

Opportunities for Social Media in the Comprehensive Approach

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ABSTRACT

Meeting today's scope of military operations often encompass areas of consideration outside of the military such as the economic and political impacts. This calls for high levels of coordination, consultation and interaction among all actors involved. We are of opinion that this comprehensive approach to operations may benefit from social media. We define social media as internet-based applications that allow groups of users to create, share, and gather information with the intention to facilitate overall command communications strategy. Examples of social media are Facebook, Twitter and Weblogs.

Social media is at the top of the agenda for many civilian companies. There seems to be limited understanding, however, on how to effectively employ social media for military operations. This paper intends to provide a brief overview of opportunities and risks of social media for military operations. More importantly, this paper will provide insights on how social media may aid the collaboration between NATO and non-NATO actors in the NATO comprehensive approach. Hence, we foresee that this paper will allow decision makers to consider the opportunities and risks and plan for the necessary organizational and infrastructural changes required to make social media a force multiplier in future military operations.

Most of the results discussed in this paper were collected during a one-day workshop. The workshop was convened with an audience consisting of military and civilian social media experts and future military leaders representing the different military departments. During the workshop participants envisioned opportunities and promising applications of social media in military operations. On the base of this workshop we conclude that future efforts should focus on minimizing the risks involved in the application of social media as a means to improve cooperative multi-organizational efforts. Examples are human-in-the-loop experimentation as a means to collect evidence of the utility and find potential areas of application and training and education to make military personnel more aware of the risks of social media.

1.0 INTRODUCTION

Not until recently, the Pentagon has decided to authorize the use of social media across the U.S. military, saying the benefits outweigh security concerns [1]. Among these benefits are that social media may help the

timely and transparent dissemination of information [2]. According to the U.S. Army social media ensures that the Army's story is shared honestly and directly to Americans all around the world whenever they want to see, read, or hear it. The U.S. Navy adds to this that social media provides a rich means of sharing information, not only with Americans, but with all internal and external stakeholders [3].

Following the claim of the U.S. Navy [3] that social media provides a means of sharing information with internal and external stakeholders, this paper argues that the comprehensive approach necessitates the application of social media. Meeting today's scope of military operations often encompass areas of consideration outside of the military, such as the economic and political impacts. This calls for high levels of coordination, consultation and interaction among all actors involved. We are of opinion that such a comprehensive approach to operations may benefit from the application of social media. We define social media as internet-based applications that allow groups of users to create, share, and gather information with the intention to facilitate collaborative planning and decision making during expeditionary operations. Examples of social media are Facebook, Twitter, Wikipedia, and Weblogs. More specifically, we propose that for the comprehensive approach to work, social media are needed that allows the military to (a) monitor better relevant discussions that take place on the internet, (b) influence public opinion and broadcast information to stakeholders more effectively, (c) better ask the public and partners for help and support, and (d) discuss matters more effectively and cooperate more thoroughly with other NATO and non-NATO actors in the NATO comprehensive approach.

This paper discusses the uses of social media and will contrast the benefits that come with these uses against the risks of social media in the comprehensive approach. For this purpose, in June 2011, with the support of the Netherlands Department of Defense (DoD), a half-day workshop was organized with Army, Navy and Air force leaders with operational experience. During this workshop threats and opportunities of social media in a comprehensive setting were explored. This paper provides an overview of the key findings of this workshop. We conclude that the many risks involved in the use of social media in the comprehensive approach requires us to proceed with caution. More data-driven research is needed before we can go ahead with the actual implementation of the necessary organizational and infrastructural changes required to make social media a force multiplier in future comprehensive operations.

2.0 THE COMPREHENSIVE APPROACH

Many contemporary military operations are launched in conflict environments which require the application of instruments other than the military to establish peace and security [4]. A variety of reports exploring the failure of peacekeeping testified that this could be attributed, at least partly, to poor coordination and collaboration between the actors engaged in these initiatives (Report of the Panel on United Nations Peace Operations. United Nations, A/55/305-S/2000/809). Soon the insight arose that there is a mutual dependency between security and development efforts and the understanding that managing these interdependencies is essential to achieving efficiency, effectiveness and sustainability (see Figure 1). This idea has been coined the Comprehensive Approach (CA).

