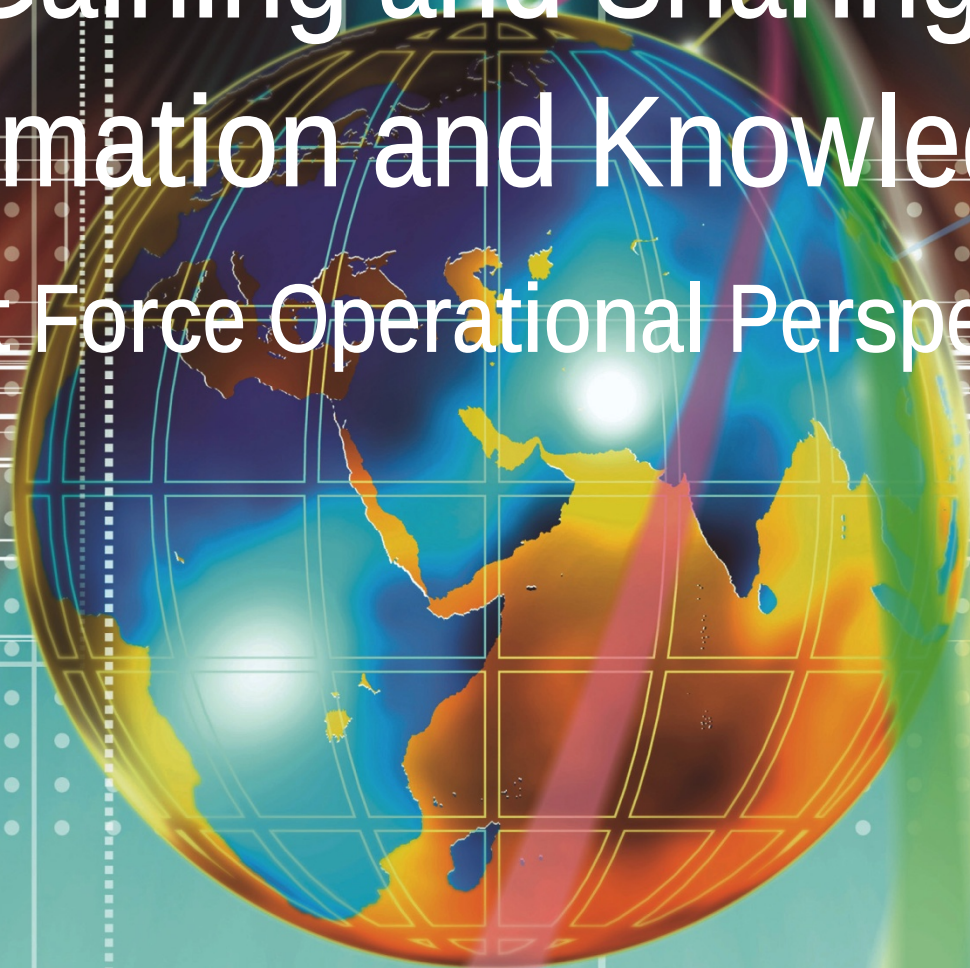




Insights & Best Practices



Gaining and Sharing Information and Knowledge (A Joint Force Operational Perspective)



Focus Paper #2

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By the JWFC Joint Training Branch

Preface

This paper shares insights and best practices in gaining and sharing information and knowledge at operational headquarters to enable decision-making in today's complex operational environment.

Gaining and sharing information and knowledge is everyone's business. It is commander and operator business, and more about people than technology even though technology remains an important enabler. Commanders and staff find that they must personally reach out and across to many stakeholders, both within and external to their headquarters, to gain the necessary knowledge on which to make decisions.

The need for gaining and sharing of knowledge has significant implications for:

- The commander's activities (e.g., circulation, use of liaison officers, relationship building with the many stakeholders, and interaction with the staff),
- The HQ organizational structure (e.g., use of flat, transparent networks, liaison officers, atmosphere of inclusiveness, and dedicated knowledge management organizations),
- The staff (e.g., leveraging CCIR, defined staff processes, battle rhythm events, staff visits, and information sharing tools).

The Joint Warfighting Center's Joint Training Branch (JTB) is afforded the unique opportunity to visit and support commanders and staffs of joint headquarters worldwide as they prepare for, plan, and conduct operations. We gain insights into their challenges and solutions as they support our national interests. We analyze and compare practices among the different headquarters, reflect on the various challenges, techniques and procedures, and draw out and refine what we term "best practices," which inform and shape joint doctrine.

We have developed a broader Joint Operations Insights and Best Practice paper and several focus papers on pertinent topics. These documents (including this paper) can be found at: <https://jko.harmonieweb.org/coi/JointTrainingDivision/Pages/default.aspx>.

We want to get your thoughts on this subject area. Please pass on your comments, insights, and best practices so that we can share them throughout the community. The JTB's POC for insights and best practices is Mike Findlay at (757) 203-5939, E-mail: michael.findlay.ctr@jfc.com.mil.

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1. Executive Summary

We continually hear allusion to “intelligence and information being the fire and maneuver of the 21st Century.”¹ We’re seeing this bear out in today’s operational environments. It is changing everything we do; even our view of warfare and military art is changing, and information and knowledge is a part of that change. Gaining and sharing this information and knowledge isn’t a niche capability; it’s core to what we do.

