

Digitization within the Armed Forces:

National Doctrines' Similarities and Differences

For several years already, the main western armed forces have undertaken long term modernization efforts which led them, inter-alia, to make a choice for all-professional forces – France and Italy, for instance – and the development of joint cooperation – United Kingdom, France.

The armed forces digitization is part of that large evolution process into which France and its main partners have engaged. Digitization which is being achieved within the forces constitutes **currently a recurring theme for doctrinal studies**. New information and communication technologies are widely exploited within the armed forces in order to allow the interconnection of all the force's building blocks – i.e. to link them through a network – in order to establish what is called a “tactical intranet” and to thus develop the “**network centric operation**” **concept**.

Although western armed forces' evolution illustrates concerns that are common to several countries, it however shows **clear divergences among the priorities that are set by each of the national modernization programs**. In the same way, the analysis of the different digitization doctrines illustrates, beyond the existence of a theoretical common basis, the specificities of each of them.

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Armed forces' modernization: between common perspectives and national priorities

Adapt to global strategic environment's evolutions: a common challenge

All countries intend to improve their forces operational efficiency. **The implementation of a "transformation" should allow the forces to gain better efficiency, flexibility, reactivity, and polyvalence, in order to be able to confront a widened array of threats.** Armed forces intend also to improve their deployment capabilities, since operations take most often place outside of their national territories.

Holding one's rank on the international stage: a European challenge

The United States have initiated that armed forces modernization process through the Revolution in Military Affairs (RMA) and then the Transformation concepts. The choices that the Americans make never leave their allies indifferent, and this is even truer in matter of defense. Within that context **the efforts undertaken by western forces in order to improve their operational efficiency illustrate their willingness to continue holding a position on the international stage.**

Indeed the United Kingdom, France or Italy have the ambition to play the role of framework nation and thus to be able to legitimately lead a multinational operation of which the US would be absent. In addition, these countries allied to the US that would acquire an increased level of efficiency or technological level could have a significant weight

within US led coalitions and develop a satisfying level of interoperability with the US procedures and systems.

Diverging priorities in matters of interoperability

The British priority is clearly stated: forces modernization, especially the implementation of network centric capacities, should allow British forces to be interoperable with the US. That hypothesis is based upon the fact that the future American choices in favor of unilateral or multilateral interventions will depend on their allies' interoperability with them. In that same logic, the relations with NATO – which is also undergoing transformation – are privileged by the United Kingdom which regards the Organization as being a first-class vector of the transatlantic link.

Italy within the framework of its armed forces' evolution plan, **envisions also focusing in priority its interoperability efforts towards transatlantic cooperation;** Italy believes that the European defense just constitutes a complement to NATO. **Sweden** – an EU member but not a NATO one – intends to play the role of a lead nation in the European Security and Defense Policy domain, especially within the Nordic region. Swedes, who are very much involved in the development of interoperability with their European partners, have even slowed down their modernization's pace in order not to outrun the other European nations which would be undergoing modernization, favoring thus a combined evolution.

Freedom of speech

France, in accordance with its strategic independence ambitions, **gives a major importance to European cooperation in matters of interoperability**. Although it simultaneously works at developing common standards and procedures with the US and NATO, France's willingness to develop a European integrated defense, induces it to favor its European partners. And last **Germany** believes that the large adaptation and reform processes into which NATO and several EU members have engaged does not leave it any other choice than to initiate also a modernization process.

Specific national objectives

The American ambition is to guarantee the United States' supremacy over the entire spectrum of the international crises management, from humanitarian interventions to high intensity operations. Positing that their technological advance will necessarily guarantee them an operational advantage, they intend to develop a superiority tool thanks to the transformation of their forces. It is undeniable that the Americans are conscious of the impact that the initiation of their transformation process has on their partners' security and defense policy. It is thus reasonably possible to wonder if that choice for modernization which they initiated doesn't illustrate as well a willingness to develop an influence tool, i.e. a tool that would allow them to both encourage other western countries to improve their forces

technological level while they'd observe the potential rising of a **peer competitor**.

