Innovation in a Transformational Environment

INSIDE:
- New SACT Message
- 10 Tips for Innovation
- Social Media
- Lessons Learned
- Gender Perspective
The Transformer is a bi-annual publication produced by Allied Command Transformation that is dedicated to the promotion of actions and ideas contributing to the transformation of NATO. Most of the authors belong to the command but the views and opinions expressed in this publication do not necessarily reflect those of ACT, NATO or its member nations and none can be quoted as an official statement of those entities. An electronic version that includes additional in-depth articles, supplementary articles and online comments is available on the ACT website (www.act.nato.int).

All articles are edited for content.

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Special thanks to Mr. Wayne Buck, ACT Capability Engineering for his contributions.

In This Issue:

This issue is dedicated mainly to the topics of Innovation and Transformation which is the Headquarters’ focus as the Capability Engineering and Innovation (CEI) Division comes to fruition. This edition of The Transformer addresses several innovation topics, including 10 tips for being innovative, the Innovation Research Park, Social Media analysis as an innovative tool, and gender perspective.

SACT Message: No Transformation without Innovation
ACT Featured Staff
Innovation Award Recognition

DSACT Message: Chicago Summit Sets the Course

A Strategic Challenge: Building Capabilities in an Age of Austerity

Frequently Asked Questions about Innovation

10 Tips for Being an Innovator at ACT: A Personal Approach

Gamification: Why NATO Needs to Play the Game

Innovation Research Park: Why it Works

Innovation Metrics – Measuring the Future

The Innovator’s Dilemma Applied to NATO

Staff Branches Can Build Capabilities

Gender – Innovation or Integration?

2012-2013 SACT Strategic Engagement Overview

Innovation and Transformation Through Lessons Learned

Operationalising Transformation – Bringing the NATO Lessons Learned Process to Life

The Alternative Analysis Concept: A New Standard for Streamlining Concept Development

Together Academia and Industry Create a Win-Win Situation

The Importance of Integrating Cyber Defence into NATO Exercises

NATO Network Enabled Capability Federating the Future Mission Network

Bridging the Information Divide

It is Possible: Collective Logistics Responsibility Can Transform NATO

Harnessing the Power of Social Media Analysis

Social Movements in Social Media

To Vanquish Pandemonium

Complexity of Post-Disaster Security Environment and Law Enforcement
Metrics for a Fairer, Smarter Alliance
An Experiment in Coalition Space Operations: Schriever Wargame 2012 International
Preparing the Alliance for Tomorrow’s Challenges: Trial Unified Vision 2012
TIDE Sprint: Thinking Through a Better Use of Technology
A Message from SACT

No Transformation Without Innovation

As I’ve just taken the handover from my old friend Stéphane Abrial, whom I have worked very closely with in France, this new issue of *The Transformer* is a good opportunity to reaffirm my pride and commitment to lead Allied Command Transformation as NATO’s invaluable hub for transformation.

Almost ten years after its creation, ACT is firmly positioned as the leader of transformation in a renewed Alliance. Much has been done, but as the process of adapting the NATO forces to the security environment is a never-ending one, much more is still to be done. Using the sturdy foundation set by those before me and the energy and creativity of every ACT member, my aim is to ensure a decisive contribution to make NATO forces ready to face all security challenges they may encounter in the long- or near-term.

While the Chicago Summit highlighted the strength of the Transatlantic Link, it was first and foremost the recognition of the will of the NATO nations to adapt to the new security environment despite our global financial constraints. It is now our responsibility to prepare them for an unpredictable future, and for this purpose, there is no other way than to think “out of the box” as ACT is used to doing. This is the reason why I fully concur with the declaration of the President of the European Council Herman Van Rompuy, who in Chicago said that “Innovation is the key for the future.” This supports my belief that there is no real transformation without innovation.

A spirit of innovation is indeed key. An article in *The Economist* described the best innovators as “T-shaped”: they have depth in one area, and breadth in many. I like to think that this “T-shape” is the T of Transformation.

This edition of *The Transformer*, which focuses on innovation, could not be more relevant at this crossroads; a change in command but a continued vision for the future of ACT and its greater mission in support of the Alliance.

Who’s New at ACT

Deputy Chief of Staff Integrated Resource Management, Major General Sait Sevdi, Turkish Army

Assistant Chief of Staff C4ISR & NNEC, Major General Mels de Zeeuw, Netherlands Air Force

Assistant Chief of Staff Capability Requirements, Brigadier General Joergen Hansen-Nord, Danish Army

Joint Warfare Centre Deputy Commander/Chief of Staff, Brigadier General John Doucette, United States Air Force

Innovative Award Recognition

With the focus of this edition of *The Transformer* on innovation, it would be remiss of me not to address the innovative needs of Allied Command Transformation. As NATO’s Transformational Strategic Command, ACT needs to lead the Alliance in innovation. The Headquarters requires innovation. In its basic form this means open minds, the ability to think laterally, and a will to challenge the status quo constructively - what I refer to as “a transformational mindset”. Whilst this is a challenge, the results will yield truly transformational results.

This happily brings me to the recent announcement of international recognition of ACT’s innovative, transformational activities. On 12 Sep, ACT was the proud winner of two awards at the 2012 Chartered Institute of Purchasing and Supply (CIPS) annual conference after winning first place for “Best Contribution to the Reputation of the Procurement Profession” category as well as being selected for the overall prize. The winning project involved three key Counter-Improvised Explosive Device (C-IED) pillars: strategic and tactical policy development, training and mobile advisory teams, and a stellar demonstration of how procurement teams can work together to deliver highly effective capability. This award showcases how the Alliance and its staff can work together for the greater good of the nations. Enormous congratulations to the procurement team for this innovative achievement and a job extremely well done!

— Vice Admiral Tony Johnstone-Burt, Chief of Staff, ACT
Several months have already passed since the Chicago Summit and it offers me a moment to review the results of the work Allied Command Transformation has had influence over what the Summit means for NATO and for Allied Command Transformation in the long run.

The many strands of work that came out of the Summit in May have given our Command a set of new goals and momentum towards our transformational efforts. This is a clear call for a multifaceted innovative thinking and an ability to see both details and the big picture. It is important to reiterate that the Summit Declaration and decisions of Heads of States and Governments taken in Chicago need to be seen holistically, bearing in mind their interrelations and mutual influence.

The scale and ambitions of the Chicago Summit decisions demand from all of us a mental agility, innovative thinking and an ability to see both details and the big picture. It is important to reiterate that the Summit Declaration and decisions of Heads of States and Governments taken in Chicago need to be seen holistically, bearing in mind their interrelations and mutual influence.

Taking a holistic approach, reflecting upon the bigger picture while undertaking root level activities, can guarantee the best overall implementation quality of Summit decisions and guidance. The implementation of concrete actions resulting from the Smart Defence concept or Connected Forces Initiative, while reflecting upon Future Challenges, is of our most imminent interest and involves nearly all areas of expertise in the Headquarters. Be it through the work on capability development, education, training and exercises, support for operations, the reform of the Alliance or growing network of partnerships, ACT remains a key player and facilitator of work on concept and capability development and offers direction to the Alliance on further actions.

We put together the conceptual landscape which will bring all of these multifaceted efforts to fruition.

The phrase “think globally, act locally” perhaps has never been more true for all of us, working in ACT. I believe this is worthwhile to reiterate that the direction given during Chicago Summit is reflected in our daily work, along with the respective interrelations, synergies and dependencies allowing everyone in ACT to contribute to the work of the Alliance and all our Nations better. ACT can be proud of the work that has already been done and everyone's commitment to continue with analysis of the Chicago documentary and its impact on specific areas of expertise. The guidance and direction is set, it is now time to make it happen.
A Strategic Challenge: Building Capabilities in an Age of Austerity

In a period of economic constraint, when increases in defence spending are not an option anymore, Smart Defence and the Connected Forces Initiative represent the proper answer for the preservation of the Alliance’s capabilities to address today’s challenges and the development of new ones to tackle tomorrow’s threats.

By Ambassador Ravic Huso, United States of America, Political Advisor to the NATO Supreme Allied Commander Transformation and Mr. Alexandre Escorcia, France, Former Deputy Political Advisor to the NATO Supreme Allied Commander Transformation

“...at a time of complex security challenges and financial difficulties, it is more important than ever to make the best use of our resources and to continue to adapt our forces and structure.”

AN UNFAMILIAR CHALLENGE

This quote from the May 2012 Chicago Summit Declaration highlights an unfamiliar strategic challenge now facing the transatlantic Alliance: how to retain and acquire the capabilities it needs for the future during “the worst crisis since the Great Depression”. What one European official has described as a “budgetary winter” is shaping the discussion regarding defence spending, with uncertain consequences for the ability of NATO to respond to today’s conflicts and prepare for tomorrow’s threats. The assertion by then-Chairman of the Joint Chiefs of Staff Admiral Mike Mullen that the current US debt level poses “the single biggest threat to national security” correctly identifies the fact that defence budgets cannot be seen in isolation from the broader economic and political context in each allied nation.

Despite the changing and challenging economic context, NATO’s original purpose has remained constant through the decades, and the 2010 Strategic Concept reiterates it in a language that could have come from the 1949 Treaty: to safeguard the freedom and security of all its members by political and military means. What has evolved is the range of security challenges that threaten NATO nations, but also, crucially, the public’s perception of these threats and the resources needed to confront them.

However, the debate on how much and how the Allies need to spend for their collective defence must be solidly informed by the current strategic landscape. Today’s emerging powers are not neglecting their defence expenditure. Quite to the contrary, China will increase its defence budget by an estimated 19 percent a year until 2015, and Brazil has already seen an increase of 30 percent between 2001 and 2010. The same trend can be identified for countries as diverse as Russia, Indonesia, South Africa and even Japan. Admittedly, these countries are still far from matching the collective capabilities of NATO allies, and there is no direct connection between their defence spending and the threat level experienced by NATO. However, the fact that countries that face significant challenges in raising the living standards of their population place such a priority on defence expenditure is a signal that should not be underestimated.

SMART SPENDING

In the current economic climate, pleas for protecting defence spending only have a chance to be heard if they are linked with realistic, achievable proposals on how to spend better. At the Munich Security Conference in 2011, NATO Secretary General, Anders Fogh Rasmussen, presented a new approach to defence spending in a time of economic constraint, Smart Defence, which refers to “ensuring greater security, for less money, by working together with more flexibility.” The Chicago Summit showed that the key means to this end is increased multinational cooperation among like-minded grouping of nations to acquire and maintain capabilities that they could not afford individually. An important element is to chart the way towards specialization by design, rather than by default – the unfortunate consequence of uncoordinated defence cuts – in areas where nations are ready to do so.

Allied Command Transformation, the only NATO command in North America, has been working hard on such an agenda. NATO Secretary General’s special envoy on Smart Defence, French General Stéphane Abrial, while he was SACT, toured the NATO nations in order to hear their views and ideas on how best to promote multinational cooperation and other innovative solutions to capability development. The aim has been to build a construct that matches national interests to NATO capability requirements to help meet the Alliance’s level of ambition.

