

Knowledge

as a key enterprise, internal, limitless,

resource

in the **Comprehensive Approach** and **Smart Defense** NATO concepts context versus scarce financial resources combined with IT skills issues in NATO.

by MAJ ROU (A) Dragoş NEGOIȚESCU



About the author:

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The opinions expressed in this article are those of the authors and do not necessarily represent the official policy of NATO.

“None of us is as smart as all of us.”

[Eric Schmidt](#)¹, University of Pennsylvania [Commencement Address, 2009](#) ([click to see the entire speech](#))

Intro

The “**WHY**” of this article is an attempt to better understand and inspire others to study deeper **How an enterprise should deal with the Knowledge resource in a hyper connected environment, richer and richer in data.**

This article focuses on defining the current **facts**, separating **constraints** from **opportunities** and faithfully attempting to inspire a **potential improvement** to the remaining NATO operational commands² in dealing with **knowledge as an internal limitless resource.**

The **main AIM** to be achieved described in this article is:

Identify **all knowledge sources**, bring them **together**, **communicate with each other** and determine the easiest way to **the customers to understand and take advantage** of this virtual dialogue.

The main identified **Constraints** are:

- The intelligence domain cannot easily be changed;
- Individuals’ IT skills are not suitable robust to cope with the IT revolution knocking on the military institution’s door³ (cloud computing, apps web stores, etc.);
- National differences in understanding and applying NATO concepts are still in place;

The main considered **Opportunities** are:

- Knowledge Governance⁴ requires a change of mindset rather than financial resources;

¹ Eric Emerson Schmidt is an American software engineer, businessman and the current executive chairman of Google. From 2001 to 2011, he served as the chief executive of Google

² Joint Force Command Lisbon has been planned to be deactivated and afterwards completely closed in early 2013

³ US Army is buying Smart Phones to allow military individuals better connect to the military virtual knowledge cloud. Palantir system is being successfully used to the level of ground teams
<http://www.youtube.com/watch?v=aja8ANrhg7U&feature=relmfu>

- An unbelievable **source of knowledge** is already available: **the common living conscience and knowledge of all enterprise`s individuals**;
- A costless **solution is already in place** and has been successfully tested;
- **Individuals have sufficient skills** in selecting the information they need, sharing their opinions, thoughts and accumulated knowledge by simply practicing it day by day in their private life.

Facts:

The classically recognized resources of any military operation are the **personnel** and their skills, **weaponry** strength and interoperability, **logistic and CIS** support. Nowadays though, one talks more and more about another key resource: **knowledge**.

NATO as an enterprise relies on **outsources** in terms of personnel, equipment, weaponry, logistical, force protection and even considerable parts of the CIS systems. Therefore it is reasonable to consider that **the only resource that NATO really and completely owns** is the **Knowledge Resource**.

What is knowledge?

Although it has been described in details in the NATO COPD⁵ and Knowledge Handbook,⁶ **it is not commonly yet agreed what knowledge is and what is not**. However, it is largely recognized that, nowadays, one needs and uses a **key resource** which goes far beyond what used to be in the past **the base** for the majority of military operations: **intelligence**.

Other authors⁷ have elegantly described the **knowledge dimension** in the new hyper connected environment. It is not in my intention to approach those theses, although some ideas are true worth a mention due to their considerable value for future development in this field. I will even dare to say these lectures should be mandatory for any tactical, operational or strategic level Staff Officer.

⁴ **The wealth of People**: How Social Media Re-frames the future of Knowledge and Work, **John VERDON** –Defense Research and Development Canada, Department of National Defense – Ottawa, Ontario, CANADA

⁵ Comprehensive Operational Planning Directive – ACO - 2011

⁶ BiSC – Predoctrinal Handbook – Knowledge Development – [click here to get to it](#)

⁷ **The wealth of People**: How Social Media Re-frames the future of Knowledge and Work, **John VERDON** –Defense Research and Development Canada, Department of National Defense – Ottawa, Ontario, CANADA ; **Power Shift** – **Alvin TOFLER**

What I'm going to attempt herein is to identify and define knowledge springs, try to describe knowledge flows and shortly depict what I have been discovering in the last months since I have been working in the recently established Knowledge Development framework⁸.

