

**Research and Analysis Project for  
UNCLASSIFIED Information Sharing in Afghanistan  
A Model for U.S. Military and Coalition Commanders,  
the U.S. Intelligence Community,  
and U.S. Homeland Security**

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**FOREWORD**

The following report outlines the “who, what, why, how, and when” of creating an open (UNCLASSIFIED) information sharing environment in local communities in Afghanistan, facilitating their collaboration, while leveraging the internet as a “disruptive force” for good.

The sponsor’s objective is to provide a guide for application in other post-conflict and developing world scenarios, in addition to homeland disaster situations.

The report summarizes several years of research and analysis by the Center for Technology and National Security Policy at the National Defense University.

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## EXECUTIVE SUMMARY

This report provides a template for creating an environment to foster UNCLASSIFIED information sharing in the field in post-conflict, post-disaster and development environments. It is built on the premise that incentivized information sharing is vital to complex operations and that creating environments conducive to information sharing benefits U.S. military and U.S. government objectives while also helping coalition partners, international organizations, non-governmental organizations (NGOs) and the local community. The template includes both the social elements necessary to creating an environment in which sharing can occur as well as the technical requirements for the information sharing. This report is in two parts: 1) a description of the research informing the template's design, and 2) the template for information sharing operations.

The report begins with a description of an ongoing pilot project in Jalalabad, Afghanistan—a project which provided the data and ‘lessons learned’ on which this report is largely based. Starting in 2006, a United Nations Office for Project Services (UNOPS) guesthouse, known as ‘the Taj’, was identified as a potential site where social, cultural and bureaucratic barriers could be overcome and the technological infrastructure for information sharing could bring significant value if the right partners could be coordinated. Initially, the team provided connectivity through internet bandwidth and technological infrastructure. Throughout the past four years, the team increased their participation and enhanced the level of information sharing. This study finds the activities at the Taj improved information sharing in eastern Afghanistan in a way that meets U.S. government objectives and helps other partners in the region.

The successes and setbacks of the Jalalabad project helped to identify basic attributes of effective information sharing operations. First, the team discovered that personnel selection is as critical as technology, even though open bandwidth served as the initial impetus for the operation. Having the right personnel who can bridge social and cultural divides was vital to the success of this project. Second, a technological infrastructure at a neutral site was necessary for the project. The field team discovered that technology and open internet connectivity served as a magnet for social collaboration and provided an environment that facilitates that social collaboration. It underscored the need for the international community and DoD members to have access to the internet in their work environments so that information can be produced and shared at the lowest level possible at all times. All actors on the ground cannot presume to know what data may be valuable to someone else, so extensive sharing should be the default. Third, the team found the incentives of maps, imagery, an open hosting platform (computer) and bandwidth, along with food, drink, and a neutral social space, brought together a diverse set of actors who then shared information across the silos that have fractured operations in Afghanistan.

Based on lessons learned at the Taj, the report provides a template for future synergy<sup>1</sup> operations, sharing information at the UNCLASSIFIED level to assist in achieving U.S. and coalition objectives. The template provides the qualifications for the most important aspect of the project, including the selection of key personnel (i.e., the “synergist” and a “facilitator,” described in Appendix C). The template also describes proper site selection and aspects of the iterative process for creating a successful information-sharing environment. It concludes with a discussion of metrics related to measuring the progress and success of future operations.

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<sup>1</sup> Synergy is defined as two or more people collaborating to achieve a result that could not be achieved individually. The term “synergy operation” is used to refer to an operation directed at improving the connectivity, coordination, and collaboration of complex operations in contested environments. In this paper, it is the job of the “synergist” to bring together diverse groups of people and organizations, including those within the USG that would otherwise not collaborate. A “facilitator” works within the USG to assist the synergist. A more in-depth description of both positions is in Appendix C.

## PROJECT SUMMARY

### Proven performance

Activities at the Taj improved information sharing in eastern Afghanistan, helping the U.S. and other partners in the region reach their objectives. Three examples of the types of information sharing demonstrate the value of this neutral setting:

- **Connectivity.** Using long range Wi-Fi connections, the Taj shared internet connectivity with a local school and hospital. As a result, the hospital was able to build a database of public health, which then allowed NGOs to improve their tracking of local health data. Connectivity is a valuable community resource, and gives locals buy-in on working towards the sustainability of the effort.
- **Neutral Information Sharing Space.** In a program colloquially known as “beer-for-data,” personnel from international organizations and NGOs increased their sharing of data on the Taj hard drives, encouraged by having a neutral social space to connect with others working in the region, as well as having free internet bandwidth. This program expanded in-person collaboration as personnel lingered over free food and beverage.
- **Election Monitoring Support.** In 2009, the Taj provided the social networks and technological infrastructure to conduct an advanced election monitoring operation. Using open source geospatial information such as OpenStreetMap, commercial off-the-shelf technology (e.g., cell phones with SMS capability) and the bandwidth and social connections made at the Taj, the group put together one of the only election monitoring projects in eastern Afghanistan to publish their information online the day of the election.

### Lessons learned from the Taj

The Jalalabad pilot project emerged from a unique set of circumstances and contacts established outside of U.S. government (USG) and NATO activities. These relationships initiated and then supported the development and growth of what has come to be a vibrant partnership and open information sharing network in non-classified space. The sponsors of this report have asked that the lessons learned from this project be consolidated to shed light on conditions proven to increase information sharing in an austere environment. Three of the most important lessons are these:

- **Open connectivity facilitates communication and coordination.** Increased connectivity--between the participants via social interaction and technical enablers--is not simply a desired end state; it is a crucial step in linking and enabling actors who have information valuable to the U.S. and coalition forces, as well as USAID program officers and contractors, foreign governments, and NGOs. Most organizations lack affordable, open connectivity in the field. Increased connectivity facilitates other activities and as a result, it acts as a catalyst with exponential effects that extend far beyond the inputs. Information sharing is a tool that, correctly employed, is vital to the success of the U.S. military, the USG, and the international community.
- **Selection of personnel is more important than selection of technology.** The other key lesson from four years of operations in Afghanistan is that a prepared and adaptable synergist (see Appendix C) who had a good relationship with the facilitator was the key to success at the Taj. Everything else learned from this study derived from these personnel and this dyadic relationship.
- **Imagery and bandwidth along with social interaction at a neutral space** can encourage information sharing across stovepipes.

**Additional lessons** relate to the partnerships and networks. A “Synergy Strike Force” (described in the Research Section of the report) was able to form successful partnerships with coalition members, NGOs and local organizations through a few basic principles that proved successful in the field. The group practiced a form of “radical inclusion,” allowing nearly anyone with peaceful intentions to enter the space and collaborate with others, in contrast to only including pre-selected people. The synergists also focused their energy on identifying and bringing in those groups and individuals who wanted to collaborate (“save the willing first”) and did not waste significant energy trying to bring in those reluctant to share. Finally, the group provided incentives such as a Thursday evening social with food, beverage and Wi-Fi, all of which helped create a neutral location in which people could connect, collaborate and share information.

**Several factors impeding the sharing of UNCLASSIFIED information** were also identified. Budgetary restrictions at times prevented money from being spent on bandwidth and technology necessary for enabling the project. The team working at the Taj was forced to front the money to keep the project going. Additionally, the U.S. military maintains a significant amount of UNCLASSIFIED information on its classified networks which cannot be shared with coalition partners and other groups doing good work in the region. In the wake of some serious classified information leaks, the temptation to clamp down further will be present. Though projects such as the one at the Taj have no connection to classified information systems, the mentality against sharing due to recent embarrassments may become a major impediment to UNCLASSIFIED information sharing over the coming years.

#### **A template for future information sharing**

Building off the lessons of Jalalabad, the authors have compiled an initial template for future operations. This template is designed to be adaptable and iterative. It can be adjusted to address unique local circumstances and incorporate lessons learned from future operations.

The template addresses the program’s organizational design including the personnel, initial setup and iterative process to build the relationships around the site. It is designed for an initial 90-day timeline in which the relationship-building efforts are conducted and the enabling technology is installed. While lasting relationships for information sharing take longer than 90 days to create, the model contains metrics that attempt to capture some initial indicators of success as well as red flags that indicate a project should be modified or cut.

#### **Five major elements of the template design**

- **Personnel:** Information sharing operations require both a synergist and a high-level facilitator. The synergist must be chosen from outside the system and have the ability to work with all partners to bridge social, cultural, language and technological divides. The synergist must be flexible and technologically knowledgeable enough to work under limited technological and constrained budgets to solve collective problems. He or she should be an informed risk taker, willing to experience setbacks while promoting a long-term improvement in the structure. In important ways, a synergist has a broad knowledge of many subjects and understands how to bring them together and to cross boundaries.

The facilitator resides within the system and provides top cover to the synergist. The facilitator’s physical location, whether on-site in the field, or at an office in Washington, D.C., is less important than his or her knowledge of key government bureaucracies, and his or her ability to explain field operations to others within the government. The facilitator’s objective is effective and productive resource flow.

Synergists can engage in creative problem solving only because a facilitator has created the necessary operational space for such activities to take place. Put another way, local problem solving relies on the presence of a facilitator who creates space for innovation and experimentation to occur.

Projects have a small permanent staff of two or three people with a significant number of outside specialists in rotation providing expertise to improve social networks, information sharing, project collaboration, and/or technological support. Temporary rotating personnel including subject matter experts, technology specialists and other synergists provide support throughout the project.<sup>2</sup>

- **Neutral sites:** A candidate site should be identified based on three basic elements: need, mobility (freedom of movement by all parties), and a social fabric open to accepting this sort of collaboration. It is vital that the personnel working on the project should use their experience and knowledge to make judgments on whether they think the location will be successful.

The initial engagement at a chosen site focuses on creating a neutral space, identifying and integrating partners into the process and providing the technology infrastructure and connectivity enabling effective information sharing. The goal of the initial engagement is to strengthen the human network using information technology as a magnet -- not to build a technology infrastructure.

A neutral space is a physical space no actor tries to overtly control (though the synergist does exercise some quiet, enlightened authority over the space), but that nearly any actor can enter in order to collaborate using a shared technology infrastructure. The neutral space also functions as a social network and virtual space that goes beyond the physical infrastructure. The communal aspect of the location creates relationships among people who would otherwise not interact for professional or social reasons in the austere environment of the field. The information that is shared at the neutral space can also be shared outside of the space, creating a network of individuals larger than those physically present.

From a technology perspective, the initial engagement is about open communications, allowing people to join local networks and share information outside their stovepipe or usual network of collaborators. Providing bandwidth, strengthening local computing power, working with local technologies (even if it is just a cell phone), using open data standards and open source toolsets and providing a stable power supply are all key in austere environments. These initial technological aspects can be standardized to a core “in a box” solution, but are meant to be adaptable to meet the unique challenges and conditions of each environment.

- **Partners:** The goal of an information sharing operation is to include as many people as possible and encourage anyone who would be a productive participant to join. Energy in the early stages should be spent identifying those who *want* to be included rather than trying to persuade reluctant partners to participate. While an ideal system would have the same people interacting across time, the synergy should be built on the expectation of high turnover in staff making institutional memory and relationship networks important to its continued success – hence, the importance of capturing that knowledge and saving it for others to reference in the future via a hosted open

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<sup>2</sup> Appendix C contains detailed descriptions of personnel positions.

sharing platform.

- **Connectivity:** Most complex operations proceed without a means of sharing information across organizations, or even between elements of the same organization. This limitation derives both from issues of connectivity and specific policies limiting information flow over existing pathways. The synergist cross-ventilates these stovepipes, building relationships that function as trusted pathways for information flow and enabling those relationships to communicate over newly established information and communication technologies (ICTs).
- **Iterative Project Cycles:** Because information sharing operations are built around the connection of people and the construction of trusted networks in a very dynamic environment, they are not linear projects. Instead, they proceed along what may be conceived as iterative cycles. The synergist must re-allocate effort and resources to dynamics that are working well. These dynamics can change dramatically in complex operations, especially as staffs rotate in and out of theatre, as new problems challenge existing assumptions, and as new opportunities arise. Operations in this environment become cycles, measurable by the success with which the synergist and partners adapt and make progress in support of productive collaborations.

### **Metrics and continued operations**

The best measurements of performance and effectiveness for this operation are not easily quantified, but should be observable by the synergists and others working on the project. Most important is measuring the quality and durability of relationships built through the efforts of the team, which may be done through social network analytics.

Additional, more quantifiable Measures of Effectiveness (MOE) may include quantity and quality of data sharing and participation at the neutral site, but those who worked on the Taj project indicated the value of the project may not always be measured appropriately through those metrics. Certain negative indicators including technology problems and a hostile reception by local organizations should be early red flags for projects and indications that major changes or withdrawal should be considered.

Once the initial personnel and project structure are in place, the synergist and facilitator will execute an iterative process of adding partners and capabilities to the neutral location. While maintaining and upgrading the technological aspects of the space, the synergist's main job will be navigating the social aspects of the relationships among the partners in the space to maintain a friendly and collaborative working environment. This is, unfortunately, not a skill taught with a manual. It requires a person, a proven synergist, with strong inter-personal skills and a strategic mindset who can adapt to challenges and recognize opportunities as they arise.



# THE JALALABAD REPORT

## 1 METHODOLOGY

### 1.1 Jalalabad Experiment (2006-2010)

The pilot project, which began in Jalalabad, Afghanistan in 2006 and continues to the present day, is structured around the idea that certain elements of a society act as catalysts for effective humanitarian relief, development, and security.

Cheap, available, and widespread communications – such as internet and cell phones – allow for local populations and internationals to work more effectively in creating stable and secure conditions. International actors are able to share lessons learned, expertise is less likely to be lost in the rapid turnovers characteristic of turbulent settings, and information is more available, empowering decision-making at all levels. Redundancies are reduced and new opportunities for collaboration are created. Providing internet to local school children enables them to shape their own education and expand their knowledge of the world. Working with the university and hospital to build systems of information management for land deeds and health records reduces the possibility of corruption.

The intent of the pilot project is to establish relationships and provide connectivity for actors on the ground, incentivize information sharing, and act as a catalyst for increased coordination, connectivity, and collaboration. The features from this pilot essential to support these tasks are a 1) neutral space, 2) synergists, and 3) partners. With all these in place, the project can be iteratively refined and adjusted in response to changing circumstances and local needs.

***Essential features:  
Neutral space  
Synergists  
Partners***

The Jalalabad pilot project can serve as a model for how to do a better job in post-conflict, humanitarian assistance, and disaster response settings by creating a complex adaptive network that responds to change. By identifying and isolating what elements contribute to success, we hope to suggest policy solutions for the ways in which the international community engages in this type of work.

It is our contention the lessons learned and best practices from this setting have applicability to a wide range of contexts, and as such, they should inform both policymakers and operators. In particular, the basic principle laid out in this report – specifically, incentivized UNCLASSIFIED information sharing is crucial to the success of missions in contested environments – extends far beyond the narrowly defined environments to which the majority of this report is addressed.

***The lessons learned and best practices have applicability to a wide range of contexts. They should inform both policy-makers and operators.***

***The principle in this report is incentivized UNCLASSIFIED information sharing is crucial to mission success in contested environments, and extends far beyond the environments in this report.***

## 1.2 Importance of information sharing in complex operations

The following example highlights possibilities for increased availability of information sharing and collaboration. In 2006, a strategic communication disaster was averted by sharing imagery. A road was slated to cut through a village cemetery at the base of Tora Bora, Afghanistan.

