Remarks as delivered by
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Thank you – it's great to be here!

Over the next couple of days, you'll have the opportunity to hear from many of the experts in knowledge management and information sharing. What I'd like to do is to talk from my experiences about the tremendous benefit this capability is providing to the Army.

And, then I'll take a few of your questions.

I've been the Vice for about nine months now…. and, it's been a very interesting – albeit challenging – experience to see the Army from such a unique perspective, particularly during this crucial period of conflict and transformation.

Before coming to the Pentagon, I spent some time in Iraq – first, commanding the 1st Cavalry Division in 2004-5 and the Multi-National Corps – Iraq in 2006. However, what I know is dated… once out of country for 48 hours, what you know is history because things change so fast. Many of the strategies, capability gaps, and needs remain the same; but, the specifics concerning the campaign are now much different.

Yet, what those two years in Iraq confirmed for me beyond a shadow of a doubt is that warfare – *as we know it* – has changed forever. What Chuck Krulak wrote about 10 years ago has become a reality.

In many ways, warfare has become much more sophisticated and our probable adversaries more savvy. In particular, the enemy has figured out how to exploit our dominance at the high end of the spectrum by focusing their efforts and resources at other points along the continuum.

As Secretary Gates stated in his remarks at the Army War College earlier this month:

"Future adversaries will continue to employ new readily available technologies in sinister ways. They will adapt and develop new tactics, techniques, and procedures as fast as they can imagine ways to gain any advantage over us, to better understand our decision cycle."

The Army has learned this lesson and others out of the experiences of the past seven-plus years. And, we're now applying them to shape and adjust our policy, tactics, techniques, and procedures.

For example, we've adopted a modular construct focused at the brigade level that has greatly enhanced our ability to respond to any situation, quickly and effectively.

We've also made corresponding changes to our Table of Organization and Equipment, or TO&E; and, we've expanded our capability by adding Civil Affairs, MPs, Special Forces, and others.

However, these added capabilities and technology enhancements – coupled with a smart and dangerous enemy – have greatly increased the complexity of the situation on the ground.

We're all familiar with the old adage: *"Information is power."* Well, that's absolutely the case on the battlefield today. And, to stay ahead of our adversaries, we have had to get better at sharing and coordinating knowledge – in order to use it effectively.

Truckloads of information and data – without the proper context – can ultimately provide more harm than good to an organization. It's not enough to simply enhance or increase the number of information-gathering technologies. We must also be able to interpret that information and make it available to the right people as quickly as possible.

Who the right people are has also changed significantly in recent years. Knowledge is no longer restricted to senior levels of command; it can't be, or we're doomed to failure.

The reality is, most *'game-changing'* decisions are now made by the individual on the ground. And, many of these decisions are required in a matter of minutes or hours – not weeks or months, as was the case in past wars. Krulak coined the term '*Strategic Corporal'* to reflect this new reality.

In the last few years, the Army has had to make the necessary adjustments to meet the challenges of this new strategic environment – including changes to our knowledge- and intelligence-gathering processes.

Think of it as a pyramid. In the beginning stages of the war, the pyramid was inverted…. We relied on a Cold War era intelligence system…. and, most information was gathered by national intel sources, such as satellite feeds, high-altitude UAVs, and other sophisticated ISR assets. The information was then analyzed at the most senior-levels and filtered down to the user through command directives – usually 48 hours later than they needed to be.

Now, the pyramid has flipped. We're much more dependent upon human intelligence or HUMINT, and considerably more information is gathered and analyzed by troops on the battlefield.

The intelligence collected by national-level assets is still required to be pushed down to the user level; but, it must be made available much more quickly to allow for immediate

use or further analysis and real-world application by the service members and small units on the ground.

Over the last few years, the Army has made significant progress in adjusting to this new paradigm. Great advances in technology now are making it possible for us to collect, analyze, and distribute intelligence faster than ever before.

Yet, the reality is the policies we've implemented with the intent to safeguard this information have made it increasingly difficult – in some cases impossible – for many at the user level to access the intelligence in a timely manner. Let me give you an example….