Of importance in all cooperative multi-organizational efforts is the willingness to look beyond organizational boundaries and focus on overarching results instead of the activities of individual actors [5] [6]. Individual members of organizations need to establish linkages and manage interactions with other organizations to organize task-related issues [7] [8]. Researchers generally refer to such behaviors as 'boundary spanning behavior' [9], and have established its importance for organizational performance [8] [10], as well as the performance of collections of interdependent teams (i.e., multiteam systems; [11]).

Boundary theory assumes that organizations depend on their environment for critical resource inputs, as well as for the disposal of their outputs [12] [13]. However, there are many barriers to successful integration. One recurrent barrier to integration is the culture difference between actors that may be observed in the comprehensive setting (cf. [14], p. 19). In the face of difficulties understanding each other's objectives and motivations, self-contained societies may develop, giving rise to miscommunication [15].



The screenshot shows a news article from the UN News Centre. The main headline is "UN stresses need for comprehensive approach to tackling Yemen's problems". The article is dated 27 January 2010. It features a map of Yemen and its surrounding region, including Saudi Arabia, Oman, Djibouti, Ethiopia, and Somalia. The text discusses the need for a broad approach to address Yemen's economic, social, and security challenges. A quote from B. Lynn Pascoe, Under-Secretary-General for Political Affairs, is included. The article also mentions a UN staff member held in Yemen and UNICEF's appeal for funding to assist children in 2012. The page includes navigation links, a search bar, and social media sharing options.

Figure 1: UN stresses need for comprehensive approach.

The CA depends on a culture of cooperation, generated by understanding that managing interdependencies and harmonizing joint objectives helps to achieve greater efficiency, effectiveness and sustainability [4]. But more is needed than just the proper mindset of all parties involved. The CA usually entails having 'mechanisms' in place for regular meetings to exchange information or discuss cooperation. The CA states little, however, about how the dependencies need to be managed or how harmonization does occur.

Browning [16] and Adamsson [14] categorize and explore several integrative mechanisms that are applicable to the CA. Browning defines integrative mechanisms as strategies and tools for effectively coordinating actions across groups or organizations, for example in a collaborative setting. As catalysts, they facilitate information flow across communication barriers, such as a company's organization structure, incentive systems, location, leadership styles, cultural differences, and management traditions. Integrative mechanisms must also regulate information flow such that it does not overwhelm or underwhelm its recipients. An important group of integrative mechanisms are appropriate and adequate organizational information and communication systems which provide for the establishment of integration. We will argue that there is a need for a special type of information and communication systems, namely social media. As we will show in the following sections, social media may provide the means to support coordination and collaboration efforts between the actors involved in the CA.

3.0 SOCIAL MEDIA

Information and Communication Technologies (ICTs) have been changing the society, providing more, and cheaper opportunities to find, and to communicate with people [17] [18]. ICT enables people to organize and individuals to meet easier. Moreover, ICT makes a more open political system possible facilitates people to share narratives and believes easier [18]. In facilitating these opportunities there is a central role for social media.

Social media is intended to facilitate communication and interaction with peers and with public audiences on topics of mutual interest, typically through Internet and mobile communication technologies. The increasingly ubiquitously accessible and scalable communication technologies (often referred to as web 2.0 [19]) allow for exchange of user-generated content [20]. User generated content (UGC) is media content that are publicly available and created by end-users. This paper uses the term social media to refer to the online technologies and practices that allow groups of users to interact through creation and sharing of information with the intention to facilitate overall command communications strategy.

The Netherlands DoD has recently issued guidelines [21]. According to the NL DoD, social media helps the NL DoD to communicate more quickly and directly with target audiences, such as potential recruits. These increased communication capabilities facilitates the following important NL DoD organizational purposes: (a) Increase in knowledge about Defence by general public; (b) More support of the general public for Defence activities abroad; and (c) To increase the visibility with potential recruits of Defence as interesting employee.