The United Nations Office for Project Services (UNOPS) personnel who were working on the problem had already formed good relationships with the local elders and were working to negotiate a solution. The UN engineers brought high-resolution imagery obtained through the UNOPS guesthouse known as “the Taj” in Jalalabad to a village shura, showing the elders the only place for trucks to turn around would be inside the boundaries of the burial ground, and explaining what the aid trucks would be bringing to the village.

After seeing the problem on paper copies of the imagery, the elders made a choice: they asked for time to move the dead – which included martyrs— in order to free up the land for the new road. The UNOPS team then witnessed Afghans moving the cemetery. Instead of creating enemies by showing up with earth moving equipment, freely shared imagery enabled engineers to pose a problem to Afghans and allowed a local governance structure to devise its own solution based on the information provided.

***Sharing connectivity provides a public good, giving value to the community. This gives locals buy-in on working towards the sustainability of the effort.***

Such interactions with local populations are far too rare. That said, up-to-date information and data – from updates on road construction to expert analysis of development projects — are imperative for making the most of limited resources and earning the trust of local populations.

NGOs, local civil society, and other members of the international community can greatly improve the effectiveness of their work by having access to basic information they often lack. In turn, the U.S. military can benefit by leveraging other actors' assets to gain information and insight. In many instances, the military has valuable information, including maps and imagery directly relevant and applicable to contractors and NGO workers.

## 2 RESEARCH

### 2.1 Jalalabad Pilot (2006-2010)

In 2005, the Office of the Assistant Secretary of Defense for Networks and Information Integration (OASD (NII)) supported an effort aimed at developing a strategy to better connect the disparate players involved in post-conflict work and to capitalize on their lessons learned and expertise. That same year, Department of Defense Directive 3000.05 (subsequently reissued as DOD Instruction 3000.05) gave Department of Defense support to stabilization and reconstruction operations with a priority comparable to combat missions. The directive also required the U.S. military “to collaborate with other U.S. Government agencies and with foreign governments and security forces, international governmental organizations, nongovernmental organizations, and private sector firms as appropriate to plan, prepare for, and conduct stability operations.”

Additionally, the U.S. military is tasked in the same document with “sharing classified and UNCLASSIFIED information during stability operations among the DoD components, relevant U.S. Government agencies, foreign governments and security forces, international organizations, nongovernmental organizations, and members of the private sector.” Unfortunately, the sequestration of UNCLASSIFIED data on classified networks and the restrictions on those in the field from using UNCLASSIFIED communications systems to share data interferes with the DoD requirement (DODI 3000.05). Additionally, the lack of relationships, the absence of a neutral location and inadequate technology make this sharing of information in the field more difficult.

In 2006, several individuals with ties to DoD and NATO working on the new DoD requirements for information sharing went to Jalalabad to find solutions to these information sharing problems. The group referred to as the Synergy Strike Force (SSF), then and now consists of an eclectic array of individuals with a wide range of talents, all of whom have an interest in helping Afghanistan build towards peace and stability.

*Synergists are individuals who bridge the gaps between systems, organizations, and individuals and engage in problem solving with local stakeholders.*

The Taj guesthouse was identified as a site where social, cultural and bureaucratic divides could be bridged and the technological infrastructure for information sharing would bring significant value if the right partners could be coordinated. The SSF team set up at the Taj and enabled information sharing by connecting the individuals involved, and better enabled collaboration by providing connectivity through internet bandwidth and technological infrastructure.

As ownership of the Taj changed from UNOPS to private organizations with fewer bureaucratic restrictions, the team increased their participation and enhanced the level of information sharing. A more detailed description of the activities of the Jalalabad pilot project can be found in Appendix B.

### 2.2 Research Results and Lessons Learned

Based on four years experience in the field, the SSF team identified the following lessons learned.

### 2.2.1 Synergist are critical to success and must come from outside the system

Synergists are individuals who bridge the gaps between systems, organizations, and individuals and engage in problem solving with local stakeholders. Because synergists function as mediators and catalysts, they must be neutral and operate outside any bureaucratic system, including the USG.

### 2.2.2 A dyad of Synergist and Facilitator is necessary for successful synergy operations

Synergists can engage in creative problem solving only because a facilitator has created the necessary operational space for such activities to take place. This top cover is a necessary element for dealing with the problems large institutions, including the USG, have created, not through any malfeasance, but through the shortcomings of top-down efforts in the varied human terrain of places like Afghanistan. Local problem solving relies on the presence of a facilitator who creates space (and perhaps resources) for innovation and experimentation to occur.

***Top cover is necessary for dealing with the problems that large institutions have created.***

***Local problem solving relies on the presence of a facilitator who creates space for innovation and experimentation.***

### 2.2.3 Mobility is a key enabler of synergy operations

In order for individuals to share information face-to-face, they need to be able to travel between sites and to the neutral space. This mobility is a key enabler of synergy operations. The lack of freedom of movement would have inhibited the ability for the Taj to function.

### 2.2.4 Synergy 'battle space' is actually two spaces: neutral space and operational space

Synergy operations must have a backdrop of neutral space such as the Taj, just as they must have sufficient operational space to be successful. Not all encounters will take place in neutral space; indeed, many will not, but a neutral space is a necessary component, which any stakeholder in the operation can frequent and where they can build relationships with other individuals, who also share their problems or have pieces of a potential solution. Synergy operations also occur in an operational space that frees the synergist and the stakeholders from normal operational constraints and enables creative problems solving.

### 2.2.5 The operational space for synergy operations is most similar to special operations

Work with Special Forces operators in eastern Afghanistan suggests the operational space for synergy operations is most similar to special operations. Teams are given cover to perform a mission, and allowed individual judgment as to how the mission is performed. The SSF team is beginning to believe a worthy avenue for investigation is to see if a Special Forces team could (1) receive training (perhaps from the new Cyber Command) for information sharing in complex operations (HADR/S&R) and (2) work in the UNCLASSIFIED information space with local and coalition partners to build synergy operations with joint operational partners, with the specific mission 'to create unity of action without unity of command.' These teams would be empowered with funding flows and authorized to perform missions where critical partners are not communicating and coordinating in ways that facilitate the 'unity of action without unity of command' objective. Some have referred to such deliberate efforts to improve connectivity, coordination and collaboration among a group of critical actors as 'synergy strike.'

### 2.2.6 Rotary and Sister City: Partner Institutions

The cities of San Diego, California and Jalalabad, Afghanistan are partnered through the Sister City Program. As stated on the website, "The citizens of San Diego, California, USA, and Jalalabad, Nangarhar, Afghanistan, desiring friendship and goodwill, agree to collaborate for the mutual benefit of their

***Building on, deepening, and extending the relationships of those organizations that already have local contacts makes the process of synergy and UNCLASSIFIED information sharing much more likely.***

communities by exploring educational, cultural, humanitarian and economic opportunities.” This relationship is undertaken as a citizen initiative, rather than a government one, and thus it is free of some of the complications inherent in government-sponsored projects. Citizens with diverse skills have been able to learn about, and even travel to, Afghanistan in order to support their partner organizations in Jalalabad. This has allowed for a rich network

of individuals to become connected within a flexible institutional setting. The partnership is directed by members of the two cities, and thus is responsive to participant needs, talents, and desires.

In addition to the Sister City Program, Jalalabad has benefited from the involvement and support of Rotary International, specifically the La Jolla Golden Triangle Rotary Club. Since November 2002, members of the Rotary Club have traveled to Jalalabad to do work there in support of the local population. The organization has established credibility on the ground, and they have cultivated their ability such that they are not seen as tied to a political agenda.

The factors to date that have been essential to the success of the Jalalabad pilot have been the enduring presence of institutional and personal relationships such as those initiated by Rotary International and the Sister City Program. The Taj and an arch synergist’s (Dr. Dave Warner of MindTel, LLC) work in Afghanistan have been built on two crucial partnerships: the Sister City Program and the Rotary Club. The longstanding nature of the relationships between Afghans and Americans established through these institutions provided a means of connecting with Afghans in a meaningful way. They also allowed for the work coming from the Taj to be grounded in ongoing projects.

***This relationship is undertaken as a citizen initiative, rather than a government one, and thus it is free of some of the complications inherent in government-sponsored projects.***

### 2.2.7 Building partners and facilitating their work is the core activity of synergy operations, not building information technology

A central feature of the work on UNCLASSIFIED information sharing has been the importance of pre-existing relationships with actors seen as acting in the community's best interests rather than with a specific political agenda. The salient features of La Jolla Golden Triangle Rotary Club and the Sister City Program have been the extraordinary work of the individuals involved, in addition to the organizational credibility. The lesson learned from this is to find the right institutions and organizations as partners. These institutions could be a local civil society group or an international NGO. It could be a small group of people with a little budget but without the political baggage of other organizations. The La Jolla Golden Triangle Rotary Club deserves the credit for effort and remains involved in Jalalabad today.

There may not be other organizations whose quality of work and longstanding relationships match the quality of the partner institutions in Jalalabad, but an essential part of this model is to do initial research to determine who, if any are appropriate partners. Building on, deepening, and extending the relationships of those organizations that already have local contacts makes the process of synergy and UNCLASSIFIED information sharing much more likely. A complete outsider will not know who to contact or what type of

information is useful and helpful, whereas an initial foothold can help provide context and introduction to key individuals who will be able to facilitate the process.

#### 2.2.8 Save the willing first

This report is guided by a view that in locations with a competing number of priority needs, efforts should be directed at those who are likely to be productive partners and who will be able to capitalize on the resources provided to them. No doubt, there will be outliers who reject the model proposed in this report, or those who aim to sabotage the efforts of collaboration among the multitude of actors. Efforts should be made to minimize risk as well as to prevent spoilers from destroying otherwise healthy and collaborative relationships.

Despite these challenges, a number of individuals from a variety of institutions will still be able to build on a basic technological infrastructure to network and share resources in ways unforeseen by the design-

***Protecting institutional turf undermines the overall mission.***

ers. It is these connectors, who wish to work together in support of mutual objectives this project aims to help. The solution is not perfect, but even a partial solution can go a long way in making substantial difference in the lives of those who seek to build a better future in contested environments.

#### 2.2.9 Human solutions to human problems

While the recommendations put forward based on the Jalalabad pilot rely on technology – some of it simple, some of it complex – the solutions would be impossible to implement without real people able to take disparate actors, information, and projects and “connect the dots.” Technical solutions also cannot address what are essentially social problems. Based on this fundamental misperception, many proposals have failed. Technology is an enabler and a tool, but it is not a silver bullet that will resolve issues fundamentally based on human interaction.

***While the recommendations rely on technology, the solutions would be impossible to implement without real people able to take disparate actors, information, and projects and “connect the dots.”***

Accordingly, solutions need to be tailored to the social aspects of connectivity as much as to the waves and wires. At the same time, social aspects need to be tailored to the technology. Who should be identified as drivers to facilitate the connectivity, i.e. who are the synergists? What criteria should be applied in choosing an effective synergist? Moreover, what do they need to accomplish their “mission”? These questions are addressed in the Template section of this report.

#### 2.2.10 Provide incentives for sharing information

In addition to partnerships with institutions with good reputations and strong local connections, there should be incentives in place as a means of encouraging people to share information.

Chains of command remain vertical, and often an employee is rewarded or censured by his or her immediate superior for how he or she performs. Within the confines of a traditional institutional framework, this makes sense. In the context of complex operations in which collaboration is essential, this incentive model is damaging to the overall mission. Protecting institutional turf – by stakeholders of any stripe – undermines the overall mission.

***Increased connectivity facilitates other activities and acts as a catalyst with exponential effects far beyond the inputs.***

In order to overcome the inertia of a culture of protecting information, incentives for sharing should be put in place. These incentives need not be large financial incentives; they can be as simple as a beer in exchange for the provision of data. The “beer-for-data” model developed in the Jalalabad pilot project proved successful because it is low cost, requires a minimal level of effort on the part of those managing the sharing effort, and is highly effective.

#### 2.2.11 Internet and imagery catalyze information sharing

Connectivity at its most basic level allows humans to communicate – to share information with one another. Connecting individuals to networks and these networks to one another allows for a rapid transfer of information, which can result in increased development, i.e. development of civil society, and awareness of security threats and, in a less pragmatic sense, development of trust and potentially partnerships among the actors, simply because they have a better sense of what the other parties are doing.

Connectivity includes low-tech and high-tech modes, from human-to-human interactions, to the ability to access the internet or communicate via cell phone, to integrating information from various sources on a computer to create a shared situational awareness. Providing bandwidth to a community of locals and internationals is a precondition for sharing data and information along with the relationships that make the information sharing socially viable. Open internet is a crucial enabling tool. A blanket of wireless networks provides non-discriminatory access to an entire population.

Connectivity is value-neutral, and as terrorists’ use of the internet has shown, it can be used to disseminate dangerous information as well as good. For example, terrorists use websites to radicalize and recruit new members and sometimes coordinate attacks. There is a concern increased imagery sharing in the region could be used by terrorists to identify critical infrastructure points to attack.

However, the successes of the Jalalabad pilot strongly support the benefits of providing access to a local population outweigh the risks. The results of the Taj activities indicate more people are likely to do good with the information than use the information against the providers. Additionally, measures can be taken to populate beneficial data rather than data that could pose a potential risk. For example, imagery that is truly sensitive can be filtered before it is disseminated. However, erring on the side of sharing with imagery has tended to have positive effects at the Taj over the past four years without incurring the hypothetical negative consequences detractors have postulated.

#### 2.2.12 Tagging shared information and accepting imperfect metadata

As information flow increased at the Taj, the files shared were of varying quality. Some NGOs would share well organized files in open source formats that were easy to search, convert and use. Others would upload large documents and pictures with little contextual information to make the data relevant.

***In an ideal situation, the information being shared would contain metatags including the “who, what, where, and when” of the information that is contained in the document, image, video or file.***

In an ideal situation, the information being shared would contain metatags including the “who, what, where, and when” of the information contained in the document, image, video or file. It also helps to have the most important

information and pictures highlighted so those who need to see the data can find them quickly. However, the experience of the Taj shows metadata are often missing when local organizations, NGOs, coalition partners and even USG organizations share data.

There are several partial solutions to this challenge. The synergist can encourage those sharing data to properly organize and tag their data in open file formats. Working with cameras and other media devices that automatically tag files with metadata should be encouraged. Having a paid staff member or unpaid intern filter through data to tag them and to highlight the most important and relevant issues also helps organize data that come from organizations that simply don't have the time or will to do it themselves.

With that said, learning to accept imperfect data and be flexible with organizations that do not conform to the usual open data standards is a key lesson learned and recommendation coming from the Taj experience. For both technological and social reasons, it's better to accept unstructured data and use tools such as "Knowledge Tree" that can organize unstructured data than to reject files because they do not conform to a specific set of standards.

#### 2.2.13 The constraints of acquisition policies dramatically slow operational tempo

Current acquisition rules prevent USG activities from funding the recurring costs of internet-reliant operations. It has not been possible so far to use USG monies to fund the bandwidth necessary for synergy operations without complex approaches involving long delays to ensure compliance with government regulations.

***Synergy operations require direct funds that are designated for the operational needs of these activities.***

While the Jalalabad experiment did find a way to get bandwidth under legal means, synergy operations require direct funds designated for the operational needs of these activities.