ACHIEVING INTEROPERABILITY

As NATO Secretary General underlined at his monthly press briefing on 5 March 2012, “Smart Defence is about building capabilities together. But we also need to be able to operate them together.” As a complementary measure to Smart Defence, the Connected Forces Initiative was launched to address this issue. While Smart Defence puts the emphasis on efficiency, the Connected Forces Initiative focuses on effectiveness, software and the human factor, and is closely linked to the enhancement of our training and exercise principle and processes.

The Smart Defence initiative has already yielded tangible results. In particular, a number of multinational projects in specific priority areas – such as air policing, intelligence and surveillance, and logistics – have been identified and will be implemented by nations, thus building trust that can result in projects of greater scope and scale over time. But longer-term, lasting results will not happen overnight. They will require hard work centred on guiding principles agreed to by the Alliance. Allied Command Transformation stands ready to contribute to this effort.

Yama Sakura 61 at Camp Courtney, Okinawa, Japan, Jan 26, 2012.
Frequently Asked Questions about Innovation

It is true that innovation rhymes with transformation; but has NATO fully embraced this notion and placed the organisation in the best conditions to innovate? Addressed are a selection of questions and answers to topics on the minds of the Alliance staff.

By Dr. Eric Pouliquen, ACT Capability Engineering Division

Q The word “innovation” is frequently used in the Command. Why?
A The focus on innovation is highly correlated with the state of our economies. Often greater during major economic troubles; especially after leaders in government and industry have applied all classical efficiency measures. One complementary and non-intuitive measure is to challenge the natural order of things by offering innovative approaches and solutions. This can call for a radical paradigm shift, shake certainties and disrupt equilibriums.

We hear stories of nearly bankrupt companies becoming a leader in their sector. Interestingly, most often to achieve leadership status, radical management measures have been chosen and innovation placed as a priority with leaders embracing the strategy. So, to address the question, I believe that everyone in the defence sector confronted with negative drivers has assessed that the status quo is no longer an option and that profound changes through innovative approaches must occur.

Q How can ACT better tackle innovation to benefit the Nations?
A I believe that ACT has the ability to propose capability solutions to our armed forces that can improve performance, reduce risk, and/or offer significant savings. A demand from Nations is evident, for example: Smart Defence and Connected Forces Initiatives.

For ACT to better tackle innovation, an environment where experts are able to better connect and work together is required. Additionally, these experts should be able to operate outside institutional constraints and use practical means such as collaborative platforms to rapidly create the most favorable conditions and productive knowledge communities.

Q What are you proposing?
A Based on successful industry models analysed by ACT, the Innovation Hub (IH) has been proposed. ACT Capability Engineering Division believes that the IH is a solid approach to boost innovation in the command. It should be viewed as a catalyst for innovation and its vision embraced: “By bringing together all relevant stakeholders in an environment conducive to innovation and creativity, the ACT Innovation Hub will foster collaboration and lead the efforts in identifying and de-risking solutions to NATO’s transformational challenges.”

This past June, a campaign to implement the optimal innovation model for ACT began. The first campaign consisted of live and online brainstorming around the topic of “the human environment capability shortfall” was deemed a great success. What could have taken months, took just three days. As an added value, a solid knowledge community for follow-on implementation of the ideas was established.

Q What is the next step for the ACT Innovation Hub?
A The model will be tested for risk reduction before it will be made available within ACT. From the lessons learned, the IH should be fully operational by early 2013.

IH work will not cease, however. In the fall of 2012, another transformational topic will be tackled by soliciting a very large scientific community in the field of autonomy and robotics.

Q Would you say that innovation is the way ahead but it has yet to happen in NATO?
A No. Innovation has happened and happens every day in NATO, but we often neither see nor exploit it. For example, the Countering IEDs campaign was improved when the decision was made to place greater emphasis on “defeating the IED network” rather than on “defeating the device”, and by focusing on doctrine and training instead of expensive material solutions. This was truly innovative and greatly helped our armed force in theatre.

Cloud computing is another innovative way NATO is tackling data management. Thanks to key leaders in industry, ACT has become an expert in the domain and is designing very cost-effective solutions. Let us not overlook the success the NATO Centre for Maritime Research and Experimentation (CMRE)\(^1\)

More than a decade ago, CMRE made the strategic decision to concentrate on new ways to detect and identify submarines and sea mines using numerous intelligent autonomous underwater platforms. The idea was to offer higher detection and identification performance by “multi-view” sensing while reducing risk to our sailors at a substantial cost reduction. This vision is about to become a reality. In a few years, our navies will use and operate fleets of AUV’s for their MCM and ASW operations\(^2\).

Q But how do you start the process of innovation?
A Henry Ford is often quoted for having said: “If I had asked people what they wanted, they would have said faster horses”. Sadly, we often strive to produce expensive and complicated ‘faster horses’ in our own domain instead of looking at the problems differently.

It could be argued that innovation and its subsequent benefits occur when our certainties are challenged. Often unpleasant, but necessary, this challenge can be accomplished in three steps: observe, network, and experiment.

Innovation is often a matter of associating ideas, talking about it, trying them, and sometimes failing miserably. It is rarely an isolated “eureka” moment. We often do not see the impact that a revolution in other domains can have on ours. Robotics, modelling and simulation, biotechnologies, social networking or human sciences, to name a few, are impacting our societies every day.

Q So, who can innovate and how?
A Everyone can innovate! It can be accomplished by creating a favourable environment and a spirit of appreciation for those who innovate. I am confident that the Innovation Hub will greatly help ACT.

It is also important to mention the role of leadership as an essential requirement. Having innovation “evangelists” at the top is key in setting the right mindset for innovation to happen. ACT Chief of Staff has recognized that our chain of command has a pivotal role in this process. So, be prepared. Change for the good of the Command is ahead.

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\(^1\) Formerly NURC and SACLANT
\(^2\) Autonomous Underwater Vehicle
\(^3\) Mine Countermeasures and Anti-Submarine Warfare Operations
10 Tips for Being an Innovator at ACT: A Personal Approach

By Mr. Wayne Buck,
ACT Capability Engineering

Allied Command Transformation (ACT) innovates. We may not think that we do but, we do. I have been involved in many innovative activities at ACT and am quite aware that many in our headquarters are influencing the Alliance in new and daring directions. There’s an old saying: “Fortune Favors the Brave” – and nowhere is that truer than in the innovation game. Incremental improvements will only allow incremental change. I offer the following tips learned during my decade at ACT and SACLANT (yes, it too was innovative in its own way).

1. **Understand Why We Exist**
ACT provides products and services to the Alliance in the form of innovative thoughts, concepts, experiments, events, papers, and policy. We have been successful in the past and will be successful in the future. However, in order to work towards a common future we must fully understand why ACT was created and where we need to go. The words we used in 2003 were slightly different than what we use today but essentially mean “ACT transforms NATO on behalf of the Alliance by delivering quality capabilities, advice, and training.”

2. **Be Enthusiastic**
Be passionate. Focus on the things that you want to change. You must become an evangelist and encourage your colleagues to support you. It is generally agreed that optimists are more creative, motivated and innovative. “A pessimist sees the difficulty in every opportunity; an optimist sees the opportunity in every difficulty.” Winston S. Churchill

3. **Persistence**
The movie Galaxy Quest uses the phrase “Never give up, never surrender.” I also advocate persistence. One thing that I respect about ACT is that our innovative thinkers persevere. Having faith in ourselves to succeed; one of our greatest strengths.

4. **Do Not Fear Change**
Innovators constantly reflect about the need for change. Trying new ventures is risky, standing still is riskier. In some instances you need to stick your neck out and take a chance. The Alliance has too much at stake to not provided needed influence.

5. **Think Laterally**
Innovative people have an ability to see connections across ideas, and can turn the patterns they see into even better ideas. This is called lateral thinking. Conducting business at ACT is more art than science. Allied Command Operations (ACO) has the Operational Art. ACT has the Transformational Art. There is great opportunity for lateral thinkers to create new ways to provide the products that our customers want.

6. **Experiment**
An expression I often use is “build a little, try a little.” If an idea is truly innovative you probably do not want to drop it into the middle of the Alliance and see if it floats. The use of the scientific method is very important to investigate phenomena or acquire new knowledge. For the common man, I advocate “lightweight” experimentation such as small wargaming, workshops or BOGSATs (bunch of guys sitting around a table).

7. **Networking**
Innovative thinkers are really good about meeting people. They see the value in knowing lots of people with different backgrounds and experiences. There are many to build your network. ACT has social activities and associations. There are clubs in the local area. Or, you can join social media and use it to your advantage. I like to connect with people on LinkedIn and see how others are innovating.

8. **Collaborate**
Collaboration is key to innovative success. No one has all the resources to conduct their work so look for partners to share the load. Within and without ACT we have many groups that we can team with including COE’s, ACO, NCIA and the Science and Technology Organization.

9. **Share Your Innovation Story with the Alliance**
You know your personal innovation story very well. But, the rest of ACT and the Alliance needs to hear about it. The ACT public affairs office and corporate communications invite you to work with them to get your story out.

10. **Celebrate Success**
As a military command we tend to be quite staid when it comes to performance recognition. We tend to recognize performance only at formal events. Success should be celebrated when it happens. Everyone wants to feel part of the team. Recognition need not be extravagant. For example, a staff member who has done well could be invited to a Command Group meeting to listen in and perhaps offer an opinion; the “Innovator of the Month” could get a special parking place; or a staff member could be invited to attend a SACT lunch with dignitaries.

**Bonus Tip - Think Like an Entrepreneur**
I spend time with successful entrepreneurs at local organisations. All the entrepreneurs that I have met have been highly motivated. We will need to adopt some entrepreneurial characteristics if we are to achieve our goals.

**About the Author:** Wayne Buck joined SACLANT on Independence Day 2001. While building the Concept Development and Experimentation process he was an influential member of the SACLANT/ACT conversion team. For two years, he led the start up of the Operational Experimentation Branch before he moved to the Modelling and Simulation Section. He is involved in innovative activities with academia and industry.

1 Center of Excellence (COE)
2 NATO Communication and Information Agency (NCIA)
Gamification: Why NATO Needs to Play the Game

Businesses around the world are innovating by playing games—does NATO need to get in on the game?

By Mr. Andy Williams and Mr. Julian Giessing, Operations Analysis Branch, ACT Capability Engineering

In the summer of 2011, almost one thousand people from around the world logged on to the internet and began playing a new online computer game that centred around a fast-paced, geopolitical situation off the coast of Somalia. Players had to create action plans to respond to piracy in international waters, and not only by military means. The games were also special: political, military, legal, technical and security experts from a wide range of fields.

This was the first run of the Massive Multiplayer Online Wargame Leveraging the Internet (MMOWGLI), run by the United States Office for Naval Research (ONR) and the Naval Postgraduate School (NPS). This was a “gamification”. With the help of multimedia and web 2.0 technologies, MMOWGLI creates a future environment where players are asked to share new ideas and collaborate to earn innovation points and win the game.

What is Gamification?

Gamification is the process of using game mechanics and crowdsourcing (the distribution of tasks to a large group of people over the Internet) to solve problems, engage and educate people. Many companies already gamify to improve revenue, market products, and increase customer engagement and loyalty. From gaining frequent flier miles and product reviewer badges, to crowd-sourcing the analysis of geological data to find gold, gamification is changing the way companies do business. Now, businesses, governments, and NATO are looking beyond educational purposes at how gamification can be put to work to solve complex real world problems.