Knowledge as a key enterprise, internal, limitless, resource

In my opinion, Knowledge is **everything** that an enterprise knows **about itself** and **about the environment** it is acting within. Very often this knowledge is required by decision makers at all levels, from the ground commanders to the strategic level **to make decisions**. It might exist in data, info and intelligence but also in **all the ideas, thoughts, opinions, assessments, experience, memories that ALL personnel accumulate into their own particular "worldview"** from the very moment of a crisis identified to be of NATO's business or interest.⁹

Metaphorically speaking, one can say that the knowledge resource is the **wind which blows into the NATO's boat sails**. This "wind" has to be **captured and masterfully controlled** in order to get "the boat" to the **right speed, in the right direction, at the right time**.

Going further with this metaphor, it is obvious that the good winds and bad winds have to be differentiated. To that purpose expertise is needed. This expertise already resides in Subject Matter Experts. They might be part of the organization **or not** as it has been described in detail in the COPD¹⁰.

To use these winds they have first to be identified; how and where these winds occur. Should we continue to wait for the good wind as the old sailors did? I'm pointing now to the intelligence assessments... Of course YES, we should always rely on the good old wind coming from the intelligence community but, if we look to the speed the events happen nowadays and the complexities and various implications of both action **and inaction as well**, there is **no place for waiting anymore**. The environment expects that the **NATO boat moves fast, accurate and effective**.

Accurate reliable Intelligence requires time due to mandatory cycles which cannot be bypassed or shortcut. This is an **unchangeable fact** and we have to live with it. Let's call it an assumed **constraint**.

⁸ Intelligence Planner within the Knowledge Center under the Knowledge Management Directorate

⁹ [Capability Development in Support of Comprehensive Approaches Transforming International Civil-Military Interactions Edited by Derrick J. Neal and Linton Wells II](#) : "while face-to-face discussions are essential ways to transmit knowledge, if the knowledge is not captured and training programs changed to consistently transmit it, the effectiveness of the knowledge will degrade rapidly".

¹⁰ Comprehensive Operational Planning Directive – ACO - 2011

So, what to do? The boat still needs wind to move all the time. Where to take the wind from?

Easy! The winds are there! We have them in our back. All **personnel's thoughts, opinions, assessments, memories are the enterprises knowledge winds**. All these have to be captured, controlled and directed to the main sail!¹¹

Prettily described but, nothing concrete so far, you might say.

How to capture? How to control? How to direct all these winds to **the right sail at the right time?**

Thoughts, opinions, assessments, memories expressed all the time in various venues at different times on different issues seem so **abstract and hard to grasp**. In the NATO enterprise, at least in terms of military personnel, people come and people go and with them all their expertise, knowledge, memories, thoughts, and opinions go away as well... thus, the corporate knowledge is lost.

Moreover, talking about the **more palpable, concrete knowledge sources (reports, assessments, files and briefings)** it is true to say that storing and accessing rules follow ad-hoc principles established by a particular entity or another according to their needs and understanding of the knowledge flows at that time. These principles have to be rediscovered and relearned by any incoming individual who gets in contact with the enormous pool of data, if any, accumulated over time.

Admitting this shortfall, one can consider that it is crucial that NATO enterprise establishes **a system of principles** to efficiently capturing all these knowledge winds / springs in order to keep pace with the upcoming complex unpredictable challenges. Furthermore, once this set of principles established, the next essential and vital step would be the creation of **a unique, intuitive, non-technical set of rapid paths to the knowledge resource**. This should ensure **access to the knowledge resource to each individual, at any time, according to any predicted or unpredicted particularity of his need for and ability to manipulate knowledge**.

Capturing the knowledge springs

Let's talk a bit about **capturing** knowledge springs first, because I believe that the key for the optimal access to knowledge resource requires correct capturing/storing process.

¹¹ MS Share Point for example has features like blog creations, discussion virtual areas where threads can be opened and comments can be tracked and afterwards fused into a mature conclusion

In our day to day life, in order to make the best decision at any given particular point, we all use everything we **know about ourselves, our potential and our limits** on one hand and, on the other hand, about the environment in which we are acting or we are supposed to act.

In order to fill knowledge gaps one should know **where to go and how to search**. It is hard to do this these days within NATO constellation of tools, platforms, databases, accounts etc. NATO has a plenty of databases dedicated to support various specific processes. There is not much in place though in terms of **making these databases talk to each other in a virtual collaborative space**. Moreover, discussions and opinion exchanges take place in different venues at various times and there are very rudimentary tools in place to track and control those **knowledge springs**. See the way the classic standard working groups memorize and share their products... readouts / meetings 'minutes saved somewhere sometime on the network.