#### 2.2.14 Necessity for new metrics around information flows through social networks

At a basic level, metrics for these operations can include the amount of data shared, bandwidth available attendance at social events and positive or negative responses to the initiative by those working in the region (measured by comments in communications or surveys).

***...existing metrics do not cover the most important aspects of synergy operations -- relationships.***

However, such metrics do not cover the most important aspects of synergy operations -- relationships. Most metrics are quantitative measurements of the attribute of a noun, either capturing its current state or the velocity or rate of change of the state when acted upon by an outside force. Synergy operations measure the existence and rate of creation of relationships between nouns, usually people and organizations. Such metrics have not yet been developed nor validated.

More complex metrics, including social network analytics, are discussed in the Template section.



### 3 WORKING TEMPLATE FOR SYNERGY OPERATIONS

In many disciplines, printed text serves as an introduction to a process of mentorship and practice. From music to medicine, textbooks are not meant to provide the definitive guide to a complex topic, but rather to prepare a new practitioner for long periods of trial and error under the watch of a senior practitioner. Synergy operations are no different. This working template is meant to prepare new synergists for mentorship under field conditions with a master synergist.

*In the first 30 days, an initial team will assess the potential of the region and try to identify a potential neutral space...*

The template covers the basic organizational design and operating methods for a synergy operation, as abstracted from the lessons learned from Jalalabad, combined with other synergy operations at the San Diego State University Visualization Lab, the DARPA-sponsored Strong Angel series of disaster response demonstrations, and field work in Africa and Asia.

#### 3.1 Timeline

Flexibility remains key in these operations and the schedule below should be considered a framework and not a definitive set of deadlines. Austere environments and cultural divides sometimes require different amounts of time to accomplish goals.

##### Days 0-30: Assessment of viability

In the first 30 days, an initial team will assess the potential of the region and try to identify a potential neutral space, preferably where good activities are already occurring and can be amplified. Among the factors in understanding the site's viability:

- Can power, technology and bandwidth be brought to the location and can it be sustained over the life of the project? In particular, are local power sources available and are satellite signals capable of reaching the area.
- Does the team have freedom of movement to enter and leave the location?
- Do organizations working in the region have the capacity to move around?
- Is the local population willing to accept the pilot project?
- Are non-USG agencies operating in the space open to cooperation?

*By day 60, small but visible progress should be made on building the social partnerships with other local groups, and the basic technological infrastructure should be built.*

##### Days 30-60: Initial build-out

Once the initial viability has been determined, around day 30 (and preferably well before), a team led by the synergist will move into the neutral site to begin building the social infrastructure and building the initial technological infrastructure (power, computers and bandwidth) to make information sharing possible. The technical

infrastructure should be built using the open standards described elsewhere in the document.

### **Days 60-90: Initial synergy operations**

By day 60, small but visible progress should be made on building the social partnerships with other local groups and the basic technological infrastructure should be built. There should be people beginning to attend social events at the neutral location. Additionally, there should be regular outreach to organizations that could benefit from information sharing in the area. The 60-day mark should be used to write a brief progress report and consider solutions for the unanticipated challenges that have arisen. The synergist engages in building partnerships and fostering specific information sharing operations to enable dynamics already working on the ground.

### **Day 90: Initial assessment**

On day 90, an independent assessment team should visit the location to assess its progress and future viability. Some simple measures of performance including the functioning of technology should be considered. Additionally, more complex social network analysis metrics are required to identify the success or failure of initial partnership activities. Metrics are addressed in section 3.6 of this report.

## **3.2 Organizational design**

Like many emerging forms of collective intelligence, synergy operations have flatter and more distributed designs than bureaucracies. They are optimized for a different purpose than a hierarchy: rather than optimizing an organization to perform a range of specific processes divided by function, synergy operations delegate authority to the edge, where those closest to ground truth are authorized to engage in creative problem solving using (usually scarce) available resources.

*Like many emerging forms of collective intelligence, synergy operations have far flatter and distributed designs than bureaucracies.*

*...initial lessons point to two roles and networks as being essential to operations...*

Distributed organization does not mean lack of structure. While the emerging methods for building collective intelligence is still a matter of academic study<sup>3</sup>, initial lessons learned from the Jalalabad pilot point to two roles and networks as being essential to operations:

- A dyad between a synergist and a facilitator with high-level decision-making authority within the USG, or any authoritarian structure. The facilitator provides the mission and extends trust to the synergist, while the synergist works in the new operational space and fulfills the terms of the trust.
- A network of partnership relationships that create network effects around the synergy operation.

Incorporation of collective intelligence (such as "crowd-sourced") products will likely use some form of a "Crowd, Bridge, Transaction, Feedback" model (see Appendix E) to help leaders make decisions, improve information sharing and promote completed "transactions" (projects completed, stability improved etc.).

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<sup>3</sup> For example, see MIT's Center for Collective Intelligence (<http://cci.mit.edu>) which brings together faculty from across MIT to conduct research on how new communications technologies are changing the way people work together.

Any plan to deploy or assign personnel to play the roles of synergist and facilitator requires careful matching of the individuals to the functions these complicated roles require. Appendix C outlines the basics of the personality types and job descriptions for each role. It also explores the only known analogue to synergy operations in the field: special operations. In more than five years of field experience,

*...the individuals from the USG who were most consistently willing to take risks involved with opening connectivity to Afghans and using the resulting flows to generate positive outcomes were Special Forces...*

members of this study have found the individuals from the USG who were most consistently willing to take risks involved with opening connectivity to Afghans and using the resulting flows to generate positive outcomes were Special Forces operators.

### **3.3 Initial reconnaissance for identifying candidate sites**

Many places are not ready for synergy operations. The initial reconnaissance phase measures several metrics and atmospheric conditions ahead of any decision to deploy a synergy operation. During days 0-30 in the timeline from 3.1 a recon team will need to survey the following metrics:

- **Mobility.** How free are both NGOs and local residents to move around the area and to congregate at a neutral site? Can people from different backgrounds come together around an internet hub?
- **Need.** How willing are local and international institutions to engage in information sharing? Are there health care and educational facilities that (by their nature) want access to outside information? Are there champions for problems that can be solved by giving more access to imagery, maps, and internet services?
- **Social Fabric.** Is the social fabric sufficiently strong to enable a synergist to bridge parties that may be in disagreement without resorting to violence?
- **Gut Feel.** The synergist can evaluate the emotions of local residents and sense if they are in a place where synergy operations can make a difference.

### **3.4 Initial engagement**

The initial engagement phase (days 30-90 in the timeline from 3.1) starts with providing connectivity from within a neutral space. These two elements—connectivity and neutral space—enable the synergist to build partnerships and extend the human networks. The goal of the initial engagement is to strengthen the human network using information technology as a magnet; it is not to build a technology infrastructure.

#### **3.4.1 Connectivity**

The synergist is the antidote to a paradox: sometimes the more an organization protects its information, the less secure it may be. The mechanism is not straightforward; rather, it requires an exploration of the interaction of information sharing with unity of action necessary for effective operations in contested environments. Connectivity in this case refers to both the technological links and the human to human communications occurring in the area.

*During this surge, information-sharing problems can quickly create coordination problems; as more donors and projects emerge, the need for coordination increases rapidly.*

### 3.4.2 Information sharing in contested environments

Operations in contested environments tend to be dynamic. After a major shock to an affected nation or a decision to create a military or civilian ‘surge,’ military and civilian organizations scale up their participation. During this surge, information-sharing problems can quickly create coordination problems; as more donors and projects emerge, the need for coordination increases rapidly.

In this circumstance, communication between organizations rarely keeps pace with the messaging tempo necessary to enable the desired level of coordination. More commonly, information shared between

***The focus on protecting information has consequences...***

***...as trust decreases, the amount of information flowing between partners also decreases, leading to further breakdown in coordination, more conflict, and ultimately yet more decreasing trust and reduced information sharing.***

stability operation partners diminishes over time, as concerns over force protection and a desire to prevent unfriendly entities from discovering and thwarting activities of operational partners creates an increased focus on information assurance. Leaks (such as Wikileaks) only exacerbate the problems and strengthen the hands of those who wish to restrict information sharing. There is no doubt security concerns must be considered. But risk-avoidance approaches to information sharing generate often overlooked risks to overall mission accomplishment.

Excessive focus on information protection has consequences: duplication of effort with organiza-

tions that cannot know of each other’s work at best leads to reduced effectiveness and even to conflicts and an accompanying breakdown in trust between the independent actors. In the worst case, the dynamic creates a vicious cycle: as trust decreases, the amount of information flowing between partners also decreases, leading to further breakdown in coordination and cooperation, more conflict, and ultimately decreased trust and reduced information sharing.

These downward spirals can provide openings for insurgent activities after a disaster or conflict. Information sharing eventually gets limited to carefully prescribed reports. Ground truth gets lost to all but those who are closest to the affected population (who may well be insurgents). As a result, the security of operations can significantly diminish, making civilian operations more risky and costly, and ultimately, less effective.

The synergist needs to provide the antidote to this vicious cycle by increasing connectivity and fostering the inter-organizational communications that increase unity of action.

***The synergist needs to provide the antidote to this vicious cycle by increasing connectivity and fostering the inter-organizational communications that increase unity of action.***

#### 3.4.2.1 Opening communications

For many organizations, the default mode of information security is to close the network to anyone who is not working on a project with which the host organization is engaged. This approach is understandable: to allow outsiders into a network often requires an organization to issue credentials for that outsider, which can be time consuming and introduce new risks to the organization’s information flows. In addition,

bandwidth is often simply not available to enable external persons to share an internet connection, especially when civilian access to satellite bandwidth costs \$6-7 per megabyte.

For a synergy operation to be effective, it must take the opposite approach. It must create a virtual neutral space where anyone can join the network and exchange data and information about their projects across stovepipes. The mission is to wire the informal networks that cross the organizational stovepipes and enable operational partners to engage in coordinated action. In this sense, a synergy operation cross-ventilates the stovepipes endemic to complex operations. To achieve this kind of inclusiveness, the synergy network must be different from the official UNCLASSIFIED network such as NIPRNET.

Opening communications requires a mosaic approach that cannot be reduced to a step-by-step guide.

***For a synergy operation to be effective, it must take the opposite approach: it must create a virtual neutral space, where anyone can join the network and exchange data about their projects across stovepipes.***

Many efforts must proceed in parallel to be effective. That said, the most basic step is providing ‘packet flow’ to the target community: a basic connection to a shared local network, and if possible, to the public internet. The synergist then uses that network as a tool to improve (or create) workflows that solve problems shared between operational partners. While building these workflows, the synergist also engages local developers to work with operational partners to

build tools to make these workflows durable, sustainable, and customized to local needs. In this way, connectivity becomes a form of barn-raising within a common virtual space.

#### 3.4.2.2 Open bandwidth

With any network, the basic unit of information exchange is the Internet Protocol (IP) packet. Without having an open IP-based network to enable information exchange, partners in a synergy operation are reduced to face-to-face meetings and expensive exchanges of information from an expensive satellite connection, both up and down. The synergist’s role is to determine an architecture that allows for wiring the informal networks that emerge during nights at the neutral space. The synergist looks for people who need to be interconnected, and provides connectivity to them as a public good. While bandwidth is often critical, analog data transmission such as cell phones and radio are also critical tools of information sharing and transmission that should not be overlooked when evaluating the benefits of connectivity.

Given the high costs of bandwidth, especially in austere environments where satellite connectivity is the only viable link to the internet, obtaining a donor to cover these costs is a core responsibility of the synergist. Where possible, these costs should be covered by whatever joint command structure (or development authority) is put in place to manage a complex operation. In addition, whenever terrestrial internet services can be procured from local nationals, the local services should be fostered as an investment in development, even if the costs are higher; the costs will eventually drop with increasing data volumes.

***Blanketing the area with open communications networks, from TCP/IP to SMS and cellular voice services, removes this obstacle and is less costly than trying to fix an uncoordinated response.***

Blanketing the operations with communications accelerates coordination. Most field operations have not yet developed a standard operating procedure to harness the network effects of ubiquitous communica-

tions that all partners in any contested environment can access. Instead, each organization tends to shell out tens of thousands of dollars for the backhaul costs of satellite communications and, as a result, tends to limit the access of outsiders to their networks.

***Opening communications requires a mosaic approach that cannot be reduced to a step-by-step guide.***

Such restrictions correspond directly with a reduction in information flow. The situation also forces each organization to build its own hub-and-spoke network, an often unnecessary redundancy in austere settings where the use of every resource must be optimized. Blanketing the area with open

communications networks, from TCP/IP to SMS and cellular voice services, removes this obstacle and is less costly than trying to fix an uncoordinated response.

#### 3.4.2.3 Strengthening computing capacity of local partners

Local partners usually possess a mosaic of information communication technologies from several eras of computing, many of which are incompatible or which have been cobbled together from spare parts. Some still rely on paper-based systems. If these partners are going to be integrated into coordinated operations, they first will need a shared set of low-cost information communication technology tools which can be maintained and extended using local labor. The synergist needs to help local partners tie into the network using existing, familiar technologies, which might be as basic as cell phones, radio and text messaging.

#### 3.4.2.4 Open data

Whenever possible, data should be exchanged in open data standards. There are several reasons why open data formats are critical:

- Proprietary data formats often require expensive licenses for commercial software. While many NGOs and UN agencies can obtain these packages as part of a large enterprise, local partners often lack such resources or bulk buying power.
- Data archived for long periods often become unreadable to new versions of the software. How many files exist in WordStar and Bank StreetWriter—two of the most popular word processors from the 1980s—which can no longer be read?
- Data in open formats foster the use of a common language among the synergy operation partners, including ways of classifying geographic and project data. In this sense, “open” means more than just a technical agreement; it is a means of developing shared values, which are also critical to building a durable community.

#### 3.4.2.5 Open-source toolsets

Open-source software is usually built on open-data standards, making it an ideal platform a synergist can use to extend the existing capabilities of operational partners. Open-source software is usually mashable; the outputs from one application can be tweaked so they form the inputs of another, and a third can be connected to visualize the combined data from the first two. A good example is Ushahidi, an open source package that mashes an SMS server (usually Frontline SMS) with a mapping server (usually Google Maps or OpenStreetMaps). For example, SMS inputs go into FrontlineSMS, are geo-located by a human through the Ushahidi administrative interface, and get visualized on OpenStreetMaps. It was this

workflow that enabled 1,200 volunteers to translate and geo-locate thousands of post-earthquake reports from Port au Prince, Haiti in early 2010.

#### 3.4.2.6 Power

In austere environments, power may be unreliable, but without it, even the best information technology is rendered useless. An important role for the synergist is to increase the reliability of power.

#### 3.4.3 Neutral space

A neutral space is a crucial element in allowing a multitude of actors with different loyalties, aims, and objectives to come together in neutral territory, away from home institutions. One of the primary objectives of the neutral space is to allow for chance encounters resulting in identification of shared obstacles and opportunities that would benefit from collaboration. As anyone who knows an operational environment understands, the after-work happy hour accomplishes as much as formal business meetings, and sometimes more.

*One of the primary objectives of the neutral space is to allow for chance encounters that result in identification of shared obstacles and opportunities that would benefit from collaboration.*

Casual encounters in a setting deliberately not designated as work space facilitate information sharing outside of institutional stovepipes. These also help minimize mindsets emphasizing the protection of institutional equities and risk avoidance above all else. Individuals with specific sets of expertise and knowledge can share this on a human rather than a purely institutional level.

