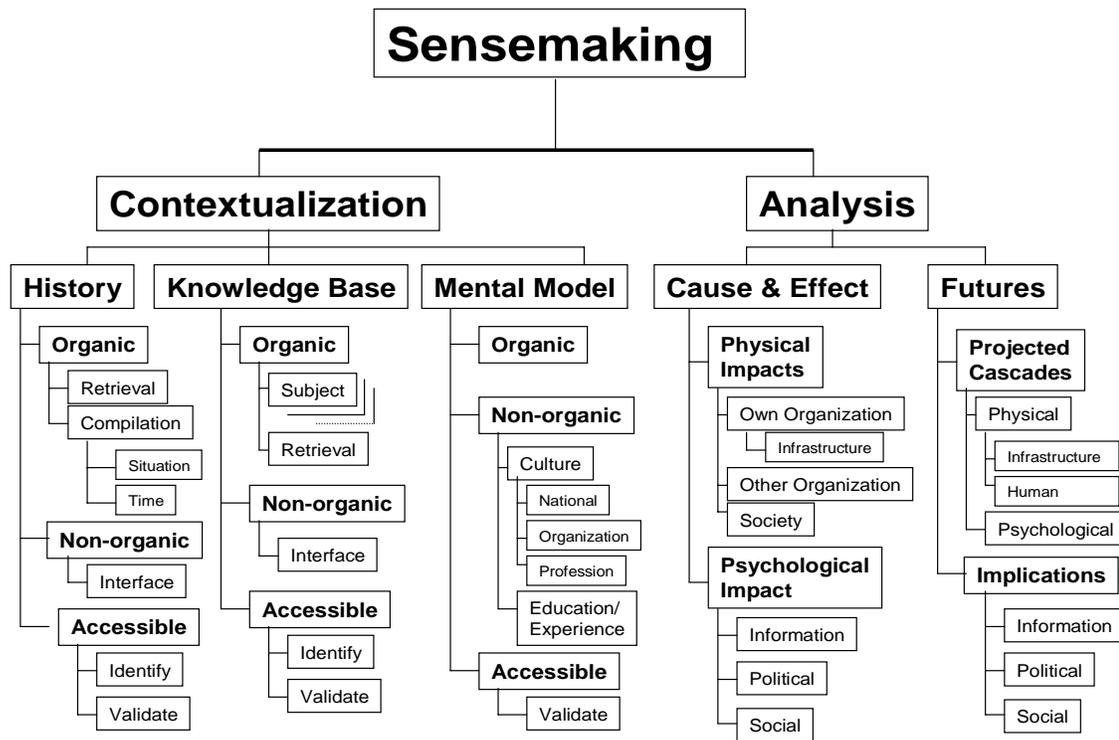


Figure 6

It is not sufficient to be aware; organizations must also be able to make sense of that awareness to be able to take purposeful action (Figure 6). This implies two functions. The first is to put the awareness into some sort of context, answering questions as to how current actions reassemble or differ from what has gone before and tapping the organization’s “institutional memory” and historical data bases, those of other allied organizations, and any other accessible source. This must then be put into a framework of existing knowledge and mental models answering questions as to what we or others know, what we believe, and where does any new knowledge fit in our own or others’ mental models, that is, the conceptual shorthand with which we communicate complex thoughts and actions. The second major function is analysis which seeks to address the cause and effect questions as to how we got here and what physical and psychological impact it is having on our own organization, those of others and of society at large. This analysis then extends into the future with a series of risk assessment questions as to what is next, where this situation is going, and the short term and long term implications of inaction.

