Putting facts at forces' fingertips

Information Enabled Capability

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INTRODUCTION

In his classic Understanding Media, Marshall McLuhan wrote, "Control over change would seem to consist in moving not with it but ahead of it. Anticipation gives the power to deflect and control force."

He was reacting to the explosion of media in the 1960s but since then, with the advent of the internet and mobile communications, the pace of change has become super-fast and unstoppable. New media make new things possible and, quite often, create changes with unpredictable consequences – unless their uses are thoroughly thought through and adjustments are made.

Today, we live in a world of Facebook and Twitter, Tumblr and YouTube; an ever-growing number of electronic information services, often in the form of apps; and the merging of television, mobile and computing. Every advance or innovation changes our world to some extent.

If there is any commonality, it is in the use of information, whether that means disseminating new information and commentary on social networks or gathering specific bits of existing information that make a user's life easier. Think weather services giving you forecasts for where you are and where you are going; currency conversion widgets to create a holiday budget; or world time apps, so you can make a call without waking up a colleague the other side of the world in the middle of the night. For businesses, there are stock control apps, tablet-based booking and ordering systems, real-time cash flow updates and much, much more. They all deliver tailored items of information, in the form the user wants. If they fail to do so, apps quickly wither and die.

Those who have best adapted to this constant flow of information and who use new media to change their personal and business lives for the better are those who have grown up with it: digital natives in their early 30s or younger. Their use of new media is as instinctive as handwriting – the process needs no conscious thought. The emphasis is on speed and accuracy, as information is useless if it is not delivered on time and to an acceptable quality. The delivery mechanism itself (mobile, tablet, PC, interactive TV via cable, satellite or over the air) is almost irrelevant.

What matters is that the information itself is available immediately and its accuracy can be trusted to the degree necessary. That may be low or high. The consequence of a free weather app failing to predict rain, when you are out and getting wet, is you'll simply use an app you hope is more accurate next time. But the failure of a paid-for weather app to a farmer could mean a ruined crop and tens of thousands in losses – and it's too late to use a different app. Different levels of quality and trust are involved.

There is one major sector that has yet to manage ubiquity of information to maximum advantage – the armed forces. It is true that many military forces have built highly capable infrastructures, and there has been good progress in delivering (largely to the public via social networks) defence-related reports and pre-prepared data and information (see Social media – changing miltary might to military will[1]). However, so far no nation's armed forces have deployed apps for operational use.

[1]Logica whitepaper: http://www.logica.co.uk/we-are-logica/media-centre/thought-pieces/2012/social-media-in-defence/

DEMOGRAPHICS DRIVING CHANGE

But things are changing, and this change is being driven by demographics. Statistics from Defence Analytical Services and Advice[2] show that the bulk of British armed forces are young: 77% of Army servicemen are in their 30s or under age group, along with 68% of Navy and 60% of RAF ratings. In fact, fewer than 2% of those joining the armed forces are over 30.

And that means they are digital natives. They expect to deal with military information as they deal with civilian information – on demand, using intuitive devices. They want what we call Information Enabled Capability.

The traditional approach to information-sharing within the armed forces is to push it from the centre outwards, essentially following a chain of command model. This leads to standardised formats, with documents, manuals and reports often aimed at multiple users. The upshot is

that the facts a person in a specific role needs are often buried among extraneous details. Then there's a waste of time looking for what's wanted, or the information is not found in time – if at all.

Much of today's operational military information is like a vast newspaper covering global, national and local news, with the different stories only roughly structured into sections. Readers can move between different parts of individual stories that interest them, or subscribe to alerts and feeds to keep them up to date. The analogy in the military would be with strategic, operational and tactical information and the ability to have "individual stories" of relevant information for each rank or role delivered as and when they're needed.

DELIVERING INFORMATION

Ideally, there needs to be a balance between pushing essential information out from the centre and pulling snippets needed by a user from central databases, with the pull process being very quick and simple.

This may sound like a naïve, perfectionist vision of a faraway future but the reality is that all the technologies needed to provide Information Enabled Capability already exist. However, the technology used is immaterial to the concept, just as the technology supplying information to your home is neither here nor there, so long as it arrives when you want it. If you want to watch a film, you can see it via DVD (bought, hired or from a subscription service), online, by cable or satellite – the end result is the same. A tweet or Facebook post has the same impact whether it reaches you via mobile, tablet, PC or interactive TV.

Three things are needed to create Information Enabled Capability: trusted, reliable, assured data sources; app creators who can pluck and reconfigure data from these stores – and the impetus to put the idea in place.