Social media can take many different forms, including text, images, audio, and video. According to Kaplan and Haenlein [20] there are six different types of social media: collaborative projects (e.g. [Wikipedia](#)), blogs and microblogs (e.g. [Twitter](#)), content communities (e.g. [Youtube](#)), social networking sites (e.g. [Facebook](#)), virtual game worlds (e.g. [World of Warcraft](#)), and virtual social worlds (e.g. [Second Life](#)). We propose a different classification, however, based on the different uses or possibilities of social media (see Figure 1).

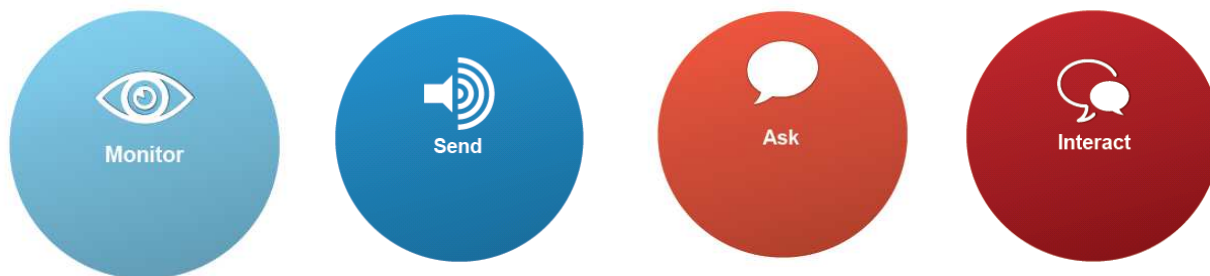


Figure 2: Classification of social media by opportunities for use.

First, social media offer the opportunity of sensing and analyzing what is going on in society, by **monitoring** user generated information. The second use of social media is that of a new communications channel that can be used to **communicate** to groups or individuals. This type of communication does not necessarily call for reactions, but governmental bodies also have the possibility of **asking** questions to the public at large. This third approach is often called crowdsourcing (e.g., seeding a question and harvesting the answers). The fourth type of use is **interaction** with stakeholders. This occurs when asynchronous or even real-time two-way communication takes place in the form of a dialogue or even multilogue. Below we explain the four uses in more detail.

Monitor: What contents do civilians, allies and other organizations generate on the internet. What is going on in a society, an area, or community (the content network)? And which people take part in these social networks (the actor network)?

Send: Governmental bodies often send information, without expecting an answer. Civilians are often informed, and sometimes asked to take action, such as the following example nicely illustrates: "close your doors and windows, there is a large fire in your neighborhood".

Ask: When an organization or an individual of that organization asks a question, an open call (crowdsourcing) or closed call (prosourcing, or direct message), anyone or specific individuals or groups are targeted to respond. For example AMBER alert aims a question at the crowd, using different channels, such as "Missing since 14-02-2012: Jan de Vries: 14 years old from #TheHague. Blond hair, black coat, white shoes. Photo available at <http://amberalert.nl>. Do you have information? Twitter: #missing @JandeVries, Or call: 0800-6070."

Interact: Civilians or (people from) organizations often seek cooperation, dialogue or multilogue, not just a short answer. Examples are Communities of Practice trying to solve issues or co-create solutions through their online activities. Defense, governmental, or civilian organizations can chose to initiate such interactive platforms or choose to join them.

All four modes of use can be seen as separate types of use, there is no fixed order in using them. However, we pose that monitoring should be at the basis of any type of social media usage. Monitoring can be about measuring sentiments (feelings) amongst a crowd or group, can be about finding facts, rumors or possible threats. When sending out messages, asking questions to a crowd or trying to interact, it is wise to monitor and listen to what's going on before taking action. Sending, asking questions and interaction is sometimes used simultaneously where monitoring is done continuously. Hence, monitoring is the key to success for the other types of use. Because social media will keep producing massive amounts of information monitoring will always be necessary. After analysis, questions to seek new information can be directed to the crowd, groups or individuals, information can be produced or a dialogue is started to reach a certain goal. After this action reactions are analyzed and the cycle of use continues. Of course, these pathways can change over time, so one could start with dialogue and end with persuasion (send).