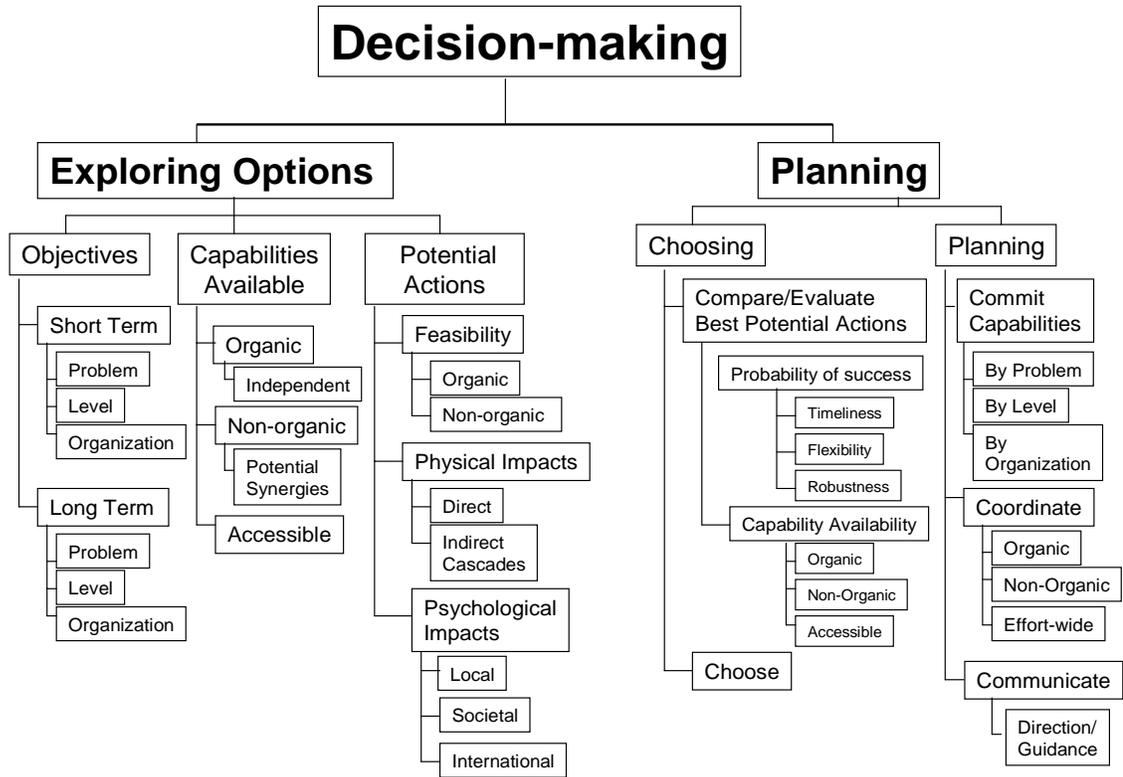


Figure 7

This sense of the problem then provides the basis for decision-making, initially in a function centered on exploring options and then in planning any actions to be taken (Figure 7). Exploring options is an iterative process examining a succession of “what if” questions as to what we, collaborators and others need to do, what capabilities might be brought to bear individually and in concert, what this might enable us to do, and the upsides and downsides of each potential action. Then planning addresses the questions of how do we choose the best options and finally how are these to be translated into a coherent action both within our own and in coordination with other organizations.

Finally, actions must be implemented (Figure 8). But when dealing with a complex problem, it is not enough to simply plan or direct the action -- for the situation at the moment the action is implemented will almost never be the same as what was envisioned in the planning phase. We must be able to implement our actions, taking into consideration the physical, psychological and temporal context at the moment they are executed and adapt accordingly. We must in fact continually adapt and re-coordinate actions as the situation evolves. Furthermore, if we recognize that the entire process we have described is but one slice of an ongoing spiral, we must provide feedback to the organizations. What was different from what was expected and planned? What physical and psychological reactions were observed? In essence, recommencing the cycle with awareness creation.

