



A Holistic Approach to Problem-Solving

By Stephen F. Nowak

Despite George Santayana’s warning—“Those who do not remember the past are condemned to repeat it”—we continue to forget what we have learned and fall into bad habits. Although we have already determined better ways to make decisions and solve problems, we tend to forget them.

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The concept is simple: decisions should be made by those with the best knowledge at the lowest level possible. In the field, this is understood—it is not the wing commander or fighter pilot who decides if a plane is airworthy; that decision is made by an enlisted aircraft mechanic. Unfortunately, Servicemembers in staff positions and U.S. Government civilians find that even minor decisions are pushed up the chain of command. Imagine history if Alvin York or Doris Miller had requested permission and waited for approval before acting.

Our adversaries are agile, innovative, and adaptive. They decide and act quickly. Since they do not adhere to laws of war or norms of civilized society, they have almost unlimited options.

This article draws from lessons learned in the past in order to propose a process for better decisionmaking and problem-solving today. Its basic premise is that most problems could and should be resolved at the lowest level possible, should involve those who best understand the problem, and include the people who have the most to gain (or lose) by resolution.

The following is a circular letter from Admiral Ernest J. King, Chief of Naval Operations, during World War II. Notice the date is over 10 months *before* the attack on Pearl Harbor. The letter reads:

From: ADM Ernest J. King
Subject: Exercise of Command Excess of
Detail in Orders and Instructions
21 January 1941

1. *I have been concerned for many years over the increasing tendency—now grown almost to “standard practice”—of flag officers and other group commanders to issue orders or instructions in which their subordinates are told “how” as well as “what” to do to such an extent and in such detail that the “Custom of the service” has virtually become the antithesis of the essential element of command—“initiative of the subordinate.”*

2. *We are preparing for—and are now close to—those active operations (commonly called war) which require the exercise and the utilization of the full powers and capabilities of every officer in command status. There will be neither time nor opportunity to do more than prescribe the several tasks of the several subordinates (to say “what” perhaps “when” and “where” and usually, for their intelligent cooperation, “why”); leaving to them expecting and requiring them—the capacity to perform the assigned tasks (to do the “how”).*

3. *If subordinates are deprived—as they are now—of that training and experience which will enable them to act “on their own”—if they do not know, by constant practice, how to exercise “initiative of the subordinates,” if they are reluctant (afraid) to act because they are accustomed to detailed orders and instructions—if they are not habituated to think, to judge, to decide, and to act for themselves in their several echelons of command we shall be in sorry case when the time of “active operations” arrives.¹*

War plans had always included the Pacific Fleet as a—or, perhaps, *the*—major player, but a significant portion of the fleet—especially the battleships—had been sunk or severely damaged during the Japanese surprise attack on December

7, 1941. The United States was now forced to fight the Imperial Japanese Navy with what ships it had, while simultaneously developing the tactics with which to do so.

Admiral King was confident that his commanders would define tactics that were appropriate for their capabilities and the situations they were facing. This would take experimentation—always costly in wartime. As tactics were tried, the commanders pooled their information (lessons learned) with one another throughout the fleet. By mid-1942, roughly 6 months after Pearl Harbor, the U.S. Navy became a force that presented not only a challenge but also a threat to the Japanese fleet, with the Battle of Midway (June 4–7, 1942) seen as the turning point of the war in the Pacific.

Admiral King’s confidence in his commanders did not alter his strategic and holistic view. He realized that commanders had access to significant data—so much data that it was difficult to separate the significant from distractions. Admiral King ordered all ships to establish a Combat Information Center (CIC) to allow “full utilization of all available sources of combat information.” While he described what a CIC would do, he did not dictate how it should be done.

Again, different approaches were tried throughout the fleet. On one ship, the executive officer stood at the edge of the radar room, watching the displays. When he developed an understanding of the overall situation, he would then relay that information to the commanding officer and weapons officer. It was not elegant, but it worked and became the model for the CICs throughout the fleet.

Components for Decisions

Solving problems is based on making a correct, or at least reasonable, decision and then acting on it. There are two main components necessary for a person to make a decision and implement it: knowledge and authority.