Knowledge management (KM) is about enabling commander’s decision-making, making it better and faster in a complex environment that includes many other players, friend and foe, each with their own decision-making requirements which makes all of this even harder. KM focuses support to the decision cycle and must be seamlessly woven into operations. It is an artful blending of people, processes and technology intended to achieve understanding in support of mission-oriented decision-making. Information management (IM) focuses on the rules, procedures, applications, and tools to gain, manipulate, and share data and information.

Key Insights:

- Understand what commanders need. CCIR are a good start point. If we don’t understand what commanders need, we will not help their decision-making. We must integrate the commander’s requirements into our staff processes.
- Gaining and sharing knowledge and information is a behavior, not a technology. It is everyone’s business. Commanders (and staff) must reach out and across to many stakeholders, both within and external to their headquarters to gain the necessary knowledge needed to make decisions. This sharing has significant implications for the commander’s activities, the organization, and the staff.
- KM and IM aren’t niche capabilities; they’re core to what we do. Technology by itself cannot sort through the plethora of players and information flows by which the commander will make decisions and influence outcomes. Key to success are people who instinctively comprehend what the commander needs through their intellect, experience, and trust-based relationships.
- The necessary people-centric culture of sharing information is instilled by the commander, directed by the CoS, and supported by the staff, not simply an information technology office.
- KM enables a “co-creation of context” among commanders in which they all gain heightened understanding of a complex environment. This enables subordinates to take the initiative and collaborate within a mission command and commander’s intent framework. We must reinforce our ability to rapidly learn from observation, experience and analysis, then rapidly share that knowledge. Consider flatter, more seamless information sharing networks.
- Defining processes is important to ensure information and knowledge is shared better and faster. Tying processes to commander decision-making and the decision cycle provides the necessary logic and structure. Clearly define the headquarters’ decision-making processes and organization before determining the rules, procedures, technical applications, and tools.
- Consider both physical and virtual means to gain and share information – these run the gamut from circulation, physical meetings, and use of liaison officers to virtual means such as phone calls, Secure Video Teleconferencing (SVTC), chat rooms, Wikis, portals, and other collaborative tool suites.
- KM includes information management (IM) enablers in the form of Information Technology (IT). Determination of the networks and software applications is critically important and normally a theater level decision as they have significant 2nd order effects, including: interoperability within the joint force, the coalition, and our partners, fielding, pre-mission training, development of procedures and rules, and ease of use within the force.

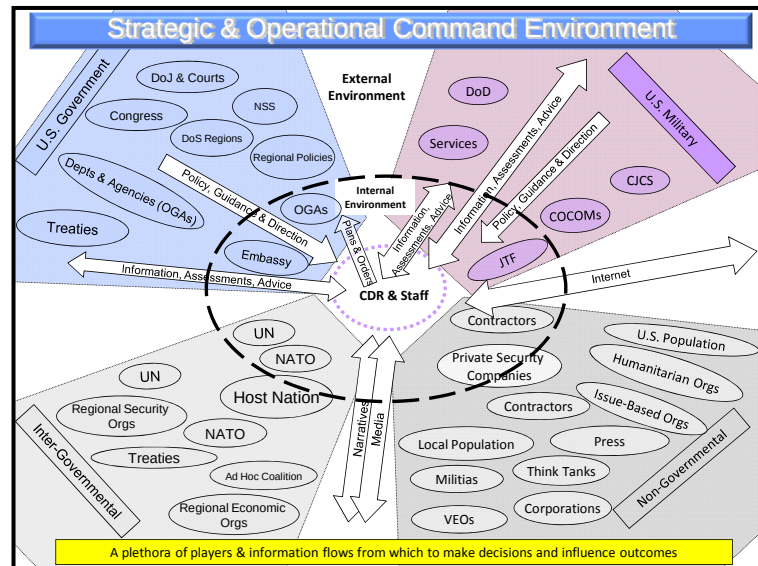
¹ See MG Flynn, 20 April 2011, Small Wars Journal Blog.

2. Commander Perspectives

*"We've been reminded that war is a fundamentally human endeavor and requires interaction with a broad range of actors and potential partners. We've discovered and rediscovered that technology provides important enablers but can never entirely lift the fog and friction inherent in war."*² We've seen a corresponding philosophical shift to emphasize the centrality of the commander, not the staff nor technology in understanding and decision-making.

Commanders operate in an extremely complex environment that includes a myriad of players and information flows that affects how the commander makes decisions and influences outcomes (depicted in adjacent figure).³ They recognize and leverage the benefits that arise from collaboration and dialogue among these many players, each with their different perspectives, experiences, and expertise.

Commanders at the strategic and operational level realize they cannot simply restrict themselves to the internal environment depicted on the figure. They must be equally



comfortable in engaging in the external environment as they attempt to better understand the environment, make decisions, and influence outcomes. They also recognize the myriad of information flows to and from each of these players.

Commanders understand the larger challenge of knowledge management within this construct of players and information flows. They recognize the impossibility of precisely controlling all of this information, but rather focus on how to best leverage it.