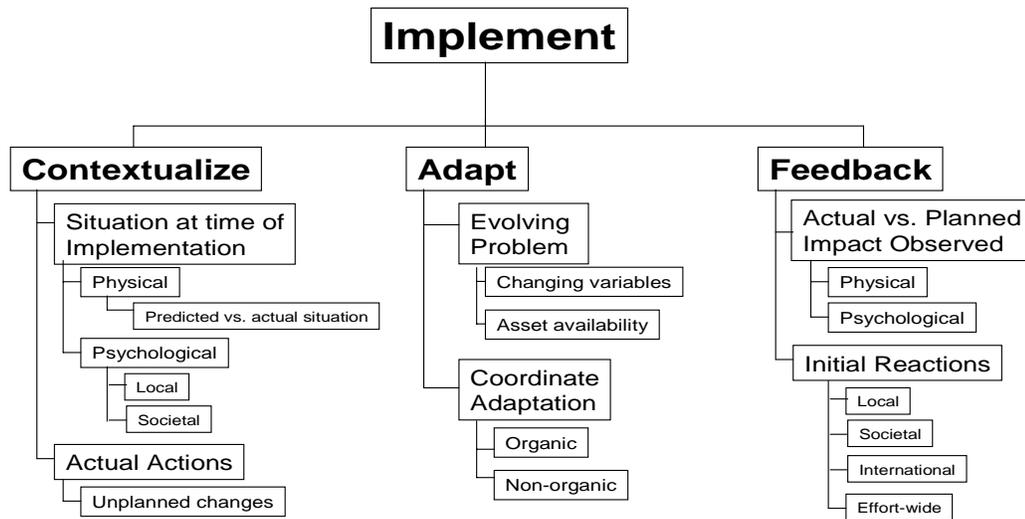


Figure 8

It should be noted that none of the above cycle is peculiar to the military or any one branch or level of government. This universal and common process could just as easily describe the unconscious steps a business or a non-governmental organization might take -- and this is its main advantage.

### Organic, Non-organic, and Accessible

Although the process may be common to all, the pivotal question is how this commonality translates into better interaction and cooperation. The key is the repeated reference in the above diagrams to capabilities, knowledge and information that are:

- “organic,” and can be directed and controlled by the stovepipe,
- “non-organic,” and are directed and controlled by another stovepipe and whose use must either be directed by some higher authority or requested from that stovepipe, and
- “accessible,” and not controlled by any stovepipe but from which all parties may draw support.

Since all of the capabilities, knowledge, and information needed to deal with a complex problem are not going to be organic to any one stovepipe, much of the cross-stovepipe interaction suggested by the processes of awareness creation, sensemaking, decision-making and implementation involve supplying capabilities and knowledge that are organic to one organization to meet the needs of another. “Accessible” capabilities and knowledge lie beyond the control of any stovepipe, but may be either more accessible or more comprehensible to one stovepipe, e.g. economic reports, and thus a quasi-organic asset.

Within the dissected action-reaction cycle, we can identify capabilities and knowledge strengths organic to each stovepipe and the needs for these strengths in other stovepipes over the course of the cy-

cle. For example, in awareness creation, defense stovepipes are likely to have significant strengths in electronic sensors and some aspects of on-scene presence whereas the diplomatic stovepipe would likely have a significant strength in human reporting and in understanding overseas media. To the degree that the two can be brought together and made mutually comprehensible, they can form a broader awareness. To the degree that the capacities in both stovepipes can be considered as cross-stovepipe assets replete with some form of cross tasking, they can figure in a synergistic whole of government response. The same is true in sensemaking. The history available within any one stovepipe to contextualize awareness will inevitably be limited as will the knowledge base and the mental models that might be applied, but the closer we can come to pooling these capabilities, the more complete our organizational, national or coalition sensemaking will be and the better bounded our understanding of the complex problems involved. In a very concrete fashion, this is also true of the decision-making process, for examining options demands a balancing of all possible capabilities and actions against desired effects and end-states and coordinate and deconflict the actions of all players involved”<sup>22</sup> Finally, in dealing with ever-changing complex adaptive human organizations and thus problems, actions have to be “re-coordinated” on the fly as they are implemented. As a result of all of the above, we can map out a series of complementarities and necessary interfaces at successive stages of the action-reaction cycle (Figure 9).