Trusted data sources already exist. To take just one example, we are the prime contractor behind the Defence Medical Information

Capability Programme, which allows the medical records of serving personnel to be accessed anywhere in the world – even in theatre. The UK's armed forces have dozens of similarly assured information data sources, complete with audit trails ensuring that information can be traced to source and validated.

App creators and writers are now part of everyday business life and are already working in companies like ours on secure Government programmes

And the will is there – already the US Army Capabilities Integration Center and the German Bundeswehr are examining how to bring apps into operational arenas. The UK Ministry of Defence (MoD) is embracing social media and will not be far behind because Information Enabled Capability is a way of multiplying the effectiveness of armed forces at a time of reducing troop numbers. And the MoD is looking ahead with its strategy for a Single Information Environment where users will gain "the information they need, sufficient to their context".

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ANALYSIS: QUESTION BY QUESTION

To show how you can do more with fewer people, imagine planning an operation abroad for deployment in nine months' time.

The planning team split their operational needs into two phases: pre-deployment and deployment itself. These phases will be subject to pure analysis – breaking down a complex state of affairs into simple elements. Those elements can be posited as a series of questions.

Take, for example, the issue of personnel. Some of the likely questions are:

- How many do I need for the operation?

- What skills do they need?

- What's their fitness level?

- What languages do they speak?

Currently, the answers come from multiple sources and take a long time to extract and sift through. But with apps extracting the information from existing data sources, the team can receive answers in near real time – and in the format most useful to them.

Similarly, planners might ask:

- What information do we have on where we are going?

- What maps of the destination do we have?

- What are the early indicators and warnings?

And on training for deployment:

- How prepared are the forces?

- How long will individual training take?

- Can we substitute roles to fill holes?

Currently, all this data is submitted in a wide variety of formats – some paper, some electronic, some verbal – and then has to be collated. Using apps, the same information can be delivered in the electronic formats the individual user wants. The apps can then easily be refined in light of user feedback.

A similar process would apply to maritime operations. Apps would make it faster and easier to ensure that all members of a ship's company are fit and proficient in their roles. More apps could identify personnel suitable for training to fill gaps or for transfer from other vessels or duties.

As the pre-deployment information comes in, the recipients are building up a mission handbook on the fly – one that is specifically designed for the purpose, rather than generic. Imagine each app as a Lego brick. The bricks are put together to create a unique structure.

COMMAND AND CONTROL

Once in theatre, operational command and control needs to be established. That raises lots more questions, such as:

- What local intelligence do I have?

- Where should resources be deployed?

- What is the electronic warfare environment?

Here, apps can provide customised answers, bringing together data from a mixture of sources, some central, some gathered in theatre and some from individuals. The result-information that is truly relevant to the situation, in terms of both time and place.

More apps can be used to provide a running commentary on the operation back in the UK, allowing further forward planning. For example, if those in the field identify a potential pinch point in a supply line between the UK and the theatre of operation, they can report it back immediately, allowing the matter to be dealt with before it causes a problem.

Reporting back increases the quality of information used at the centre, as well as at the operational base. Think early indicators and warnings that can be added to as local knowledge builds up, or details of changes to the local electronic warfare environment that can be conveyed to ensure that effective counter-measures are deployed. The flow of information becomes a continuum, constantly updated and refined – which means relevant information becomes more visible, allowing better decisions to be taken. That's true of Information Enabled Capability.

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DELIVERY

At the heart of Information Enabled Capability is a military app store, sectioned just like any other online app store but along military lines – for example, personnel, training, logistics or command and control. Access to the apps is role-based, so that only authorised people can draw on specific pieces of information.

Some of the apps within any section will provide essentially the same information in different formats, in the same way as an online banking system uses fixed underlying data sets but displays them differently depending on the access channel – PC, tablet or smartphone.

Different military apps will also present the same data in differing ways to suit the end-user. This element of choice will allow users to personalise their experience, so the app adapts to the way the users work, rather than forcing them to work in a specified way. This leads to more efficient, productive staff.

The element of choice is a result of experience in the civilian world. A typical example would be stock market apps. They all display share prices but they have different fans because they meet a need in slightly different ways. Users range from individual pensioners wanting a simple check on their investments to pension funds needing real-time updates. If a stock market app fails to gain an audience, it will lose out to better-tailored versions.

You can expect the same with military apps – there will be competition between providers, just as there is between providers of military materiel. Competition will help to keep standards high and allow a controlled degree of innovation to become normal. While this will need managing, it can be done with a light hand because the apps use existing and pre-assured information.