4.0 WORKSHOP ON SOCIAL MEDIA IN THE COMPREHENSIVE APPROACH

In June 2011, with the support of the Netherlands Army, a half-day workshop was organized with Army, Navy and Air force leaders with operational experience. The workshop was organized by members from the project organization Social media for the Defense program leader V1125: C4I in a comprehensive approach. The workshop was funded by the Netherlands Defense Organization and was hosted by the Director of Operational Policy, Requirements and Plans. The purpose of the workshop was to identify the threats and opportunities of social media in a comprehensive setting. Another purpose was to explore the possibilities of social media applications in the comprehensive approach. As mentioned, we are of opinion that the comprehensive approach to operations may benefit from social media. Hence, the workshop's focus was on the use of social media for command & control in expeditionary operations.

The workshop was preceded with a general literature review of social media. Scientific and popular publications on social media were studied with the intention to create an overview of risks and opportunities of social media. The result of this literature study was recently published (in Dutch) on Frankwatching.com [22] (see <http://www.frankwatching.com/tags/social-media-swot/>).

4.1 Threats and Opportunities of Social Media in the Comprehensive Approach

During the workshop many arguments for and against the use of social media during expeditionary missions were identified. These were later clustered according to the NATO DOTMLPFI acronym. DOTMLPFI stands for Doctrine, Organization, Training, Materiel, Leadership and education, Personnel, Facilities and Interoperability. A graphical representation was then created presenting an overview of these arguments. In total the workshop participants identified 26 arguments for and also 26 arguments against the use of social media during expeditionary missions. This overview is published on TNO.nl. The remainder of this section discusses a small selection of the arguments that were identified during the workshop with a direct implication for the comprehensive approach.

4.1.1 Threat: OPSEC

By far the most important threat to the use of social media according to the workshop participants is Operations Security (OPSEC). The uncontrolled, unmediated, and publicly accessible nature of social media may cause a lot of damage to OPSEC. There are many examples of how through social media the OPSEC was endangered during expeditionary missions. For example, when personnel in their communications through social media with their spouses or friends unintentionally provide information that poses a threat to OPSEC, such as giving away information on highly classified visits of highly ranked military personnel or civil authorities to camps (see Figure 3). On other occasions, insulting messages, acts of racism or messages that point out the stupidity of military personnel discredits the image of the DoD or the Ministry of Defense (MoD).



IDF soldier jailed after web leak

The Israeli military cancelled a planned raid on a Palestinian village after one of its soldiers posted details of the operation on Facebook.

The unnamed soldier revealed the time and place of the raid and the name of his unit on the social networking site.

He said on his status update that his unit planned a "clean up" raid.

The soldier was court-martialled and sentenced to 10 days in prison. He was also ousted from his battalion and relieved of combat duties.

"On Wednesday we clean up Qatanah, and on Thursday, God willing, we come home," the soldier wrote on his Facebook page. Qatanah is a village in the West Bank near Ramallah.

His Facebook friends and fellow soldiers reported the post to the authorities.

The decision to cancel the raid was made by commanders after it was feared the leak would put the unit in danger. The operation went ahead several days later.

A statement from the military released after the leak said, "Uploading classified information to social networks or any website exposes the information to anyone who wishes to view it, including foreign and hostile intelligence services."

"Hostile intelligence agents scan the internet with an eye toward collecting information on the IDF (Israel Defence Forces), which may undermine operational success and imperil IDF forces," it added.

Posters

Prior to the leak, the Israeli military had launched a full-scale campaign warning of the hazards of sharing military information online.

Figure 3: Social media a threat to OPSEC? source: <http://news.bbc.co.uk/2/hi/8549099.stm>.

A recently issued guideline by The Netherlands DoD [21] states that OPSEC severely limits the use of social media. All uses that are campaigning against OPSEC are prohibited. Personnel are prohibited to write about internal affairs, not yet issued policies or classified information. Training and education should play an important role in making military personnel aware of the risks of social media in expeditionary missions. Interesting to note is that this recent guideline does not see a role for social media in helping to manage interdependencies and harmonizing joint objectives in expeditionary operations. Moreover, SG A/973 issues no specific guidelines to military personnel working abroad or during expeditionary missions.