The benefits of such a space are easy to identify, but how do such spaces come to exist? Specifically, what features of a space result in rewarding collaborations and increased capacity to problem solve? The *Project for Public Spaces* identifies several criteria that make a good public space, including: accessibility, sociability, comfort, and the ability of users of the space to engage in activities.<sup>4</sup>

##### 3.4.3.1 Characteristics

The space cannot be owned, or perceived as being owned or affiliated with a particularly controversial individual, group or organization.

The physical location in particular will have an owner, but this person must be open to those from many organizations so the location does in reality result in a flourishing “watering hole” in which people who would not otherwise interact in their professional lives have the opportunity to share their perspectives and learn from one another’s experiences.

If the ownership of the neutral space must change, it is important the former owners and others are not excluded from the space.

The labor market in contested environments is highly transient, and individuals often move between numerous jobs and organizational affiliations. The neutral space serves as a place to diminish these transitions by virtue of providing a locale in which people can come irrespective of their institutional affiliation.

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<sup>4</sup> See *Project for Public Spaces* at [www.pps.org](http://www.pps.org). Terms are defined and a greater discussion of the concept of neutral space is included in Appendix D of this report.

### 3.4.3.2 Security

Regulating security of the neutral space, both the virtual and physical locations as well as monitoring the social network, is an extremely delicate endeavor. Contested environments are, by their very definition, high-risk, and places where internationals and expatriates congregate often serve as high-value targets for terrorists. How can risk be managed in these instances?

First, security cannot be the single overriding concern; it must be balanced with mission objectives. Otherwise, there would be no reason for a deployed overseas presence. U.S. embassies, often called “fortress embassies,” due to their high level of defense and security, end up functioning as virtual prisons in which staff are unable to leave and it is almost impossible for visitors to get in or out. There are good reasons for this, as attacks in recent decades on U.S. embassies have shown.

Unfortunately, this protectionist mindset also cuts staff off from the very population they are trying to serve. Security measures completely isolating an operation from the local community create their own kind of risk, as lack of contact with and knowledge about the environment can lead to ignorance regarding local conditions, risks, and threats. Even complete isolation does not eliminate risk, and arguably, heightens it.

Strong local contacts serve to alert international staff to potentially volatile situations. Further, a positive presence in the community may reduce the likelihood of attacks, as some attacks directed against international partners are a result of resentment of what is perceived as an ineffective international presence.

***...lack of contact with and knowledge about the environment can lead to ignorance regarding local conditions, risks, and threats.***

A balanced approach to risk-taking is necessary. To pretend targeted attacks will not occur in certain environments is foolish and dangerous, and security precautions are absolutely necessary. Nevertheless, eliminating risk is impossible, and at times, interacting with the local population will reduce risk by making security operators more informed. The context will dictate exactly how much the

location can mitigate risk while still allowing for free movement and shared information.

### 3.4.3.3 Cultural sensitivities

Cultural differences present difficulties in the modulation of the neutral space. For example, consuming alcohol, intermingling of men and women, and western dress codes can be extremely offensive to host country nationals. And yet, such things often come along with an international presence, for good or for ill.

To address these differing norms, the owners of the neutral location must strive to be respectful while still acknowledging western norms may apply in certain environments. For instance, Afghans may feel uncomfortable in an environment in which alcohol is served. To ensure Afghans can also participate and contribute to the dynamics of the neutral space, there could perhaps be a physical space set aside with a different environment. An alcohol-free zone, for instance, might be an important part of the space. Another way to accommodate those of different religions might be to have a special prayer room set aside for those who wish to observe the five daily prayers.

In some contexts, it is unlikely any foreign national women will come into a mixed gender environment, in particular if any alcohol is involved. This necessarily excludes people who are very important to the



success of the mission. Thus, it is important to recognize the people who are able to share the neutral space are not fully representative.

Secondly, the synergist should seek out opportunities to engage populations that might not otherwise participate. Foreign women, for instance, may be able to enter some spaces designated for Afghan women. Encouraging this type of interaction is one way to reduce the likelihood important voices are not marginalized.

#### 3.4.4 Partners

Building effective and enduring partnerships is a crucial element in a synergy operation. Without partners, the synergist is nothing more than an additional actor; with effective partners, the synergist is an enabler, working across domains, seeking out opportunities to have an impact far exceeding the expended effort. In this context, partners are those who are supported by the synergy in one way or another, such as a locally-run hospital, or an international NGO.

The long-term goal of synergy operations is not to run a smooth and seamless operation that maximizes efficiency. Such operations would simply be led by the U.S. military and would not require the support of coalition partners and local actors. Instead, the goal is to transfer ongoing operations and skills into the hands of those who have a long-term vested interest in the success of a town, city, community, or an organization.

Partnerships are the glue that link international efforts with long-term, locally-driven growth. Without local buy-in and support, there may be some level of progress, but developments will back-slide if the benefits eventually are transitioned to those who were not part of the original planning and implementation. Effort must be devoted, then, not solely to pursuing the best courses of action, but rather to working with local communities, and building their capacity to the extent possible.

Identifying appropriate partnerships is not always an easy task. There are a multitude of actors and more possible partnerships than can be pursued. There are also unsavory institutions that may not be appropriate for collaboration. Still others may resist the principles guiding this work, such as open flow of information. Institutional barriers to collaboration may be too high for some organizations. The following principles lay out ways to approach partnerships. They provide useful metrics to identify how, and with whom, to partner.

The recommendation from the Taj project “*Save the Willing First*” is important in this partnership process. There will always be outliers who are unwilling or unable to adjust to the new model of approaching operations in contested settings as outlined in this report.

***Principles on how to approach partnerships. Useful metrics to identify how, and with whom, to partner.***

Instead of developing a policy and striving to implement it consistently with all partners, we urge the synergist and those involved in synergy operations, to pursue the “low-hanging fruit,” at least initially. There may be institutional, bureaucratic, and policy obstacles that cannot be solved. And yet, despite the fact all collaborations cannot be pursued, a number still can; consistently finding what can be done is the attitude or mindset of a good synergist.

#### 3.4.4.1 Radical Inclusion

One of the challenges in working in contested settings is the difficulty of differentiating between who are legitimate partners, and who are potential spoilers. Program officers and mid-grade military members may have a difficult time determining who is worth partnering with and who is not. In the absence of evidence, the default mode may be to exclude those who have not yet proven their worth, which often perpetuates the status quo. Only those who already have relationships will be able to deepen and extend them through partnerships.

***...the goal is to transfer any ongoing operations into the hands of those who have a long-term vested interest in the success of a town, city, community, or an organization.***

What we propose is a reversal of this traditional thinking. Instead of trying to keep others out, the aim is to incorporate everyone possible, identifying their knowledge, skills, and abilities and then engaging those assets. Only when an actor demonstrates unreliability or is a known security risk should he or she possibly be denied certain privileges and forms of access. This reversal is a complete rethinking of how to approach and engage with unknown entities.

Radical inclusion directly relates to the notion of ubiquitous synergy, the idea there are opportunities for connectivity, coordination, collaboration and de-confliction everywhere. Even those who are seen initially as tangential may eventually prove to be central. This has been demonstrated in the political milieu of contested environments again and again.

Nonetheless, analysts and policymakers often miss early opportunities to understand such unknown players' qualities better. By approaching and including even those who may seem to be fringe players, the likelihood is higher that real opportunities will be created and exploited.

#### 3.4.4.2 Multiple paths to partnership

The concept of partnership proposed in this report is a flexible one. Partner organizations and individuals may come and go; they may contribute and not contribute.

The aim of a radically inclusive partnership approach is to expand the possible modes of association to maximize the advantage to all stakeholders. Rather than laying out a step-by-step process for moving up the "ranks" of partnership, participants can join the social network through multiple entry-points. A free and open environment makes for very low barriers to entry.

#### 3.4.4.3 Cultural shifts among USG partners

Many of the early Provincial Reconstruction Teams (PRT) efforts in Afghanistan and elsewhere to coordinate, develop and implement an integrated civil-military information management system ran into culture clashes.

A significant challenge was the reluctance of international organizations and NGOs to share specific information about their own activities; and there remains today evidence of that behavior. The NGOs and international organizations projected then, and occasionally still do, the attitude they simply were ideologically opposed to having the military conduct assessments of the activities and programs in which they were involved.

A lack of knowledge about the location of civilian-sponsored projects impedes the military's and PRTs' abilities to avoid engaging in duplicative activities. From a practical security perspective, lack of knowledge about NGO movements and locations impedes the ability of military commanders to be prepared to provide effective security assistance. The decision whether or not to cooperate, coordinate, share information, or otherwise interact, is left to each agency, and that is also driven by organizational culture and the personalities who lead them.

***... culture shifts must move across and down the organization to the field, to the front lines where you actually meet your client...***

We have seen Multi-National Force Commanders and Chiefs of Mission espouse the changes necessary to guide effective information sharing and coordination. Initiatives to change culture usually are conceived and launched on the executive floor.

But, to succeed, and as management expert Dr. Price Pritchett has demonstrated in his studies, culture shifts must move across and down the organization to the field, to the front lines where you actually meet your client, in whatever form that comes. Culture can be very controlling but, powerful as it might be, the culture cannot change without permission from the people who make up the culture's community of members. That in turn has to be acknowledged, permitted, reinforced, and rewarded by the executives.

#### 3.4.4.4 Different priorities among non-USG international partners

"Partners" refers to both local, foreign, and international institutions and individuals, encompassing a broad range of players. There are differences within these communities, however, and it is worth pointing out each has different equities and priorities.

The development community tends to focus more on long-term sustainability over fixing immediate needs and problems. This means the process and method are oftentimes more important than delivering results. For instance, development agencies will often go through a long consultation process with a local community before undertaking any type of community development project. The aim is to build local capacity and generate buy-in, over and above the aim of the particular project.

This approach differs from the humanitarian community, whose goals are often to alleviate suffering rather than work to address longer-term problems. The humanitarian core principles of independence, impartiality, and neutrality, mean working with organizations which are not neutral – foreign governments and the military for instance – is seen as a liability for them. The humanitarian community of late has raised concerns about a blurring of the civil-military boundary, a boundary they aim to keep clear for their protection.

The diplomatic community, in turn, seeks to implement the objectives of their host government. This may well also align with development and humanitarian goals, but there may be other equities involved as well.

The security community has three elements: the military component charged with fighting a counterinsurgency and creating a stable and secure environment, police elements with similar roles domestically, and the widely used private security contractors, many of whom are hired to protect development and humanitarian workers.

Each of these communities cares about and has access to different kinds of information. By increasing opportunities for sharing that information, as well as knowledge and expertise, the likelihood of improving all activities in the region is high.

#### 3.4.4.5 Local partners

Local partners are the key factor in the success or failure of any mission. This includes local organizations and institutions, but it also includes individuals who are leaders in their communities and who can make a difference.

Local government officials will have differing degrees of credibility. Some are seen as authentic representatives of the community from which they come, and others are viewed by the local population as little more than thugs who have manipulated power in their favor. Nonetheless, the international community is bound to work through and with the local government.

While some development organizations work exclusively through the local government and channel all funds through them in an effort to build capacity, synergy operations instead emphasize providing tools to the population to allow them to direct their efforts as they see fit. Empowerment through increased information can help minimize some of the stovepipes associated with new local governments without undermining them.

***Local NGOs are essential partners; they know the needs and wants of the local population.***

***Local NGOs should give the synergist a chance to determine what messages and projects to amplify.***

Local NGOs are also essential partners; they are the organizations familiar the needs and wants of the local population. Too often, development projects are funded by what is deemed popular, so more schools are built than prisons, although the latter serve vital functions in building a stable society. Similarly, funding may well be directed at problems while seemingly important to the funding agency, are not a high priority for the local people. Local NGOs should give the synergist a chance to determine what messages and projects to amplify.

Hospitals and universities are hugely valuable resources and provide an institutional framework for teaching and connecting with local populations. A good relationship with local universities and hospitals is vital.

The extent to which these institutions view partnerships with any aspect of the synergy operation as beneficial is crucial, for this will impact their willingness to partner. By being a 'team player' and providing resources when and as appropriate, the partnership will be strengthened.

#### 3.4.4.6 Turnover

High turnover is one of the primary challenges for a coherent operation in a contested environment. Six-month tours and a constant rotation of new faces who must relearn the players, the environment, and the challenges all make for an inefficient and often ineffective mission. Enduring partnerships, facilitated by the synergist, will help to maintain ongoing

***Enduring partnerships, facilitated by the synergist, help maintain ongoing relationships, rather than productive partnerships disappearing after a rotation.***

relationships, rather than having what grew to be productive partnerships disappear after a set of military or aid workers rotates out. The synergist should therefore be a constant presence.

Beyond a continued commitment to the region, but not necessarily a continuous presence, the synergist should be responsible for relationship handoffs. She or he should share her or his connections and facilitate new relationships. While email introductions are helpful, a more proactive approach to introductions and partnerships will be more effective. Just as with any relationship, face-to-face communication is the most helpful.

For this reason, the synergist's value increases with time. She or he knows the relationships, the needs, and the strength of the community as a whole, rather than just one programmatic aspect. This regional view – that looks at all the players in a given area, working to support one another sometimes and at other times working at cross-purposes – is a unique perspective, and one that is rare, despite the multitude of actors. The cultivation of partnerships that will endure—until an eventual handoff and transition—is a crucial function of the synergist.

### 3.5 Iterative project cycle

Modern bureaucracies are rooted in thinking from 19<sup>th</sup> century: Progress is defined as steps through a linear process. Projects should move through stages from A to Z much like a GM product should start as an empty frame and emerge as a finished car. In the real world, there is no escapement mechanism to prevent a project's forward momentum from slipping backwards. With complex systems, sometimes this ebb and flow in the rate of progress and the actual velocity is not only normal, but desirable. Sometimes

social groups—from teams to villages to larger bureaucracies—require time to backtrack and rethink.

*...a synergist's value increases with time.*

The synergist's role in this dynamic is akin to managing the pace of change—to understand when to charge ahead, and when to backtrack to a safer place when the group has overheated and conflict

has emerged. It should be understood synergy projects will not proceed on the schedule, or with the efficiency home offices desire. Period. They will either go faster or slower.

Synergy operations will also be iterative and cyclical, not linear. They will progress through a series of smaller synergy operations, each designed to meet some specific need for a defined set of actors. It is through the accumulated successes on the small level that larger, non-linear effects get built on the larger scale. In other words, synergy operations are complex systems which display emergence.<sup>5</sup>

#### 3.5.1 Identify stakeholders for issues

During complex operations, there is often a desire to achieve goals to get ahead of aligning the stakeholders necessary for planning the project or mission. The synergist is the person who asks, “Please name the human,” focusing the mission back on emergent rather than immergent behaviors. Name the stakeholder or champion in a specific place who will take on a specific role. Only when the key champion is in place should the project begin.

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<sup>5</sup> Immergence and emergence are concepts from complex adaptive systems. Immergence describes activities where macro scale dynamics influence actions at the micro level. Emergence is the opposite: it describes activities at the micro level that affect dynamics at the macro level (e.g., the quintessential example from the Santa Fe Institute of when a butterfly flaps its wings in the Baja, a hurricane emerges in the Caribbean).