Gamification goes beyond traditional gaming technologies by harnessing the power of crowdsourcing and the human tendency to compete and problem solve.

Gamification involves harnessing the power of games to allow the desire for rewards, status, competition, and collaboration to be satisfied, while simultaneously achieving a benefit for a company, organisation or cause.

How Does it Work?

An example of gamification occurs when a friend “likes” an interesting article you share via social media; you receive a subtle psychological reward that incentivises you to share similar content again.

While the example of “likes” is a simple example of gamification, businesses and governments are looking at gamification to improve complex areas: collaborative problem solving and processes optimisation. “Serious Gaming”, as IBM calls it, integrates real world data, process models, and game mechanics. By developing an abstraction of a real world problem in a fun, challenging and rewarding game, analysis of the problem can be crowdsourced either within an organisation or freely to the public.

A sophisticated example of gamification is MMOWGLI; a direct response to the compartmentalisation of approaches by various organisations. The idea originated from the ONR, who were investigating ways to improve strategy for counter-piracy and found that the international response to the piracy problem was hampered by several challenges. The various organisations involved had compartmentalised their responses into diplomatic, military, legal, and insurance approaches, and consequently had neither a coherent set of goals and objectives, nor an agreed measure of effectiveness to determine the success of maritime security policies. As a result, barriers were broken down between organisations and fostered gamified collaborative brainstorming.

How Might Gamification be Put to Use in NATO?

First, gamification is an innovative way to support concept development. The key benefit is the opportunity to engage with a diverse range of people and brainstorm different ideas. Games could allow 100s of participants and increase the opportunities for analysis by capturing data about the process and outcomes of brainstorming.

Second, games are a novel way to conduct analysis and experimentation. In the future, we might see massively distributed experiments over 100s or even 1.000s of players, allowing an increase in data collection than is possible with the current approach of one or several events. Experiments could be run multiple times with different parameters, scenarios and solution options. Richer and deeper analysis would be possible with the vast amount of data captured by online software.

Third, applications can capitalize on past successful gamification efforts such as the US pre-deployment training where military simulations are combined with cultural learning. Training for operations planning, intelligence, analysis, C2 and logistics planning could all be enhanced by the inclusion of online practice games where trainees had realistic examples to test their skills outside of the classroom.

Finally, NATO might enhance its public communication through gamification by putting players in the position of a senior leader to understand the challenges of NATO’s operating environment. The wider public could engage in a gamification application by participating in a serious game on a topic relevant to NATO. This would help strengthen support in the member nations, create an opportunity to convey NATO’s mission and garner understanding for the important role NATO plays in international security.

Further Reading

• Reality is broken: Why games make us better and how they can change the world. Jane McGonigal, 2011, Penguin Press.
• All the latest on Gamification: gamification.org
• Try playing FoldIt: fold.it/portal/
Innovation Research Park – Why it Works

As one of the only research parks in the nation to be located on the campus of its research institution, Innovation Research Park (IRP) sits at the heart of Old Dominion University’s intellectual capital, research infrastructure, and student and faculty innovation.

An interview with Mr. Tom Osha, IRP at Old Dominion University conducted By Mr. Wayne Buck and Dr. Eric Pouliquen, ACT Capability Engineering

Tom Osha is President and CEO of Innovation Research Park (IRP) at Old Dominion University (ODU), where he provides leadership in creating a knowledge community that utilizes intellectual capital, innovation, infrastructure, and sense of place, to create companies, expand markets, and attract business opportunities to ODU, the Hampton Roads region, and the Commonwealth of Virginia. Osha also serves as the Executive Director of Economic Development for ODU where he advises the President and senior leadership on matters of economic development policy and business strategy. He was recently appointed as the founding director of the ODU Innovation Foundation.

Q Why is Innovation Research Park needed?
A My parent company, Wexford Industries, believes in the concept of a Knowledge Community. A Knowledge Community has several components. It has a space component. There needs to be iconic, spiritual gathering places. It has an ecosystem component which is everything from programming, events, and the mix of stakeholders versus constituents. It has an anchor component that, in the case of IRP, is ODU and specifically different research centers of ODU. The final component within the Wexford world is a networking component. Companies that are here have the opportunity to collaborate for scale easily across all of our projects and more broadly to collaborate within all of our relationships in our industry and others. We believe that all of these components taken together form this Knowledge Community. We believe that the Knowledge Community is a more powerful construct than just the traditional office or science department setting.

Q You mentioned “collaboration for scale.” You mentioned this also at Industry Day last year, what exactly do you mean by this?
A One of the challenges that small companies in particular have are how can they become large without becoming so distracted with outside activities that they cannot stay true to the essence of their business? We find there is far more power in putting together a group of organizations, companies, and individuals that together is far more powerful than they are separately and that they complement each other. Let us say, for example, that NATO is seeking a solution in a certain domain, perhaps ASW or C-IED. Those solutions are not going to come from the traditional routes through the nations, MODs, etc.

Where the new ideas will come from is the emergence of new players with new ways of thinking with new capabilities, particularly with different cost structures. So, if we threw a problem into the middle of this table that was a problem of say, how to defeat an IED. If sitting around the table was General Dynamics, Finmeccanica, Lockheed and all the rest you would get a solution. You would get a solution most likely based on the legacy solutions of platforms that they already provide. This brings with it its own cost structures, timelines and so on. If you wanted to throw the same problem out to a group populated by Google, someone in social networking, somebody in cloud computing, somebody in graphic design, you will get an entirely different solution due to the cross domain collaboration.

Where the construct of the collaboration for scale comes in and perhaps where it can help the Innovation Hub is when you have an idea ready to demonstrate. Now you can plug into your already existing capability development process and a small company can get access to opportunities that they have never seen before. Your collaboration allows you to scale an idea that you might never have scaled before at a cost structure that you might never have had.

Q So the scaling is finding the right interlocutors?
A Yes. Let me give you a telecommunications example. In 1998, DSL was just starting to get market penetration. We at Broadwing went to Cisco and said “We, Cincinnati Bell, would like to become your exclusive partner for the implementation of DSL.” Of course, Cisco worked with all of the big companies like Verizon, AT&T and so on. But, our proposal was one of collaboration for scale. If in 12 months Cisco sold 30,000 DSL units across the US West that would be a lot of units. But, if they sold 30,000 only in Cincinnati then they would have a penetration that would allow them to start testing applications along with selling the units. Having a small partner brought Cisco a different dynamic then it otherwise would have had. That is collaboration for scale. Without that idea we never would have gotten their attention.

Cisco was able to test many new applications on this network largely consisting of their hardware creating a win-win situation for both companies.

Q It would seem that this type of collaboration is the DNA of IRP.
A We think that collaboration is the DNA of a Knowledge Community.

1. ASW: Anti-Submarine Warfare; C-IED: Counter-Impovised Explosive Devices
Innovation occurs on a daily basis within each nation’s armed forces from their innovative use of equipment to meet changing mission requirements to innovative mission planning and innovative capability development based on operational needs. Some may call it creativity, but innovation means more than looking at something differently. It involves critical thinking among all stakeholders providing a foundational role in change management and transformation. How can we develop innovation metrics to measure innovation? What are the benefits particularly during austere economic times where the battle space changes frequently? Four articles based on innovation metrics have been reviewed to provide potential answers.

**Innovation Metrics Development**

Muller, Välikangas, and Merlyn (2005) revealed the need for a sustainable innovation policy to create and maintain an organisation’s influence. In turn, this policy requires development of innovation capabilities to provide advantages over other organizations. Commanders see these innovation advantages for and against them as they win and lose ground in the battlespace between allied forces and the enemy. However, in austere economic times, innovation programs rapidly become budget fodder. To avert budget challenges, leaders should realize that, designed properly, innovation metrics can aid decision making based on objective data and align goals with strategic objectives.

The authors found innovation metrics allow leaders to assess the organisation’s strategy decay. To avoid excessive or rapid decay, they highlighted the need for an innovation framework consisting of resources, capabilities, leadership, and processes. Additionally, the authors offer guidelines for developing metrics focusing on the inputs, processes, and outputs. They caution leaders to avoid focusing on a single or small group of metrics.

**Measuring the Innovation Process**

Once an organization develops its innovation framework, Morris (2008) offered a nine-stage innovation process graphically represented as a funnel (Fig. 1). Each stage consists of soft (qualitative) and hard (quantitative) metrics. At the Strategic Thinking stage, many ideas are proposed and become goals and requirements. These ideas are then funneled down through the next stages under careful management. Morris recognizes the importance of managing innovative ideas through a portfolio requiring research. The Ideation stage represents the sandbox where ideas take shape as concepts for further development.

He recommended the aggressive pursuit of insight for the concepts, sparking development of usable products. Targeting the products into a portfolio under development, sets the stage for rapid prototyping and the Innovation Development stage. The resulting completed innovation products are then ready for marketing and implementation.

This process offers many innovation metrics adaptable to NATO ACT’s strategic thinking, training, and capability development outputs.

**Innovation Metrics**

Now that an organisational innovation framework and process exist, Kaplan and Winby (2007) provided discussion on how to define appropriate benchmarks for innovation metrics. They caution against using the traditional Research and Development (R&D) flavoured metrics such as R&D headcount, number of active R&D projects, and number of R&D ideas submitted. They argued that these metrics may be useful in some areas but offer a limited view of innovation. Instead, they advocated development of a family of innovation metrics mirrored to the organisation’s strategy and spans across the organisation. They divided the metrics into input and output categories under a framework similar to Muller et al.

The input metrics focus on budgetary investments, use of resources, and skills and behaviours related to innovation that drive the development of outputs. The output metrics answer the expected results.

**The Innovation Scorecard**

Combining the framework, process, and metrics into a useful tool for leadership and management, Gama, Mira da Silva, and Ataide (2008) described the innovation scorecard (ISC). Based on the Balanced Scorecard (BSC) developed in the early 1990s, the ISC was designed to combine the BSC framework with innovation metrics to measure the added value of innovation and to ensure its alignment with organisational goals and objectives.

Developed using a real world case study, the ISC was found to provide a systematic approach to measuring innovation. It forced organisations to create a coherent portfolio of innovation metrics. It proved to be a “comprehensive management tool for measuring and managing many different aspects of innovation.” Lastly, the ISC offered an easily implemented and powerful tool that can measure all types of innovation.

**Conclusion**

For Allied Command Transformation, the usefulness of defining innovation metrics within a process and framework culminating in an ISC will provide return on investment within the three ACT transformational output areas: Strategic Thinking; Capability Development; Education and Training. Additionally, the advent of ACT’s Innovation Hub could provide development and resource cost benefits for the products from the three output areas.
Sustaining and Disruptive Ideas and Technology are Applicable to the Busi
ness World and Governments Alike.

Are the Concepts Found in the Innovator’s Dilemma Applicable to the Bi-
Strategic Commands?