Recent research shows that the stories that military personnel post on social media, such as YouTube, are highly similar with official statements of the military [23]. Brand [23] argues that military personnel are well aware of the risks to OPSEC that social media pose to their selves and their colleagues and that the risk of social media to OPSEC is a lot smaller than the Pentagon thinks or wants us to believe. Although the risk of the use of social media to send information (e.g., to spouses, friends, or the larger community) to OPSEC seems relatively small, it may still severely limit civil-military cooperation in the form of a dialogue. Due to the fact that by definition social media are publicly accessible, the use of social media as a means to communicate classified information in the comprehensive approach between allies is limited or not an option at all, leaving us with the question of when and in what circumstances social media has added value.



Figure 4: UN headquarters in Baghdad lies in ruins after a massive suicide bomb explosion in August, 2003.

4.1.2 Threat: The Peacebuilding Dilemma

On October 27, 2003 an ambulance filled with explosives smashed into security barriers outside the International Committee of the Red Cross (ICRC) headquarters in Baghdad killing several employees and leaving more than 200 wounded. Following the attacks, the ICRC immediately withdrew its international staff from Baghdad [24]. The United States was held indirectly responsible by members of the ICRC for the deaths

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of the humanitarian aid workers. Members of the UN and NGO communities felt they were endangered partly by the fact that the U.S. was fighting a war that had not been authorized by the Security Council and that had created a situation which had basically invited the attacks [24].

The comprehensive approach has created a situation which military and civil actors operate in the same space at the same time. Civil-military cooperation has serious implication for NGO's on their ability to remain impartial, neutral, and independent in fulfilling their core tasks. As a result, the lines between neutral relief efforts and non-neutral peacebuilding and reconstruction activities have become increasingly blurred, thereby raising dangers and risks especially for civilian actors [24]. This has created a situation, which has been called the peacebuilding dilemma, in which NGO's are reluctant to openly collaborate with the military [24]. The complete and open access of social media and, consequently, the high visibility of the civil-military cooperation to the public severely hinders the adaptation of social media in the comprehensive approach.

4.1.3 Threat: Social Media Are Not Social

To what extent are social media social? The channel that people use to communicate via social media often imposes restrictions on the communication process (see Figure 5). When people have the ability to conduct face-to-face discussions, they can use the full range of linguistic, paralinguistic, and nonverbal behaviors to communicate and coordinate [25] [26] [27]. For example, it is possible to use directional gestures (i.e., pointing) to refer quickly and easily to people, locations, and objects. Because face-to-face communication is produced in real time, speakers have direct feedback on how their message is being understood as it is being delivered. Social media make it difficult to transmit all of the sources of information available in face-to-face conversations at the same rate and fidelity at which they occur naturally [28]. During computer-mediated communications via social, media participants are usually unaware of the facial expressions, tone of voice, posture, and so forth of the other participants [29]. Consequently, it is believed that people feel more anonymous and are focused more on themselves and less on others [30].




Figure 5: Social media reduces the need for face-to-face communication.

Reduced levels of social context cues are often associated with lower levels of interpersonal trust [31] [32]. Trust is important within a comprehensive approach because it supports the building of interpersonal relationships, functional interactions, communication, coordination, and cooperation between parties, and reduces the costs of monitoring and controlling [33] [34]. Trust is essential to the loose coupling that allows civil-military collaboration to work. This represents a critical paradox for coalition partners with strong ties through social media. If members of distributed coalitions are going to engage in collaborative activities, trust is needed. But for trust to develop members need to be in proximity of each other, for instance to observe the amount of effort others are expending, activities in which collocated teams can much more easily engage [6].