We now have the ability to push the Common Operating Picture, or COP, down to the lowest levels through Land Warrior and, soon, Ground Soldier Ensemble. But, then we classify what is of little intelligence value in such a way that it prevents individuals at the Team Leader-level and below from accessing it. And why? Clearly this is fleeting information of little tactical value seconds after it is generated. But, these uniformed individuals need it in order to avoid fratricide and maintain situational awareness in a difficult environment.

Meanwhile, we've also had to find ways to better facilitate information exchange horizontally across the small unit level.

I'll give you another example…..

In the past, two units might end up in the same location – one of the units may have gotten lost or delayed by circumstances. Well, the unit or individual that was assigned to that particular location and not expecting company is often taken by surprise. For centuries, this type of battlefield fog or friction has led to fratricide.

Making sure this type of *"just-in-time"* information is available and disseminated at the user level – and beyond – is critical. Over the last few years, the Army has developed several technologies to help with this.

Situational awareness tools like Blue Force Tracker (BFT) and Force XXI Battle Command, Brigade-and-Below (FBCB2) have greatly improved Soldiers ability to operate freely and safely on a crowded battlefield.

But, what we've also come to realize – as the amount of information and data continues to grow at a rapid rate – is that individuals at the user level provide the context that makes this information useful intelligence. Information is simply data. Knowledge is what's most valuable; and, knowledge are those relevant pieces of information put in the appropriate context so that it can be understood and effectively applied by individuals on the battlefield.

Unfortunately, we've struggled with this in the Army over the last several years as the nature of warfare has become increasingly dynamic and more complex, and as our ability to gather data and intelligence has continued to expand.

That was why, when I was the 1st Cavalry Division Commander, I deployed with Command Post of the Future, or CPOF…. the then-experimental system developed by DARPA that enables distributive – and, more importantly – collaborative command and control.

In the past, I would've called all of my Brigade Commanders to the Division HQs to issue an operations order and make sure my intent was clearly understood. This required many of them to fly or drive across Baghdad.

The collaborative capability of CPOF allowed me to convey my intent to the Commanders without requiring them to make the trip across a city of 7 million people – thus saving time and possibly even lives in the process.

Currently, DARPA is working on further expanding this capability through the Personalized Assistant that Learns or PAL program. PAL would provide a cognitive system able to learn from experience, be told what to do, explain what it's doing, reflect on past experience, and respond to unexpected changes or events. This will ultimately make military decision-making more efficient and effective at all levels, and it will help Commanders to make better-informed and faster decisions on the battlefield.

In this rapidly changing strategic environment, speed is a critical element. And, one of the things we realized during our first few months in Iraq was how fast the enemy was learning from us, but how slowly our processes were transferring knowledge and information internal to our organization.

To address this challenge, we implemented CAVNET, a knowledge transfer system – similar to a messaging board – that allowed squad leaders, platoon leaders, and company commanders to immediately share enemy tactics, techniques, and procedures (TTPs) from the last patrol with their counterparts.

Then, out of Blue Force Tracker, FBCB2, and the innovative ideas of CPOF and CAVNET emerged an even more critical system for this new kind of war, called the Tactical Ground Reporting system or TIGR. For those of you who don't know, TIGR is a virtual notebook, with significant events, pictures, video, census data, infrastructure, and personal observations made by Soldiers on the ground.

It allows other Soldiers to tap these virtual notebooks, review the material, gain valuable context, and then draw their own conclusions. This amazing system arms the Strategic Corporal with exactly what he needs – the best knowledge and information available.

Initially, as you'd expect – this system was met with great resistance…. the Signal Corps guys said it couldn't be done because it would take too much bandwith… the MI

community argued a sufficient system already existed in ASAS*;* CENTCOM complained that it was redundant to other systems – like CIDNE, the secure internet host site used to catalogue data on people, facilities, and organizations.

Unfortunately, this resistance is characteristic of the Services. As an institution, our military consistently puts up many of the biggest barriers to making meaningful and needed change.