By Mr. Wayne Buck, ACT Capability Engineering

The Innovator’s Dilemma Applied to NATO

The Innovator’s Dilemma describes a business theory about how large, well-performing companies can fail even when they are doing everything right. In the book, the author describes companies whose current capabilities and successes actually became obstacles in the face of changing technologies and environments. Can this business theory be applied to NATO and, if so, what can NATO learn from it?

Sustaining and Disruptive Innovation

Innovation is the application of new ideas to existing processes and consists of two types, sustaining and disruptive. Sustaining concepts and technologies improve performance. Disruptive concepts and technologies are innovations that disrupt an existing market in an unexpected way. They are generally “cheaper, simpler, smaller, and, frequently, more convenient to use.” Disruptive concepts and technologies do not occur very often, but when they do, they can cause the failure of previously successful companies whose resources, processes, and values allow it to concentrate solely on sustaining technologies.

In 2003, NATO recognized that it needed an innovative actor to help prepare the Alliance for the future. Allied Command Transformation (ACT) uses most of its resources to improve existing capabilities. But, ACT also has a responsibility to prepare the Alliance for new capabilities which in some cases could be disruptive in nature. A current example of disruptive technologies is the use of Serious Games (games designed not solely for entertainment). For education, NATO uses almost exclusively classical technologies: whiteboards, slides projected on screens, videos, and, for the past ten years, Advanced Distributed Learning (ADL). The use of Serious Games by academia and business to educate students in an engaging manner is now significant. ACT has joined this wave of disruption with its award-winning game Boarders Ahoy! used to teach shipboarding. However, this minor investigation into a disruptive technology is the exception not the rule in ACT.

Mission Support

If one thinks of the Bi-Strategic Commands as business units within a large corporation, one can see that Allied Command Operations’ (ACO) resources, processes, and values are designed in such a way that it can accomplish its mission of preparing for, planning, and conducting military operations. ACT supports this ACO mission by developing sustaining concepts and technologies. This is clear in the ACT mission of changing, driving, facilitating, and advocating continuous improvement of Alliance capabilities. What is hidden in the ACT mission is the need to also understand and prepare for disruptive ideas and technologies.

When businesses need to tackle disruptive technologies they do so in one of three ways. They can acquire a firm to do the disruptive work for them, change their internal processes to support disruptive work or spin off a portion of their own organization to do the work.

ACT’s Focus on Disruptive Innovation

In 2003 the Alliance spun off ACT to be its forward-thinking instrument. Similarly, ACT spun off and isolated a portion of its organization to concentrate partially on disruptive technologies and understanding how they may affect the Alliance. In the beginning, Concept Development and Experimentation (CD&E) had its own resources, processes, and was working on developing its own values. Since 2003, ACT is in its fourth reorganization and each time CD&E has become part of a larger group forcing CD&E to shed its own innovative processes and values and adopt more sustaining processes and values in its need to compete for resources. In the opinion of this article’s author, a result has been significant lack of autonomy which has diminished the disruptive ideas and technology contributions that CD&E can provide to the ACT mission.

Some disruptive ideas and technologies are investigated at ACT, but the efforts are fragmented, isolated and must compete for resources within the existing sustainment-focused processes. Existing NATO resource allocation processes require well thought out and clear multi-year plans to allow for prioritization, review, vetting, and ultimately budgetary decisions being taken by the Military Budget Committee. Disruptive technologies are inherently not well understood and lacking in an identified future. The resource process favors sustaining concepts and technologies over disruptive concepts and technologies making it very difficult to initiate and advance work to contribute to understanding what impact disruptive concepts and technologies may have.

If ACT is to follow a fully innovative agenda it must also concentrate on disruptive ideas and technologies. To achieve this aim may mean developing a truly autonomous set of resources, processes, and values within the existing processes.

1 The Innovator’s Dilemma When New Technologies Cause Great Firms to Fail, Clayton M. Christensen, 1997
Staff Branches Can Build Capabilities

Capability Engineering and Innovation within Allied Command Transformation takes on the challenge of managing capability improvements, new initiatives and innovation.

By Brigadier General Giovanni Fungo, Italian Army, ACT Capability Engineering Division and Dr. Han De Nijs, ACT Capability Engineering Division

A New Division

Allied Command Transformation (ACT)’s commitment to improve its efficiency while managing human resources constraints1 has led to the creation of the more integrated and result-focused Capability Engineering and Innovation (CEI) Division. This new division is actually the existing Capability Engineering Division enhanced with two branches: Transformation Network Branch (TNB) and the Innovation, Doctrine Coherence and Lessons Learned (IDLL) branch, and by merging the Lessons Learned Implementation (LLI) branch and Policy and Plans branch.

A New Mission

This restructuring stays in line with the division mission and function, but the aim of the new division, to focus on “innovation”, will alter the current work programme: business will not be as usual.

The CEI Division will initiate, undertake, facilitate and support the development of emerging capabilities and future innovative approaches to solve identified and anticipated capability shortfalls. It will use a coherent approach to solutions development and, will integrate NATO and national efforts.

Requirements and Solutions

The CEI Division will match requirements with solutions and conduct projects which fulfil them. Requirements for capabilities are generated in a number of ways in NATO: most of them being called Urgent Operational Requirements and Lessons Learned, others formed by the emerging needs and transformational ideas of the Alliance. Moreover, the NATO Defence Planning Process (NDPP) produces Capability Shortfalls or Gaps.

Engineering and Innovation

Solutions to requirements can often be found by engineering existing or known solutions.

Innovation has increasingly been sought in NATO capability development as a means to maintain effectiveness and improve efficiency. The premise is that through innovation and better exploration of existing capabilities, NATO nations may be able to offset decreasing defence funds while still maintaining or enhancing the Alliance’s capabilities. Furthermore, new ideas can result from strategic thinking, study and consideration about the Future Security and Operating Environment and from Nations need to change their current defence capabilities. Transformational solutions and disruptive change can be found when innovative capability development is applied to these new ideas.

Innovation, as a mindset, broadly discussed throughout this magazine is at the heart of the initial process. Once emerging innovative applications are better understood, further refinement and adjustment to a new function can become an engineering activity.

Collaboration and Engagement

The development of solutions through engineering and innovation is improved by engagement and collaboration with other actors. Seeking external perspectives is a crucial part. Through engagement, the CEI Division seeks to improve capability development projects across nations and NATO entities with collaboration.

Engagement and collaboration by the CEI Division will be governed by an understanding of supply and demand. The demand is to have external actors understand current solutions, the operational environment and the need for new solutions. The supply is the available applications that may find use in the defence domain. This will develop a constant pull and push of possible ideas and solutions.

Transformational Events

The CEI Division will organize transformational events that allow a strategic understanding of what is involved in the demand and supply or what transpires in defence requirements and solutions. For example,

• the Chiefs of Transformation Conference (COTC) an engagement with nations about transformation and innovation,
• Industry Day a meeting with the captains of Industry,
• CD&E2 Conference gathering relevant practitioners from NATO and the nations.

Programme of Work

These events serve as an engine for the divisional programme of work, collaboration and engagement. The division manages the programmes that involve the contracting of the Centre for Maritime Research and Experimentation (CMRE), the NATO Communications and Information Agency (NCIA) or national analysis, modelling and simulation entities and academic institutions. The Innovation Hub (see page 4) is the ultimate extension.

Implementation

The CEI Division will implement its new mission in 2013, with the challenge to be seen as the focal point of innovation within the Command.

1 In this case linked with the new 2013 Peace Establishment (PE)
2 Those branches belonged to a dissolved Division called Program and Implementation
3 Concept Development and Experimentation
Gender – Innovation or Integration?

Considering gender and gender issues as a powerful tool towards peace and security.

By Ms. Aram Hong, ACT Gender Advisor Assistant

United Nations Security Council Resolution (UNSCR) 1325 was unanimously adopted on 31 October 2000. The Resolution was a cornerstone and recognised that women are important interlocutors in the greater discussion on peace and security. In 2007, NATO passed its first policy document and, since the ratification, there have been many successes with respect to gender. However, the integration of gender perspective could still be considered to be in its nascent stages.

Gender Requires a Change of Mindset

Innovation entails a certain sense of ‘newness’, of invention, of originality. In light of this understanding, what does ‘gender’ have to do with innovation? Moreover, is ‘gender’, at all, innovative? The most obvious answer is: no. Gender as a subject – as a concept – is neither new nor innovative. It is rather the manner in which gender dimensions are considered and applied within the armed forces and in armed conflict that is very modern. In reality, such actions to incorporate the perspectives of both genders should already be part of our normative organisational behaviour. Thus, what we consider as ‘new’, to integrate gender perspective, is actually a reflection of the change in mindset and the perception of what is “normal”. Consider a woman’s right to vote. Not so long ago, in western democracies, women did not have the right to vote. Now, because it has been “normed” we do not even consider the question.

What is Gender?

Gender refers to the socially constructed roles and responsibilities between men and women. These roles are heavily influenced and learned by one’s culture. In creating societies where roles are divided according to labour, it is typical to find men in dominant positions and women in subordinate positions. However, as these responsibilities are socially constructed, they may be altered or changed completely, thereby changing what is “normal”. In this way, Gender Advisors work to assess and evaluate differences between men and women in order to create and revise current policies, directives, education and training in consideration of the two genders.

What Does it Mean to Integrate Gender Perspective?

Properly integrating gender perspective involves the understanding that men and women perceive security risks, armed conflict and safety differently. Women in particular, are more negatively affected by, and in, armed conflict. Yet women are, more often than not, side-lined when it comes to addressing their particular needs with respect to protection and post-conflict reconstruction in particular. Therefore, by solely concentrating on security measures and freedom of movement for men, the needs of half of any given society are ignored. To prevent further exclusion, women need to be involved and represented at all stages of a decision-making process to ensure a more holistic, inclusive approach. The Alliance has also called for more women to be represented in national armed forces. In this manner, developing military structures with the ability to recognise and tackle multi-faceted conflicts and crises, including lobbying for a more gender-balanced force, contribute to greater operational effectiveness.

What, if at all, is ‘New’ About Gender?

The new part about gender is that nations and NATO believe gender perspective is integral to the Alliance’s success, and, as such, there are currently Gender Advisors newly installed throughout the Peacetime and Crisis Establishments. They work to implement gender dimensions and provide direct advice on gender-related dimensions to the Commander. In this way, Gender Advisors streamline and address what should be normative behaviour and eventually will become the norm. Gender Advisors should not be the only staff officers to be single-handedly charged with integrating gender perspective. Considering gender dimensions should be part of what we do in each of our jobs, at all levels – from the strategic to the tactical levels. Such recognition by nations and the Alliance as a whole to mainstream gender reflects a new comprehension in the face of conflict. It is now widely-acknowledged that the lynchpin of a stable future depends (in part) on the successful integration of the women, peace and security agenda. We have gained a deep understanding that properly addressing gender dimensions is a powerful tool and a relatively untapped force towards peace.

Nonetheless, if we return back to our initial premise that socially constructed differences have persisted throughout time, then it is the manner in which we address these differences by creating policies, recommendations, education and training, and operational planning guidance, that is new. This, itself, involves a change in mindset and an admission that: ‘we are not there…yet.’ Integrating gender perspective benefits everyone – not just women. The Alliance must work to continue to actively engage and incorporate gender considerations so that such organisational behaviour is not left to the sole responsibility of an ‘innovative’ Gender Advisor.
All dates are tentative and to be confirmed.
Innovation and Transformation Through Lessons Learned

Lessons learned should not be considered the final step of a process; but instead the beginning of an experience.