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AN APP FOR ANYTHING

Because of the relatively low cost and lead time of app development, it will become easier to demand highly personalised apps for specific functions. Military operations are often fast-moving and commanders will not know that they need a piece of information until almost the last minute. Once they've defined the need, they can order the app.

This has several consequences. First, the emphasis is on output – the information needed – not IT requirements, which was the standard military response for many years. Defence procurement traditionally specifies a system to meet a range of requirements in one standardised way. Inevitably, that leads to compromises, with the result that users may not receive exactly what they want and others receive irrelevant information. While that is changing gradually, the pace can be accelerated.

Turning traditional procurement procedures on their head and allowing users to specify outcomes – the only thing that is important to them – forces the process to become flexible and agile, involving far fewer compromises. Instead of procuring expensive, multi-functional systems, the military can exploit inexpensive, single function apps that, to use a marketing term, deliver customer satisfaction because they serve specific individual needs rather than an average group's needs – which is currently unusual in defence IT. And because the apps are user-defined, they are intuitive, so training bills fall.

App creation can be industrialised by governing information flows and using common processes within individual data sources, to ensure that the information itself continues to be assured. This also reduces expense because it exploits the sunk costs of creating the data sources in the first place.

To ensure cost control, there could also be new payment methods, with payment for information delivery, app validation or acting on feedback from users.
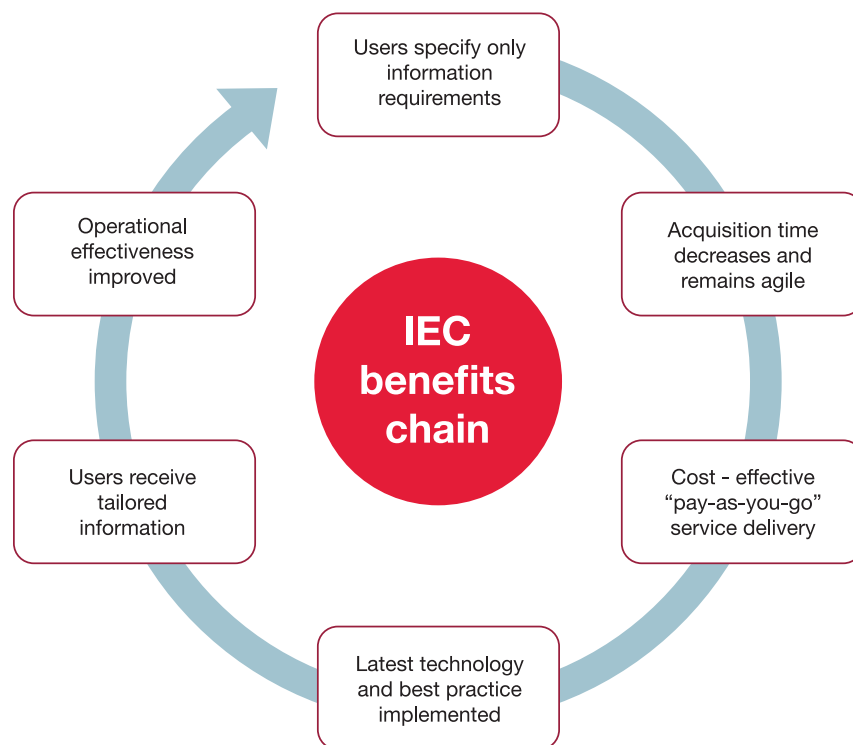
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CONTROLLING CHANGE

In essence, Information Enabled Capability is a very simple concept with significant ramifications.

It's using what already exists in a much faster, more flexible and nimble way that allows the military to organise and deploy their capabilities far more effectively. It puts facts at the forces' fingertips and, in doing so, is a low-cost capability multiplier.

It is a consequence of the way we live today – a fact that has already been recognised by nations such as the United States and Germany.

The sooner Information Enabled Capability is deployed in the UK, the sooner the military will not only benefit from, but also direct, inescapable change.
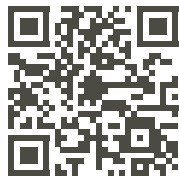
Users specify only information requirements

Operational effectiveness improved

Acquisition time decreases and remains agile

IEC benefits chain

Users receive tailored information

Cost - effective "pay-as-you-go" service delivery

Latest technology and best practice implemented

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CGI

CGI GROUP INC.
T: +44 (0) 845 070 7765
E: iec.uk@logica.com
www.cgi-group.co.uk/iec

cgi.com

CODE 6821 0413