We see a continuing emphasis on commander and people interaction instead of a singular reliance on processes and technological solutions to gain situational understanding. "Mission command" emphasizes the critical role of leaders at every echelon in contributing to a common understanding or context in which they are operating (a "co-creation" of context with their subordinates and stakeholders), leveraging each of their perspectives to arrive at a more comprehensive, common understanding of the environment. This concept of mission command is intrinsically linked to the idea of the necessary centrality of commanders in these environments of uncertainty, complexity, and ambiguity.

Insights:

- Emphasize the human aspects of knowledge management. Invest in your people, your LNOs, and your interaction with your leaders, staff, and the many stakeholders.
- Commanders can greatly assist their staff through sharing their unique perspectives.
- Instill a climate of seamless information sharing – push toward "co-creation" of context.
- Focus your units and staff through CCIR that address both necessary decisions but also the information necessary for better situational understanding.
- Require HQ processes and user-friendly technology to support and enable your responsibility to understand, visualize, decide, direct, lead, and assess.

² General Dempsey, "Mission Command," Army Magazine, Jan 2011 (Excerpts throughout this section).

³ General Odierno, Address to Knowledge Management Workshop, May 2011 (Also the source of figure).

3. Overarching Insights

Knowledge Management and Information Management are different, but necessary aspects in today's HQ decision-making.

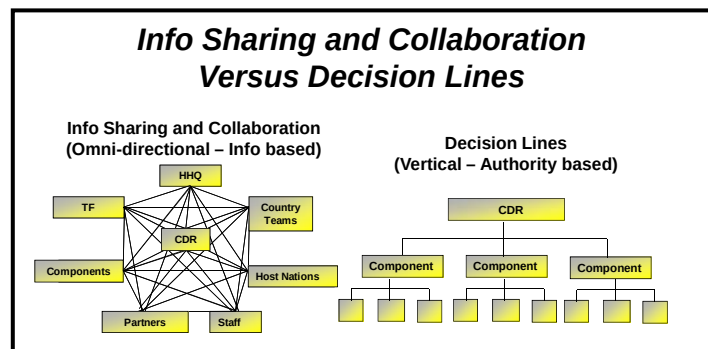
- KM is people-centric, and focuses on people gaining and sharing knowledge to aid decision-making through interaction, organizations, and processes, making it better and faster in a complex environment that includes many other players, friend and foe, each with their own decision-making requirements.
- IM is more information technology-centric and focuses on the rules, procedures, applications, and tools to gain, manipulate, and share data and information.

We find that operational level HQ must think in terms of both KM and IM, leveraging people, processes and procedures, and technology to make better and faster decisions. Commanders need to rely on their instincts and intuition as they personally interface with numerous stakeholders, including our interorganizational and international partners. Staffs need to recognize the people and processes aspect of sharing knowledge while exploiting the full capabilities of technology. Organizations and decision makers that have not adapted both people-wise and technology-wise to the myriads of players and information flows will be overwhelmed with information and may lose the ability to make rapid, informed decisions.

Our necessary interdependence with the interagency and multinational partners has significant personal interaction, information sharing, and collaboration implications. Balance 'need-to-share' with 'need-to-know' thinking within a culture of inclusion.

KM Insights:

- Understand the commander's information needs and the myriad of relevant players and information flows.
- Organize to interface with these relevant players. Leverage both commander and staff interaction and liaison elements. Delineate staff interface responsibilities with each player. Use collaborative networks. Share different perspectives.
- Instill an inclusive mindset that balances a 'need-to-share' and 'need to know' mentality with stakeholders to better support decision-making while accounting for the risks associated with the potential of compromise on the various networks.
- Leverage flat, transparent networks to share information and co-create context while retaining clear lines of authority for decision-making and responsibility (see figure).
- Clearly define the headquarters' decision-making processes and KM requirements before determining the IM "rules, procedures, applications, and tools."
- Consider both physical and virtual collaboration means to gain information and develop knowledge – these run the gamut from circulation, physical meetings, and use of liaison officers to virtual means such as phone calls, Secure Video Teleconferencing (SVTC), chat rooms, Wikis, portals, and other collaborative tool suites. Retain the tried and proven use of a scribe to record key information and decisions. Post these summaries on the portal.
- Develop sufficient capacity to enable foreign disclosure and information sharing with your partners. This includes having Foreign Disclosure Officers (FDO) and Foreign Disclosure Representatives (FDR) on the staff.



- Use CCIRs to guide and prioritize information flow. CCIRs focus the staff and its limited resources to provide relevant information to support decision-making. CCIRs serve as “control measures” for KM by establishing priorities for collecting, processing, analyzing, and disseminating.
- Task the Chief of Staff (CoS) with the responsibility for KM and IM oversight and designate an operationally-focused Knowledge Management Officer (KMO) who works for the CoS and supports KM and oversees IM in the HQ.
- Develop and refine staff processes and procedures (KM-focus) through an integrated Knowledge Management Working Group (KMWG) led by the KMO and comprised of J-code and stakeholder KM representatives (KMR) that report to a Knowledge Management Board (KMB) chaired by the CoS. Task the KMWG to maintain currency and relevance of the commander’s and staff’s knowledge assets.
- Disseminate approved KM processes through an authoritative Knowledge Management Plan (KMP). The KMP should define the responsibilities of the KM organization, and provide guidance on how to gain and maintain situational awareness, share information, and collaborate with higher, lower, and adjacent organizations throughout the decision cycle. Periodically revise the KMP to reflect improvements to the command’s processes as they are developed over time.