By Lieutenant Colonel Manuel Santos,
Spanish Army, ACT Programme and Project Management Lessons Learned Implementation Branch

History shows us that experience is almost always the best teacher. We solicit the advice of battle-hardened warriors because of their experience and we revere the counsel of elder statesmen for the same reason. In fact, the phrase “History shows us…” itself belies the value of experience. One certainly learns from one's own experience, but this is often a slow process and may come with great cost. Alternatively, one may quickly build vast amounts of experience at little cost by learning from others. This is precisely the point of the Lessons Learned programme: to share experience and avoid making the same mistake as others before us.

What is a Lesson Learned?

A lesson learned is useful information gained through experience that an organisation should retain for future use and that might be relevant to other organisations. Depending on the lesson, it could be a successful procedure or outcome that you wish to repeat or it could be a means to avoid an undesirable result you have experienced.

So, in order to identify lessons, you can ask yourself: What is not working that can be improved? Or, what is working well and can be shared with others?

Innovation through Lessons Learned

Lessons learned is about change and innovation, with the objective of obtaining improved capabilities. The process begins gathering insights (observations) and conducting analysis to find out the best solution to resolve the observed problem. The lessons learned process then produces innovative ways to change the way we operate; i.e., tactics, techniques and procedures, doctrine, equipment, etc. The final step is distributing the knowledge of those changes so others can benefit from our innovative activity, and we can benefit from the innovations of others. It is this last piece, sharing, that in many ways is the most important for the lessons learned process – we must learn from others to make things better and to help transform NATO.

It is not by chance that lessons learned is a major pillar of transformation. The added value of the work being completed within Allied Command Transformation (ACT) is the essence of innovation such as transforming NATO’s training, capabilities, and strategic thinking.

The Importance of Lessons Learned in ACT

Lessons learned are designed to improve the efficiency of a process. Individuals or teams can benefit from the knowledge gained through the experience of those who have gone before them.

In today’s rapidly changing security environment, the ability to identify and implement innovations quickly is of paramount importance to NATO’s ability to undertake the full range of Alliance missions. Lessons learned contribute to the successful reform and transformation of the Alliance, and is an essential component of any organisation committed to continuous improvement and development. Establishing and sustaining a robust NATO Lessons Learned capability and the associated means and tools to implement change is a visible indication of the willingness of the Alliance to adapt, develop and transform. It is these activities that ART is at the heart of ACT.

On a smaller scale, the more we embrace lessons learned as a part of our working culture, the quicker and more efficiently we can respond to current and future threats.

An example is the fight against C-IED, which we can see as a race between NATO and our adversaries to reach a faster decision cycle: how to respond to new IED devices and techniques before the enemy can change them.

Minimal Effort, Great Results

Capturing lessons learned from projects is key for any organisation. Unfortunately, project teams usually move quickly from project to project and capturing lessons learned is seldom a priority. To ensure efficiencies over time and development of best practices, it is essential to capture and document, in writing, lessons learned on projects and on daily work. Lessons learned are a useful tool in every area of expertise or discipline.

For the lessons learned process to be effective, two factors are key: leadership involvement and a constructive culture that avoids blame.

Experience is the Best Teacher

Every year, experienced personnel within ACT leave and with them depart a vast amount of experience. This experience can be preserved if documented in the form of written and accessible lessons learned and best practices. The resulting documentation will assist those who join ACT to quickly take advantage of what their predecessors learned. ACT as a whole must be committed to the lessons learned process. Each staff member, to a certain extent, is an observer, an analyst, or an implementer making it invaluable for individuals to make a difference.

Experience is indeed the best teacher, but we need not rely only on our own experience. By documenting and sharing lessons learned, everybody can quickly gain years of experience.
Operationalising Transformation – Bringing the NATO Lessons Learned Process to Life

The Joint Analysis and Lessons Learned Centre saw first-hand the success of their lessons learned policy through the crisis response operation Operation Unified Protector.

By Brigadier General Peter Sonneby,
Royal Danish Air Force, Joint Analysis & Lessons Learned Centre

Rebounding on a Success

In October 2011, after seven months of naval and air operations, NATO successfully concluded its mission in Libya. Operation Unified Protector (OUP) has proven to be not just a military success, but a success of self-reflection — commanders and leaders at every level of NATO examined their actions in search of the lessons to be learned. At the onset of the mission, these commanders and leaders, from the Secretary General down to component commanders, initiated the Lessons Learned Process in accordance with the NATO Lessons Learned (LL) Policy and the Bi-Strategic Command (Bi-SC) LL Directive.

Method is Paramount

The NATO LL Policy and the Bi-SC LL Directive form the documented basis for NATO’s LL Capability. NATO recognized, following its first crisis response operations in the 1990s in the Balkans, that it needed a more formal organizational approach to capturing and learning lessons from its activities. This recognition led to the creation of LL and analysis structures within NATO Command Structure (NCS) bodies and the establishment of a new dedicated NCS body for joint analysis and LL: the Joint Analysis and Lessons Learned Centre (JALLC). These structures have actively contributed to NATO transformation ever since by providing the insight needed to drive intelligent change in the Alliance.

The NATO LL Process consists of six steps divided into two main phases. The analysis phase involves capturing observations on what went right and wrong, then analysing the observations to determine root causes and possible solutions. The result: Lesson Identified (LI) a recommendation on how to institutionalize the learning gained, and action body implementation recommendations.

The remedial action phase begins with leaders and commanders endorsing the recommendations and tasking the assigned action body to implement the recommendations. Then the recommendation is implemented and effectiveness validated. The last step is sharing which must take place throughout both phases.

OUP allowed for the first activation of the NATO LL Process in a short-notice and rapidly stood-up crisis response operation with the aim of capturing the full range of lessons that arose.

Broad Expectations

The Secretary General formally initiated the NATO LL process in early April 2011. Consequently, each headquarters involved in OUP prepared LI reports. And JALLC, ACT’s premier body for operationalising transformation through the NATO LL Process, was instrumental in making it happen.

During OUP, JALLC was involved at each level, from NATO HQ to the operational-level staff of Combined Joint Task Force (CJTF) OUP, helping LL staff officers identify, record, and report lessons. JALLC staff were deployed to provide their expertise in capturing lessons. Their efforts helped ensure that the LL Process was activated from the very beginning of the operation and that valuable lessons from the onset, especially those concerning the NATO Crisis Response System and operations planning in the lead up to OUP, were recorded for future analysis.

JALLC’s next significant contribution followed with involvement in the SHAPE-led Strategic Analysis Team (SAT). SHAPE established this team in order to collect lessons from the planning of the Operation, the way it had been conducted and the effect of these methods on the Operation. JALLC provided one-third of the team personnel and the work led to over 70% of the LIs produced in the final report and endorsement paper.

Reports on Time

After the operation was complete, the JALLC was tasked by SACT to produce a report on the lessons from OUP: OUP – Lessons for the Alliance. A total of 15 OUP lessons were identified and presented in three broad categories: political considerations, organizational and doctrinal issues, and NATO assets and capabilities.

SACT submitted the report to the NAC in June, paving the way for the political and strategic level remedial action phase. Identifying a gap in the process, JALLC also published a second report: OUP – Lessons from National Military Perspectives representing the Nations views on the NATO LL Process.

A Complete Panel of Products

As a final product for OUP, JALLC has published a bibliography and annotated reference list of the major products published as a result of the OUP LL Process. This bibliography is designed to be a study aid of the lessons from OUP and as a LL Process guide.

The NAC’s approval of the military advice on implementing the lessons from OUP and Chief of Staff SHAPE’s endorsement of the SHAPE OUP SAT Final Report mark the completion of the endorsement and tasking step. These endorsements form a strong foundation for the Remedial Action Phase of the NATO LL Process and close out the analysis phase. The analysis phase may be over but there is still a substantial amount of work to be done to learn and implement the lessons identified form OUP.

JALLC is most proud of their direct contribution to OUP, representing an expenditure of over 10,000 man-hours. The analysis has been completed successfully, the lessons have been identified, and the way ahead has been approved. The onus is now on Commanders and assigned actions bodies to make the necessary changes in how we do business to ensure NATO continues to learn and improve.
The Alternative Analysis Concept: A New Standard for Streamlining Concept Development

By Commander Mark Leavitt, United States Navy, Capability Engineering Division

Successful concepts begin as good ideas, but it takes many NATO professionals, countless hours and a Herculean effort to transform a concept into a fully developed and tested NATO capability in a timely manner.

This is not a complete success story...yet. The Bi-Strategic Command Concept for Alternative Analysis (AltA) is just a piece of paper until it goes through the difficult implementation process. Only when AltA exists as a worthwhile capability within NATO will this story become a complete success.

Streamlining Concept Development

The AltA Concept represents a new standard for the successful completion of NATO’s Concept Development and Experimentation (CD&E) process. The concept was delivered rapidly, just short of 10 months from receipt of the request from SHAPE to approval of the Bi-Strategic Command Concept. Rapid delivery was possible by applying three key ideas. First, a cross-functional development team was formed that included broad stakeholder membership. Second, an aggressive development plan was created to maintain positive momentum. Third, a stepped approval and evaluation process facilitated incremental consensus and leadership buy-in. The combined value of these elements, and lots of hard work by many people, drove the short delivery timeline of the AltA concept.

Personalities Matter

Without question, the most important of these elements was the development team. The team exemplified a truly cross-functional approach to a project. At maturity, the concept development team included over 30 members from a considerable number of NATO military commands - HQ SACT, SHAPE, JWC, JALLC, JFC Brunssum, JFC Naples, JFC Lisbon, FC Madrid, AC Ramstein, and MC Northwood. Additionally, it received assistance from subject matter experts within the United States, United Kingdom, Canadian and Dutch militaries. Collaborative effort ensured that the concept was developed and refined through inclusion of a wide variety of perspectives and more thorough consideration of the underlying ideas.

Setting Goals as a Group

The next important element to success was the use of a clearly defined development plan. This plan truly drove the concept’s evolution. The plan was widely distributed and became a key component of meeting or workshop. Exposure to and awareness of the development timeline gave the entire team a sense of responsibility for meeting the goals. Key development events were planned at least six months in advance, creating an expectation that the Capabilities Engineering Division would incrementally deliver more mature products at each of the major development events. The importance of this cannot be overstated. If we waited until the concept reached a predetermined point of development before arranging the next workshop, the timeline would have increased by many months. The development plan also included weekly meetings for ACT members. Frequent, but short, meetings were crucial to keep the positive momentum of our work.

Consensus through Collaboration

The final component of the concept’s rapid development was the use of a stepped approval and evaluation process. We first introduced a conceptual framework, rather than a complete concept, as an initial building block that allowed reviewers to comfortably move toward consensus without offering either full concurrence or complete disapproval. It also allowed leadership an early look at the direction the concept was headed, giving them the opportunity for direction and guidance to help ensure its success. After the framework was approved, the development team began working on the complete concept. A task made easier with the knowledge that the basic structure had been through thorough review and approval. The concept again went through a series of review and approval points before being introduced for final staffing. At each step, ACT and SHAPE leaders were given an opportunity for review. Interested national parties were also given the chance for review and feedback to ensure the widest exposure and a thorough vetting of the ideas contained in the concept.