## Cross Stovepipe Cooperation

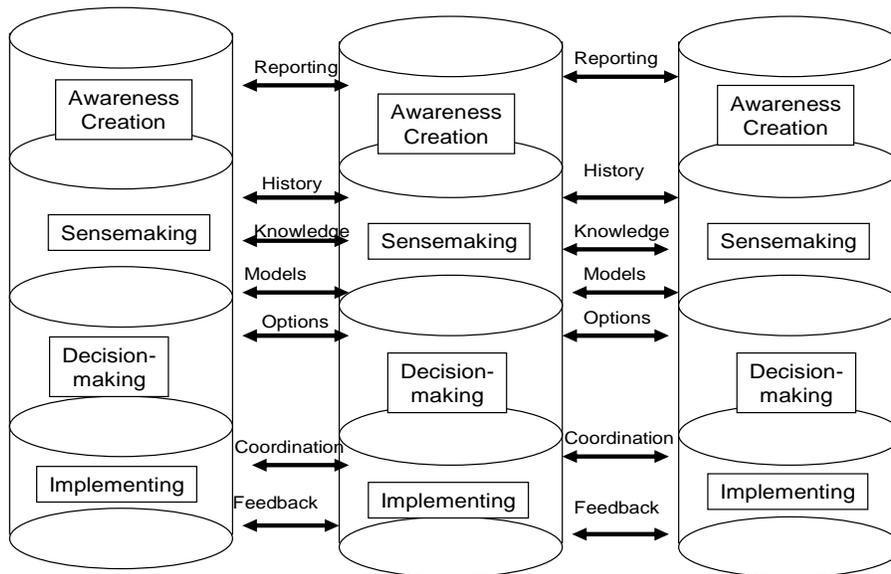


Figure 9

While the innate complexity and continually changing nature of the challenges we face do not permit us to identify specific requirements for cross-stovepipe interaction and networking in advance ... or to provide detailed contingency plans covering all eventualities, we can map out both the organic strengths of each stovepipe and their requirements for non-organic capabilities and knowledge. We can also map the kinds of questions that humans in the loop will need to answer, to information, analytical and modeling tools applicable to those questions, and to the interfaces and even the individuals to whom complex knowledge will need to be passed. This is to say the common process becomes a basic decision-making architecture and a map to the communications and social networking needed to bridge applicable stovepipes.

### **So, who's in charge?**

But herein stands a formidable challenge. Can we hope to dependably share capabilities and knowledge on the basis of an enlightened self interest and voluntary compliance?<sup>23</sup> Will stovepipes cooperate and share:

- to perform their tasks better?
- to meet the common needs of the situation?
- to justify their own existence and future growth?

If we presume a cycle by cycle approach in which the agency players can see how they stand to benefit from the outcome of each cycle, the self-interest might be evident, but the reality is a situation in which there will be many cycles going on simultaneously at many levels whose pay-off for any one stovepipe will seldom be entirely clear. In other words, the common concept, language, and processes enable cooperation and sharing but do not ensure it.

How then do we ensure the mutual support enabled by the common concepts, language and processes? Two examples experienced by one of the authors are pertinent. The first occurred after Desert Storm when a stovepipe criticized for lack of support began discussing what it might do better. An official offered that, if the communications capability were expanded, the organization could increase by ten-fold the messages it sent "in support" each day, adding "and one of them is bound to be right." The second involved an attempt to give immediate priority support to military operations in Bosnia, a request that was turned down with the tart reminder, "They don't do our budget." In the first case, the operative driver was not the need to help but rather that to avoid further criticism, that is, a bureaucratic survival instinct. In the second case, the driver was a metric for surviving and prospering – the budget and who controlled it. These incidents underline a need for authoritative direction. In the face of a major catastrophe or challenge to the continued existence of the entire system, stovepipes may be expected to come together and, to the best of their ability, cooperate, but as the urgency of a particular requirement diminishes or the

threat becomes protracted and even routine, this altruistic enlightenment diminishes and the organizations tend to revert to the mechanisms of bureaucratic and organizational survival.

### **Command and Control**

The missing ingredient in the enlightened self interest approach is the ability to direct and enforce compliance. Interagency processes may use a “first among equals” model for who is “in charge” but lack authority to enforce a mandate on any organization but their own. The process is even more difficult when spanning differences in scale (federal, state, and local governments), differences in kind (government and non-governmental organizations) or across international borders. Clearly someone needs to be in charge. Clearly there needs to be some form of what the military stovepipe might refer to as “unity of command” if not “command and control.”

We have to be careful here. The term command and control reflects a military approach that often bears little resemblance to a civilian world in which “C2” is more often “cooperate and coordinate” and in which there are few sanctions for a failure to comply. Yet at the same time, command arrangements that revolve about the centralization of decision-making in some higher authority can be self-defeating especially in dealing with the kinds of complex, human-centric situations we face in most whole of government action. Moreover, the successful resolution of such situations depends heavily on the ability to learn and adapt quickly, exactly the kind of flexibility discouraged by centralization. Centralized decision-making may be more easily enforced, but you run the risk of not having the needed detail and understanding for success. Centralization will likely come at the expense of on-site flexibility and lower level decision-makers may no longer be inclined to act, react, and adapt to fast-paced local interactions. In a sense, broad centralization may sacrifice both the diversity of the potential options the government can generate and the speed of action that might permit it to take initiative.