IM Insights:

- Determination of the networks, databases, and software applications is critically important and normally a theater level decision as they have significant 2nd order effects, including; interoperability within the joint force, the coalition, and our partners, fielding, pre-mission training, development of procedures and rules, and ease of use within the force.
 - Recognize that these decisions have far-reaching implications and are normally a theater-level (or higher) decision due to impact on interoperability, procurement, fielding, and training. Articulate your requirements and be an active participant in the discussion and decision.
 - Identify and promulgate the primary communications network to be used by the command (e.g., CENTRIXS, AMN, SIPRNet, NIPRNet, APAN). Alert users when critical information must be passed on another network. Develop processes to share information with interagency and coalition partners who may not be on your primary communication networks.
 - Along with a primary network, designate software applications (IM tools) to be used on the network to ensure positive C2: information sharing and dissemination (e.g., portal, message and document handling, and email), collaboration (e.g., online meeting, chat, and VTC), COP/situational awareness database, and events database in order to fully integrate commanders and staffs at all levels. These tools will need to be interoperable across the network, both within the HQ and with HHQ, stakeholders, and subordinates.
 - Carefully select software applications that are user friendly. Recognize interoperability, fielding, and training requirements, and impact of personnel turnover. An adequate IT tool that is well understood and used is much more effective than a “perfect,” continually changing IT tool that is too complex to intuitively understand and use.
- Use an operator-friendly web page/portal as the primary digital means to share information. Combine it with simple ‘push and pull’ information protocols remembering that posting information does not guarantee reception of that information. Ensure information can be easily inserted, found, and retrieved on the web page/portal. Incorporate metadata tagging and standard file naming conventions.
- Reduce reliance on e-mail for sharing information. Reliance on such point-to-point information processing is slow, cumbersome, and risky. It fosters an exclusive, stove-piped approach to information sharing and decision-making.

4. Responsibilities (the people)

Defining responsibilities across the HQ is key to success in effectively gaining and sharing of information and knowledge. The adjacent figure and below descriptions depict how several organizations have defined responsibilities.

Commander: Articulates intent for inclusiveness and sharing. Shares vision on the relevant players and need for interaction with those players. Provides guidance on decision-making style, CCIR, and degree of desired technology to support KM and IM. Commander's guidance drives the information flow throughout the organization and among the staff and instills a culture of information sharing.

Roles and Responsibilities				
Commander	CoS	KMO	IMO	J6

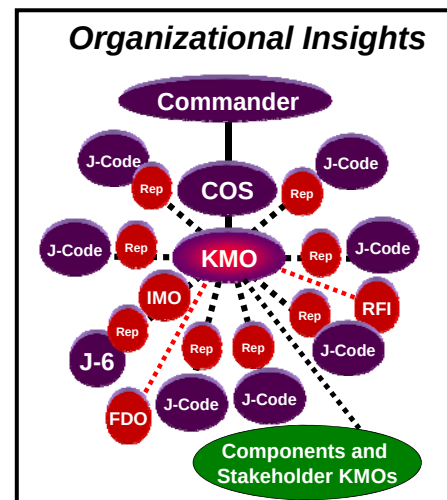
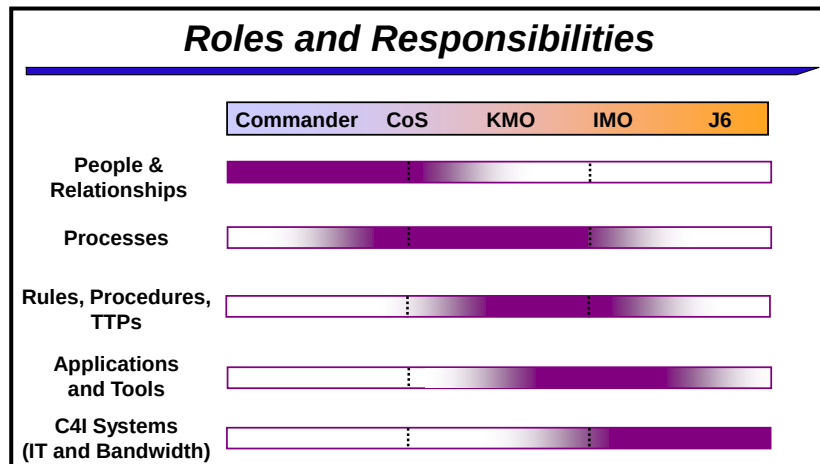
CoS: We find that most of the successful operational level commanders task the CoS with the responsibility for developing the organization and processes for information sharing within the HQ to support decision-making. The CoS focuses on the B2C2WG structure and processes, battle rhythm, and the leverage of technology to support staff processes.