From CD&E to Implementation

The concept is unique from a capability development standpoint as it seamlessly transitioned from concept development to capability implementation following concept approval in April 2012. ACT is approaching this project as an opportunity to aggressively move from idea to concept to functioning capability, shortening the timeline for delivering transformation by considering capability development as a holistic process of concept development, experimentation, and implementation.

The implementation timeline is purposely designed to be as aggressive as the development schedule. Initial Operating Capability is expected by January 2013. Full Operating Capability will follow in May 2013 when the pilot course is replaced by a full NATO developed curriculum that includes training for AltA Facilitators, general training for staff, and AltA education lectures embedded in other courses.

The Final Push

If we can meet this timeline and deliver an Alternative Analysis Capability that adds value to the decision making processes within NATO then we can declare a complete victory, but there is still much work remaining to reach this goal.
Together Academia and Industry Create a Win-Win Situation

After nearly three years of existence, the Framework For Collaborative Interaction has proved to be an efficient tool for the ACT capability developers and all their support activities … for no cost!

By Major Christophe Dufeÿ,
France, Ingénieur Principal des Etudes et Techniques de l’Armement, Office for Collaboration with Academia and Industry, Capability Engineering Division, Future Solution and Modeling & Simulation Branch

Industry and Academia are multifaceted worlds of importance for Transformation. A “one-size-fits-all” approach in any academia-industry engagement will not produce satisfactory results for NATO. Therefore, multiple approaches have been devised within the Alliance; the collaborative approach being one of these. Collaboration is limited to projects conscribed in time and scope, and ones that do not involve procurement. Nonetheless, collaborative interaction allows for teamwork to emerge between ACT and Academia or Industry and to participate in solving shared concerns. Collaboration is guided by the Framework For Collaborative Interaction (FFCI), which provides principles, tools and coordination for this effort.

**Framework For Collaborative Interaction for “Free”**

FFCI was set up in 2009 and the implementation team, the Office for Collaboration with Academia and Industry (OCAI), was created in 2010. Since then, FFCI has been providing substantial support to many projects from cloud computing to countering hybrid threats, medical support to operations, distributed networked battle lab, missile defence and many more.

FFCI is an additional resource for anyone in ACT working on projects; be it capability development related or any other ACT mission driven project. Additionally, FFCI is available to those projects with privately contracted support, NATO Industrial Advisory Group studies or any NATO agency contracted support.

FFCI is not a programme, it is an enabler to achieve results similarly to the way contracting supports projects. But there is an exception to FFCI; there is no exchange of money between the involved parties for services. Resources are provided with respect to their level of ambition into the project. Interestingly, skeptics have long thought that this model would not be viable, but the successes have proven them wrong.

Academia and Industry have engaged in many FFCI projects without directly receiving any financial contributions. These organisation find benefits beyond the financial aspect; a “collective benefit” perspective. This action brings awareness of the current capabilities within industry to NATO. As a result of the collaboration, NATO and industry can then take into account the capability development effort, for example, and the industry organisation can understand what NATO is expecting; thus the company could lead its research and development efforts accordingly.

**It is About Teamwork**

Setting up collaboration is by essence teamwork between different parties. The ACT Subject Matter Experts (SMEs) and Academia and Industry representatives have to manage each others expectations to find a fair basis for collaboration. The OCAI team provides advice and coordination, with great support and assistance from the Legal and Contracting & Purchasing branches and ACT Office of Security. The OCAI team will appear officially in the new Peace Establishment (PE) of ACT with permanent positions, which will enforce setting up new milestones in the recognition of collaboration efficiency. Over time, those Voluntary National Contribution (VNC) and the contractor personnel positions will be filled by peacetime positions provided by the nation’s military personnel.

**Industry Engagement Beyond ACT**

Discussions are currently underway on how to extend industry collaboration beyond ACT and extend it throughout NATO.

The principles of FFCI (fairness, openness, transparency, and a zero-to-low cost benefit) should be applied to all possible frameworks. But such frameworks should first fit the requirement of each NATO body that would like to work towards a collaborative effort. At that point, the implementation would adjust as necessary considering the requirements of each entity and, more particularly, their level of involvement into the capability development effort.

When considering collaboration with industry, it will be necessary to address the role of the NATO Industrial Advisory Group (NIAG). Could NIAG play the role of the OCAI at the NATO level? Could NIAG coordinate all the collaboration efforts?

**The Future of FFCI**

FFCI has endured the long journey and this ‘stop for refuelling’ and ‘taking on new equipment’, will be short and worthwhile. Then, just like a plane’s mission is to fly, once the PE is fully implemented, FFCI will take-off again!

1 Peace Establishment (PE): The authorized peacetime manpower requirement for a unit, formation, or headquarters.
The Importance of Integrating Cyber Defence into NATO Exercises

Cyber defence is a serious threat facing NATO and its information systems. But, to remain cyber secure, this effort cannot be accomplished alone.

Serious Threats Take Serious Action
Cyber attacks on the NATO Communication and Information System (CIS) are becoming more frequent, more organised and more influential to the NATO mission. These attacks may affect critical infrastructure supporting NATO CIS. It is possible that they may reach a threshold which threatens national and Euro-Atlantic prosperity, security and stability. Foreign militaries and intelligence services, organised crime, terrorist and/or extremist groups and even insiders can all be at the source of a cyber attack.

Maintenance of cyber security is a shared NATO responsibility and every one of us has a cyber defence role to play. Effective NATO cyber defence must be a collective effort; it is not a game that can be played alone.

Cyber training and the integration of cyber-relevant injects within exercises are the means to test and validate consultation, Command and Control (C2) and the decision-making processes required to establish and maintain effective cyber defences in a complex, multi-national and coalition environment.

Change of the Operational Mindset
The main defence against cyber attacks are user awareness and prompt reporting of suspicious activity.

The initial effort in Allied Command Operations (ACO) for cyber defence training is to change the mindset of the staff regarding the topic. This mindset change will assist the operational staff on how to respond to cyber threats. The training aims to enforce that managing cyber incidents is an operational issue and not just a CIS issue. Moreover, cyber incidents have to be handled operationally across the ACO commands and beyond.

The Need for Cyber Defence within NATO Exercises
“When you move from “policy” level to “do it” level, you realize that only a few people are around with expertise and experience to effectively translate into practical terms for the operational staff what the high level policy wants to say,” as mentioned by Lieutenant Colonel Luc Lafreniere SHAPE CIS INFOSEC, former Section Head.

You may be familiar with the Cyber Defence Policy, CDMB CONOPS\(^2\) and other documents from the strategic NATO HQ level. While helpful, these documents do not provide operational staff answers to the principal question “What do I have to do when a cyber attack occurs?”

Here is where ACO can provide a tight linkage between the operations and strategic side of cyber defence therefore providing answers to the above question.

ACO maintains a focus in planning and executing cyber defence scenarios into existing NATO exercises which will be on creating cyber security awareness for training audiences. This awareness will be exercised on preemptive measures, such as contingency planning, and reactive actions, such as consequence management.

Cyber defence training scenarios should be incorporated into the overall exercise scenario in such a way that they do not interrupt the execution and/or evolution of the exercise and do not hinder the fulfilment of the set training objectives. This links back to enforcing a mindset change. The efforts should be focused on linking cyber security issues with operational incidents. This will bring realization to the forefront of individual’s minds that cyber attacks may be detrimental to operations and lead to wider comprehensive issues.

Think Beyond Technology
Figure 1 describes the final result of a cyber attack. The key takeaway is the “Exfiltration” and how to respond. The technical aspects of cyber defence (IDS\(^3\) configuration and exploitation, malware analysis, forensics, etc.) are assumed to be carried out by other bodies and the operational staff starts training from that point forward.

Some types of cyber attack like Denial of Service (DoS) are easy to be observed. Some other types like data exfiltration and modification can not be easily revealed and effective fusion of information is critical in order to come to the right conclusion. It is very important to be able to analyze, correlate and synthesize information. The key element is the capability for fusion of information through varied sources (INTEL, SIGINT, Media reports, INFOSEC reports) in order to recognize the Cyber Attack (for example a document exfiltration) as the root cause of other operational/kinetic attack events.

Cyber defence incidents should not be reviewed in isolation. They should require the engagement of all operational staff and not be treated as CIS technical issue.

ACO is focused on implementing a comprehensive approach which integrates cyber technology with policy, processes, people and management. By adopting this approach we expect to train staff in an appropriate way during exercises in order to achieve uninterrupted operations and mission fulfillment. III

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1 SHAPE CIS INFOSEC: SHAPE CIS Information Security
2 CDMB CONOPS: Cyber Defence Management Board Concept of Operations
3 Intrusion Detection System
**NATO Network Enabled Capability**

**Federating the Future Mission Network**

NNEC provides overarching principles to enable for future missions effective and efficient networking, in line with the Comprehensive Approach and the Connected Forces Initiatives.

By Colonel Patrick Grelier, French Armament, NNEC Branch Head and Dr. Alberto Domingo, NNEC Deputy Branch Head

**AN UPDATE ON THE NATO NETWORK ENABLED CAPABILITY (NNEC) CONCEPT**

The NNEC concept developed doctrine and guidelines on how to federate capabilities to be used in joint and combined operations. The concept considers both military and non-military partners and is constructed in line with the NATO Comprehensive Approach set forth at the Lisbon Summit. Capability unification used in support of future operations is the **raison d’être** of the Alliance. Federation fosters information sharing between mission partners, resulting in better situational awareness and improved command and control, which are key requirements for “information superiority” that dramatically improve mission effectiveness. Federation can be achieved through simultaneous utilization of the four NNEC components: the underlying **networks and systems**, the information to be shared, the processes to do so, and the policy and doctrine required to enable and empower users to share the information they possess. True “enterprise-level” federation can become a reality through coherent and balanced efforts made in all four areas.

A number of innovative tools have been developed to enable the inclusion of NNEC elements in existing, planned and new capabilities. The NNEC criteria are a set of (NNEC-driven) requirements that can be overlaid on capabilities to ensure they will be able to seamlessly exchange information with other peers. The NNEC assessment process is the method to formally validate the capability in terms of its ability to support information sharing and federation. Other tools are available as part of the NNEC Body of Knowledge, e.g. the **NNEC roadmap**, a planning and analysis tool to ensure on-time and efficient organization of resources and activities; or the **NNEC-NDPP guidelines**, exploring how to embed federation requirements into NDPP as the main NATO procurement planning tool.

**IMPLEMENTING NNEC:**

**A SUCCESS STORY**

Significant efforts have been made to “**operationalize**” the NNEC concept (i.e. to bring the abstract benefits of federation closer to the warfighters). In conjunction with the development of the guidelines and tools described above, the Afghanistan Mission Network (AMN), first emblematic implementation of NNEC, served as proof of concept, and NNEC principles have permeated all areas of capability development. In addition, a number of NNEC compliance assessments have been conducted, to measure capability compliance with NNEC criteria. Those assessments have helped quantify federability compliance and progress, generating a number of observations and solid recommendations to help refine both the capability assessed and the criteria themselves.

