



TRANSFORMING FOR THE DIGITAL AGE BY BG STEVE SPANO , USAF (RET)

The thoughts and views in this article are solely those of the author and do not represent any official position of the Air Force or the Department of Defense

Information Technology is creating a growing discontinuity between longstanding joint and service doctrine, command and control (C2) structures, and command relationships. The digital age is being defined by an emerging environment of rapid and effects-based decision-making with new missions, organizational structures and processes, business agility, and a self-organizing knowledge-based work force plugged into persistent virtual and collaborative environments. This sweeping change requires, at a minimum, an entire end-to-end assessment of the transformation process given the renewal of old state actors that are emerging from this digital paradigm, and with them new and dangerous threats. More importantly is the emergence of non-state adversaries, including terrorist organizations that have proven their digital acumen through agile C2, proactive recruiting and training, and extraordinarily effective funding and material supply chain methods.

The U.S. Department of Defense (DoD) is the quintessential analog institution. This stems in large part from an unavoidable outcome of a massive bureaucracy with competing constituents as well as policies and processes not in synch with today's digital age. While successful in implementing "point" improvements in targeted areas such as battlefield C2 and intelligence, surveillance, and reconnaissance, DoD needs a more forward-looking transformation strategy that creates an agility that transcends the new geo-political battlespace. This strategy must include a transformational approach for developing a future generation of digital leaders that embody the same major tenets that adversaries are now successfully adopting. In short, transformation needs transforming.

Current strategic management models such as the Five-Year Defense Plan (FYDP) and Quadrennial Defense Review (QDR) were designed for predictable, static, and unsophisticated threats in well-defined battlespaces. These models, and others like them, served DoD well in an analog world where linear processes mirrored evolutionary technology cycles. But the dynamic and unbounded threats coupled with the low-cost, blistering pace and growing dependencies of information technology (IT) are rendering these current strategic planning models obsolete. Today, the United States can no longer separate political, diplomatic, and military challenges into functionally-based structures and processes. The lines are blurred, and the effects are growing far too complex to coordinate. As such, a new transformational approach is needed-- one that redefines radically new strategic models and aligns C2 structures and processes with the increasing pace and power of technology. Part of this transformation also must include recalibrating leaders for the information age.

The U.S. military's traditional hierarchical models are significantly constrained by the tradeoff between both the growing richness of information and its ubiquitous and instantaneous reach anywhere around the globe. This tradeoff is creating an environment that "foments the asymmetries of information." It is seen in models whereby senior leaders have their traditional grasp and control on the big picture while dispersed subordinates have a much more granular but "shop-centric" handle on their constricted knowledge base. As a result, a continued asymmetry of power is emerging where parochialism



CyberPro

Volume 4, Edition 13
July 7, 2011

Keeping Cyberspace Professionals Informed

continues to revolve around monopolizing sources of knowledge. It exacerbates current trends within organizations that are already slow to action, cumbersome to manage, and in some ways highly politicized. Moreover, it is corrupting the training process for a millennial generation already demoralized by analog age leadership.

The normal tendency to cope with the new realities of the digital age is for strategic planners and decision-makers to create a bolder repackaging of outdated models to pass for transformation. In the past, DoD was able to solve most problems by simply applying more capacity. However, today's biggest challenges deal with complexity, and capacity will not solve the complexity challenges our military faces. Until the DoD deals with this paradox, it will continue to cling to the time-tested constructs that sharply define rigorous and tightly controlled linear structures and processes. The problem is this approach only encourages more innovative coping mechanisms that strengthen (rather than loosen) the tight grip on control and accountability. This approach is not transformational.

A glaring example of this trend is the flawed belief that the central front on terror is a single place or country. This viewpoint exemplifies the classic doctrinal thought pattern of distant history. The idea that any one country is the central front in the war on terrorism could lead one to believe that succeeding along this front will usher in V-Day celebrations in this greater conflict. Such is not the case. This view only exposes the flaws and seams in analog thinking.