J-codes Directors: Directors play a key supporting role in the KM/IM organization by determining KM and IM aspects peculiar to their staff functions. Each director identifies relevant external players and ensures appropriate personal interaction to gain and share information. They normally assign a Knowledge Management Representative (KMR) to assist in their KM/IM responsibilities and enforce KM and IM policies in their staff directorate.

J6: Provides the C4I systems and provides technical recommendations on applications and tools to facilitate information flow.

Knowledge Management Officer (KMO): Assists the CoS in KM and IM direction. Focuses on staff organization and processes. Develops the KM/IM plan (KMP), integrates the foreign disclosure process, and exercises coordination authority over the staff KM/IM representatives (KMRs). Organizations that assign an operationally-focused KMO under the auspices of the CoS tend to be most successful in maintaining information flow to support decision-making. The KMO position should be assigned as primary duty billet rather than an additional duty. Although rank is not necessarily a primary consideration, the KMO responsibilities routinely require engagement at all levels in order to enforce the command's KM policies. The KMO should have operational experience, and an understanding of the command's staff functions, reporting requirements, and IT capabilities.

Information Management Officer (IMO): The IMO's principal tasks are: management of rules, procedures, applications, and tools that support KM. The IMO coordinates with the J6 on



supportable applications and tools, provides IM recommendations for CoS decision, and oversees use of IT. Recommend the IMO be IT-focused and part of the J6.

KMR: Responsible for day-to-day implementation of the KMP within their respective directorates. KMRs develop each J-code's supporting input to the KMP, train and overwatch their respective J-code's KM and IM activities, and represent their J-code directors at HQ KM and IM meetings.

FDO: The FDO processes classified information that is nominated for release to non-U.S. personnel and is key to the flow of information in a coalition operational headquarters. Therefore the FDO serves in an advisory role to the KMWG to ensure that a clear understanding of foreign disclosure processes are integrated into the KMP.

FDR: FDRs prepare material to be processed by the FDO and are typically assigned within an individual J-code. Consider where you assign FDRs throughout the staff and how many trained FDRs you may need in each functional area in order to maintain a timely flow of information throughout the headquarters.

RFI Manager: The RFI Manager typically operates on the Joint Operations Center (JOC) floor, and receives, assigns, and tracks the status of RFIs among the staff, subordinate units and higher headquarters. The RFI management process is key to the flow of information throughout the organization, therefore the RFI manager serves in an advisory role to the KMWG to ensure the RFI process is understood and integrated into the KMP. We normally see the J2 continue to maintain a separate intelligence-oriented RFI process.

Every Staff Member: KM and IM is everyone's responsibility as they all support the commander's decision-making. Keep focused on:

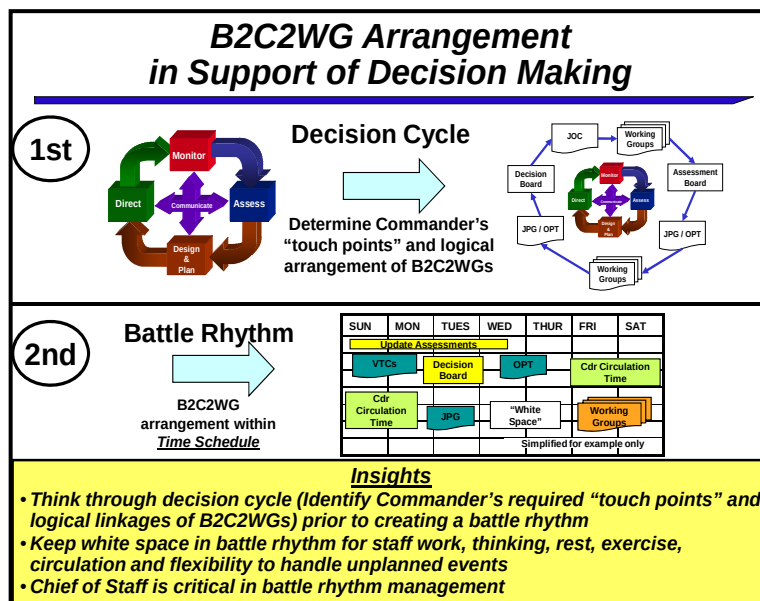
- What do I know?
- Who needs to know it?
- How do I get them the information?

5. Knowledge Management (people and processes)

KM is people-centric, and focuses on how the commander and staff gain knowledge and understanding to enable effective and timely decision-making. We see that this larger KM construct comprises the following critical aspects:

- Interaction with relevant players (discussed earlier)
- Three processes⁴
 - Decision Cycle
 - Staff Integration
 - Collaboration

Decision Cycle: Every headquarters we visit uses some form of a decision cycle to assess, plan, direct, and monitor operations. The decision cycle assists the commander in understanding the environment and in focusing the staff to support critical decisions and actions. Communication throughout the decision cycle, both within the headquarters and with higher, adjacent, and subordinate commands helps to ensure shared situational awareness. The Commander's decision cycle is discussed in greater detail in Joint Operations Insights & Best Practices at the URL listed in the preface.



Staff Integration: We are seeing more KMO involvement in helping the CoS organize and integrate the B2C2WGs and OPTs. B2C2WGs are forums for bringing together functional expertise from across the staff and external stakeholders to support decision-making. We also see many headquarters leverage virtual collaboration tools to facilitate inclusiveness at these venues.

