The Agility Imperative: Précis
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March 30, 2010

This Précis is based on a forthcoming CCRP book scheduled to be published in the near future. This book is a call to action. It presents a set of observations and conclusions regarding the need for, nature of, and ways to improve one's Agility. Interested readers may check this webpage for pre-publication excerpts. The author welcomes comments and suggestions.

A New Age

We are still thinking and acting as if we are in the Information Age. However, this label no longer provides an accurate description of the characteristics of our time. More importantly, Information Age mindsets and solutions cannot adequately address the challenges of the 21st century.

A more appropriate label for the world we live in is *The Age of Interactions*. The technologies of the Information Age and the applications of these technologies have, since the arrival of ubiquitous connectivity, evolved from providing limited access information processing applications to enabling an explosion of rich interactions.

Unlimited possibilities have been unleashed for the ways individuals and organizations can connect and work with one another. These interactions have profoundly changed our world, presenting both a set of challenges as well as providing new opportunities.

The challenges of our age are a result of increasing complexity and dynamics while the opportunities are a result of having new and powerful means to do new things, to do old things in new ways, and most importantly, to create new ways of organizing ourselves.

The Complex Endeavor

Complexity in the Age of Interactions comes from both the mission to be accomplished and the composition (size and characteristics) of the set of partners required to successfully cope with the challenges at hand.

The challenges of the 21st century include a variety of humanitarian disasters (earthquakes, floods, tsunamis), failed states, instability, global terrorism, intractable conflicts, pandemics, economic crises, and poverty among others. These problems are not one dimensional, but rather involve the consideration of effects in multiple, inter-related dimensions. These dimensions include social, political, and economic effects.

These problems are beyond the ability of any single actor or even a small set of very capable actors. Responses to these challenges, if they are to have a chance of success, must involve a large, heterogeneous collection of entities working together. This collective is, in and of itself, complex and dynamic.

These situations, characterized by complex, multi-dimensional effects spaces and complex selves are called Complex Endeavors.

In Complex Endeavors, the number of manifest and potential interactions is, for practical purposes, uncountable and unknowable. Each interaction has the potential to impact both the effects space and the state of the collective. Given the number of interactions that will or could occur in a given time period, these situations are very dynamic and unpredictable.

The Information Age has provided us with increased access to vast amounts of data, beyond human number crunching, and enhanced visualization capabilities. It has held out the promise of reducing uncertainty to manageable levels and consequently improving our ability to make decisions. Under some conditions and for a select set of problems and tasks, this promise has indeed been realized. But the new technologies and capabilities of the Information Age have, in addition to solving one set of problems, created the conditions that have led to a new set of problems. The increased access to information has created not only an opportunity to provide the right information to the right person, at the right time, in the right form, regardless of geography, but has also enabled richer,

more continuous interaction between and among individuals and organizations. Thus, the same technologies designed to reduce uncertainty by creating and disseminating information have created a new virtual, global workspace. This has, in turn, enabled real-time interactions never before imagined. As a result, events that may once have had isolated consequences can now generate cascades of consequences, consequences that can quickly spin out of control. This is the reality of our times.

The Imperative

The uncertainties and risks associated with Complex Endeavors cannot be reduced to manageable levels. Prediction is not possible. Therefore, Success (effectiveness, efficiency, survivability) must be achieved/maintained in light of:

- Complexity, dynamic, and chaotic environment
- Unknown futures, unexpected events, unpredictable states
- New, diverse circumstances
- Unfamiliar situations
- Changing goals, objectives, purposes, and tasks
- Loss, damage, threats

Since no matter how well one does in reducing uncertainty, it will not be enough to fall back on traditional solution strategies. Both a new mindset and problem solving strategy is required. The most promising approach is to increase *Agility*.

Agility is an existential capability in the Age of Interactions.

Agility

Change is ever present. Change brings both stresses and opportunities.

Agility is the ability to successfully cope with change.

Agility has both a passive and an active component. Passive Agility involves possessing a set of characteristics that allow an entity to continue to operate effectively, despite changes in circumstances or conditions. Active Agility is the ability to effectively respond or adapt when required. This may involve taking an action, stopping an action, changing a process, changing one's approach to

management, governance, or command and control. It may also involve changing one's perceptions or even the way success is defined.

Change for change's sake is not Agility. Agility implies effectiveness. This means that an entity's capabilities and behaviors are not considered to be agile unless they enable the entity to maintain or improve its measures of value.

An entity's measures of value are a reflection of its values and perspectives. As such, they are subjective. An entity's measures of value can be expressed as a function of the effects of interest. A desired state. Therefore, success can be defined as the ability to reach and maintain a specific region of the effects space. This region can be thought of as an acceptable operating envelope.

This envelope (what an entity considers success) can be expected to change over time, with evolving circumstances. Thus, the targets of our time not only are very difficult to hit—but they move.

Given the uncertainty present in Complex Endeavors, some of the changes in the situation (including changes to the state of self) will be unpredictable, unexpected, and will result in unfamiliar situations.