France, at the difference of its partners, states its willingness to keep its independence and strategic autonomy in matters of defense and foreign policy: the operational efficiency improvements that France achieved thanks to its modernization efforts will serve that state ambition. As a matter of fact it is not a question for the French forces of following rigorously the American conception precepts, but rather to adapt these new doctrines to France's requirements and military culture. France hopes thus being able to build up a pole of influence in Europe and to imprint with its philosophy the similar evolutions that are going on in European neighboring countries; France intends to preserve, in addition to its national strategic independence, a European culture and identity in matters of defense.

The Americans, British, French, German, and Swedes, among others, have all placed the network concept at the very heart of their armed forces' modernization and adaptation process, since it is a means to achieve the objectives that have been set. Although the development of the American Network-Centric Warfare (NCW) theory has inspired the elaboration of similar doctrines in other countries, this concept doesn't correspond to a unique definition. Each country has tried to adapt NCW to its own objectives, means and ways of thinking.

The various "Network Centric" concepts

A common theoretical basis: to achieve information superiority...

The interconnection of the sensors with the command and control systems and the weapons systems aims at achieving information superiority.

Information acquisition, processing and dissemination capabilities that have been significantly improved, allow the development of a common operational picture (COP) that facilitates sharing situation awareness and understanding (SA/SU).

Information control provides the commander with an invaluable support since it reduces the uncertainty that is linked to combat operations. Decision making is thus more reliable

since the commander may concentrate his efforts on knowledge management, reflection and actions planning. He is able to elaborate orders that are more precise since he knows that all echelons share a common picture of the operational situation.

The decision-making process has become faster thanks to the possibility to gain awareness of friendly and enemy situations and to an increased capability to disseminate orders and reports.

And last, the **use of information and communication technologies allows a decentralization of the decision process**: each person in charge of an operation, whatever might be his place in the hierarchy, has more freedom of maneuver which allows him, if required, to seize

any opportunity that arises. This autonomy in matters of decision acquires an importance that is all the more significant so the current forces' engagement context makes the armed forces operate among the populations and demands rapid decision making.

... in order to achieve operational superiority

And last, in the action domain, the decision making process acceleration and the improvement of the navigation and positioning capabilities allow a

faster execution. High level operational tempo allows taking advantage over the opponent, thanks to surprise, provoking thus more uncertainty within enemy forces.

The maneuver capabilities are also improved. In fact forces can disperse over larger areas and focus on the decisive points.

Since the main effort can be clearly defined, **forces and assets can be used in a more efficient way.** In fact they are concentrated at the right place, at the right time and according to the principle of strict sufficiency. Operational situation awareness contributes to the economy of resources and to reducing forces' vulnerability.

A similar conception of the digitization benefits cycle

Information > Awareness ⇄ Planification > Decision ⇄ Action > Effects



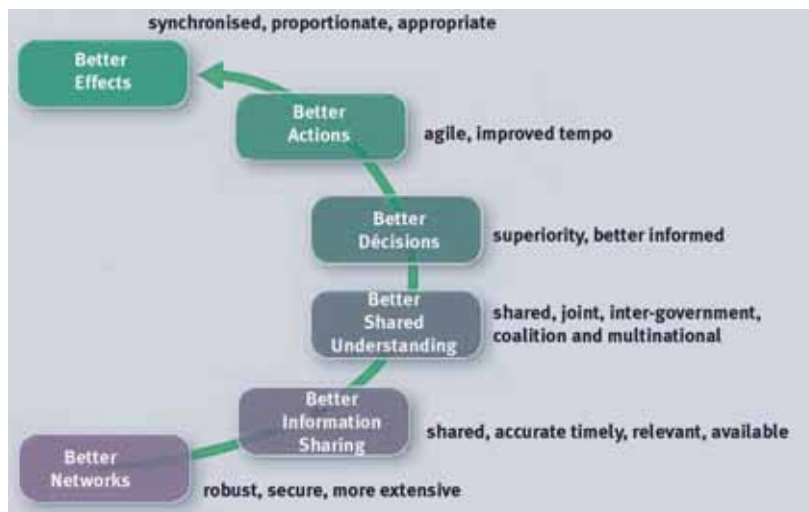
France

Source: <http://www.eai.terre.defense.gouv.fr/sir/doc/sir.pdf>



United-States

Source: *Doctrine #1*, december 2003, "Digitization within the US Army "