The CoS, DCoS, and the J-code directors are directly involved in developing and refining the battle rhythm and required B2C2WGs. As addressed earlier, the KMWG and KMB are used to develop processes and procedures for the headquarters. The KMWG is tasked with developing process and procedure recommendations to the CoS at a KMB, implementation of the KMP, and KM training and enforcement. Examples of process development may include: changes to B2C2WGs and battle rhythm, RFI management procedures, CCIR and Significant Actions (SIGACTs) reporting, and the Common Operational Picture (COP).

The battle rhythm provides the structure for managing one of our most important resources – the time of the commander and the staff. The battle rhythm is not simply a calendar, but a coordinated progression of events that supports the commander's decision cycle. Battle rhythm management is normally a process maintained by the CoS or a designated delegate due to the direct effect that it has on timely decisions and accurate assessments. The 7-minute drill format (see figure on next page) establishes the foundation and purpose (who, what, where, when, how, and why) of a B2C2WG event. If a new battle rhythm event is to be nominated, the 7-

⁴ These processes are discussed in more detail in a staff integration focus paper located at the URL noted in the preface.

minute drill provides a means to help determine whether it is considered viable based on a finite amount of time available.

Collaboration: Collaboration entails working among the staff, higher, adjacent, subordinate headquarters, and other stakeholders in order to incorporate all available expertise to develop plans, maintain situational awareness, and support the commander's decision cycle. The operational environment is complex and the perspectives provided by stakeholders and sources outside of military channels, such as industry and academia, enhance situational understanding. While new technology provides distinct benefits, we still see that successful commanders recognize the continued need for personal interaction using traditional collaboration means (e.g., LNOs, phones, and physical meetings). They recognize the value of personal relationships and work through the challenges of communications with coalition, interorganizational, and host nation partners.

DoD has seen a very dynamic growth in the development, refinement, and the active use of collaborative tools. The availability of collaborative tools extends how, when, and where knowledge is disseminated. As newer technology becomes available, military organizations will continue to adapt their processes, procedures and tools.

- Physical Means. We know how to run physical site meetings. We schedule them, publish a purpose and an agenda, provide read ahead information, set clear objectives, control the meeting, and publish results. We recognize that time is one of our most precious resources. Meetings tend to be more effective if participants have time to prepare and to act on new information from each meeting rather than going from meeting to meeting with little or no time in between. With consideration for effective use of time, for each scheduled battle rhythm event: post the agenda and previous minutes on the portal, assign a scribe to take notes and read back any decisions and/or new taskers for clarification and understanding, and identify an OPR and due date for all tasks.
- Virtual Means: Virtual collaboration augments physical collaboration by allowing geographically separate participants to work together. While traditional virtual collaboration tools such as phones and radios are familiar forms of communication, virtual collaboration supplements physical collaboration by providing more robust functionality such as multicast voice and graphics. In the age of information, commanders are taking full advantage in order to gain the most benefit of knowledge and information without having to rely on physical presence of a meeting's participants.⁵

"Seven Minute Drill"

1. Name of board or cell: *Descriptive and unique*
2. Lead J code: *Who receives, compiles, and delivers information*
3. When / where does it meet in Battle Rhythm?: *Allocation of resources (time and facilities), and any collaborative tool requirements*
4. Purpose: *Brief description of the requirement*
5. Inputs required from: *Staff sections and/or B2C2WGs required to provide products (Once approved by CoS, these become specified tasks)*
6. When?: *Suspense DTG for inputs*
7. Output / Process / Product: *Products and links to other B2C2WGs*
8. Time of delivery: *When outputs will be available*
9. Membership codes: *Who has to attend (Task to staff to provide reps)*

⁵ We find that use of some form of contingency plan is useful to ensure continuity of planning and staff interaction in the event of some form of denial of service preventing use of virtual collaboration means.

Process-centric Insights:

- Develop and refine KM processes through an integrated KMWG led by the KMO and comprised of J-code KMRs who fully understand their directorate's processes and can speak on behalf of their directors regarding KM.
- Disseminate approved processes through an authoritative KMP. Clearly define the headquarters' decision-making processes before determining the IM 'means and tools.'
- Spend time developing the battle rhythm. Logically arrange battle rhythm events to support the commander's decision cycle prior to developing the detailed battle rhythm. These events should each have defined purposes, input requirements, output products, attendees, and 'linkages' to other events and organizations defined in their respective 7-minute drills.
- Think through what meetings are necessary, logical sequencing of their inputs and outputs, frequency to support decision-making, who should attend, and how you record and disseminate the decisions and results of those meetings.
- Minimize the number of collaborative events, both physical and virtual, recognizing the time requirements to process information and perform tasks.
- Leave white space in the battle rhythm to process information, prepare, rest, and exercise.

6. Information Management (Technology-focused)

IM focuses on the applications, tools and procedures that facilitate KM. Tools and technology enable the commander and staff to better share information to enable faster and better decisions. The latest technology or gadget may not be the right answer if a more basic tool or process adjustment can do the job.