### 3.5.2 Resourcing

As Iraq and Afghanistan have shown, money does not solve problems in the field; people do. Pouring more money into a synergy operation will not lead to better or faster results unless money is aligned directly to the needs of the stakeholders. Often, money needs to be more flexible than the current donor environment will allow. Hence, the role of the synergist is often to live in a world where donors want to give more money, but run into policies preventing them from giving to actual needs on the ground on a timescale meeting the needs of the synergy operation. This bottom-up approach will deliver more tangible results and with more lasting impact than exclusively headquarters-driven decision-making in regards to funding.

### 3.5.3 Scavenging as a strength

In cases where money cannot flow for various reasons, scavenging becomes a mode of existence. In the hands of skilled synergist, scavenging can be a form of community building—forcing cooperation and collective action and moving resources into a commons where they can be repurposed in legal and transparent ways.

### 3.5.4 Pacing of the work

In the practice of “Adaptive Leadership”<sup>6</sup>, there is a concept of a holding environment, where a facilitator convenes stakeholders to address complex problems and helps them to discover shared problems. At the core of this activity is a gradual process of peeling back excuses and misconceptions to uncover conflicts in the underlying belief there are structures preventing cohesion between the factions.

This work can be taxing, particularly in the context of contested environments, where operational duties combine with synergy work to create a saturation point: a moment when the totality of obligations becomes overwhelming. For many understaffed organizations, saturation may be a daily occurrence.

At some point in the process, it is not uncommon for conflicts to emerge between factions. Emotions boil over into a destructive dynamic focused on asserting one group’s value structure over another’s. One or more factions try to assert authority over the facilitator, or may try to negate the work of another actor. The synergist’s role is to protect the good behaviors and give no energy to the destructive behaviors. Where necessary, the synergist may need to be the person who shows how out of line an actor is.

### 3.5.5 Open dialogue

When facing complex problems, synergists are the opposite of backroom dealers; they put things out in the open, share widely, and manage the process of the group coming to terms with the situation and exploring possible solutions.

The key is understanding how to manage group dynamics so they form collective intelligence instead of group think.

(Methods for dialogue are far too broad to summarize in a few bullet points. We recommend *The U Method* from Otto Scharmer, *Fifth Discipline* from Peter Senge, *Leadership on the Line* from Ronald Heifetz, *Real Leadership* from Dean Williams, and *The Art of Adaptive Leadership* from Alexander Grashow. Also recommended are Harvard’s Program on Negotiation and MIT’s Center for Collective Intelligence.)

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<sup>6</sup> Cf. *The Practice of Adaptive Leadership*, R. Heifetz, A. Grashow, M. Linsky, Harvard Business School Press (2009); *Real Leadership*, D. Williams, Berrett-Koehler Publishers (2005); *Leadership Without Easy Answers*, R. Heifetz, Harvard University Press (1998).

### 3.5.6 Modulating access to neutral spaces

Like a proprietor of a coffee shop, pub, or tea room, the synergist can modulate who has access to the neutral space. Sometimes, the space needs to be more closed to facilitate sensitive deliberations between parties who are looking to enter the space but need to talk first. Sometimes one party becomes too overbearing and criticism needs to be done in private. Sometimes a faction becomes disruptive and needs to know access is a privilege that can be taken away. The synergist must determine how to be fair and open about this process.

### 3.5.7 Dealing with information parasites

One pathology in information sharing operations is the information parasite: the organization willing to accept information but offering nothing in return. These black holes disrupt operations.

The synergist has responsibility to outmaneuver these parasites rather than control or ostracize them. They need to come to understand how their behavior is affecting others in the space, and information is going to dry up quickly if they do not share information back into the community. Those who fund them or receive the information will also be interested in the potential loss of access, a policy well within the synergist's purview. If they refuse to change, the synergist can control access, but this method should be a last resort.

***...information parasite: the organization that willingly accepts information but returns nothing.***

### 3.5.8 Avoiding delays

In linear project schedules, delays are quantifiable risks. However, given that information operations are iterative systems displaying non-linear dynamics, a small delay can often become amplified into major problems with unpredictable secondary and tertiary effects. A delay in funding can prevent a major stakeholder from participating in the community, which can cause a breakdown in trust in the project and require months of rebuilding by the synergist.

### 3.5.9 Flexible timelines

Complex projects often must work within timelines. A schedule forms a basic framework for action: a planning document for solving specific problems, with which specific humans and organizations, given current resources.

The timeline should be flexible, adapting to the realities on the ground. And all timelines can have pause buttons for when resources are not available, when the political situation is averse to making progress, or the stakeholders need to focus on an urgent crisis. In these cases, when one timeline must pause, the synergist's job is to make progress on other projects which are still open for work.

The synergist must help the stakeholders adapt to where and when opportunities arise.

### 3.5.10 Transitions

The synergist has his or her own private goal: to create a durable neutral space where local leaders—or leaders from within the community—can successfully manage the space and handle further conflict and growth on their own.

The synergist needs to devote significant attention to developing the leadership skills within the community to bring the space to this point. Often, this stage will be reached only during the transition from

contested environment to development, when the roles of internationals become more focused on building local capacity instead of running crisis operations.

### 3.6 Evaluation and measures of performance / effectiveness

Social network analytics can be used to perform baseline surveys of the social fabric of a synergy site and the subsequent increase in relationships as a result of the synergy operation. These methodologies have been applied in multinational corporations by a wide range of academic and commercial interests, and could be used to train to USG personnel for inspections of synergy sites.

Social network analytics apply graph theory to the lattice structures of relationships between people, organizations and things. With these tools, the raw number of people in a network is less important than understanding the strength, quality and diversity of relationships among those people. Such analytics would require some baseline survey of who knows whom in a region, compared against the end of a synergy operation, which should increase both the number of relationships as well as the characterization of those relationships.<sup>7</sup>

*Social network analytics (SNAs) apply graph theory to structures of relationships.*

For example, it would be simple to measure the number of people attending social events at the Taj. Indeed, that number increased over time when graphed. However, a more qualitative assessment noted some of the most important relationships were built on “slow” nights when fewer people were in attendance, but the people who were there created new partnerships and went on to accomplish greater information sharing. It takes an advanced social network analytics program to capture such information.

These metrics include:

- Number of human nodes in the synergist’s social network.
- Number of relationships between the human nodes in the social network of the synergist
- Centrality of the synergist (which needs to be evaluate as net positive or net negative according to context).
- Number of physical (network) nodes in the IT network
- Number of interconnections between nodes in the IT network.
- Information flows over the IT network between nodes as a proxy for communications/messaging between individuals.
- Total data (GB) shared within a common pool, as with the “beer for data” program.
- Attendance levels at neutral space gatherings (weekly)
- “Vibe” at neutral space gatherings: one person lecturing to people sitting in a circle or many groups collaborating and sharing on their own.

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<sup>7</sup> Robert Hanneman and Mark Riddle (2005): [Introduction to Social Network Methods](#), John Scott (2000): [Social Network Analysis](#); Derek L. Hansen, Ben Shneiderman, Marc A. Smith (2010): [Analyzing Social Media Networks with NodeXL: Insights from a Connected World](#).



Among additional metrics for MOP that should be considered:

- Is the technology up and working?
- Is bandwidth available?
- Is the power supply relatively stable considering the austere environment?
- Are computers and servers on site functioning properly?
- What is the quantity (MB/GB) of data being shared over the neutral location networks?
- Is the neutral site secure? Do staff and partners retain their freedom of movement?
- Is there attendance at the social events?
- Does attendance include personal networking, collaboration on projects and information sharing?
- Do local organizations desire to continue this project, measured by requests verbally or in writing?
- Do locals or NGOs working in the region want this project to continue?
- Is the project the only, or the best, site for information sharing, or is it redundant to other efforts in that area?

### **3.7 Qualitative research methodology**

Along with the social network analytics and quantitative metrics, if funding allows, an in-depth qualitative research methodology including surveys of participants should be included in future projects.

This sort of research requires additional time and personnel, but will provide further data to verify the success of the project, identify weaknesses, and suggest further refinements.

## **4 RECOMMENDATIONS**

### **4.1 Change policies to allow funding of applicable internet activities**

Find a policy solution to allow for the funding of synergy operations, and in particular, funding operations of open internet operations, both human and technical. Today, funding cannot easily be applied to the recurring costs of bandwidth, although this flow is critical. In some cases, the keys to development exist less in fixed site projects like dams and bridges than in enabling information and people to flow. See paragraph 10 of DODI 3000.05.

### **4.2 Empower the edge**

Many policies governing work in theatre on USG contracts are instituted to ensure compliance with regulation rather than to enable individuals in the field to engage with the local population in activities that solve problems. USG policy-makers need to review centralization so as to empower people at the edge while increasing transparency over their activities.

Over-centralization is hindering the ability of staff to customize actions to the varied social and cultural topology of Afghanistan, particularly around information sharing. There are many cases of individuals who have, or are aware of, UNCLASSIFIED information but cannot share it with key mission partners because the network on which it is sitting is restricted.

### **4.3 Leverage social and technological skills of the Synergy Strike Force with SOCOM units**

A parallel recommendation to having outside civilian synergy teams set up neutral sites would be to have them provide these skill sets to special operations forces (SOF) (which typically have the language and cultural training other military units lack) deployed in the field.

On the technological side, with the assistance of experts, such as from U.S. Cyber Command, these forces would be trained to provide power, communications, and bandwidth, and set up local UNCLASSIFIED networks for sharing information among USG and non-USG personnel. They would also have the cultural and social training to build partnerships with local leaders and international NGOs in the region to build the networks to share information. They would be in support of civilian and military operations in the region, but also have the flexibility in making decisions in the field to adjust to the local circumstances.

This solution would draw on the traditional strength of SOF units, build up local institutions, and apply them to the technological and social challenges in sharing information in an austere environment. In addition to the high operational tempo of SOF units, a challenge with this recommendation is the SOF units would have a more difficult time than civilian teams creating a space viewed as "neutral" by all local participants. This would require them to have strong local partners who could play a leading role early in the process to make it function properly.

#### **4.4 Clarify requirements for neutral spaces**

Neutral sites such as the Taj, while having security measures in place, may not conform to the same standards as those for usual USG facilities. Military commanding officers and civilian officials in charge of security measures may need to re-examine the level of security support necessary, understanding the limitations of support in an environment where it is important to balance sufficient security with increased collaboration. The advantage of the neutral site is that it is not a fortress where all potential threats (as well as engagement opportunities) are barricaded out. Security measures alone should not be allowed to negate the advantages conveyed by effective engagement.

## APPENDIX A: BACKGROUND AND PROBLEM DEFINITION

The importance of information sharing in complex contingencies and operations<sup>8</sup> abroad has been repeatedly demonstrated in recent years. One lesson repeatedly “relearned” is this: if U.S. or coalition forces cannot communicate, collaborate, or exchange information with the population they seek to influence, they *cannot* achieve the social, political, and economic goals for which the forces were committed.

The ability of the U.S. military to share information – internally as well as with outside actors – has also received increased attention. From disaster response scenarios around the world to operations in Iraq and Afghanistan, U.S. military personnel and civilians have been tasked with securing environments and creating conditions conducive to democratic processes and civil society, which depend on information sharing and continuous information flow.

The military has been asked to perform functions for which its members have not always been explicitly trained, and the U.S. Department of State has been working to build an effective deployable civilian capacity.

The intelligence community is transitioning as well, recognizing the need to gather different kinds of information in addition to what has traditionally been considered “intelligence.” Data from the grassroots level have been raised as a priority, and in-depth information about local communities has also been seen as increasingly valuable.

The recent focus on strategic communication has highlighted the importance of information about local perceptions and attitudes to enhance our understanding of their needs and the impacts of our actions.

***While in some cases it is clear who is the enemy and who is the ally, more often than not, allegiances shift in response to changing security, political, and economic environments.***

Any international engagement features not only the multitude of U.S. and coalition actors, but also a variety of other institutions and organizations. One of the challenges of working in complex environments is this heterogeneous and at times bewildering array of actors with competing interests and aims. The international presence is made up of various UN departments and programs, large and small international NGOs, private volunteer organizations, private security companies, development contractors, as well as various arms of foreign governments whose intricacies often mirror those of the U.S. government.

Local actors are similarly diverse, and it may be hard for outsiders to determine who has power, prestige, and influence in the eyes of the local population. Various ethnic, tribal, or class tensions are often invis-

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<sup>8</sup> PDD/NSC 56 from May 1997 defined complex contingency operations “as peace operations such as the peace accord implementation operation conducted by NATO in Bosnia (1995-present) and the humanitarian intervention in northern Iraq called Operation Provide Comfort (1991); and foreign humanitarian assistance operations, such as Operation Support Hope in central Africa (1994) and Operation Sea Angel in Bangladesh (1991).” There have been other definitions since, but all involve the need for civil-military cooperation and information sharing.

ble to foreigners who are ill-informed in regards to the history of a society, and newcomers may be unable to decipher complex internal dynamics.

While in some cases it is clear who is the enemy and who is the ally, more often than not allegiances shift in response to changing security, political, and economic environments.

The task of U.S. service members, diplomats, aid workers, and contractors in all their different capacities is to navigate this complex web of alliances and loyalties in order to support those agents with goals that align with U.S. objectives in the region. It is, of course, the local actors who have the ultimate responsibility for rebuilding their community, society, and country and accordingly, any international or U.S. intervention must engage with and support these local actors--empower them to make better informed decisions for their own stability and prosperity.

***It is the local actors who have the ultimate responsibility for rebuilding their community, society, and country and any intervention must engage with and support these local actors.***

Effectively navigating such an environment is, predictably, not an easy task, and literature emerging over the last several years (not to mention the preceding decades) has sought to address this challenge. Strategies now exist that describe how to win 'hearts and minds,' and counterinsurgency manuals that codify and provide instructions on how to gain the support of the local population and diminish support of spoilers who seek to destabilize a region and undermine U.S. goals and objectives.

The authors recognize there is already vast literature on U.S. military engagement in conflict, post-conflict, and crisis zones and do not intend to duplicate existing lessons learned, best-practices or policy recommendations. Instead, this report focuses on a specific issue: UNCLASSIFIED information sharing between the multitude of actors in these settings and drives to a replicable process for developing and maintaining synergies to achieve collaboration for a common good.

One of the greatest challenges facing any reconstruction or humanitarian assistance operation is to bring stability and cohesion to the mass of related but separate, often independent activities that are being pursued across multiple sectors.

### **Recent developments**

There have been several important developments in doctrine that recognize the need for this capability, and several key directives have been signed.

First, Department of Defense Instruction 3000.05, not only puts Department of Defense support of stabilization and reconstruction operations on equal footing with combat missions, but the U.S. military is required “to collaborate with other U.S. Government agencies and with foreign governments and security forces, international governmental organizations, nongovernmental organizations, and private sector firms as appropriate to plan, prepare for, and conduct stability operations.”

Additionally, the U.S. military is tasked with “sharing classified and UNCLASSIFIED information during stability operations among the DoD Components, relevant U.S. Government agencies, foreign govern-

ments and security forces, international organizations, nongovernmental organizations, and members of the private sector.”<sup>9</sup>

***The policy is clear, but implementation has been uneven: tactics, techniques, and procedures (TTP) have not yet been developed how to share information with diverse actors at the operational level and below.***

The policy is clear, but implementation has been uneven: tactics, techniques, and procedures (TTP) have not yet been developed in regards to how to share information with such diverse actors at the operational level and below. Organizations have struggled to find mechanisms for information sharing with NGOs, and Combatant Commands such as SOUTHCOM and AFRICOM have attempted to integrate interagency staff more fully into the command structure with mixed success.