What are we then to do? The natural rise of interagency disputes to higher levels suggests a basic rationale. Disputes rise to the point where lines of authority converge and there is one actor to whom the contending stovepipes report. In disputes between entities of a single larger organization such as defense, lines may converge at the ministerial or chief of staff level. If they are between governmental departments, the point of convergence would be the head of government. The process is somewhat simpler in a unitary state with a cabinet system. Indeed, a number of states are beginning to center their whole of government command arrangements in permanent coordination centers in the prime minister’s office where multi-faceted cabinet level decisions can be reached and enforced and where a national level mandate for the continuation of the government becomes the driving force. In a federated system with checks and balances to limit the control of any one stovepipe, the problem is even more difficult. There are multiple layers of government over which the federal executive can exert only indirect control. The customer

may always be right, but different stovepipes have different customers! In spite of this, the thrust of the rationale seems plain. An authority who bridges the concerned stovepipes needs to be cognizant of the challenges that lie in the gaps. This authority needs to be exercised on a regular enough basis to ensure the development of sufficient social networking to mobilize and synergize the capabilities, knowledge and expertise of diverse stovepipes. Also, this authority cannot be solely at the top.

### **Fishnet Organization**

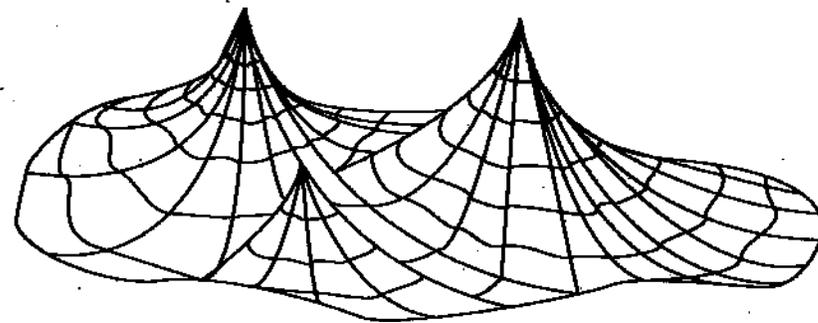


Figure 6

The need for some form of self-synchronization of effort means that similar authority will be needed wherever different stovepipes must be brought together to deal with a problem. Rather like a fishnet that stretches to deal with heavier stresses. This is where network centric and effects-based thinking come into play. We need the appropriate communications networking to support self-synchronization which can take many forms including the ad hoc use of commercial systems. What is less evident is the need for such networking to include a wide variety of information and analytical tools, models, simulations and other information age assets to support the human in the loop and to change with the situation and his needs. Effects-Based thinking then offer a common basic concept and processes to put all of these elements together on a whole of government basis.

#### **Conclusion:**

*“testing whether that nation or any nation so conceived and so dedicated can long endure.”*

*--Abraham Lincoln, Gettysburg Address*

The Katrina relief effort underscored the difficulty of conducting a whole of government action despite the best efforts of people in many stovepipes to save lives and do the right thing. Perhaps the best example of what might be was the National Guard, locally bred armed forces comfortable working under the control of state government, familiar with local culture, and responsive to emerging local needs. The Guard’s own culture was such that “When reports on the catastrophic damage in Louisiana and Missis-

sippi began to flow in, the National Guard Bureau did not hesitate to act. The Bureau took responsibility for coordinating the flow of Guard resources and personnel from all 50 states to speed up the process and increase efficient use of resources as requirements from coastal states grew beyond their ability to coordinate individual state-to-state compacts.”<sup>24</sup> The success of a whole of government effort hinges on team building, the creation of networks of trust and confidence and a cross spectrum “effects-based” approach that focuses on complex human interactions.

In the final analysis, the real challenge is not our ability to provide whole of government action to deal with a natural disaster. It is the need to deal with “stabilization,” conflict prevention and the threat of man-made disasters created by individuals and terrorist groups eventually armed with nuclear and biological weapons of mass destruction. The requirements of national security and disaster relief have converged and the ability both to prevent manmade disasters and to handle their aftermath has become part of our ability to deter. Whole of government action has become critical to whether states as we know them “can long endure.”