**NNEC IN SUPPORT OF DEVELOPING FUTURE MISSION NETWORK (FMN)**

The FMN concept, currently under development, warrants timely implementation to meet NATO and Nations’ expectations: it was the main theme of the 2012 NNEC Conference held in Vienna, Austria. Possessing the potential to become NNEC’s next emblematic implementation; building on the principles of federation of networks and services, information sharing and efficient exploitation of current capabilities. The FMN also embraces and exploits lessons identified from operations in Afghanistan and Libya. The contributions of NNEC are encapsulated in the NNEC components, offering solutions and innovative developments such as new policy models for information assurance and information management joining instructions that formalize and describe information sharing mechanisms; the concept of information clearinghouses, distributed information repositories and multi-level information tagging; and federation of assets built over common essential core services, COI provided specialized (mostly Web) and mediation services in line with the C3 services taxonomy.

**THE WAY AHEAD**

The NNEC principles are more relevant than ever highlighting the continued need for a long-term vision, further development of innovative tools and use of emerging technologies to feed implementation. Seeking interoperability at all levels, they support FMN implementation, and the ambitions of the Connected Forces Initiative. The benefits that can be gained through use of a federated approach are becoming critical drivers and are fully embraced and supported by NNEC. Achievement of the current initiatives being pursued by the Alliance will require changes in education and training, exercises and the ways new and emerging technologies are introduced and employed in operations. The practical solutions offered by NNEC compliant capabilities have the potential to make this possible, providing support to the coordination of conceptual requirements, implementation and operational coherency. These and many other topics will shape future discussions and will be studied further at the upcoming 2013 NNEC Conference “coNNECting Forces” to be held in Lisbon, Portugal. Contact us at is-nne@act.nato.int

The Way Ahead

The NNEC principles are more relevant than ever highlighting the continued need for a long-term vision, further development of innovative tools and use of emerging technologies to feed implementation.
NATO’s current Strategic Concept, adopted at the Lisbon Summit in November 2010, underlines that effective crisis management requires a comprehensive approach involving political, civilian and military elements and entities. Building upon lessons learnt from past NATO operations in crisis-struck areas, the Strategic Concept states that military functions are necessary but insufficient to “address the varying complex challenges” to the Euro-Atlantic and international security on their own. Allied leaders agreed at Lisbon to enhance NATO’s contribution to a comprehensive approach to crisis management and to improve NATO’s ability to contribute to stabilization and reconstruction.

**THE CFC AND OPEN SOURCE SHARING**

“The comprehensive approach not only makes sense – it is necessary,” says NATO Secretary General Rasmussen. “NATO needs to work more closely with our civilian partners on the ground”. Furthermore, the NATO Supreme Allied Commander Europe (SACEUR), Admiral James Stavridis, wrote in a 17 April 2012 blog post that more “open source security” is required. He stated that this “means that wherever we can, we should be creating teaming arrangements between nations (international); governmental organizations (interagency)”. He went further to identify areas that might yield results in searching for opportunities specifically private-public cooperation which according to SACEUR, “offers potential in humanitarian activities, medical diplomacy, disaster relief, and linked development”.

In 2008, NATO Allied Command Transformation (ACT) introduced the Civil-Military Fusion Centre (CFC) as an experiment in Norfolk, Virginia. The CFC enabled the sharing of open-source, unclassified information between civilian and military stakeholders working on complex crises in an effort to bridge the information divide.

The CFC concept, developed by ACT, is now actively engaged and functions as an operational capability for NATO Allied Command Operations (ACO). Currently, the CFC is ACO’s only footprint within the USA, generating innovations and contributing to ACT and ACO as well as other non-NATO entities (NNE), including international and non-governmental organisations, throughout the world.

The CFC has, since its founding, contributed to improved responses to global crises which demand comprehensive, civil-military forms of assistance.

**COMPREHENSIVE APPROACH IN ACTION**

In the aftermath of the devastating earthquake in Haiti in 2010, the CFC helped link humanitarian aid and military actors to facilitate the delivery of supplies to affected populations. The CFC continues to engage with both civilian and military organizations regarding improvised explosive device and demining information in order to help those working or living in regions affected by explosive remnants of war.

The CFC, via its online portal at www.cimicweb.org, is able to search, locate, fuse and share well-informed, timely, and relevant information concerning SACEUR’s Strategic Spaces. At this portal, through social media outlets such as Facebook, Scribd and Twitter, and using other online tools (e.g., podcasts, ReliefWeb), the CFC is able to connect with a global audience and better serve its end-users.

The CFC does this not only through publications, such as weekly reviews and thematic reports, but also by creating online resources vital to civilian and military communities. Recent examples include the launched Afghanistan Map Library, which contain several hundred maps containing information on demography, geography, ethnicity, governance and so on, and the Afghanistan Provincial Indicators database. The CFC has also established, in recognition of gaps in existing information, web pages on the 2011 Bonn Conference and the 2012 Tokyo Conference on Afghanistan. Having become a trusted resource for various stakeholders, the CFC gains the ability to foster increased awareness and, perhaps, trust and understanding across the civil-military divide.

In addition, the CFC’s Request for Information (RFI) service, which is free for subscribers, has enabled both information sharing and the establishment of linkages between civilian and military stakeholders operating in crisis contexts. For instance, upon the request of a subscriber, the CFC worked to facilitate contact with Kenyan development organisations along the country’s coast in efforts to provide possible civil-military engagements with various projects in the region. In another example, the CFC linked an ISAF officer from an ISAF Regional Command, who needed information regarding local humanitarian conditions, in touch with local officials from a major international organisation dealing with Internally Displaced Persons (IDPs). The ISAF officer received the information he needed but also formed a professional contact that will enable him to directly obtain and share information in the future.

**A CATALYST TOWARDS OPEN-SOURCE SECURITY**

The CFC is as an example of the comprehensive approach in action and serves as a catalyst towards open-source security. It is able to connect and bridge a seemingly wide information and relational divide. In doing so, the CFC helps to bring non-military views, or the “views of others” operating in crisis contexts, deeper within NATO. According to SACEUR, “Open-source security is about connecting” the international, the interagency, the private and public — and lashing it together with strategic communication largely in social network.” Simply put, the NATO ACO CFC is an active operational capability and a proven example of that 21st century connecting force to which SACEUR speaks.

Please visit the CFC at www.cimicweb.org.
**It is Possible: Collective Logistics Responsibility Can Transform NATO**

Demonstrating the possibility to improve effectiveness of logistics in the spirit of Smart Defence.

By Major Lars Vergien, German Navy, Joint Deployment & Sustainment, Logistics

"In the past, I’ve worried openly about NATO turning into a two-tiered alliance…. This is no longer a hypothetical worry. We are there today…. To avoid the very real possibility of collective military irrelevance, member nations must examine new approaches to boosting combat capabilities—in procurement, training, logistics, and sustainment." — Robert Gates

A CLEAR NEED FOR COLLECTIVE MANAGEMENT

Within the Joint Deployment & Sustainment Division (JD&S) of Allied Command Transformation (ACT), Secretary Gates’ comment was not news. Logistics is a mundane subject to an outsider—until something goes wrong or the price is too high. And logistics is a big ticket item in terms of the resources it consumes, especially in the light of the ISAF mission in Afghanistan. So, for the last several years, the NATO logistic community has been working to transform its network of NATO and national supply chains by which our forces are sustained. The concept and the resultant planned capability are called Operations Logistics Chain Management (OLCM). It is the means by which NATO will achieve collective logistics: planning collaboratively for deployment and sustainment and enhancing logistic visibility and decision support in order to improve theatre-level logistics management.

Many of the OLCM drivers resonate with Smart Defence. Capability overlaps that lead to duplication and unnecessary redundancy, or competing purchasing demands on industry that allow the price we pay to be bumped up. With budgets tighter today than before, we cannot afford these inefficiencies. OLCM aims to put NATO logisticians in command of how we reduce costs while preserving or increasing our effectiveness. "Specialization by default is the inevitable result of uncoordinated defence cuts and is not effective." Instead of achieving economies of scale only at the national level, OLCM sets itself the aim of realizing those economies at the NATO level.

SMART LOGISTICS

Technically, there are key material and interoperability aspects still to be overcome. Information sharing as the enabler for logistic visibility is the lifeblood of a modern logistic system. NATO and its national partners are not well placed to respond to the new economic reality driving us. NATO’s own logistic functional area service, while planned for replacement, is several years past its prime and only able to help OLCM achieve its interim operating capability. Optimal coordination of the pan-NATO logistic chain will require nations to exchange information with NATO, which is both a technical issue and a trust issue. For this reason, the JD&S Division is a key supporter of NATO’s planned service oriented architecture approach, with its promise of improved interoperability and greater adaptability to change.

In the meantime, ACT is involved in relevant nearer-term activities supportive of the new transformation imperative. For example, within the auspices of Smart Defence, and with the USA acting as lead nation, a software prototype was created to act as a kind of military eBay to facilitate the exchange or sale of surplus capabilities or services; a timely development given the imminent departure of much of the force presently in Afghanistan. As the NATO Secretary General observed, "Some of the Smart Defence initiatives are a promising approach to overcome the challenge of multinationality and interoperability within logistics." ACT has sponsored software experimentation between NATO systems and various prototypes in 2012.

RADICAL EVIDENCE

Lastly, JD&S is working with ACO to focus on a capability for collaborative planning within a strategic command element focused on logistics planning aspects, based on lessons learned from Operation Unified Protector. As NATO presses ahead with Smart Defence and its related initiatives, the JD&S Division sees that it has lessons it can share while simultaneously benefiting from the urge towards greater collaboration and cooperation. But both for OLCM and for Smart Defence nations have to radically re-evaluate the interrelationship between political sovereignty, military effectiveness and economic efficiency. This will not be easy but it must be done because, as NATO Secretary General remarks, only "by working better together...can (we) get a better return on resources." 1

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1 As Delivered by the US Secretary of Defense Robert M. Gates, Brussels, Belgium, Friday, June 10, 2011.

2 ISAF: International Security Assistance Force

3 Definition of Collective Logistics: Collective Logistics is “The collective approach undertaken by NATO and nations to plan, generate, synchronize and prioritize national and NATO logistics capabilities, resources and activities to deliver logistics support to NATO missions, operations and exercises, by making use of common processes and organizational structures”. MC319/2


5 Cf. by NATO Secretary General Anders Fogh Rasmussen at the ACT Seminar, Washington DC, 28.02.2012.

6 Cf. by NATO Secretary General Compare footnote 4.
Harnessing the Power of Social Media Analysis

Social Media consists of tweets, blogs, status updates and hashtags, but Social Media is really about communication. Paying attention to online conversations provides insights into an organisation or to a process that might otherwise be overlooked.