4.1.4 Opportunity: Anytime, Anywhere, Anyone

An important characteristic of social media, when compared to other types of media, is that social media are relatively inexpensive to use and easy accessible to enable anyone to publish or access information. Hence, social media are independent of time and location. This potential is exploited increasingly, since the internet becomes increasingly available around the world. Digital skills, knowledge and prosperity used to be required to use social media (and the internet in general). Improving usability, user friendliness and decreasing costs make social media more accessible and decrease thresholds (see Figure 6). This means that with the availability of social media it is becoming a lot easier to communicate with all stakeholders involved in the comprehensive approach. Moreover, with the adoption of social media as an extra means for communication it is no longer needed, for collaboration between NATO and non-NATO actors in the comprehensive approach, to invest lots of money in interoperability.

US Army runs smartphone trial, could see 'limited deployment' later this year

By Sean Buckley  posted Jul 16th 2011 7:24PM



Sure, the US Army could continue to develop [expensive proprietary gadgets](#) for use in the field, or they could make the switch to (relatively) inexpensive off-the-shelf smartphones. It's a change that's been [considered for some time](#), and the Army is now at the tail end of a six-week trial of more than 300 Android, iPhone, and Windows Phone devices for military use. The results have been promising, according to program director Michael McCarthy, stating that younger soldiers who grew up with smartphones and handhelds are very comfortable using them for military purposes.

Figure 6: Inexpensive off-the-shelf communication technology, increased usability, user friendliness and decreasing costs make social media more accessible.

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This fall the Netherlands military is starting a large continuous Netherlands multifunctional exercise which is called PROMISE. The focus of the exercise is on proofing new approaches to Command and Control (C2) with inexpensive off-the-shelf communication technology. The rationale behind this exercise is that C2 of all NATO and non-NATO partners in the comprehensive approach by one organization is not possible. An important question the Netherlands military is addressing is whether a combination of social media to be used at the lower levels of classification and military C2 systems will provide for a satisfactory level of system awareness and harmonization between partners (see also Figure 6).

4.1.5 Opportunity: Unity and Involvement

By using social media individuals are able to unite their forces more efficiently and effectively than before. The impact of these joined forces, knowledge and skills (aka wisdom of the crowd) has changed the way organizations, government and community act and work. For example, last February, the Defense Advanced Research Project Agency (DARPA) partnered with Local Motors and announced the Experimental Crowd-derived Combat-support Vehicle (XC2V) Design Challenge. The public was asked to design a military vehicle that could execute two types of missions: Combat Reconnaissance and Combat Delivery & Evacuation. A prototype of the winning design, the XC2V Flymode, has just recently been constructed (See Figure 7).



Figure 7: The crowdsourced Experimental Crowd-derived Combat-support Vehicle.

As mentioned, social media not only enables us to place an open call to the general public, social media also enable the possibility to have a dialogue with anyone anywhere at low costs. Being able to have this dialogue allows you to co-create and to let citizens participate in the policy-cycle. Two-way communication provides interesting new opportunities for the military. An example of such new opportunities in the comprehensive setting is the possibility to partner-up with civilians or local NGO's during reconstruction missions.

4.2 Summary of Threats and Opportunities Identified

Many arguments for and against the use of social media in the comprehensive approach were identified in our workshop. To name a few: Social media may limit the flow of information between coalition partners, may cause misunderstandings through miscommunication, lower levels of trust, and a peace building dilemma, which all hinder civil-military cooperation. Another argument against the use of social media is that social media are highly dependent on IT-infrastructure: what if local government shuts down internet or a natural disaster takes place knocking out the internet or IT-infrastructure? Another problem identified in the workshop is that of finding the target audience: There are so many social media that it may become difficult or even impossible to find the people you want to communicate with. More, there is the risk of opponents using fake identities, for example that of US Military personnel, to influence the conversations on social media in order to undermine goodwill of locals or partners¹. Instead of helping civil-military coordination, for example during relief efforts, peacebuilding and reconstruction activities, these threats may seriously hinder civil-military cooperation in the comprehensive approach.