Knowledge. Information is data that have been organized so that they can be understood and which have been communicated to the appropriate decisionmakers. *Knowledge* is defined as the

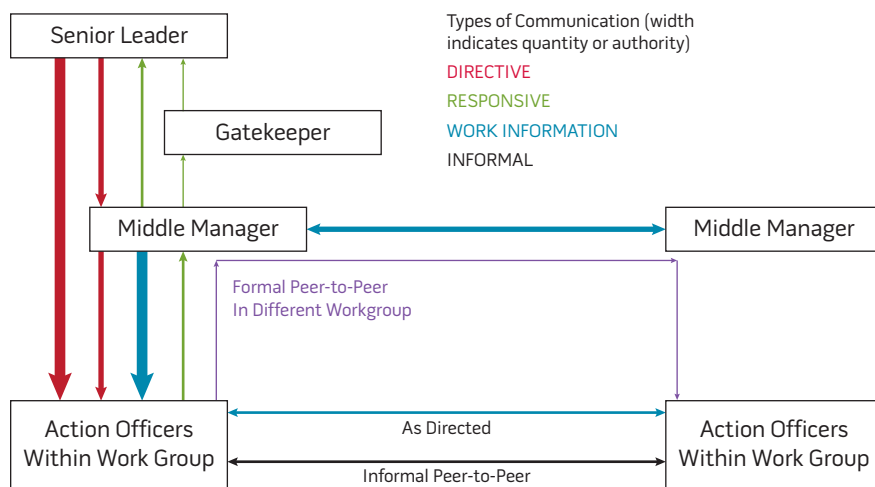
fact or condition of knowing something with familiarity gained through experience or association. Knowledge is powerful because it combines information with experience. However, partial information may lead to an incorrect conclusion.

Authority. Like beauty, everyone knows what authority is when they see it. The *Department of Defense (DOD) Dictionary* includes 132 entries for various types of authority. The regular dictionary is equally unhelpful. For our purposes, I propose we define *authority* as the ability to act on a decision. In large organizations, by default, an individual lacks authority until it is specifically granted by billet, assignment, or other administrative action.

Combining Knowledge and Authority. Ideally, the person with the most knowledge and experience regarding a particular situation would be the one to make a decision and have the ability to implement it. However, the larger the organization, the less likely this is to happen. Often, the person with the most knowledge of a particular problem will be an action or desk officer—a worker bee, if you will. On the other hand, the person with the authority to act will be at a higher rank; while he or she may have some degree of familiarity with the problem, he or she may lack the depth of knowledge and experience of those at a lower organizational level. Indeed, individuals with authority can delegate appropriate authority to subordinates to allow them to make an intelligent decision and implement it. However, in practice, it is likely that instead of delegating authority to the person with knowledge, there will be the expectation that knowledge can and will be transferred to the person with authority.

The most important decisions are those that solve a problem. In an increasingly complex world, making and executing decisions require two individuals, each with half of the required ingredients and who may not work together on a routine basis. In many cases, it is difficult to even define the problem. Frequently, the problem is not viewed objectively, but is defined in terms of the decisionmaker’s preferred solution. This

Figure. Communication Flow in a Bureaucracy



problem is frequently a result of, or exacerbated by, the organizational structure in which the problem occurs.

DOD Organizational Structure

DOD has 3.2 million employees, making it the largest single employer in the world. The organizational structure to successfully manage an entity that large and complex is almost always a bureaucracy, which is neither inherently good nor bad; it is merely one of many organizational types.

In the DOD bureaucracy, both uniformed military and civilian employees are assigned a grade (rank), with an equivalency between civilian and uniformed grades. There is a clearly defined (and enforced) chain of command, which encourages a culture focused on rules, standards, and rigid processes. A bureaucracy provides stability, but it is not an effective platform for quickly making and acting on decisions. As a result, the “weaknesses of bureaucratic structures are slower decisionmaking, high levels of supervisor and managerial overheads, lack of employee freedom, and lower employee morale.”²²

Communication. In large, established organizations, communication is influenced by both rules and culture. Effectiveness of communication is strongly affected by its direction. Downward communication from senior leaders is generally directive in nature.