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<sup>1</sup> A *stovepipe* is a metal tube that extends vertically out of a fuel-burning stove. It has a single task: to act as a kind of chimney for the stove, moving the smoke and ash along a narrow, rigid path. In a **stovepipe organization**, employees have a narrowly defined set of responsibilities, and their output and feedback “moves” along a set path in the chain of command.

<http://www.wordspy.com/words/stovepipeorganization.asp>

<sup>2</sup> The Stafford Act is a 1988 amended version of the Disaster Relief Act of 1974 (Public Law 93-288). It created the system in place today by which a Presidential Disaster Declaration of an emergency triggers financial and physical assistance through the Federal Emergency Management Agency (FEMA). The Act gives FEMA the responsibility for coordinating government wide relief efforts. The Federal Response Plan it implements includes the contributions of 28 federal agencies and non governmental organizations, such as the American Red Cross. It is named for Robert Stafford, who helped pass the law.

[http://en.wikipedia.org/wiki/Stafford\\_Disaster\\_Relief\\_and\\_Emergency\\_Assistance\\_Act](http://en.wikipedia.org/wiki/Stafford_Disaster_Relief_and_Emergency_Assistance_Act)

<sup>3</sup> A Failure of Initiative: The Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina, <http://katrina.house.gov/pg 187>

<sup>4</sup> “... the EOC (Emergency Operations Center) uses conference calls as a way to provide command and control and ensure unity of effort among the state and effected parishes. However, after the conference call during landfall on Monday morning, August 29, the parishes lost their communications capabilities and were unable to convene another conference call until 11 days later, on Friday, September 9. Even then, the participants in the conference call noted that it was still hard to make regular phone calls.” A Failure of Initiative pg 192

<sup>5</sup> “Command centers in the Department of Homeland Security (DHS) and elsewhere in the Federal government had unclear, and often overlapping, roles and responsibilities that were exposed as flawed during this disaster. The Secretary of Homeland Security, is the President’s principal Federal official for domestic incident management, but he had difficulty coordinating the disparate activities of Federal departments and agencies. The Secretary lacked real-time, accurate situational awareness of both the facts from the disaster area as well as the on-going response activities of the Federal, State, and local players.” The Federal Response to Hurricane Katrina: Lessons Learned <http://www.whitehouse.gov/reports/katrina-lessons-learned/chapter5.html>

<sup>6</sup> FEMA, for example, was an agency that evolved from WWII civil defense preparations. In 1979, President Jimmy Carter, at the prompting of the National Governor's Association, signed Executive Order 12148 which put a new agency, FEMA, in charge of coordinating all disaster relief efforts at the federal level.

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FEMA absorbed the Federal Insurance Administration, the National Fire Prevention and Control Administration, the National Weather Service Community Preparedness Program, the Federal Preparedness Agency of the General Services Administration and the Federal Disaster Assistance Administration activities from HUD. FEMA was also given the responsibility for overseeing the nation's Civil Defense. President Clinton promoted the FEMA director to a cabinet level position. The end of the Cold War permitted the agency's to shift its resource focus from civil defense to natural disaster preparedness -- and after 911 adding terrorism prevention and response. There were new monies and new power. After 911, FEMA was "demoted" to a functional role under the new Department of Homeland Security (HLS), headed up by Tom Ridge. <http://em.nemaweb.org/?17> (National Emergency Management Association website)

<sup>7</sup> Grunwald, Michael & Glasser, Susan B., "Brown's Turf Wars Sapped FEMA's Strength" Washington Post, Dec 23, 2005

<sup>8</sup> Ibid.

<sup>9</sup> "These go from the state to FEMA's Federal Coordinating Officer (FCO), who in turn requests assistance from the Defense Coordinating Officer (DCO). The DCO passes these requests on to the joint task force which routes them through Northern Command to the Office of the Secretary of Defense Executive Secretariat, to the Joint Directorate of Military Support of the Joint Staff. At each stage, the request is validated ... Once vetted, the request is tasked to the services and coordinated with Joint Forces Command, and forces or resources are then allocated to the joint task force ... " Ibid, page 204.

<sup>10</sup> "On August 30<sup>th</sup>, an e-mail generated in the Office of the Secretary of Defense (OSD) indicated concern about the flow of information between DoD and FEMA and a lack of understanding of what was an official request for assistance and what was not. Another email from DHS to DoD on this day indicated Secretary Chertoff was requesting updated information on the levees in New Orleans, shelter information, and search and rescue missions DoD was performing. The OSD response expressed wonder at why DHS was asking for information, as FEMA had not even generated requests for these missions for DoD. Communications between DoD and DHS and in particular FEMA, during the immediate weeks after landfall, reflect a lack of information sharing, near panic, and problems with process."