The concept of Agility can be applied to: Individuals, Organizations, Collectives, Nations, Systems, Management, Governance, Command and Control, Processes, Plans, Architectures, Tools, Functions, Policies, Strategy, Doctrine, Tactics, etc.

Being agile requires responsiveness. In order to be responsive, an entity must be able to recognize, in a timely manner, potentially significant changes in the environment, an adversary, or indeed to itself, and recognize what would be an appropriate response. Thus, being agile involves the ability to create an adequate understanding (awareness) of the environment and the ability to anticipate and/or detect and recognize a relevant change in circumstances. Being agile also requires the ability to respond appropriately. Responding appropriately implies acting in a timely manner, or, indeed, not acting.

Being agile involves a combination of having a set of agility-friendly innate (or design) characteristics as well as developing the ways, means, and the enablers of Agility or avoiding obstacles to Agility.

Agility is not an end unto itself. Therefore, Agility is not a capability that should be maximized. The capability to be agile (Agility Potential) and actual reactions

to changes (Manifest Agility) both involve costs. These costs can be justified only by the nature of the challenge. The appropriate amount of Agility to seek, Requisite Agility, is a level that balances the costs of attaining it with the consequences of not having it, given the situation. Thus, Requisite Agility, not unlimited Agility, should be the goal.

Ways and Means of Agility

There are a variety of ways and means to deal with or respond to potential or manifest stresses or to seize opportunities. These ways and means include: robustness, flexibility, resilience, innovation, and adaptation. These all imply being responsive, that is, an ability to anticipate and/or recognize changes that require action and the ability to decide and act in a timely manner.

Robustness permits the entity to achieve an acceptable level of performance or effectiveness in accomplishing a new or significantly altered task or mission. A lack of robustness limits an entity's ability to succeed when the nature of the task or mission differs from what is expected or when it changes in unanticipated ways.

Flexibility provides the entity with more than one way of accomplishing a task. This capability permits the entity to try another response instead of having to stick with an ineffectual, infeasible, or pre-empted response. Having to move to a less-preferred option or an alternate response may not yield the same results (had the original response been successful), may have some undesirable side effects that the preferred option did not have, and/or may not be as cost-effective as the preferred approach; but having one or more alternatives is, nevertheless, better than not being able to do anything, but continue with a "doomed to failure" course of action.

Resilience permits an entity to recover the lost performance or effectiveness, at least in part and over time, caused by loss, damage, misfortune, or a destabilizing perturbation in the environment.

Innovativeness permits the entity to generate or develop a new tactic or way of accomplishing something; a discovery or invention.

Adaptation permits an entity to change itself; that is, to change its processes, structure, or indeed values to become better suited for the challenge.

These ways and means are not independent of one another; in fact, significant synergies are to be found in combinations of these ways and means.

Enablers and Impediments

It is one thing to espouse a desire to be more responsive, more flexible, or to be innovative; quite another to create the conditions that are necessary to enable these prerequisites for Agility. Improving Agility requires ensuring that enablers are present and impediments are removed, to the fullest extent possible.

The entities of interest here are our organizations and the collectives necessary to undertake Complex Endeavors. These entities consist of people, tools that extend human performance, information, and infostructure. They also have processes and structures that prescribe permissible behaviors and interactions. The Agility possessed by these entities will be a function of their people, the tools, information, and interactions available to them, and the structures and processes that affect their behaviors. A lack of capability and/or Agility in any of these components will serve to constrain the overall effectiveness and Agility of the entity.

People are the first key to Agility. They can compensate for, to a surprising degree, a lack of capability and Agility in other components. They can also provide the inspiration and innovation necessary to take advantage of the opportunities provided by other components and the situation at hand. However, as is all too often the case, a handful of people can undermine and thwart the Agility designed and built into organizations, processes, and systems. Thus, people are arguably the most important ingredient to consider in efforts to improve the Agility of organizations, processes, and systems. Maximizing the contributions that people can make to Agility should therefore be a priority.

What makes people agile?

Agile people conceive and approach the world and their assigned tasks differently from those who are less agile. In general, agile people have a propensity to seek improvements, are more willing to consider information that

is at odds with preconceived notions, and are more willing to be different and take risks. These basic characteristics can be enhanced or suppressed by education, training, and culture. Unfortunately, many organizations, both large and small, suppress agility-enabling characteristics. Examples abound. Look around.

The challenge is to both enhance and take advantage of these agility-enabling characteristics of humans while avoiding the potential pitfalls. Doing so requires considering the following two questions. What permits agile people to have a positive impact? What prevents agile people from having a positive impact?

In Power to the Edge, the thesis was to maximize power by taking full advantage of both the available information and the available assets where assets included people. This book identified two fundamental prerequisites for creating power: means and opportunity. It is these same two prerequisites that permit agile people to increase organizational, process, and/or system Agility.