The reasons for and benefits of information sharing are numerous. As will be discussed throughout the report, up-to-date information and data – from updates on road construction to expert analysis of development projects are imperative for making the most of limited resources in a wide range of environments, from humanitarian assistance and disaster response to counterinsurgency operations.

NGOs, local civil society, and other members of the international community can greatly improve the effectiveness of their work by having access to basic information they often lack. In turn, the U.S. military can benefit by leveraging other actors' assets to gain information and insight. In many instances the military has valuable information directly relevant and applicable to contractors and NGO workers.

While it may seem intuitive that information sharing, especially among coalition partners, benefits all involved, security concerns and a culture of restricted information access makes widespread information sharing a challenge. The usual kind of coordination and information sharing among civil and military actors in post-conflict situations can be characterized, and is driven, by distinct self-imposed parameters. In a combat environment, what is regarded as information sharing by one party is often perceived as intelligence gathering by another.

In environments specializing in handling highly classified and sensitive information, UNCLASSIFIED information is often pushed to the side or ignored in favor of intelligence (i.e., information provided by intelligence sources). Business which could be conducted at the UNCLASSIFIED level takes place instead on classified networks, making it inaccessible to those outside of the system or without security clearances.

If the default mode of communicating is on classified systems, certain actors are marginalized or excluded, including at times even U.S. embassy staff and USAID personnel, not to mention small local NGOs. This highlights the need for IC and DoD members to have access to the internet in their work environments, so information can be produced and shared at the lowest level possible at all times.

Much of the data collected by the military but not actively shared could be hugely effective when in the hands of coalition partners, international or local actors. To take one example, high-resolution imagery of a given area may not be of primary interest to a member of the military. Patrols may be planned for another area, or the region with the imagery may not be seen as a priority, and thus not worthy of attention.

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<sup>9</sup> DoDI 3000.05, September 16, 2009

However, this same high-resolution imagery for a development worker can easily save time, money, and potentially lives. If the imagery covers a non-permissive area, development workers can determine, based on the imagery, whether construction projects have begun without risking any lives. Even if the area is permissive, it is possible the agency does not have time, money, or staff to monitor projects.

***Without any presence or monitoring, there may be an incentive for corruption rather than implementation of the project.***

Without any presence or monitoring, there may be an incentive for corruption rather than implementation of the project.<sup>10</sup> The imagery provides a means to monitor the project visually from a distance. The scenarios in which UNCLASSIFIED information sharing are crucial extend far beyond this example. This is used illustratively to show even low-priority data or information may be high-priority for others. International and local actors cannot presume to know what data may be useful to others, so the default should be extensive sharing.

Experience has proven the primary obstacles to sharing are not technical; they are social. The human beings on the ground are the ones who must implement policy and strategy, collaborate and share information, and respond to rapidly changing circumstances and conditions. At times when the human element

***The primary obstacle to sharing is not technical; it is instead social.***

is forgotten or not understood, and well-laid plans are not actualized because of social barriers. Examples abound of a misreading of the social context leading to the failure of projects. Technical enablers accomplish little or nothing without the people in place to establish the human network and provide incentives for collaboration, then to popu-

late information and establish connectivity. As such, this report covers the human engagement to address the social requirements as well as the technical enablers.

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<sup>10</sup> An example based on the same premise may be found in the Satellite Sentinel Project (<http://www.satsentinel.org/>), which uses imagery to monitor and hopefully prevent a potential conflict between north and south Sudan.

## **APPENDIX B: DETAILED DESCRIPTION OF THE TAJ PILOT PROJECT**

### **B.1 Research: Jalalabad pilot (2006-2010)**

The Jalalabad pilot project emerged from a unique set of circumstances and convergences that created the opportunity to put into place theories regarding effective UNCLASSIFIED information sharing and to demonstrate the effectiveness of enhanced connectivity. The opportunity arose from relationships established outside of USG and NATO activities. These relationships and partnerships were what initiated and then supported the development and growth of what has come to be a vibrant partnership and UNCLASSIFIED information sharing network.

In 2005, the Office of the Assistant Secretary of Defense for Networks Information Integration (OASD (NII)) supported an effort aimed at developing a strategy to better connect the disparate players involved in post-conflict work and to capitalize on their lessons learned and expertise. At the time, OASD (NII) recognized the military did not have an effective means of communicating with the wide array of international players and citizens.

To improve partnership capacity, troops on the ground needed to have a better sense of the community with whom they interacted, their behavior and goals, and pre-existing collaboration mechanisms. They also needed to know effective (and ineffective) means of engaging with the local and international community.

The premise of the project – connections increase situational awareness, access to expertise, and support U.S. military and USG objectives – is the foundation of the Jalalabad pilot. A crucial element of the success of the project has been the existence of a neutral space that functions as a physical and virtual hub. This space, known as the Taj, has been instrumental to the catalytic and synergistic work of the Jalalabad efforts. This is a neutral space outside the wire and the often prohibitive access restrictions of U.S. and NATO military bases. The space is accessible to internationals and locals working in Jalalabad. As such, the venue acts as a meeting place for the many internationals who are traveling in and around eastern Afghanistan.

### **B.2 Jalalabad pilot staff: Synergy Strike Force**

In 2006, several individuals with ties to these institutions as well as the Department of Defense went to Jalalabad to build on these efforts. Members of the group – a collection of individuals who all of whom have an interest in helping Afghanistan build towards peace and stability – have traveled to Jalalabad to donate their time and skills.

Referred to as the Synergy Strike Force (SSF), the team consists of an eclectic array of individuals with a wide range of talents. Individuals are chosen and invited to participate based on their life experience, operational technical knowledge and demonstrated social skills in austere environments. Each of the participants is expected to function in multiple roles.

Over the past several years, more than 30 individuals have traveled to Afghanistan, the majority for multiple trips. In the process, they have built relationships, come to know the culture, the context, and some of the languages. They have, most importantly, acted as synergists, able to identify, pursue, and create opportunities for collaboration and coordination among the manifold of actors in the field. Accordingly, they have been able to forge relationships, build connections, and multiply opportunities.

The strength of the Synergy Strike Force has been its diversity, the commitments of its members, and the institutional affiliation. The advantages of the longstanding partnerships in Jalalabad were the depth of



relationships established by groups who are seen as neutral players. Synergy Strike Force members were able to build on these relationships to come into a contested environment and do good work.

### **B.3 The Taj (Jalalabad, Nangarhar Province, Afghanistan)**

After the 2001 invasion of Afghanistan, the UN Office for Project Services (UNOPS) established a UN guest house in Jalalabad compliant with minimum operating security standards (MOSS), and housed a team of New Zealand and Australian civil engineers there to plan and build new roads in Nangarhar Province. The engineers dubbed the compound the “Taj.”

Soon thereafter, the engineers from the southern hemisphere decided the staffs from NGOs and UN agencies in the area were not getting to know each other outside of very limited interactions through projects. They decided to make a fun place where others could gather at the end of the week for a night of social interaction. They built a pool and installed a tiki bar. They then put out the word the Taj would be opened for a few hours on Thursday nights: any ex-pat who was working for a local NGO or UN agency was invited to come to the Taj for an evening of socializing over beer and food.

### **B.4 Discovering a success**

In 2006, Dr. Dave Warner traveled to Jalalabad on an assessment mission with the San Diego Rotary Club, which was working in Nangarhar Province and wanted to evaluate how to expand its programs. After a week of meetings, Dr. Warner was invited to spend his penultimate night in Afghanistan at the Thursday event at the Taj. What he discovered surprised him.

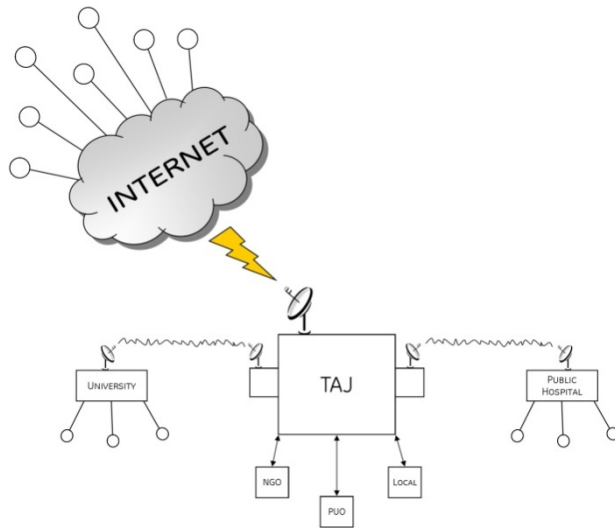
Over a few hours of talking, Dr. Warner gathered more ground-truth than he had accumulated from a week of official meetings. He was able to sit at a table with staff from multiple organizations and get a synthesized perspective on current operations, rather than getting the stovepipe view from individual meetings held on closed compounds. Dr. Warner resolved to help this space grow.

What struck him as the two key needs in Nangarhar were bandwidth and high-resolution satellite imagery. Internet communications were sparse and slow, making it very difficult for organizations to collaborate on their operations and exchange data without face-to-face meetings. While the evenings at the Taj were helped offset this lack of bandwidth, Dr. Warner sought to demonstrate what could happen if bandwidth—at lower costs and higher availability—could catalyze increased coordination.

Organizations also had coarse imagery with which to plan roads and projects, and there was a striking lack of high-resolution topographic data. Using five-meter imagery to plan roads in a country with such a variety of topology was leading to underestimation of the number of culverts necessary to construct roads; these underestimates caused many delays and funding challenges.

### **B.4 Amplifying the good**

Dr. Warner returned to Jalalabad in late 2006 with Ken Kraushaar, an expert in networking and system administration. They brought with them a hard disk of one-meter resolution imagery provided by the Department of Defense, some simple wireless gear (Wi-Fi routers and cabling), with which they wired the tiki bar at the Taj for an internet connection. They then enabled everyone who participated in the Thursday evening events to bring their laptops and connect to a free public internet.



Dr. Warner also made the imagery widely available. Working with the UNOPS road engineers, he saw they not only applied the imagery to improve their planning, but also that they used the imagery to explain their projects to village elders.

In a striking case, a village at the base of Tora Bora was slated to get a turn-around at the end of the road into the mountain village, so trucks could deliver aid to the remote settlement. Given the topology and layout of dwellings, the only possible location for this turn-around required paving over the village's cemetery. Provincial officials had informed UNOPS it would not be a problem and the project should continue.

Instead of following this advice, the engineers brought the imagery to the village shura, explaining to the elders what the trucks would be bringing to the village and showing the only place for the trucks to turn around would be inside the boundaries of the cemetery. After seeing the problem on the imagery, the elders made a choice: they asked to have time to move the dead – which included martyrs—and free up the land for the new road. Instead of causing antipathies, imagery had enabled engineers to show a problem to Afghans resulting in a local solution made by self-determination.

### **B.5 Entering into partnership**

In late 2007 Dr. Warner discovered UNOPS was going to leave the Taj and surrender the property. Because the hosts of the Thursday nights would be leaving, the neutral space that had become a social hub would close and become a memory, not a living institution. No one else had a space where ex-pats could gather and exchange information. Rather than let the synergies die, Dr. Warner entered into a partnership with Tim Lynch, who ran a private security firm working with a Japan-funded project, to co-lease the Taj. Dr. Warner then created plans to expand the synergy operation to see what could happen if the Taj became even more open.

Dr. Warner traveled to Afghanistan several times in 2008, installing the first wide-open public internet through what was supposed to be a two-week test of an inflatable GATR very small aperture terminal (VSAT) dish on the roof of the main building. This connection, which over 22 months started at 1Mbit and varied in its bandwidth, was funded by the Office of the Director of National Intelligence (ODNI) for the express purpose of fostering increased information sharing among NGOs and local institutions in Jalalabad.

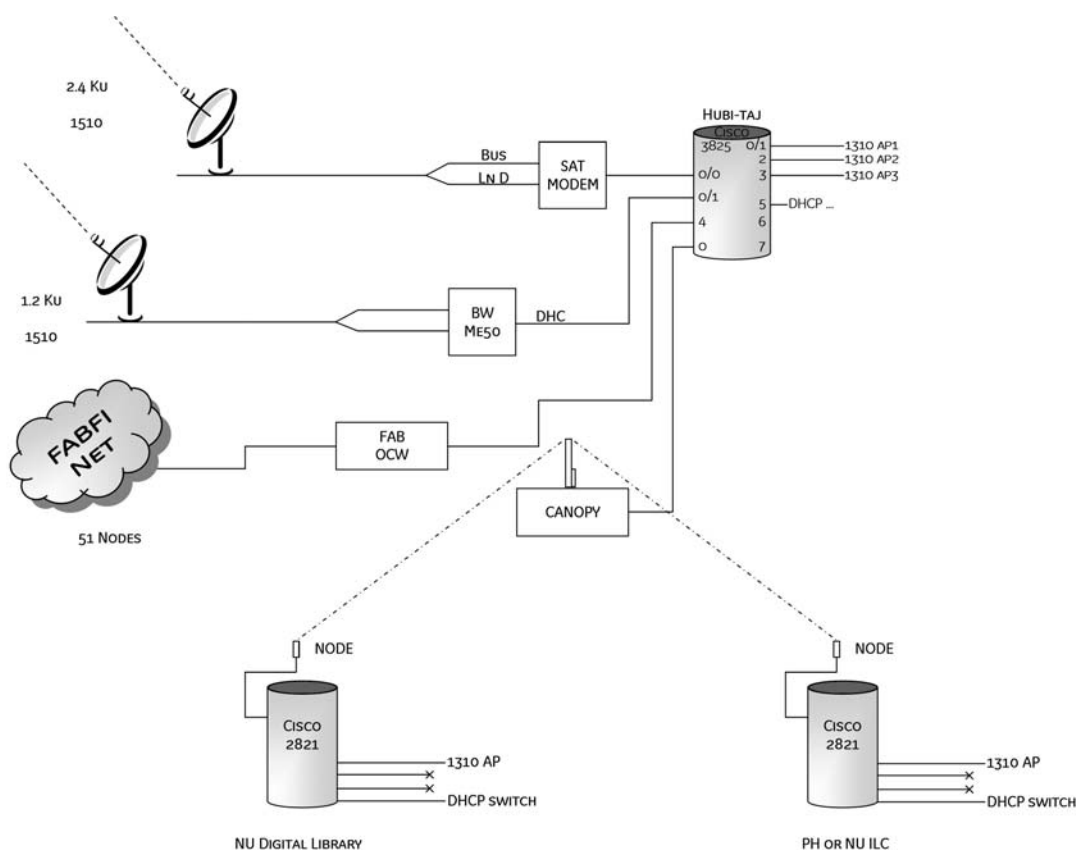
### **B.6 Sharing packets: open networks and public internet**

Building on relationships with the Nangarhar city hospital and university computer science department, Dr. Warner started inter-mingling the individuals who were working in public health and computer science by literally connecting their computing networks. Using long-range Wi-Fi shots and a long range Wi-Fi mesh networks called FABFI developed by the MIT FABLAB, Dr. Warner's team connected the hospital, the university, and several NGOs to the network at the Taj, enabling them to access a completely open, shared connection to the public internet.