Let me clarify what I understand by **knowledge springs**. I call knowledge springs **those expressions of people's minds** emerging *ad hoc* or as per requirement with regard to an issue or another. One can mention: comments, opinions, assessments, individuals feelings, abilities, skills. All these bits emerge from the **accumulated experience of individuals**.

Should we rely on them? On opinions and feelings ...?! YES, we not only should, we MUST.

Imagine the military operation as a trip, a holiday trip. You know or you might learn all data about your potential holiday destination thanks to the enormous real time updated pool of data which is the INTERNET but, **you will most likely go where a trusted friend recommends you to go**. You trust his opinion and feelings and accumulated experience although you are bombarded with wonderful offers and advertisings. You just simply rely more on that opinion than on the bunch of sterile information you find on internet. This is how the human being is constructed and maybe that's why we have evolved so much and so fast.

Opinions which might make the difference¹² are expressed loudly or shyly in various venues (coffee shops, after meetings, peer to peer emails etc.). I genuinely believe that all these bits of knowledge crucially matter to the mission success and should be gathered together as a river gathers **all drops** of water from its springs becoming thus able to shape mountains with its **accumulated power**.

NATO enterprise has plenty of this priceless and costless resource: the so called **common conscience and knowledge of all individuals** coming from the staff officers

¹² Read The Intelligence Failure of Pearl Harbor by David Kahn on www.foreignaffairs.com

from different nations with different experience and approaches. This is a great **opportunity**, a goldmine in terms of knowledge sources, which should be taken into account as such when planning the knowledge-flows-capturing process.

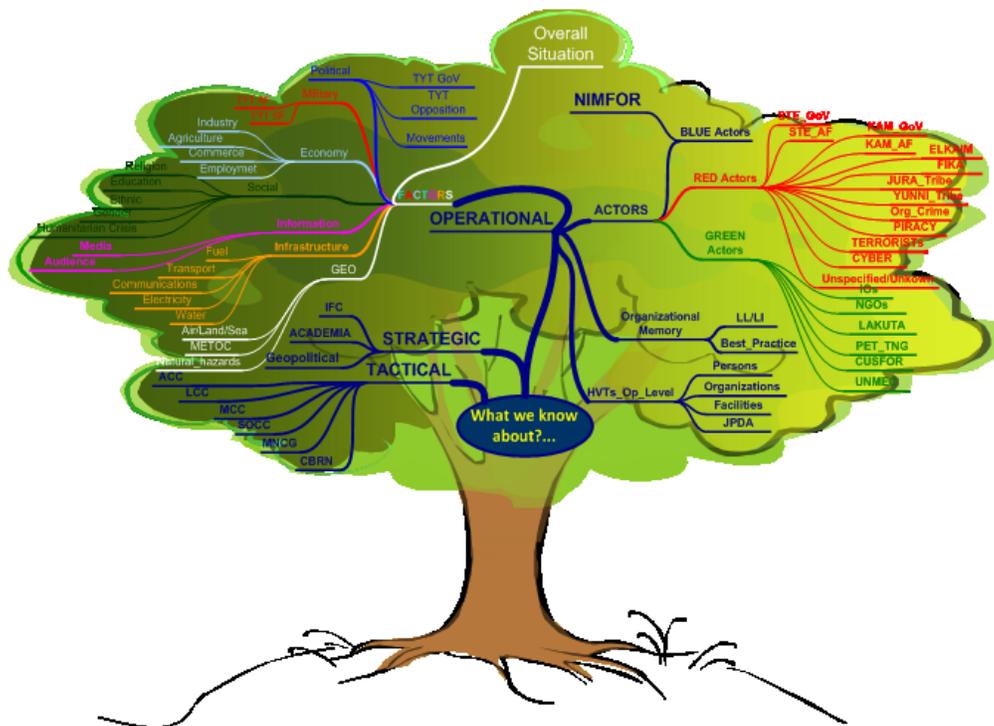
Imagine the knowledge flow as a river flowing in the direction of NAC¹³ declared End State¹⁴. On this river each decision maker can put his kayak at any time and ride its portion of the road together with the whole NATO enterprise fleet.

Nothing new so far you might say. The issue is still there: **How to concretely capture all these springs together and make them available to all**¹⁵.

I will suggest the following proposed **way of improvement**:

First step

Establish a Back Bone Structure for a common language that might be both understood by machines (databases) and humans. I have used the Tree of Knowledge Concept in order to Structure to set the base of the SFJT12 Knowledge Base.