"These problems are indicative of a dispute between DoD and DHS that still lingers. DoD maintains it honored all FEMA requests for assistance in the relief effort, refusing no missions. FEMA officials insist that notwithstanding the official paper trail, DoD effectively refused some missions in the informal coordination process that preceded an official FEMA request." Ibid, pages 203-204.

<sup>11</sup> Northern Command was a new military organization set up after 9/11 to help defend the US homeland from attacks from within.

<sup>12</sup> The Coast Guard is formed in the manner of a military service and reverts to the Department of Defense in time of war but falls under the department of Homeland Security in peacetime and has wide civilian and law enforcement tasks. A Coast Guard officer, therefore, was a cultural bridge between the military and other departmental, state and local agencies involved in the relief effort.

<sup>13</sup> This was much to the chagrin of the local officials who thought the federal government was freelancing and their effort uncoordinated. Failure of Initiative, pg. 189

<sup>14</sup> "Then, with the floodwaters rising and his city in disarray, New Orleans Mayor Ray Nagin cemented Honore's hero status during an emotional interview with WWL-AM radio in the chaotic days after the storm. A few breaths after he ripped President Bush and the federal government for their slow response, Nagin went out of his way to praise Honore, admiringly dubbing the general "one John Wayne dude. He came off the doggone chopper, and he started cussing and people started moving," Nagin said. "And he's getting some stuff done. They ought to give that guy - if they don't want to give it to me - give him full authority to get the job done, and we can save some people." Duncan, Jeff "Three Star Celebrity" the Time Picayune, September 19, 2005

<sup>15</sup> Indeed a single human intervention in a decision-making process can render that process complex because it introduces a myriad of variables and an outcome that can never be entirely predictable.

Smith, *Effects-Based Operations*

<sup>16</sup> Logically, the greater the scope of the capabilities that a stovepipe presents, the greater the fraction of the variables it might be expected to deal with, but no stovepipe will contain all the possible answers -- something amply demonstrated in New Orleans, but also seen in challenges from Afghanistan to Somalia and back again.

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<sup>17</sup> *Washington Post*, February 8, 2007 p. 1

<sup>18</sup> It should come as no surprise that the movement toward whole of government action started in smaller countries or that the willingness to tackle the problems of cross-stovepipe operations is greatest among them. Where larger countries with larger stovepipes of capabilities might still succeed with single stovepipe action, they have no choice but to act as a whole. In fact larger countries are at a disadvantage in some ways. The bigger the government and the more complicated the stovepipes, the greater the problems in undertaking cross stovepipe action are likely to be. Indeed, the often repeated hope of many big country decision-makers has been that smaller countries will be able to figure out how to undertake “whole of government” action ... and then teach their larger brethren.

<sup>19</sup> Some of the same problematic organizational attributes actually help us solve complex problems. Stovepipes can be powerful tools because of a common organizational culture that proceeds from a rough commonality of education and experience.

<sup>20</sup> A major “whole of government” challenge is conveying complex knowledge beyond the social network of the stovepipe, a process that can require lengthy explanation if the needed knowledge and understanding can be conveyed at all.

<sup>21</sup> This was laid out in Smith, *Complexity, Networking, and Effects-based Approaches to Operations*. However in this case the breakdown is deliberately more generic to the point that its applicability is to all organizations becomes evident.

<sup>22</sup> Smith, *Effects-Based Operations*, p. 108.

<sup>23</sup> Such enlightened self interest is actually the driver behind the functioning of our economic complex adaptive system. Individuals seek to prosper and make economic decisions to that end with the aggregate result being an efficient use of available resources. If this self-interest were left entirely unfettered, however, it would tend to produce monopoly and inefficiency. Thus, the enlightened self interest is in practice balanced by government regulation and intervention to ensure that the common interests of all the people are met.

<sup>24</sup> [A Failure of Initiative: The Final Report of the Select Bipartisan Committee to Investigate the Preparation for and Response to Hurricane Katrina](http://katrina.house.gov/), <http://katrina.house.gov/> page 205