A view through a digital lens brings into focus a different lexicon of the central front on terrorism. Rather there are multiple, ubiquitous, and fleeting "micro-fronts" that strike with stealth, speed, and unprecedented geopolitical effectiveness that, while often militarily insignificant, can cause global economic consequences and reap political instability throughout a region or the world. Attacks on the Kobar Towers, the USS *Cole*, the World Trade Center in 1993, numerous embassies, Oklahoma City, 9/11, Spain's rail and Japan's subway, and the deadly variety of suicide bombers and roadside bombs have all been well-organized but effective fleeting micro-fronts on terror. As technology continues to evolve, these micro-fronts will further split into more lethal nano-fronts that include places such as Wall Street, Main Street, and critical national infrastructures using sophisticated speed-of-light cyber weapons. Preventing even the majority of these micro and nano-fronts will not end the war on terrorism because they treat the symptom instead of the cause. The changing character of this current war transcends military operations. It is a struggle of ideology that requires ever-constant vigilance, and a new way of thinking, organizing, and acting.

The current analog approach to defining digital problem sets is also creating a cascading effect on many interconnected concepts and organizational principles. Many of DoD's organizing structures continue to espouse the notion that artificial boundaries can be carved out and assigned to individual commanders to manage forces and capabilities within those boundaries using traditional linear line/staff functions. However, some of these C2 structures are not consistent with new threats and vulnerabilities. There are no borders and linear processes in the digital age. The sanctuaries of old have been breached by IT-enabled chat rooms, worms and viruses, Internet fundraising for outwardly legitimate charitable organizations, and a global supply chain for modern weaponry enabled by online businesses. While some leaders are challenging the classic wisdom of outdated command models, there still remain strong forces holding tightly to old principles rooted in ownership and control. DoD must recognize the C2 model of a single person in charge with its traditional line/staff functions merely appliqué the status



CyberPro

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quo and rapidly is becoming ineffective and obsolete. It also is stifling transformational thinking and smothering leadership growth.

A paradox exists in the struggle to make an institutional shift from a historical philosophy of “thinking ourselves into new ways of acting, to a digital approach whereby we act ourselves into a new ways of thinking.” The military has spent decades in the dogma of the former while struggling to embrace the latter. Time-tested doctrine, legacy C2 structures and relationships, and cumbersome acquisition processes continue to operate along an evolutionary path built on years of analyzing past conflicts. While some improvements have been made, overall, these increases have come in the backdrop of a diminishing returns.

A new lexicon in C2 is emerging that is rendering as dogmatic these past approaches that served the U.S. military and defense industrial complex well. The intersection of classic linear-based C2 and new forms of collaboration are redefining how we should organize, command, and lead forces. However, what is happening is quite different. The grip on classic centralized control is extending downward into every organization. More importantly, the concept of centralization is taking greater control in the execution phase. There is little good that can come from this trend for any organization or institution wishing to remain relevant unless the goal is short-term savings. Beyond the obvious dangers lie serious unintended consequences. Chief among them is a form of “digital micro-management” that risks stifling innovation and creating leaders well experienced in combat but ill prepared to rise to higher levels where they will surely face more complex decisions in fleeting environments of greater ambiguity and uncertainty – an essential hallmark of leadership. Neither bodes well for our institutions – public and private -- as we move into the digital age.

The effects are beginning to manifest themselves in the development of young leaders. Digital-age warriors are being led by analog-age leaders, and a growing friction is heating up that must be cooled if we are to transform our structures and processes for the challenges we face. Most of today’s leaders were raised in the analog world where empowerment, trust, and decentralized execution were a fundamental tenant of leadership development. Rigid command structures and staff processes were designed to mitigate the limits of technology and mandated more decentralization and empowerment to the lowest levels of command. This created battled-tested leaders who learned to assess risk and to make decisions in the face of ambiguity. That world has left us, and the seam between the old and new realities is wide and growing wider.

Today, the rapid advances in IT are creating an environment where leaders are struggling to understand how best to adapt technology to new structures and processes while continuing to embrace the needed balance between centralized control and decentralized execution. Information technology should help create digital leaders that can synchronize art and science in ways that fundamentally change process and output. However, what is emerging is a new breed of digital micromanagers who are more comfortable in applying technology as a coping mechanism to deal with their lack of understanding of technology’s proper application in a changing environment. Real-time situational awareness horizontally and vertically, e-mails, blogs, wikis, instant messaging, VTC, all yield tremendous advantages in fidelity and accuracy of decisions and should be embraced in strategy and processes. Common understanding at all levels of command has definite benefits -- if applied appropriately. However, the inability to marry art with this new science is creating a unique dichotomy.