Social Media is booming. It seems as though everyone and every organisation is participating. From grocery stores to churches to government, it is inevitable that someone is communicating through Social Media. While each communication tool has its place (websites for establishing Internet presence and company image, email for easily reaching personal and business contacts in a documented format, phone (gasp!) for actually speaking to another human), it is the explosion of short posts and status updates via social networks that have garnered 98% of the U.S. online population. However, once you grasp the idea of news and life updates in 140 characters or less, you will see that it is not your reading or shorthand skills that need tweaking, but your listening skills.

Social Media Transforms Relationships

Social Media is transforming the relationship between organisations and their stakeholders by making communication more democratic. Not only do organisations talk about themselves and their services, but now their stakeholders have the ability to express opinions and spread news as well. This democratic environment offers a great opportunity for organisations to listen to their stakeholders and tune their messaging to specific audiences. On the other hand, not listening to stakeholders can make an organisation seem rigid and out of touch. Organisations across the globe have invested in Social Media and Social Media tools. In 2011, 79% of polled organisations were said to be using some type of Social Media analytics to gain a better understanding of their audience and how their brand was perceived by their audience.

Social Media Analytics Adds Value to NATO

Social Media provides every stakeholder with the ability to respond nearly instantaneously to the messages and actions of any organisation. The near real-time feedback can be analysed and used by organisations to be more responsive in their planning and communication.

In an Allied Command Transformation (ACT) limited objective experiment (LOE) during the 2012 NATO Summit in Chicago, IL, a team of analysts focussed on two of the Secretary General’s televised speeches and ‘listened’ to the feedback of the public generated via Social Media outlets. By listening, the analysts were able to monitor and analyse responses then quickly evaluate the public perception of NATO messages and actions of any organisation. Analysis of Social Media during the 2012 NATO Summit showed that stakeholders were actively engaging in Social Media directly from the event, and that they were responding to the messages being put forward by NATO from across the globe. The ACT analysis team was able to identify conversations, both positive and negative, from relevant sources that could help the organisation to be more effective in understanding its audiences in the future. The results of the experiment were put forth in near-real-time to ACT Strategic Communications (StratCom) staff in Chicago who delivered the reports to the Secretary General’s StratCom advisor and NATO PDD. Being a new form of experimentation and analysis, it was realized that while the analysis was useful, more training on incorporating Social Media inputs for messaging to the public will be required.

The results from the Chicago Summit experiment provide a foundation for future work with Social Media analysis. Following the experiment, it was determined that further experimentation with Social Media analysis by the ACT (StratCom) Capability Development Team would be of significant value. With support from NATO Public Diplomacy Division (PDD) and the Secretary General’s StratCom team, a greater visibility and focus on the use of Social Media analysis is anticipated.

NATO Strategic Communications

The aim of NATO Strategic Communications is to ensure that NATO audiences receive truthful, accurate and timely information. NATO must use all relevant channels, including traditional media, Internet-based media and public engagement to build awareness and understanding; and thereby gain support to develop decisions and operations consistent with agreed NATO policies, procedures and principals. While Social Media is a key analysis tool in the age of Social Networks, it needs to be considered as part of a larger media analysis package to deliver benefits to the Alliance.

What is Next

The Summit Social Media experiment was designed as a single activity within a larger Strategic Communications capability development campaign.

A new experiment is currently underway to explore the use of Social Media as a sensor for social unrest which could aid analysts in horizon scanning. The aim of this experiment is to consider these situations earlier will allow NATO to be more prepared for future needs.

The full experiment report can be found online at: http://www.act.nato.int/images/stories/media/socialmedia_final_report.pdf.

Social Movements in Social Media

There are many conversations in Social Media. Finding the ones that may be of value often depends on the human networks to which you are connected and the kinds of conversations to which you pay attention.

By Dr. Candace Eshelman-Haynes and Dr. Nancy Houston,
ACT C4ISR Technology and Human Factors

The Arab Spring is widely agreed to have begun on 19 December 2010 when a young Tunisian named Mohamed Bouazizi set fire to himself in protest after police seized his vending cart. This event cascaded into revolutions that dismantled the governments of Tunisia, Egypt, and Libya in addition to inspiring social movements in other nearby nations. This event seems to have been the moment when Tunisians began to coalesce around the call to action. It is likely that organizers, who had been planning some type of movement for more than a year, simply made use of this symbolic act to engender support for their efforts.

Social Media as a Sensor

Knowing that conversations on Social Media are connected to real world events raises interesting possibilities for using Social Media tools, such as Twitter, as a sensor and possibly a predictor. While Twitter data is not a replacement for hard evidence, it is proving to be a good mechanism for alerting officials to the need for investigation and action.

Medical experts already know that Social Media provides a faster indicator of new epidemics than traditional reporting. The United States Geological Survey (USGS) found that by using Twitter as a sensor they can provide local alerts faster than scientific sensors. Twitter is particularly useful as a potential sensor because it is popular and has a very large, openly available, volume of data. It seems logical then, that Twitter could provide a sensor for emerging social movements as well.

Social Movements

Social movements share a common progression, arise under similar conditions, and are talked about using a common vocabulary. The common elements of social movements should form the basis for anticipating social movements from Social Media conversations.

Srdja Popovic, a leader in the Serbian movement to unseat Slobodan Milosevic, heads the Centre for Applied NonViolent Action & Strategies (CANS-VAS), an organization dedicated to teaching non-violent methods of protest to people seeking change in their environment. Many of the leaders in the Arab Spring movements received training from CANVAS. Key methods taught are the use of symbolic acts and communication tools including Social Media. Interestingly, grassroots organizers are advised to use the English language to address a wider international audience.

Finding the Conversations Leading to a Social Movement

The grassroots movements of the Arab Spring made heavy use of Social Media to talk about their campaigns. Though the debate continues over the exact nature of the role of Social Media in the Arab Spring, the link between Social Media and the Arab Spring is undoubtedly a strong one.

Finding Social Media conversations related to known events is just a matter of entering event related keywords or hashtags into the Twitter search interface. Finding conversations about undefined events is a little tougher. You have to know how people talk about those types of events or hope that your networks are talking about the events you hope to identify.

Successfully identifying conversations related to social movements requires recognition of some important characteristics of grassroots movements. Social movements emerge under some common conditions and share some common English vocabulary when discussed amongst international audiences. Protests are among the actions used by grass roots movements to promote social change. Crisis and conflict are typical of conditions under which people begin seeking change. The specific conditions that give way to crises tend to define local movements and include things like ethnic violence, famine, unemployment, political corruption and crime.

As people tweet about a specific movement they use terms that identify specific grievances and group identities such as #yosoy132 (Mexican protest movement) or #ows (Occupy Wall Street). Finally, the keyword “hope” when present in a large number of posts about a given movement may be an indicator of the strength of a movement. It seems that hope may be expressed more often as people begin to expect change to take place.

Is Social Media as a Sensor of Value to NATO?

A discovery experiment will be conducted by Allied Command Transformation (ACT) in fall 2012 to evaluate the use of Twitter as a sensor for social instability. The experiment will seek to provide a clear definition of the keywords and indicators associated with social movements, as well as to identify the best way to visualize the results. The experiment will be conducted in cooperation with the Civil-Military Fusion Center (CFC) and the Crisis Indicators Group (CIG) as part of the ongoing effort to enhance information management and shared understanding between military and civilian staffs in operational environments. An objective will be to discover the role of social networks in human information behaviour and developing shared situation awareness and understanding.

2 A hashtag is a word preceded by the # symbol used to indicate a specific topic.
To Vanquish Pandemonium

The Joint Air Power Competence Centre (JAPCC) has developed an Education and Training (E&T) model that allows concrete E&T courses to provide students the opportunity to improve their Command & Control/Leadership Competence towards the aim of “accepting chaos, followed by a much more efficient control of chaos”.

By Colonel Uwe L. Heilmann,
German Air Force, JAPCC, Head C4ISTAR Branch

It takes no history buff or military expert to confirm the fact that operations involving armed forces are both highly dynamic and bear a high degree of complexity. This theory can be supported by the countless check lists, procedures and regulations ultimately aiming at lessening the occurrence of probable and real negative actions and effects.

**Point of Departure**
A chaotic situation, or simply “chaos”, can be described via its characteristics of unpredictability and opaqueness. For example, the game of roulette is unpredictable as the players can never truly know which number will be rolled next; it is an unpredictable game to win.

Now, imagine a system where both characteristics are pronounced to a high degree; a potential reaction would be to recede. So, then, what turns a system into something highly unpredictable? Dynamic components and processes. What nurtures opaqueness? Perceived complexity. An inevitable deduction: Military operations and activities always happen within chaos and also inevitably contribute to it.

**Cognition**
Attempts to supersede this chaos with a neatly arranged design (battle plan) and effectively managed supervision by applying regulations and algorithms are doomed. High casualties and defeat become unavoidable.

A most drastic example can be found in the process of the Royal Navy in the Victorian Age which found its anti-climax in the first half of the Great War.

**Turning Lemons into Lemonade**
Instead of placing all efforts towards dissolving chaos, “immerse” into it, even exploit it. Instead of fighting against chaos, understand it as a “system of systems” where recognized results lead to only partially foreseeable effects. Taking this into consideration is key; not striving for “perfection”. Replace BEST practice with NEXT practice.

Permanent awareness of the necessity to change, to adapt and to influence paired with a deliberate relinquishment of a comprehensive knowledge about everything at every time increases the chance to prevail in chaos with a higher degree than the adversary.

**Approach**
Education and Training (E&T) decision-makers and their staffs have to push students into “chaos” and trigger the idea of “change of patterns” as an effective modus operandi via their self-awareness.

This process is strongly supported if the students, i.e. the recipients of E&T, are removed from contemporary military operations and their daily Command & Control (C2) routine and environment as much as possible. This procedural method prevents them from falling back into existing individual routines, fostered by their most subjective experiences, nourished by ignorance and prejudices. This individually perceived reality, subjective experiences in combination with ignorance and prejudices deny them the chance to recognize, identify and describe patterns.

**Key Elements of the JAPCC E&T Model**
First, the theory and application of constructivism. Constructivism is a scientific approach towards learning and teaching that identifies the individual learner as the decisive factor. The individual only learns if they want to learn. Sustainability regarding the assimilation of knowledge can only occur if the decision to learn was positively made beforehand. It is the teacher’s prime mission to trigger the students’ decision to learn.

Second, the idea of “not telling the students WHAT to think but inviting them to experience possible ways HOW to think”. A teacher’s doctrine derived from the first key element.

Third, the use of commercial conflict simulation games (called CoSims or ConSims). As broad as their variety in systems and topics is, they all have one thing in common: they are not computer-based.

CoSims provide an immense diversity of topics, offer to challenge the students on all levels of command, and force the students to either succeed or fail within the given micro cosmos. Additionally, they are inexpensive and offer students the chance to learn about history, geography, military doctrine, and improve the English language skills.

Playing CoSims is not the end but the means and feedback by the teachers, who turn into observers, is vital for this E&T model. This feedback must be exercised constantly, on occasion, scheduled, person-to-person, and to the whole group.

Whenever the JAPCC conducted this E&T program, it earned more than enthusiastic response from the students.

The JAPCC is always ready to introduce this E&T model to new customers. To experience it is to understand its positive effect.

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1 Reference “Rules of the Game”, by Andrew Powell
Industry Day 2012 materials are available at www.act.nato.int/industryday

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