Communication from mid-level managers to senior leaders is primarily responsive and generally formatted according to a prescribed structure. Communication to a senior leader often passes through a secretary, aide, executive assistant, or other gatekeeper who decides which communications the senior leader receives.

Upward communication from non-managers to any leader other than their own is generally discouraged if not prohibited, even though there is organizational benefit to such communication (see figure). When such communication is approved, it is normally sent via several intermediate levels before reaching the intended recipient. Horizontal communication within a single group tends to work reasonably well, as does communication between groups at the management level. The protocol for formal communications may require the message to be passed up one chain of command, transferred to another, and then passed down the second chain to the intended recipient. Communication by non-managers across groups is more difficult, except on an informal basis, which may depend more on relationships and personal networks than organizational processes.

Communication may be dictated by organizational structure, but in turn it dictates the effectiveness of a particular structure. Communication in a complex, multilayered organization tends to be complicated and less effective than in a

flat one, which tends to increase the time to respond to a requirement. By comparison, small organizations with informal communication enjoy a high degree of integration, and individuals feel free to communicate directly with almost anyone else in the organization. The result is that flat organizations enjoy a faster response, greater agility, and adaptability.

Peter Drucker, one of the most influential forces in modern management, wrote that span of control has been replaced by span of communication: “The number of people reporting to one boss is limited only by the *subordinates’ willingness to take responsibility for their own communications and relationships*, upward, sideways and downward. ‘Control,’ it turns out, is the ability to obtain information.”²³ Of course, by extension, withholding information is also control, which may contribute to the existence of stovepipes or rice bowls. However, even though such practices may benefit the individual, they do not benefit the organization as a whole. Anything that does not encourage a holistic view tends to be a liability because intense focus on one area tends to create blind spots in other areas.

Speed vs. Perfection. Generally, we benefit from the ability to quickly define a problem, identify a solution, and implement it. Anything that needlessly slows the decisionmaking process tends to be a liability. Similarly, anything that reduces our ability to be agile or innovative is also a liability. General John Hyten, USAF, commander of U.S. Strategic Command, put it quite plainly: “Right now, we are being outpaced by our adversaries. We’ve lost the ability to go fast and fail. Watch what our adversaries are doing. Look at Kim Jong-un. What he’s doing is testing, failing, testing, failing, testing, failing, testing and succeeding. . . . If you want to go fast, you have to empower people with the authority and responsibility to execute.”²⁴

Taking it a step further, the Chairman of the Joint Chiefs of Staff (CJCS), speaking at a graduation ceremony at the National Defense University, advised, “As leaders, create an environment within which innovation, the questioning of conventional wisdom and creativity are not only allowed, but actually encouraged

... and assume you don't have all the answers."⁵ Our senior leaders can clearly see these needs and have communicated the issues quite clearly. However, we have yet to translate such ideas into action, and we may not have the luxury of time for a gradual change.

In light of General Dunford's and General Hyten's advice, we need a way forward that empowers people who have knowledge and experience with both the authority and responsibility to make and execute decisions. We must encourage creativity and innovation. A different process could be tried as an experiment. If it succeeds, it could then provide a framework for solving future issues and problems. Fortunately, there is a nearly perfect environment in which to conduct such an experiment.

A Computerized Conundrum. There are two deputy directorates—the Future Joint Force Development (FJFD) Deputy Directorate and Joint Training Deputy Directorate—located at the Joint Staff facility in Suffolk, Virginia. The missions of the deputy directorates are complementary and share many similarities. The FJFD Deputy Directorate includes the Joint Lessons Learned Division (JLLD), which collects information on observations, best practices, and lessons from throughout the joint force. Some of this information is collected by teams of analysts that, at the request of a combatant command, joint task force, Service, or Joint Staff, travel to the location in which a particular issue is occurring. The team then collects data by conducting interviews and recording observations. The data are analyzed in order to identify the most significant issues (called findings), which normally lead to recommendations for improvement.