¹³ North Atlantic Council http://en.wikipedia.org/wiki/North_Atantic_Council

¹⁴ See COPD Chapter 3 Strategic Level, Phase 2 Strategic Assessment, Section 2 Process

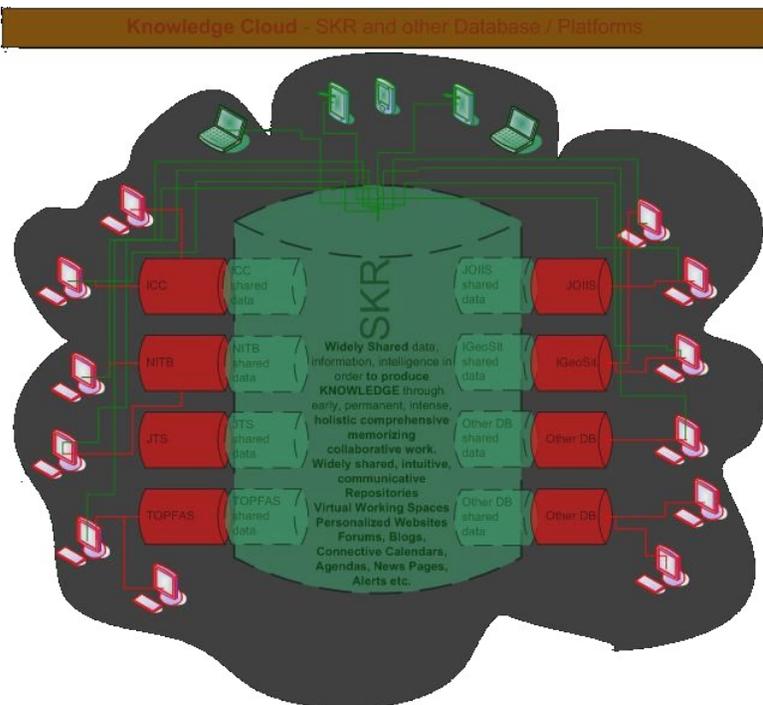
¹⁵ Of course assuming that the principles need to share vs need to know are applied

Second step

Model some parts of the existing databases so that they become able to communicate with one another and be partially merged if required¹⁶. Set common attributes according to the backbone structure.

Third step

Advertise the Tree of Knowledge structure to all, including non NATO, contributors/customers so that they become familiar with the common language.