The workshop resulted in several opportunities for better civil-military cooperation through social media, such as an increase in reach and ease of communication with all stakeholders involved to increase the effect of operations. Another interesting opportunity that was identified during the workshop, but was not further elaborated on in this paper, is the use of social media as a polling instrument to assess morale or the effects of the operation. In this example, social media is used to conduct polls amongst own personnel, NATO and non-NATO actors in the comprehensive approach. Furthermore, crowdsourcing, for example at own troops, was named as interesting opportunity for social media. Imagine that you encounter a problem during your work. With the help of social media you could ask the world, or, in a similar matter, local people or experienced colleagues back home for the solution to your problem(s).

5.0 CONCLUSIONS AND RECOMMENDATIONS

An important aspect of the comprehensive approach is that organizations involved need to establish linkages and manage interactions with other organizations to organize task-related issues. This paper explored the possibilities for social media to improve comprehensive planning and decision making in a cooperative multi-organizational effort. We found that there are many opportunities for social media in the comprehensive approach that plea for the implementation of social media in the Command & Control structure of the military. These opportunities may take different forms. For example, the implementation of social media as a means to communicate has financial benefits for all involved in the comprehensive approach. Social media are often composed of inexpensive off-the-shelf communication technologies that are easy to use. This means that for NATO and non-NATO actors to communicate and coordinate no expensive communication technologies need to be developed nor acquired any more. Other opportunities identified are that social media have the power to involve all stakeholders in the comprehensive planning and operations cycle, make visible who is doing what, and increase the reach and speed of communication.

¹ Interestingly, according to several media, the US military is developing software that will let it secretly manipulate social media sites by using fake online personas to influence internet conversations and spread pro-American propaganda (see, for example, <http://www.guardian.co.uk/technology/2011/mar/17/us-spy-operation-social-networks>).

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There are many risks involved as well with the use of social media as a means to improve cooperative multi-organizational efforts. These risks have to do mainly with OPSEC but also with channel restrictions on the communication process, making it more difficult to transmit all of the sources of information available in face-to-face conversations at the same rate and fidelity at which they occur naturally.

An important question is whether the opportunities of social media outweigh the threats. Based on what we have learned so far, we think that more knowledge is needed to be able to make firm decisions for or against the use of social media in the comprehensive approach. For example, we hardly have any knowledge about the occurrences of the identified opportunities and threats in military practice and the magnitude or value of each of the identified arguments. More importantly, the military has yet to develop valid criteria against which the potential benefits of social media applications will be assessed. For example, is the military willing to accept an occasional leak of classified information through social networks to the general public including our opponents? If not, then there is not really a strong case for implementation of social media, no matter how big the evidence-based benefits for C2 might be.

It is an illusion to think that the military, or its partners, are able to counter all of the threats of social media to the comprehensive approach. Countering these threats is not about building bigger walls or better equipment. It is all about the human factor. It is important to keep in mind that it are *not* the social media that pose a threat to civil-military cooperation, but the humans that make use of them. As we all know, humans are prone to making errors. As mentioned by the Netherlands DoD, in their recent social media guideline [21], a good way to proceed, therefore, is to invest in training and education to make military personnel more aware of the risks of social media to OPSEC and civil-military cooperation in the comprehensive approach.

Future efforts should focus on the collection of best practices that help to minimize the risks and maximize the benefits of social media for military and non-military cooperation. Our workshop showed that a lot of initiatives involving social media take place in the organization but that these are often “killed” by bureaucracy and, more importantly, take place out of sight of policy makers. Of course it is an illusion to think that we can make the military organization less bureaucratic. It is important, however, that we find these initiatives and extract the best practices of successful innovations in the comprehensive approach.

Other future efforts should include human-in-the-loop experimentation as a means to collect data-driven evidence of successful application of social media. An interesting research question, for example, is how effective a combination of social media and military C2 systems are in providing for a satisfactory level of system awareness and harmonization between partners in the comprehensive approach. At the lower levels of classification civil-military cooperation could take place through social media, while at the high end military C2 systems provide for sufficient levels of OPSEC. Finally, we believe that it is important to start cautiously by conducting small experiments at first and then generally expanding them to more complex experiments with multiple factors involved. There is much to be learned here from the old saying that we must learn how to walk before we can run. Likewise, we also need to obtain, grow, or find our wings before we can fly.

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