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The quest for accountability and drive for efficiency are causing the centralization of more and more mission areas, combat and support processes, and even weapon systems. Efficiency, rather than effectiveness, is dominating a shift from centralized control — de-centralized execution to a new and dangerous construct of centralized control – centralized execution. Technology now gives leaders the ability to see much richer content and extensive reach across all levels of command. This in turn makes it difficult for command leaders to resist the subliminal urge to take control of decisions that were once entrusted to leaders on the scene. Concerns over such non-tangible qualities as experience level and accountability are manifested in a perceived lack of trust that serves as justification for analog age leaders to control decisions they themselves would have felt in the past were routine on-scene command decisions. The irony is this misuse of technology is occurring from the analog leaders who lack the understanding of how best to apply it. Confusion exists between the principles of authority and autonomy. Added to these phenomena is the desire to achieve efficiencies by centralizing more and more control and execution of mission areas, processes, and systems. This combination is--and will continue--to stifle innovation, adversely affect leadership development, and make it difficult to recruit and retain a highly skilled work force. History has shown over and over again that too much centralization will put a tourniquet on innovative thinking. No institution can endure by centralizing (or outsourcing) its thinking.

DoD cannot avoid the realities of this shift nor the impact it is having on the development of our future leaders. Moreover, we cannot ignore the associated logic that is playing out amidst the chaos inherent in what we define as transformational change. The difference between genius and competence is that genius recognizes when change is occurring while competence adapts to change once it is universally understood. Change in the digital world will be constant and will be driven by global businesses as well as state and non-state actors who recognize that the benefits of acting their way into new methods of thinking far outweigh the historical models of thinking their way into new methods of acting. The primacy of a new transformational approach lies in the ability not just to go beyond seeing the difference but also to universally embrace it as a fundamental tenant of a new way of thinking. Much more needs to be done to build upon, document, institutionalize, test, train, refine, and perfect the principles of this underlying transformational shift. Analysis is needed to examine how to deconstruct organizations and rebuild them into more decentralized self-organizing entities where staff functions can rapidly—and naturally—come together, break apart, and regroup across unlimited boundaries and organizations to exploit the seam between richness, reach, and collaboration. This approach lends itself to addressing fast-moving complex issues more effectively than the traditional hierarchies of large organizations. It also builds the digital leaders needed to adapt, respond, and execute to a new era of threats and challenges. This approach is seen today in the practices of many successful global businesses. However, it remains to be seen if DoD can make the transition in an era where IT is principally viewed as a cost center rather than a value center.

Changing an organizational culture is about changing beliefs while preserving values. Beliefs are only altered when behavior changes. The dramatic change in the character of warfare is a reflection of the change in the strategic landscape. Within DoD, a time-tested model that worked for several decades has been shattered, and this requires the institution to accept universally as obsolete some new realities. We can begin with some existing doctrine, C2 structures, some time-tested principles of war, and the culture and lexicon of the who and how we define the term “operator.” Adding to this complexity are



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the similar challenges facing institutions outside of DoD. Addressing new-age irregular warfare, including cyber challenges, must be a collaborative effort between DoD, the rest of government, and industry. However, it should not deter our nation from taking necessary steps to move forward into this digital age.

Past transformations have all occurred within the lexicon of an analog world. As such, technology was much simpler and thereby easier to synchronize with doctrine and C2 organizations. The balance between technology, doctrine, efficiency, and effectiveness created a continued need to decentralize execution and empower tactical front line leaders. However, current transformation is being fueled by rapid advancement and society's dependence on digital technology. Succeeding in this ongoing transformational effort requires wholesale changes in the way we think about the character of war and the process we use to transform. This will challenge almost all we have learned, either through formal education or practical experience. However, the current environment requires a much bolder and more uncomfortable approach than evolutionary change. It requires an entirely new lexicon for transformation that exceeds the boundaries of our traditional comfort zone. That not only makes what is needed a much bigger challenge but also so much more imperative.

History has shown that people resist change, even change within their comfort zone. However, the noted historian Will Durant once wrote that "a great civilization is not conquered from without until it has destroyed itself from within". I suspect the same holds true for many institutions.