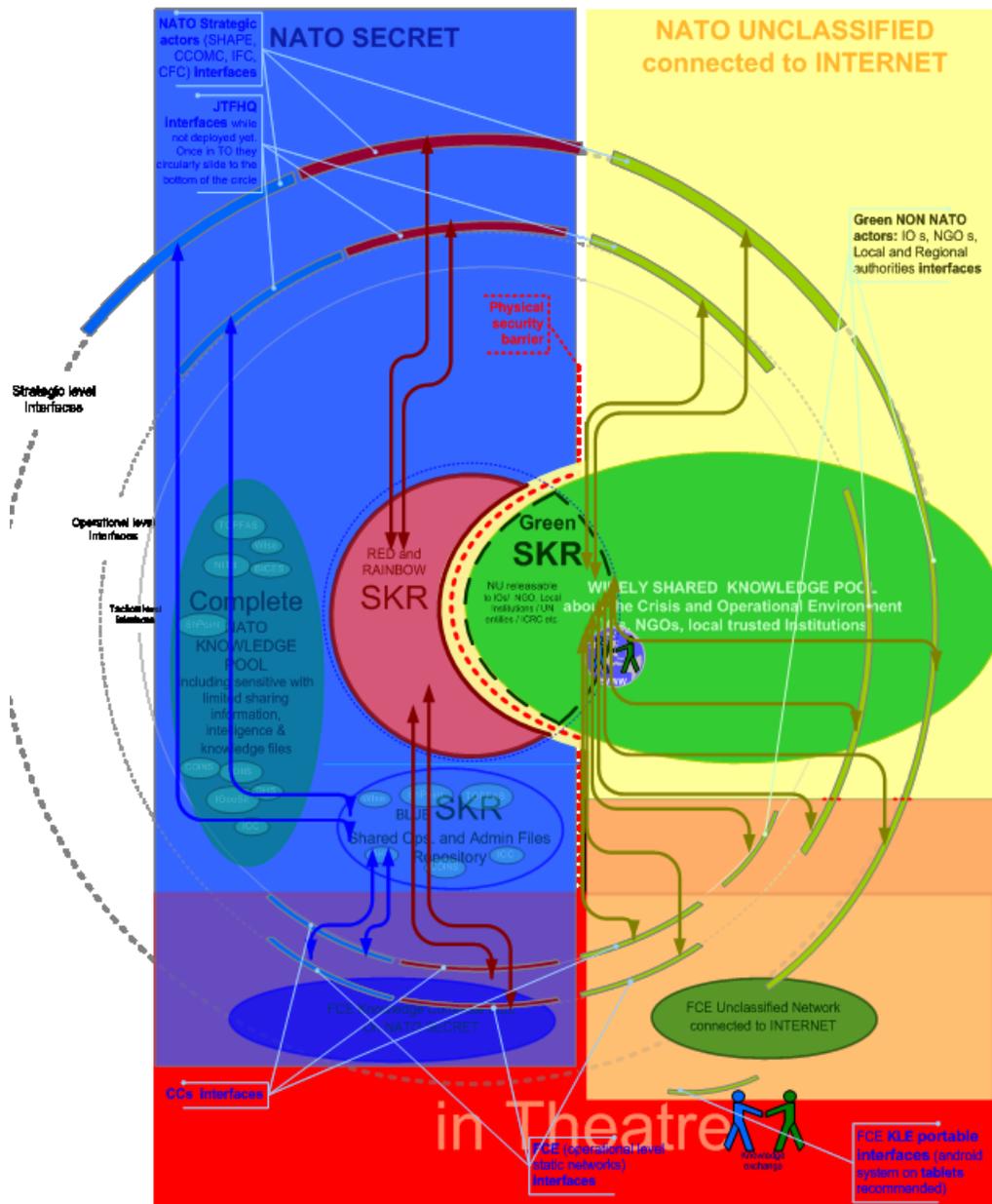
Fourth step

Build a living set of interfaces. This bucket of interfaces has to be integrative, intuitive, easily and rapidly to model. The platform used has to support multiple, portable, ad hoc, customizable to the finest grain (individual level) interfaces responding to all and each customer`s requirements.

This virtual space, this computer cloud, should be the place where **virtual collaborative security multilevel access venues might and should be established by customers** with no or very limited technical training.

It is known that the technical skills are becoming more and more a scarce not only in military organizations. Thus one should not expect better in the light of the IT revolution knocking on the door of the military society. Moreover the IT community already feels there is a gap in terms of strategic thinking not only at the managers` level but, more importantly at the developers` level.

¹⁶ The files attributes structure should follow the Tree of Knowledge principles and stakeholders accessing needs



All these virtual **venues must be connected to the same unique Knowledge Repository** and hence become able to track and categorize every drop of knowledge. All this has to be done according to predetermined easy to understand and apply principles (ex: Tree of Knowledge). Hence, **any potential customers might rapidly assimilate and collate all the knowledge drops available at any point, according to his ad hoc needs.** The author is **fully aware of the trap in which some might fall** thinking that a **collation of knowledge drops would be enough to point to the right decision.** No, there is nothing falsier. **The judgment** part of the analysis process is **(still) to be made by the humans.** The machine only provides **fast and complete access to ALL knowledge** the enterprise have at that particular point.

Those (human) judgments have to be added to the existing knowledge threads/springs as well making them even richer and more valuable. I consider **this portion** of the already available knowledge resource as paramount: **the common living conscience of any enterprise, the expression of all its individuals` thoughts gathered together.**

Knowledge development education

Nothing happens over night, except the Christmas night of course. Individuals already have the freedom of thoughts and some technical skills in using social networking and cloud computing features due to their private (digital or on-line) social life (see the way people interact and how social networks keep track of all the content of these interactions). This is a considerable **opportunity** and should not be disregarded. The only thing remaining to be done is **educating individuals to accurately, and systematically express their thoughts** in a fully adjustable environment capable to memorize and ensure fast multilevel access to what the enterprise has been memorizing until that particular point.

Even from the very beginning of the Core Knowledge Base establishment, these virtual venues have to be offered to the (designated) **individuals or groups of interest**. These can work in total confidentiality in a limited circle of knowledge but, commonly widely recognized familiar principles in terms of storing, sharing and accessing the Knowledge Base have to be enforced right from the beginning. Thus, when it will be decided that this circle of knowledge should be enlarged, all the augmenters will know how to work with that Knowledge Base simply because **collaborative virtual working principles and database structuring would be the same** they have been using while working with other Knowledge Bases, **only the content will be different**.