Overarching Insights:

- Determination of the networks, databases, and software applications is critically important and normally a theater level decision as they have significant 2nd order effects, including interoperability within the joint force, the coalition, and our partners, fielding, pre-mission training, development of procedures and rules, and ease of use within the force.⁶
 - Recognize that these decisions have far-reaching implications and are normally a theater-level (or higher) decision due to impact on interoperability, procurement, fielding, and training. Articulate your requirements and be an active participant in the discussion and decision.
 - Identify and promulgate the primary communications network to be used by the command (e.g., CENTRIXS, AMN, SIPRNet, NIPRNet, APAN). Alert users when critical information must be passed on another network. Develop processes to share information with interagency and coalition partners who are not on your communication networks.
 - Carefully select technology (software applications) that is user friendly. Recognize the interoperability, fielding, and training requirements, and impact of personnel turnover within the force. An adequate IT tool that is well understood and used is much more effective than a perfect, continually changing IT tool that is too complex to intuitively understand and use.
- Use an operator-friendly web page/portal as the primary digital means to share information. Combine it with simple 'push and pull' information protocols remembering that posting information does not guarantee reception of that information. Ensure information can be easily inserted, found, and retrieved on the web page/portal. Incorporate metadata tagging and standard file naming conventions.
- Reduce reliance on e-mail for sharing information. Reliance on such point-to-point information processing is slow, cumbersome, and risky. It fosters an exclusive, stove-piped approach to information sharing and decision-making. Key players may not get emails or follow on emails resulting in disparity in common knowledge.

Networks and Databases: Maintaining multiple physically separated communication networks poses significant challenges to information sharing. Various initiatives have been put into practice to allow the sharing of information without compromising classified or sensitive information. The Afghan Mission Network (AMN) was designed to link multiple coalition and host nation networks and domains, without compromising national or operational level information. Many units now use ".org" portals (e.g., All Partners Access Network (APAN) and HarmonieWeb) to bridge the civilian-military information sharing gap. These are examples of systems that provide online venues for collaboration of operational information among partners.

Web Portals: Web Portals have become the primary means for rapid and effective collaboration. Consistency and uniformity provide users with quick access information. Individual functional areas should also have the ability to modify web pages based on specific functional

⁶ An example of these implications could be those associated with one unit opting to use a certain COP tool that pulls from a different data base and is not interoperable with an existing COP tool.

requirements, keeping in mind that a poorly organized web portal will be counterproductive and will interfere with quality information sharing.

Portal Design Tips:

- Dashboards: Use them. They support user-friendly information sharing. Provides key information upfront and adds to utility of the portal as the primary information sharing application. Use front page links to the most referenced documents.
- Journal: Use a journal type application to provide shared awareness of ongoing activities. Incorporate this on to the dashboard and individual web pages.
- Web page templates and themes: Sites and pages should all use a common template to provide uniformity to the web pages for ease of navigation.
- Files: Maintain on portal to allow broader access. Use Metadata tagging and file naming conventions to increase discoverability of data and information.
- File sizes and images: Be sensitive to large file size implications. Not everyone will have the same bandwidth to download large files. Use compression software and efficient file formats (e.g., JPEG or PDF).

DCO: DCO is the DoD program of record for worldwide synchronous and asynchronous collaboration available on Non-Secure Internet Protocol Network (NIPRNet) and Secure Internet Protocol Network (SIPRNet). It provides meeting rooms, chat, on-line training and 24-hour tech support. Through the use of instant messaging, low-bandwidth text chat, audio/video web conferencing, white-boarding, and desktop and application sharing, DCO allows users to communicate and share information in a reliable and secure forum. The NIPR version of DCO is available to any user with internet access.

Chat: Chat rooms and instant messaging are the tools often leveraged to support ongoing operations due to the ability to maintain a running record of dialogue. DISA has developed increased chat capability.

Email: Email is a useful tool for sending immediate information to a single or multiple recipients. However, there is an inherent risk involved with “stove-piping” information. Vital pieces of information can become lost or buried in someone’s overflowing inbox. Individual users who overuse their email capabilities may potentially neglect other information sharing venues which are more visible, searchable, retrievable, and sustainable, such as portals and databases. Nonetheless, email is a useful tool when employed appropriately and not as the primary information sharing means.

COP: When utilized deliberately, the COP can help decision makers and action officers visualize, plan, and deconflict operations in the battle space in near real time. Plan early for what COP information is to be displayed in the JOC and designate a COP manager with operational experience to assist in the process. Designate and rehearse procedures for drilling down into the COP to support contingencies such as Troops in Contact (TIC) or Personnel Recovery (PR) events.

Force Tracking & Databases: Force Tracking enables common situational awareness of friendly, neutral, adversary elements in the operational environment. It supports all elements of the decision cycle, but has critical importance in the monitoring function, with regard to assessment, planning, targeting, and execution. We are seeing an exponential growth in the technological ability to track forces and display force disposition. The challenges are in integrating all of the force tracking means, focusing on what information is important, and getting the right information in the right format at the right time to those who need it.

Responsibilities for both blue and red force tracking extend far beyond the boundaries of the joint force commander’s operational area. It’s a global activity that the joint headquarters’ needs to understand and influence in order to ensure common situational awareness.