The relationships began to deepen, resulting in teamwork and collaboration. The hospital was able to build a database of public health records, which it exchanged with a local NGO working with public health officials so it could begin to track key variables around the health of local youth.

The MIT FabLab—an initiative to teach local entrepreneurs about custom manufacturing—joined the network, at first co-locating at the Taj. The FabLab later moved into downtown Jalalabad and began to teach local Afghans how to download 3-dimensional computer-aided design (CAD) and fabricate those designs on a 2.5D router, a router that works in almost three dimensions such as SHOPBOT, and custom hardware (using Arduino, an open-source hardware). The university was able to access ever more information, including open-source software.

The Thursday night events also took advantage of the bandwidth. Dr. Warner and team expanded the availability of open Wi-Fi at the tikibar, making it possible for anyone to come to the Thursday night event and access their personal accounts, such as Gmail and Facebook.



### B.7 Full ownership of the Taj

In late 2008, Tim Lynch got another contract that took him out of Nangarhar. The Taj’s existence was again in doubt. Knowing eastern Afghanistan did not have an “alternative place”, Dr. Warner decided the synergy operation would continue, and put in his own money to assume the full lease for the Taj. While the financial constraints were real, the freedom of ownership opened new avenues for community building.

Dr. Warner expanded the openness of the community at the Taj more than had been previously allowed. Opening the Taj to a wider variety of people helped expand the relationships and social networks that were formed. It also increased the amount and variety of data and information being shared at the loca-

tion, which was helpful for all participants and assisted in achieving U.S. objectives of greater information sharing and data collection from the region.

### **B.8 Afghan election monitoring (2009-2010)**

One out-of-box activity arose around the election of August 2009. Dr. Warner and Todd Huffman discovered the international election monitors were using LANDSAT imagery, which was so coarse as to render entire compounds in many villages as a graphical blur on the map. They simply could not see entry and exit points to individual polling stations. Huffman worked under a brand-new NEXTVIEW imagery license, with the National Geospatial-Intelligence Agency (NGA) to obtain sub-1m imagery of eastern Afghanistan. In partnership with NDU STAR-TIDES research program, Huffman worked with a team of technologists from Google, OpenStreetMaps (OSM), Fortius One/GeoCommons, Development Seed, Sahana, GeoChat, and Stamen Design to provide the election monitors with far better data. The team from STAR-TIDES did the following for the Taj:

- Processed the imagery, making it available through a free license to Google Earth Enterprise Server and Google Fusion Server (a \$100K donation from Google).
- Overlaid vector road data from OpenStreetMaps (OSM), and created a tool to print Walking Papers, which are PDFs of the satellite imagery overlaid with point of interest data that can be annotated by hand and scanned back into OpenStreetMaps.
- Integrated crowd sourcing tools customized for election monitoring, including a micro syntax that could track votes cast for the presidential candidates (i.e., AA: 9, AG:3 counted as Abdullah Abdullah getting nine votes, and Ashraf Ghani three votes).
- Packaged the entire software stack on a single MacMini, which Dr. Warner's partner, Todd Huffman, hand-carried to the Taj.

In the days before the 2009 election, the team at the Taj partnered with Small World News' *Alive in Afghanistan* project, which used Ushahidi to collect reports of election fraud and violence via SMS, email, and web forms. Ushahidi is an open source project that allows users to crowd source crisis information over SMS.

With some journalists reporting on election fraud and violence, complaining of harassment and intimidation by the Government of Afghanistan, the team at the Taj discovered they were one of the few election monitoring resource in eastern Afghanistan and the only one functioning by providing real time updates online (other groups would publish reports days or weeks after the election). Together with *Alive in Afghanistan*, they offered a means to track election fraud and violence in real time, which the team at the Taj shared via the GATR's satellite connection.

The data set provided an early and critical component to investigations into the relationships between violence and election fraud. Building off the work in 2009, the Small World News Team coordinated with the team run by Dr. Warner to accomplish a more extensive monitoring project for the 2010 Afghan parliamentary election. The basic network that emerged during the partnership appears in the second figure above.

## APPENDIX C: DESCRIPTIONS OF SYNERGISTS AND FACILITATORS

### C.1 Synergists

A synergy operation requires a neutral person or persons who can build relationships, foment information sharing, and curate the neutral space. This role is the synergist. As a neutral mediator and catalyst, he or she must arrive from outside the system he or she is serving, but also have the wherewithal and imprimatur to cross very diverse cultural, community, and organizational lines. It is worth emphasizing: lessons from the field clearly indicate individuals from within the usual bureaucratic structures of government or industry are ill suited to dealing with the risks intrinsic to synergy operations, not the least of which is the nature of the cross-boundary work that must be performed and the interference of funding regulations with those activities.

### C.2 Personality

In many ways, the synergist is the proprietor of the place where ‘everybody knows your name.’ He or she is the person who creates and protects the social space where everyone feels welcome, included, and comfortable—including regulars and newcomers to both the virtual and physical neutral spaces.

No matter where in the world one goes, there is some neutral place where people gather which is neither home nor work. Pubs, tea rooms, internet cafes, or even a tarp with comfortable seating and a welcoming host—all of these spots draw people who want to socialize and relax in an environment where “everyone knows your name.” Because these local watering holes enable people from all walks of life to mingle and share stories, they are an ideal format for fostering information sharing across fielded organizations.

With ever more security restrictions limiting the mobility of staff from NGOs and UN agencies in Afghanistan, these neutral spaces play a critical role in maintaining staff morale and ensuring initiatives planned by one organization do not duplicate the efforts of another. They provide an environment where informal information exchange can cross-ventilate the stovepipes in which most fielded staff work.

The work of a synergist is to create comfortable neutral spaces from local resources, however sparse or Spartan. The key is not to focus on the physical place, but on the common problems and goals of the people who might inhabit the space. It is not civil engineering, but social engineering.

Hyper-tolerant mindset. Sociologists have long recognized how most groups display a prejudice against individuals who are different from the existing norm. It could be the person who dresses Goth, or the individual who grew up in one religion and converted to another with very different value system. The synergist is the one who sees this outsider as an opportunity to learn something new and bring some new ideas into the community. The synergist is a bridge between these worlds. Acting as a hub of hyper-tolerance, the synergist brings individuals from a wide range of backgrounds into the cantina. The synergist makes it the norm to be radically inclusive; those who exclude are called out for the behavior in kind ways, and encouraged to return to the norm.

Urban sociologist Ray Oldenburg suggests free or inexpensive food and drink are crucial to drawing individuals to a location, just as is high accessibility. The proximity encourages the development of a group of 'regulars' who attend gatherings often, and contribute to the environment being welcoming and comfortable. The synergist should facilitate and support this community atmosphere.

Integrity. Because information sharing operations bridge so many different factions, the synergist must keep the entire community focused on the mission: to assist the affected population. As a result, he or she must have a deep sense of integrity and ethics, so the value system of the commu-

nity gradually refocuses on the core work all parties share: developing the capacities of local nationals so the internationals can either go home or move to the next area of need. The synergist must navigate between the values of the international community and the affected population, as these may be at odds.

Systems thinker. Those who think through problems in linear, step-by-step manner are not likely to make good synergists, as most group dynamics are highly non-linear. A synergist is one who understands how to use positive and negative feedback loops to his or her advantage: how amplifying dynamics one wishes to see more of, and to starve the dynamics one would like to see less of.

Informed risk taker. A synergist understands policies that eliminate risk also guarantee mission failure. The regulations of international development—and particularly the strictures of information assurance and physical security—are not always in line with local conditions, and often prevent staff from taking informed risks. The synergist acts as the bridge around these policies. He or she is the one who understands and is free to act on the knowledge that some risk is necessary to cross-ventilate the stove pipes.

Social connector. Mapping the possible connections between the social network in a place requires getting to know each individual. Sometimes, structural holes in the social network—when person A knows person B on her right and person C on her left, but neither person B or person C know each other—need to be filled. The synergist connects these people strategically—perhaps to connect a problem to a potential solution, perhaps to connect resources to a method, perhaps just to ensure people who share the hobby of pumpkin chucking can find each other and build a catapult that will hurl a pumpkin several hundred meters to the amusement of everyone else in the neutral space.

Courageous mentality. Most people work within the systems that govern their lives. The synergist must know how to work between systems. In one sense, this entails a musician's sense of rhythm: knowing where all the columns are, and still being able to dance between them with great freedom. The synergist has to be willing (and able) to tackle the work of challenging existing systems. It must be a knowing optimism: not idealism of a twenty-something, nor the jaded cynicism of an aged veteran, but someone with pragmatic courage.

### **C.3 Experience**

The synergist must bring a wide range of experiences to the job, including work within other cultures, as well as negotiation or other work in areas such as adaptive leadership.

Field experience. Because the synergist is weaving a fabric between various international and local organizations, it is important he or she understand the structures of life for each of the factions he or she is connecting. This comprehension should extend beyond awareness; it should be base of knowledge sufficient to sustain a curiosity about learning ever more.

Education background. There is no educational background that marks a synergist, beyond a sense the person has explored a range of topics at depth. Those who show a penchant for crossing fields, performing interdisciplinary work may be more apt to be synergists than those who have studied only one topic at depth. In the terms of social and political theorist, philosopher, and historian Isaiah Berlin, synergists are foxes, not hedgehogs. Synergists should have a deep understanding of group dynamics and human behavior across cultures. They should also understand

technological and political dimensions of information sharing using a wide range of tools and information communication technology. They should also understand negotiation and dispute resolution, and perhaps have experience acting as a mediator. Above all, the person should be a curious explorer who is willing to learn from conversations with people.

#### **C.4 Tasks**

The synergist performs a wide range of tasks:

Enabling informal agreements among all groups. While the formal agreements between operational partners still provide the strategic framework for aligning goals and priorities, it is these informal arrangements (“handshake con”) that tend to play the critical role in coordination of efforts at the operational and tactical levels. Such ad hoc arrangements are capable of having immense strategic impact. At a minimum, they ensure efforts in different sectors do not undermine each another; at the maximum, they foster a dynamic where operations reinforce one another and result in an effect whose magnitude is greater than outcomes of each effort taken individually. The synergist enables these informal agreements. He or she does not just stumble on serendipity; he or she creates moments where serendipity is more likely to happen.

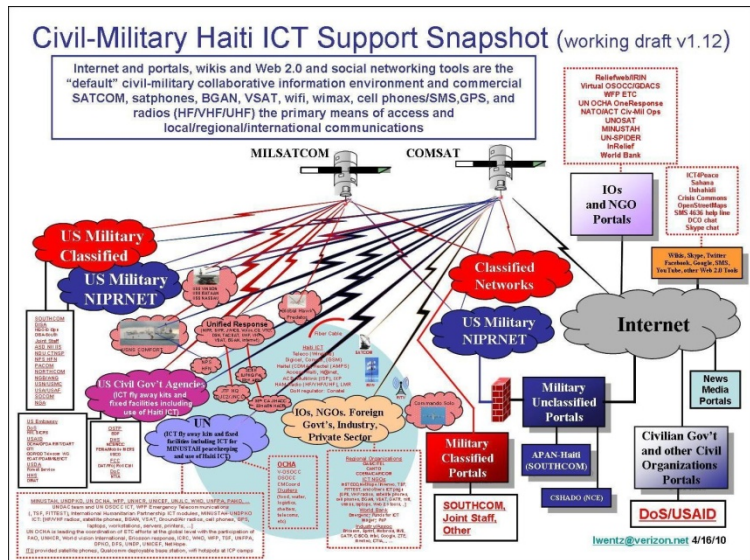
Healing networks from the damage caused by personnel rotations. Despite the critical nature of personal relationships to mission success, these informal networks receive few resources to develop or sustain them. More commonly, effective informal networks are usually the product of individuals who, through difficult and time consuming work, are able to overcome issues where their organizations have not yet resolved differences in policy, tactics, or technology.

This approach to bridging gaps is not only inefficient, but is also driven by personalities. It is, therefore, ad hoc, sometimes lasting only as long as those personalities remain in theatre. This dynamic is further influenced by personnel rotations in both civilian and military organizations, which can disrupt existing agreements with the host nation and lead to renegotiations, rework, and lost time. The synergist brings newcomers together with people who understand the domain in which the newcomer will be working. The synergist also enables the individuals who are actively overcoming issues in their own formal systems.

Scavenging resources. The synergist is the scavenger who figures out how to take resources from one supply chain and (legally) convert them for use in addressing a problem in another domain.

Fomenting improvisations. Despite the intensity of activity at the strategic and tactical levels, individuals rarely have the communication tools that enable them to interact directly across their respective organizational membranes. More commonly, individuals have to work through slow bureaucratic channels, using information systems designed to optimize the flow of reports and requests up a hierarchy and to relay decisions back down to the field. As a result, individuals in the field, who must make decisions in real time, find ways to improvise. The synergist’s role is to assist and amplify these improvisations.

Helping partners build common conceptions of how to work together. The leaders of tional civil-military operations cannot assume all parties will be using the same methods for thinking through strategy, tactics, or operations (see U.S. Army Field Manual 3-24 on counterinsurgency). Any technologies brought to the table will likely reflect the approach of the partner (or vendor) who funded or produced their ICT framework. Sectors have often



developed sophisticated coordination mechanisms unique to each field. In some operations, the UN Office of the Coordinator for Humanitarian Affairs (UNOCHA) has the lead, whereas in other cases, local government may lead any international intervention effort. The protocols, standards, and data schemas, as well as the styles and etiquette, differ considerably. An awareness of and sensitivity to these differing technical and social norms is crucial for the success of any effort.

The overview diagram above from a report by NDU Senior Research Fellow Larry Wentz on "Haiti Information and Communications Observations" illustrates the complexity of the ICT infrastructure and related portal environment supporting the civil-military response. The internet and related portals, wikis and Web 2.0 and social networking tools became the "default" civil-military collaborative information environment.

Wentz noted commercial SATCOM, satphones, BGAN, VSAT, GATR SATCOM, Wi-Fi, Wi-Max, cell phones/SMS, GPS, radios (HF/VHF/UHF) and ham radio operators were the primary means of network access and access to local, regional, and international communications.

Creating ubiquitous synergy with all stakeholders. Some of the most critical and difficult collaborations need to be created outside the field, focusing on bringing together the donors and headquarters of large institutions who expect results on the ground in line with their abstractions of the problem. The synergist is the one who helps build a common vision of ground truth among the sponsors and stakeholders in the project. It is through this work he or she is able to obtain new resources to bring back as gifts to the community he or she is building, and through these gifts that his or her powers as a synergist grow. This need to travel and create partnerships outside the region is part of the requirement for the synergist to have freedom of movement in and out of the location of the neutral site.

Problem definer: identifying common needs. The current system of approaching contested environments offers few channels for the various actors to articulate and discover shared problems and common needs. Even these, such as the UN Cluster System is divided into functions; rarely is there any opportunity to discover how logistics, medicine, and food are linked except at the level of the people loading the truck to go to an IDP camp with medical clinic. The synergist is the one who helps the system see a truck could easily carry a few extra boxes of medication and vaccinations for children, not just at the loading dock, but in the planning and policy levels.



Cross ventilating the stovepipes. A synergist goes beyond defining common problems: he or she creates durable pathways for institutions to exchange information. This work entails converting the informal into the formal: building new policies from the examples of the synergy operation. This work is perhaps the most difficult, time consuming, and frustrating in the list of tasks of the synergist, as large organizations rarely adapt to existing conditions on the ground, but only so far as historical realities have permeated into the minds of their leaders.