Amazingly I can now firmly say that this is possible without necessarily being assisted by the IT community because we, JFC Lisbon, did it in SFJT12¹⁷.

I am not saying that succeeding to do this without IT assistance would be an **advantage**. Looking to the near future requirements I would rather call it a requirement. Let me mention several reasons:

Security reasons

Sensitive reasons require, sometimes, that nobody, other than a small community, **know about the content of an established Knowledge Base, not even the IT personnel**;

¹⁷ Stead Fast Joint Exercise 2012 – Based on Cerasia II Scenario Package. The exercise was used to test the first attempt for the shape of the new NATO Deployability Concept.

Ease of use

The IT often come up with solutions that do not necessarily meet our expectations in terms of simplicity and ease of operation, thus, continuous lengthy training is often required;

Long-lasting

The process of understanding users' requirements by IT community and the solution development process takes time which is a resource less and less affordable these days;

Costly

Sometimes the IT proposed solution requires enormous financial resources and thus, nation's approval and hence, again, time ...

I would even say that the Staff Officers have to be taught or to learn by themselves how and what to ask to IT community. **IT should be enabling actions and not driving them**, as I fear that often happens these days...

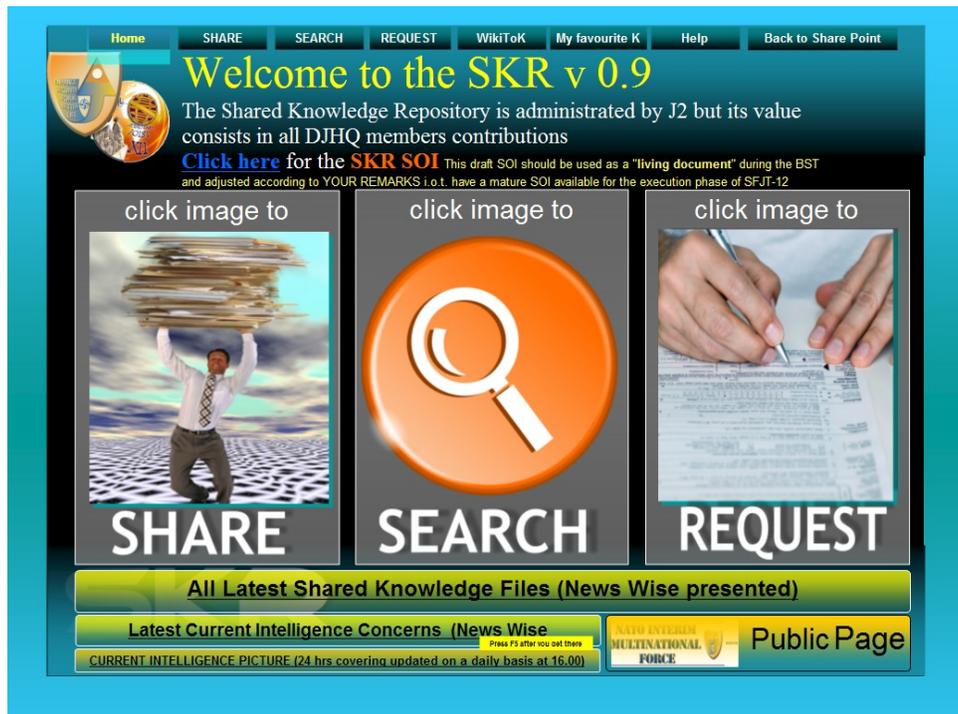
An already put in practice example: SKR¹⁸

The kind of solution described above has been put in place and successfully tested and experimented by JFC Lisbon, using **cheap already available software** and **limited or none IT skilled human resources**. The IT has only executed few **required** settings of the network, always within the security policy provisions, of course.

This is just a way to apply the above mentioned principles **fast and costless with the already available non specialized tools**. Platforms dedicated to **make databases talk, not only to each other but, more importantly, talk to their customers**, are already in use in different governmental national institutions.

The SKR core concept is about gathering all available knowledge strings together and making them talk effectively to their customers regardless of their access or technical skills. Specialized databases and other geospatial apps were intuitively brought together to allow consistent, meaningful, fast and customizable access to **any** customer at **any** point according to **any** ad-hoc requirements without them setting up new accounts, passwords or asking to attend supplementary lengthy trainings.