Fortunately, within two years – because Soldiers demanded it – TIGR was in use in Iraq where it immediately began paying tremendous dividends. And, today, 17 combat brigades in Iraq and Afghanistan are equipped and using the system.

The bottom line is this…. If we want to stay effective in this new strategic environment, we must stay ahead of the technology. And, we should assume our enemies are doing the same.

We must also ensure that we're using available knowledge as effectively as possible. I can assure you this remains a top priority for our Army's senior leaders.

Back in July of 2008, Secretary of the Army Geren and the Chief, General Casey signed and issued a memo identifying the twelve Army Knowledge Management Principles. This was the first step in a process to develop an enterprise approach to knowledge sharing across the Army.

The ultimate objective is to create a culture of collaboration that encourages wide and free-flowing exchange of information between those who know and those who need to know across the enterprise.

I'll give you a brief example; some of you may have seen the video or read the futuristic story about Specialist Alfredo. This fictional scenario is set on an operating base located along the Afghanistan/Pakistan border in the year 2012.

SPC Alfredo's squad is getting ready to conduct a recon of new entry routes by Taliban forces into Afghanistan at "0-dark thirty" the following morning. And, his squad leader prepares the unit by downloading several relevant podcasts produced recently by uniformed individuals in the field, including troop experiences from similar-type operations and various images of craftily placed IEDs much like those the squad may encounter in the area. The squad leader bundles these "casts" with information on the mission that was provided by his superiors…. and, sends it to each squad member's PDA. Afterwards, the group gathers to talk about the key elements. This "fused" information and the context gained during the follow-on discussion provides them with the knowledge that may save their lives.

There's more to this story, and I'd encourage those of you who have not yet had an opportunity to review it – to do so. It does a fantastic job of illustrating the Army

Knowledge Management Principles in action. It also demonstrates many of the technologies that we envision may exist in a few years.

In fact, the intelligent and innovative people here in this room and across the Knowledge Management community may very well achieve technologies or processes that are well beyond our imagination! And, they're certain to be pushed even further by the creative innovators from current and future generations.

Fortunately, young servicemen and women *like* SPC Alfredo have a more inherent understanding of technology, and I believe this will prove to be a tremendous benefit in the future.

Today's generation is much more familiar with technology as compared to past generations. They've grown up juggling cell phones, pagers, iPods, the Internet, and Wii; and, they can text, blog, tweet, and game all at the same time. Meanwhile, most of us are still trying to simply get the TV remote to work!

Overall, I do believe we've made great progress in recent years in the areas of information sharing and knowledge management, and I'm confident we're headed in the right direction for the future. However, there's still much work to be done – not only across the Army, but across government as a whole.

Last week, I visited the U.S. Institute for Peace, where I had a fascinating conversation with their president and members of the staff. As many of you know, USIP is focused on the non-kinetic effects of war, primarily conflict mitigation. And, they're currently doing great work, both in Iraq and Afghanistan. For example, they're helping to educate the Afghan people on the Rule of Law in an effort to counter the influence of insurgents, particularly the Taliban.

Efforts like these by non-military organizations are critical to achieving stability around the world. And, the demand for such "soft power" skills as agronomy, civil affairs, and public works has increased considerably in recent years. However, limited capability exists to fulfill the need. The small contingency of people from the Institute for Peace that are working in Afghanistan, for example, cannot possibly educate the entire populace. They're attempting to expand their reach to a broader audience by setting up a website with information on the Rule of Law. And, I applaud their efforts.

But, I also believe we need to take it a step further. We need to cut across the barriers that exist between agencies, such as Treasury, USAID, and Defense – and, find ways to collaborate and share knowledge on anything and everything from micro loans to small business to simple farming techniques.

Unfortunately, there's frequently been an *"us versus them"* mentality in government. And, we've not been overly successful in the past at making these types of exchanges.

However, this needs to change. We must break through the cultural barriers that have traditionally restricted cooperation…. and, the sharing of ideas, information, and capabilities that will be so critical to achieving stability in the world in the years ahead.

Thanks again for the great work that you're doing. I appreciate the opportunity to join you here today. And, now I'll be happy to take your questions.

Army Strong.