The synergist is patient, working to bring these organizations through a game of catch-up, hoping they will be able to transcend a dynamic of “running faster, falling behind” the ever changing conditions of the field, where mobile technologies increase rates of communication at exponentially faster rates.

### **C.5 Facilitators**

A facilitator is an individual within the USG (or other structure of authority) who can provide top-cover to a synergist. Lessons learned from the Jalalabad experiment revealed the facilitator is likely to be a senior official with decision making authority who can form a strong trust bond with one or more synergists—so strong the synergists can be empowered to engage in activities which will change perceptions in the USG and often surface hidden issues and conflicts. Because the work of the synergist is often outside the mental model held by current policies and processes, the facilitator should be experienced and skilled in dealing with conflicts and the politics that emerge from the synergist’s improvisations and creative solutions.

### **C.6 Personality**

A facilitator tends to be a visionary with adept skills at moving new ideas through the USG policy and budgeting apparatus. He or she has command of a wide range of skills and understands how to integrate those ideas—and the people who authored them—into task forces and working groups that achieve creative solutions to wicked problems.

### **C.7 Tasks**

Top Cover. The facilitator invents the operational space in which the synergist can work, and lends his or her formal authority to this environment, protecting it from skeptics and critics (especially during the initial period, when the synergist’s initial trials/experiments will lead to errors that uncover hidden issues).

Funding. The facilitator can find ways to channel funding to the operational space to achieve mission ends, even when policy and procedures make funding a synergy operational difficult. One of the key methods of blocking a synergists work come not from local stakeholders, but from members of the USG who have other legitimate interests that unfortunately do not support those activities in the field. For instance, protecting institutional equities or enforcing any number of regulations may be counterproductive, although bureaucratic incentive structures support these behaviors, which in other contexts are appropriate. These blockers usually target the funding chain of the synergist first. If this chain can be protected, the synergist is much freer to continue solving problems across the silos of the USG and creating unity of action without unity of command.

### **C.8 Dyad of synergist and facilitator**

The synergist and facilitator need each other to achieve the mission ends with the backdrop of connectivity, a neutral space, and an iterative project cycle. They function as a dyad, with the facilitator providing the mission and extending trust to the synergist, and the synergist working in the new operational space and fulfilling the terms of the trust. This dyad needs to be formed around problems where a senior leader is willing to take risks to achieve the mission, and where a synergist is willing to accept the risks in return

for protection from the reactions that cross-boundary work triggers amidst bureaucracies who operate in silos.

The facilitator selects the synergist and directs his or her energy towards a given end. The facilitator also delegates authority to the synergist to determine the means of achieving the mission and entrusts him or her with the resources necessary to accomplish the mission.

The synergist is responsible for providing evidence of operational successes to the facilitator, so the work can continue to win more proponents in the senior leadership of the USG and skeptics have less reason to balk at the cross-boundary approach of synergy operations.

### **C.9 Other personnel**

Several other personnel descriptions below help define the tasks to be done. However, it must be stressed many personnel who fall under the synergist label are cross trained in a variety of skill sets that allows them to accomplish the tasks required at any given time.

A specific type of computer technician is key in the early stages (days 0-60) of the project when technology is installed and required for any upgrades to the technology during the project. The Synergy Strike Group calls this position a "Power-nerd," and it can be described as a person with technical capabilities to install and manage technology in austere environments while also having the social skills necessary to live in that austere environment and contribute to the other aspects of the project. A typical network administrator from inside the government bureaucracy may meet the technical requirements on paper, but lack the ability to manage the challenges in the field.

After the initial setup, the project should have outside subject matter experts come to participate for one to four week periods. These experts come from the development, disaster relief and post-conflict stability community as well as the technology and social science sector. Each brings his or her own expertise to the area with the goal of increasing social connections, information sharing, knowledge or technological capabilities. Among the subject matter experts, personnel familiar with metrics and social network analytics should be present for several weeks to determine the progress and viability of the program.

"Synergists" other than the project leader are utilized at various times. In this case, synergists, as defined by Dr. Warner's Synergy Strike Group, are people with a diverse set of technical and social skills who can cross boundaries and successfully bring together people and organizations that usually do not collaborate professionally or socialize.

Along with the lead synergist, the other personnel are accomplishing the actions that build and sustain the partnerships that allow information sharing the function. For example, they visit local clinics and schools to answer questions of those who are utilizing the information sharing at the location and ensure the technology is functioning. They speak with local guards and police to maintain situational awareness about the local security situation. They provide training on donated equipment and software. They learn about new technologies and software platforms such as geospatial information mapping and bring that knowledge to the field in order to improve information sharing.

## **APPENDIX D: NEUTRAL SPACE DEFINITIONS**

Accessibility refers to the effort people must make to get to or enter the space. In the context of a contested environment, this means the space cannot be “inside the wire,” or requiring checkpoints, special access badges, nor can it be located far away from centers of local or international activity.

A location too remote or too restrictive will not generate the kind of energy and connections vital to the flourishing of a virtual community and a robust social network. At the same time, a place seen as recklessly disregarding security precautions will handicap itself as well: internationals will stay away from locations they deem to be high-risk targets without adequate precautions. Thus, a balance must be struck between the two elements.

Sociability is another key factor. The space must allow for casual, informal, and unplanned interactions. Scheduled meetings with work agendas are also appropriate and beneficial, but the coexistence of diverse types of encounters has more potential to bring together what had been considered disconnected topics and projects. In chance discussions, a tremendous amount of valuable work is done, and the information not put into briefings and reports, much of it the most essential kind, is shared between colleagues and friends.

Sociability is also important for creating a cohesive community of people who are able to help one another. Because so much of what goes on in contested environments takes place behind the scenes, or in the informal rather than formal, sector, personal connections are often the reason many things are accomplished. One aim of creating an environment in which sociability flourishes is to improve the efficiency of all the work being done by international actors and locals.

Comfort also plays a central role in creating a conducive environment, as people are more inclined to share information and collaborate in a relaxed setting. Again, this concern may seem frivolous, but as everyone from corporate businessmen to government lobbyists knows, a pleasant and relaxing environment changes how business is done. This is especially true in the high-stakes and high-stress environments that have enduring conflict and insecurity.

Finally, a space with multiple uses – from a bar to a swimming pool – encourages a high level of socialization and creates a thriving space that supports the efforts of any synergy mission. Each of these factors also matters in the context of the neutral space that will improve connections and foster an environment conducive to collaboration and information sharing.

### **D.1 Neutral space as a physical place**

Many of the connections in this report focus primarily on the virtual aspects of connectivity. We stress information sharing, data, and virtual social networks. But a prerequisite for these types of connections that facilitate and enable face-to-face human interaction is a physical place: a space where individuals can go and meet or run into one another.

Value added comes from the offline conversation revealing who is trustworthy and who is not, which officials are corrupt and which are not. A venue provides the opportunity for new people to meet the old guard, to gossip or debate policy.

The space must be a physical venue, with a social component, that allows and encourages individuals to come together. The place could be a guest house, as was the case with the Taj, but it could also be some other type of structure that fulfills the criteria of multiple uses, accessibility, sociability, and comfort as

laid out above. In this space, there needs to be sufficient space for upwards of 30 individuals to gather for business and social functions.

The neutrality of the space is another key issue. In this context, neutrality refers to a space that is not seen as having an exclusive institutional affiliation and in which people from many different organizations must be welcome and not feel as if they are compromising themselves by entering the space. This means the location cannot be seen as too intimately involved with the equities of any one institution or government; it cannot be seen as partisan or favorable to one group over another. It must serve as a place that allows for members of diverse communities to gather and talk and learn from one another.

Neutrality is a difficult thing to ensure, especially in the context of contested environments. If only one group of people come, the space will be seen as where the security or diplomatic or humanitarian communities go. Ideally, the space will be accessed by locals as well as the diplomatic, humanitarian, development, and security communities.

## **D.2 Neutral space as a social network**

A social network refers to an interconnected group of people who know and trust one another. Strongest connections are forged face-to-face, not virtually but in person, though these can be reinforced, strengthened, and expanded in virtual settings. The physical location provides a venue and an opportunity for people to gather together, to get a sense of the person behind the emails and phone calls. Even casual interactions forge connections, and these may be strengthened through frequency, in person or virtually.

As a physical space is established in which actors come to know one another, a social network emerges. A robust social network has several benefits that extend beyond the reach of institutional relationships. Individuals are able to share their knowledge about programmatic issues, but they can also share their own experiences in the country and region.

The 'inside scoop' – the knowledge not captured in briefings, reports, and official press releases – is often more valuable to those working in the field than the official stance. Because lessons learned, especially on the tactical level, are not always codified, a social network can help ensure a system of shared knowledge emerges.

This type of information is often local and specific. It may include which shura members tend to be most helpful or disruptive in meetings. It could also extend to 'best practices' in which members of the social network know what works well in terms of development strategies or which routes are the safest to drive.

A vibrant social network not seen as supporting one institution's loyalties and equities, serves the entire community more broadly. It allows for a reach-back capability, in which those deployed in-country can reach out to those who have been in-country previously. It allows for information to be shared in informal ways. If someone needs to know where to purchase cell phones, or which hospitals are in need of excess medical supplies, the social network of the particular community will have that information and it will be accessible and shareable.

These social connections need to be built, at least in part in person, and then strengthened and reinforced via online interactions.

## **D.3 Neutral space as virtual place**

The virtual aspect of the neutral space refers to a locally-hosted site or domain name that serves as a location for people to gather, upload, download, browse, view, and search. It is a place to store various kinds of information, documents, and imagery.

The place aspect of this differs from the network because it is not simply made up of codified and systematized connections between individuals who have knowledge. This virtual place is the location where the information that is codified, systematized, and written down is stored. Documents, surveys, assessments: all of these are vital in a post-conflict setting where information is scarce and unreliable. The existence of one centralized place serves as a dropping off point for all of these documents.

This must feature a place to upload, download, and as appropriate modify, documents and files. The virtual place must allow multiple participants. There needs to be a place where collected and compiled information can be shared. This includes assessments, imagery, maps, and reports.

The existence of numerous sites aimed at providing a “one-stop-shop” for information on a given country, conflict, or region demonstrates the difficulty of designing the next Facebook, YouTube, or Google – sites that have achieved a critical mass such that they become essentially the only useful and reasonable tool for their communities.

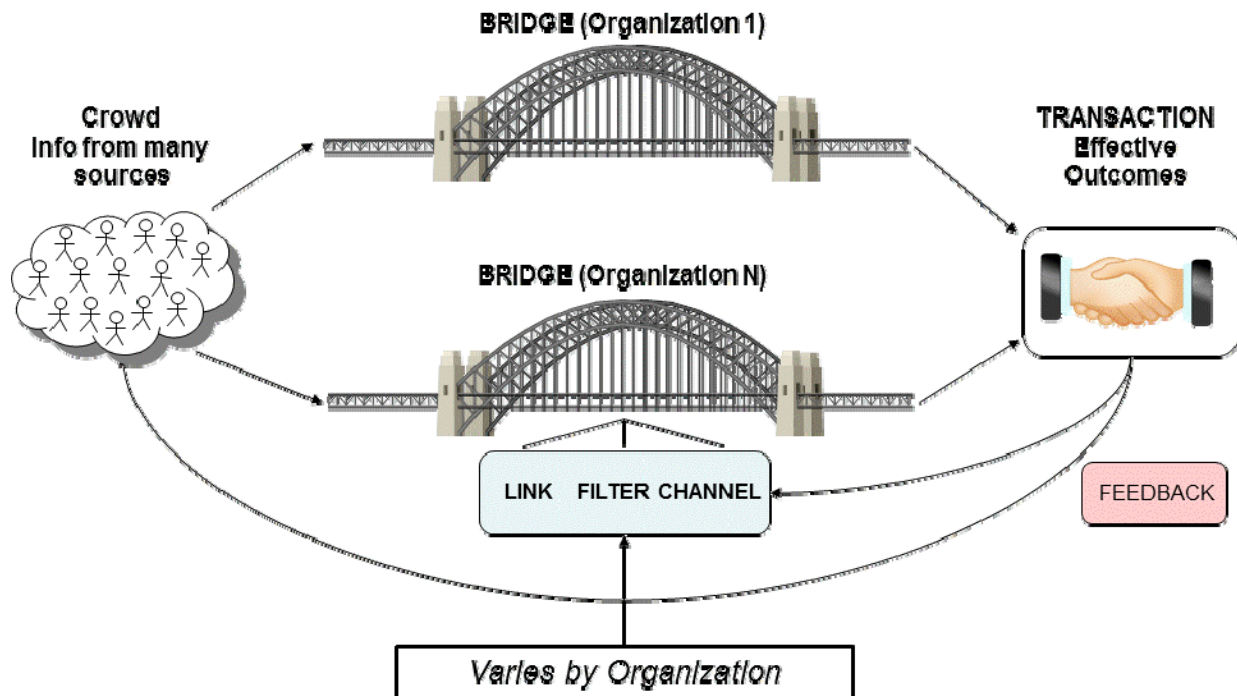
This ambition to host the one and most useful site must be scaled back in favor of providing useful information. People will still rely on the big sites run by multi-billion dollar companies and huge institutions. What a virtual space in a synergy operation can provide is the possibility of linking up local, relevant data with the people who need them. General information is rarely what is useful in a setting. Specific, up-to-date, and detailed information is more readily useful.

The virtual space can build on the success of other sites, incorporating features from big websites or the technologies of wikis, but it will not become the only and perhaps not even the primary resource for a country or even a region.

## APPENDIX E: THE CROWD, BRIDGE, TRANSACTION, CHANNEL MODEL

Based on the experience at the Taj and elsewhere, the following model has been developed for sharing UNCLASSIFIED, open source, information in a variety of environments.

### Crowd, Bridge, Transaction, Feedback Model



The Crowd will make available information from many sources— NGOs working the field, news organizations, crisis-mappers, text-message feeds, other social media sources, etc. It will exist whether government officials, or others, use it or not. However, it's important to make it easy for people to find what they need.

- The Bridge between the Crowd and Transaction is uniquely designed for each organization and incorporates elements such as:
  - A Link where “Open Source Teams” pull together information from the crowd they want to monitor—blogs, wikis, structured GIS products with metadata, collaboration tools, text-messages, etc.
  - A Filter where information is vetted and validated. Depending on the security environment this can be a light review (Haiti) or, in some cases (Afghanistan) the open source information will have to go through rigorous scrutiny. Filters also will have to keep decision-makers from being overwhelmed with the volume of information likely to be generated.
  - A Channel through which filtered information is passed to decision-makers of whatever stripe.

- The Transaction represents an outcome effectively achieved; something valuable on the ground has occurred (people rescued, food delivered, contracts fulfilled, etc.). Without the completed transaction, “Crowd” and “Bridge” are just interesting exchanges of information.
- Feedback loops connect the “Transaction” to the “Bridge” and the “Crowd.” Feedback is essential not only to know which Transactions have been effective, but also to identify those that have not. Besides being able to affect individual organizations, broadly directed feedback can be part of a strategic communication campaign or to produce pressure that can change the environment in which decisions are made (through embarrassment via the “Crowd,” for example) to improve the likelihood of successful Transactions.