United-Kingdom

Source: *Network-Enabled Capability*, JSP 777 Edn 1

Specificities of the American, British and French conceptions

For the US, information constitutes by itself a combat environment and a strategic concept. Informational superiority is perceived as a “vital requirement” for the US security, e.g. **the development by the Americans of the “infodominance” concept which is described as being the final stage of the struggle intended to control the information and which gives access lastingly to the ultimate stage of awareness.** More complete than superiority or supremacy, dominance is characterized by its qualitative aspect and it provides the forces with a decisive advantage while informational superiority relates to a quantitative aspect and is only temporary and without any real power. “Information Dominance” has reached the rank of a strategic weapon within the American military arsenal; it has up to this day no equivalent in European military doctrines² However that ambitious objective seems to have been reduced in the Joint Vision 2020 document, to the benefit of the more modest and pragmatic Information Superiority concept.

In addition, **the American Information Operations (IO) concept turns information actions into an actual combat branch.** Defensive IOs aim at protecting American capabilities to conduct actions within the informational domain. Offensive IOs aim at harming enemy capabilities in that same domain, by manipulating its perception on information, by electronic warfare actions against its communication and information systems....

The British concept emphasizes the impact of digitization on the command and control function

The British concept differentiates from the American NCW by emphasizing the network capabilities more than the digitized resource itself. Among these capabilities, the British focus on the improvement brought to command and control as well as to

battlespace management. **The NEC concept developed in the UK adopts a so-called commander centric approach which intends to adapt the British vision of command and control to the new digitized environment.** Consequently, procedures aiming at preventing from too much interference by the commander will have to be defined in order to keep the control function at the minimum level possible and thus provide the subordinate echelons with the freedom of action required to be able to seize opportunities, which guarantees an increased tempo of the maneuver.

The French approach to crises resolution: “the military and the politicians go hand in hand³”

France, which, as of the outset of the intervention phase, prepares the basics of what its action will be during the stabilization phase, intends to manage simultaneously the crisis and the exit of crisis. The military victory doesn’t guarantee the end of the conflict: **the armed intervention should only be envisioned if it helps the implementation of political solutions and the achievement of a desired end state.** EBOs (Effect-Based Operations), that aim at creating conditions favorable to an exit of a crisis, are part of that process which takes into account operations’ continuum. Network centric operations must serve that crisis general management policy which constitutes a strong feature of the French posture in that matter. This ambition is on the right track since French digitized systems that were developed initially to be implemented during the intervention phase are also perfectly adapted to a use during stabilization.

¹ Research & Lessons Learned Division/Forces Employment Doctrine Center.

² Info-dominance : enjeux et perspectives du rôle de l’information dans la stratégie américaine depuis la parution du QDR 2001, Sihame ZANIFI, DAS, Sous-direction Technologique. (“Infodominance : stakes and perspectives of the role of information in American strategy since the publication of QDR 2001”, by Sihane ZANIFI, French Directorate, Strategic Policy, Technological under directorate.).

³ General De Gaulle, quoted by General Bruno Cuhe, Army Chief of Staff, at the CDEF/CEIS symposium 19/10/06.

The differences that can be outlined through a comparison of the approaches of network centric capacities’ implementation by various national doctrines **allow somehow to understand the state of mind of each of these nations, and illustrate each of the forces’ traditions and culture.** They thus put into perspective the extent of the American influence, each country being able to get ownership of the NCW concept in its own way and in accordance with its identity.

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