Access to means is determined, in large part, by 1) education, 2) training, 3) the distribution of information, and 4) the allocation of resources. Opportunity is a function of both the authority to act (rank, doctrine, practice) and circumstances. Circumstances often involve opportunities that are fleeting and one must be able to act individually or in concert with others in a timely manner. Agility is therefore something that can, in part, be delegated. The Agility of an organization depends as much upon the approach to management, governance, or command and control it adopts as the (potential) Agility of its people, the totality of its means, and the information that is available.

Thus, enabling an entity's Agility involves enhancing the potential of its human resources, ensuring that available information is available to those who need it, enabling interactions between and among individuals and systems, and allocating authorities in appropriate ways. The last three, taken together, constitute an approach to organization.

Often it is productive to focus on simply removing the obstacles to Agility.

Just as an open and inquisitive mindset is an enabler of Agility, a closed and complacent mindset is an impediment.

An Industrial Age view of problems and solutions also is the enemy of Agility.

Increasingly, Information Age mindsets, currently viewed as progressive, are creating impediments to Agility.

Understanding the consequences of the mixture of *agile* and *non-agile* people, in a variety of circumstances, is important. This is a topic being currently explored by DoD's CCRP and its DoD and international partners.

Unquestioned assumptions have a pernicious impact on Agility. There are a number of ways to expose assumptions and encourage a review of their applicability under current circumstances or future circumstances.

Traditional approaches to establishing requirements for information and communication systems and the approaches employed to design, develop, and test systems result in fielded systems that are far less agile than is needed. The result is that the systems intended to enable Agility are, in fact, impediments.

Observing and Measuring Agility

It is possible to observe agile behavior or a lack of Agility only in hindsight. While one can learn from these observations and analysis of these cases, we need a way to observe and assess Agility prospectively in order to better understand Agility (in experiments) and to assess progress in efforts to improve Agility (in analyses).

However, the full Agility that an entity possesses can never be completely observed because agile behavior and the consequences of these behaviors do not manifest themselves until an appropriate occasion arises. In other words, Agility is a latent property, a potential that remains dormant until it is manifested and its power realized.

This fact presents difficulty for those who wish to make investment decisions based upon a definitive determination of the value of Agility. This is a problem faced by those who have been arguing for increased investments in Information Technologies, in the infostructure necessary to enable network-centric operations (also referred to as network-enabled capability), and in efforts to assure this infostructure. In fact, the two analytic challenges are related, as an adequate infostructure is one of the key enablers of Agility.

These two investment issues are instances in a class of decisions that involve significant uncertainty. There are provably effective approaches that involve risk-management strategies that apply to these situations and that need to be better understood and more widely adopted. The bottom line is that the value of Agility can be understood and valued even if its power is latent.

Requisite Agility refers to the degree of Agility required for a given endeavor.

The Evidence

One of the most promising ways to become more agile is to leverage our capability to network. Networked entities have the potential to take advantage of all available knowledge and expertise and can create the shared understanding necessary for effective collective action.

Our understanding of these new organizational approaches, their behaviors under stress, and their ability to recognize and seize opportunities is very limited. However, there has been increasing interest and capability to simulate and experiment with this, heretofore unexplored region of the Focus and Convergence Space.

The questions currently being researched include the relative Agility of different approaches (allocation of decision rights, interactions between and among participants, information dissemination) with respect to stresses including time pressures, problem difficulty, bad information, and less than desirable information-sharing behaviors. Some of these results may surprise. They all contribute to our ability to quantify Agility and thus provide an improved basis for investment and strategy decisions.

There is a growing body of evidence that either confirms or strongly suggests that:

- We are incapable of adequately predicting the future; yet, we still design and optimize our organizations and systems based on flawed predictions.
- Information sharing improves information quality and shared awareness; yet current organizational structures inhibit information sharing.

- People provide the most effective means to compensate for shortcomings in organization, process, and systems; yet, we are not investing in nurturing and enhancing this innate capability.
- Robustness, flexibility, and resilience all contribute to Agility; yet we limit these by not making them central to investment decisions and/or by placing significant constraints on individual and organizational behaviors.
- When all else fails, innovativeness and adaptability are all that stand between us and fragility; yet, we create disincentives that limit innovativeness and adaptation.

Improving Agility: The Way Forward

Agility will not come easily to existing organizations and the ad hoc collectives that are formed to take on the challenges of our times. It will require the efforts of everyone.

First and foremost, we need to develop and share a better understanding of the implications of a lack of Agility for ourselves and our organizations.

Second, it must be clear that Agility is the responsibility of everyone. The lack of Agility anywhere constrains the entire endeavor.

Third, our organizational structures and processes and, indeed, our approaches to management, governance, and command and control, need to be re-examined in the light of their ability to deal with an appropriate level of unpredictability. Changes in our structures and approaches will be necessary to make them better able to deal with the unfamiliar and unexpected.

Fourth, our planning and investment strategies must be re-conceptualized to stress Agility rather than picking winners.

Fifth, education should return to the principles of teaching individuals how to think and cope rather than teaching school solutions.

Sixth, training should focus on Agility ranges where the unexpected is experienced rather than a canned training scenario.

Finally, research that focuses on measuring Agility and developing a better understanding of its enablers and its detractors is necessary to support progress in all of the above.