¹⁸ Shared Knowledge Repository – is a platform built in MS Share Point that has been used to store, share, access and request data, information, intelligence and knowledge during SFJT12 exercise. It was recognized by JWC in the First Impression Report as a Best Practice that **“SHAPE should consider to institutionalize”**



In simple words the main principle applied was: **One cannot predict** what the customer might need, to which **purpose** and, especially, **when**. **What one can do** though is to **leave the door open** and all the **familiar** (to customers) **tools in place, organized in an intuitive order**. This should save customers and (knowledge) developers` time. Moreover, the customer might contribute to the Knowledge Base as well with **no fear**. They are even encouraged and offered a fast, intuitive, memorizing venue to do so. Why with no fear? Simply because of the availability of the versioning¹⁹. **Nothing is lost.**

I would dare to say that: **protecting the Knowledge** you have **is not** necessarily the key to becoming more efficient but, **being faster in building a strong opinion** that you will act upon **is** the main lever to the current military operations **success**. The **intentions of action must obviously remain secret** but **NOT the knowledge base that the intentions are built upon**. Our opponents might already know what we know or even more but they should be blind in terms of what we are going to do, before we do it. **A painful question**

¹⁹ See the Versioning feature of Microsoft Office Share Point feature here:
<http://www.youtube.com/watch?v=osmW6tlxCz4&feature=related>

I truly believe that all readers of the article will agree on the answer to this question. The answer is **NO**.

To better understand **why** this fact is like that, let's go into details and clarify why we talk about knowledge and, not like in the old times, about intelligence or/and information any more.

The Comprehensive Approach sets the ground for a **wider and radically more intense collaboration with all actors involved** in a particular crisis in order to help them all **holistically understand** the environment and **the full spectrum of desired or undesired effects**.

This **intense collaboration** requires **new mindsets and new processes and, above all, produces an enormous amount of data**. In NATO these processes have been described in detail in the NATO COPD, the BiSC Knowledge Development Handbook and the latest BiSC Directive pertaining to Conceptual Framework for the Alliance Operations. Along with these new mindsets and processes and in order to manage the new type of data, NATO has started to develop integrative software platforms to support staff's internal collaboration (on the classified networks TOPFAS). It is expected and desirable that similar platforms will be established on the non-classified networks too but, what **is not clear** so far is **how any decision maker** might take the **full benefit** of the growing knowledge base **whenever and ONLY when** he needs it, **however** he needs it²¹, no matter on which level of the decision process he might be.

An answer:

The **SKR concept** has evolved towards **trying to achieve this goal** and now is proposing a **set of interfaces to a unique Knowledge Base**. This **unique Knowledge Base is** structured in three SKRs due to functional, legal and security matters: BLUE, RED and GREEN. Please have a look at the attached Business Process Models pertaining to the current SKR Concept Status. This effort has to be considered just **one of the first steps towards a more efficient use of the Knowledge resource as a key enterprise internal limitless resource**.

End note

Although at this point, it might be reasonable to make such an allegation, I'm **not assuming** that an overall agreement is already (even only mutually) reached, when it comes to knowledge as a vital resource but, I strongly believe that no one can deny the **tremendous necessity of clarity and consistency** of the enormous NATO pool of data, information, intelligence and ultimately knowledge.

²¹ COPD Chapter 2

Thus, in this article, I have just attempted to set the ground for a further deeper understanding of how the **knowledge resource** available **both inside and outside the NATO organization might be harnessed and fully used.**

The Comprehensive Approach draws the guidelines for a different framework focusing on enhancing the cross areas of expertise collaboration within the organization and recommend that an **essential clutch is established** with the external entities, institutions, organizations strategic, regional and local actors involved in the crisis NATO is intending or is asked to deal with.

Conceptually speaking this **is a *sine qua non* condition of the future military operations planning and execution** but, when it comes for putting the concept in practice, it seems that indestructible obstacles occur. Is meaningless to mention all of them but, probably the reader has already thought about: national caveats, biases, old fashion mindset, security pretexts and so on which all should be considered as constraints and acted upon. Overcoming these obstacles is the essential art of change management.

Finally or rather firstly, I believe that a rigorous identification of the real **constraints, opportunities** combined with an **open minded approach** will lead to an **effective, fast and costless solution.**