COOP:

Continuity of Operations (COOP) planning is critical in maintaining reliable, survivable C2. COOP planning accounts for the protection of critical information and prepares the staff to displace to an alternate C2 location(s) in the event of a catastrophic communications loss, physical destruction, or degradation of the joint force headquarters facilities.

The back-up, off-site storage, and protection of critical operational information along with the capability to rapidly transfer and access that information are essential to enabling the execution of COOP. In addition to training and operating from alternate CPs, we have seen joint force headquarters successfully pass control from primary to alternate CPs, as well as to subordinate units designated as alternate CPs.

Identification of the critical operational functions to be sustained in the event of catastrophic communications or facilities loss will enable the development of an effective COOP plan. It will focus the staff's efforts to back-up, store, and protect information systems from kinetic attack, cyber attack, or environmental degradation. Consistent maintenance and employment of alternate communications nodes will enable effective transfer of essential systems and functions to preplanned alternate locations and enables commanders to identify shortfalls and refine their COOP SOPs.

Insights and Best Practices:

- Clearly identify critical stakeholders and information flows to ensure the correct selection of the appropriate networks, and best IM tools.
- Consider both physical and virtual collaboration means to conduct battle rhythm events.
- Develop tools and procedures to support defined processes. This enables tailored technology support for interaction, collaboration, information sharing and force tracking.
- If use of multiple portals and domains is required, use link features and functions from one to the other(s), but keep one authoritative repository for specific information and ensure those business rules are codified in KMP.
- Use continuous chat collaboration for monitoring ongoing operations, situational awareness and time sensitive events.
- Collaborative tool/application selection criteria should consider ease of use, bandwidth efficiencies and commonality with all stakeholders.
- Don't use collaborative tools as the location to store record files or data. Store these key files on your web portal to ensure ease of access.
- Provide collaborative tools training to the staff and enforce Digital Rules of Engagement (DRoE).
- Use links (versus attachments) when using email to conserve bandwidth and storage as well as to maintain version control of documents.
- Wikis are an important tool for allowing group collaboration. Products such as the Mil Wiki and AfghanWiki support information sharing among host nation and Communities of Interest (COI) and can be a ready source of information to support decision-making.
- Develop, maintain, and rehearse a COOP SOP.

7. KM and IM Plans

One of the biggest challenges that any headquarters faces is the development of procedures into a formalized, authoritative document. This sets the standards for the collection and dissemination of information to support timely informed decisions and maintain shared situational awareness. Units that invest the time and rigor to determine their processes and tools up-front typically foster an organizational culture of effective and efficient information flow.

KM and IM Plans address the following:

- Focuses knowledge and information flow in support of the commander's decision cycle.
- Prioritizes relevancy of information from sources found inside and outside the organization.
- Defines processes that develop operational situational awareness.
- Enables rapid, accurate retrieval and adaptation of previously developed knowledge to satisfy new requirements; provides a means of recording, storing, and recalling lessons learned.
- Routes products to the appropriate staff sections in a readily understood format.
- Keeps commanders and staffs from being overwhelmed by information.

Authoritative guidance is needed to articulate not just the processes that exist (KM), but also the means by which the command will perform those processes (IM). The following is a list of considerations for inclusion into the KMP and IMP.

KMP

- Roles and responsibilities.
- Information sharing requirements and general procedures (COP management, CCIR development, employment of LNOs).
- Battle rhythm development maintenance procedures.
- RFI management procedures.
- FDO process.⁷
- Billet turnover procedures.
- Procedures for maintaining HQ SOPs.

IMP

- Roles and responsibilities.
- Information systems tools and procedures (to include collaborative planning tools).
- System recovery and outage mitigation procedures (Continuity of Operations (COOP)).
- Digital rules of engagement.
- Information assurance procedures.

⁷ Refers to the procedure regarding the flow of information to be processed by unit FDO and FDRs. Specific theater foreign disclosure guidance is normally classified as NOFORN.

The KM and IM Plans should complement each other – the KM procedures should be achievable, repeatable, and supportable by IM. IM tools and the IM tools should support the KM procedures. The guidance provided in the KM and IM Plans is applicable to all members and involves all facets of the organization in order to support commander's decision-making.

- For further KMP examples refer to *Intellipedia* (SIPRNet).
http://www.intellink.sgov.gov/wiki/main_page keyword "Knowledge Management Plan"
- For further IMP examples refer to JP 3-33 Appendix D.

Insights:

- Develop and disseminate authoritative KM and IM Plans.
- The KMP design should be agile and flexible to keep pace with the rapidly changing information sharing environment as directed by the commander and CoS.
- The KMP should lay out how to gain and maintain situational awareness and understanding, share information, and collaborate with higher, lower, and adjacent organizations throughout the decision cycle.
- Address information sharing and collaboration requirements with interagency, coalition and NGO stakeholders. Develop processes to share information with all stakeholders who are not on your communications network.
- Provide training and implement procedures to enforce KM guidance and to achieve KM proficiency throughout the organization.
- Specify goals and direct the processes that support each function of the decision cycle.
- Match tools and SOPs to support staff processes.
- Be prepared for change – do not allow your KMP to become stagnant and not remain current with the command's decision-making processes.
- Use the KMWG as the means to periodically review and update the KMP.