Another JLLD component reviews and analyzes data that have been input into the Joint Lessons Learned Information System (JLLIS) by members of the Armed Forces or interagency partners. JLLIS data are analyzed for trends, anomalies, and significant issues. JLLIS data flow in both directions and are accessible by commands to prepare plans for various operations or assignments. For example, if a command were deploying to a



Munitions Systems Technician assigned to 455th Expeditionary Maintenance Squadron reviews technical order data before building GBU-38 bomb, part of weapon system used on F-16C Fighting Falcons, August 14, 2014 (U.S. Air Force/Cohen A. Young)

failed or failing state, information available in JLLIS concerning corruption would be useful. When the Zika virus appeared in 2016, a number of JLLIS users accessed the lessons from the U.S. Ebola effort.

The Joint Training Deputy Directorate provides a wide range of training support to the combatant commands, with exercises being one of the most important since they emulate actual combat operations to test a command's capabilities, determine its readiness, and identify future training opportunities. Training maintains its data on the Joint Training Information Management System (JTIMS).

Separate Computer Systems. The two computer systems contain similar, and at times identical, data. Data useful to one group may reside on the other's computer system. There are two systems because of procedural requirements that support the legally mandated duties of the CJCS. Federal law assigns these responsibilities in *U.S. Code*, Title 10, Section 153. These responsibilities

include doctrine, training, education, planning, advising, and assessing readiness. The Chairman has developed and promulgated instructions as to how each of these responsibilities will be met.

CJCS Instruction (CJCSI) 3150.25F, *Joint Lessons Learned Program*, states that "JLLP knowledge management is enabled by JLLIS, the DOD system of record for lessons learned. JLLIS facilitates the collection, tracking, management, sharing, collaborative resolution, and dissemination of lessons learned to improve the development and readiness of the joint force."⁶ Title 10 also directs the CJCS to formulate policies for the joint training of the Armed Forces and coordinating military education and training.

CJCSI 3500.01H, *Joint Training Policy for the Armed Forces of the United States*, identifies "JTIMS [as] the enterprise solution available for use by all DOD Components."⁷ JTIMS interfaces with several other systems to "input to readiness reporting in the Defense Readiness

Reporting System” and transfer training and readiness data into the Joint Exercise Program.⁸ The relationship between JTIMS and JLLIS is described in detail in the Chairman’s Training Instruction. Enclosure D of the instruction instructs combatant commands to “establish and conduct a deliberate observation validation process to capture key overarching and cross-cutting observations and lessons no later than event ENDEX [exercise termination] plus 45 days; export validated TPOs [task performance observations] and TPEs [task performance evaluations] in JTIMS into JLLIS.”⁹

Defining the Problem. While the instructions seem to indicate a well-structured system, when I tried to determine how the two computer systems interacted, the answers included:

- JTIMS and JLLIS currently can and do communicate.
- The two systems cannot communicate, but the next JLLIS software release, scheduled for December 2017, will enable this capability.
- Combatant commands routinely record observations, which are entered into JTIMS.
- Appropriate issues are transferred from JTIMS to JLLIS.
- Data are not actually transferred from JTIMS to JLLIS; data must be exported from JTIMS and then manually entered into JLLIS.
- If a command (for example, a ship at sea) cannot directly access JTIMS or JLLIS, it records observations using a spreadsheet and then uploads it when feasible.
- Those designing the exercises cannot access the data in JLLIS, which would provide them with more current data to include in the exercises.
- Since anyone with a Common Access Card or Personal Identity Verification card can get a JLLIS account, there is no reason that joint training personnel cannot access JLLIS.

To quote the old movie, “What we’ve got here is failure to communicate.”¹⁰ Is this a computer

communication problem, a people communication problem, or both? In any case, it will take more effective communications among people to resolve this issue. Artificial intelligence is advancing, but so far computers are not able to autonomously resolve such issues and must still depend upon human intervention.

A Holistic Approach

Based on the advice from the Chairman, General Hyten, and Admiral King, I propose the following approach, which, if successful, could provide a framework for resolving future issues.

First, it is logical to assume that the people who use JLLIS and JTIMS on a regular basis know more about these systems than anyone else. By user, I am referring to those who input, manage, or analyze the data in either system. There are experts, like computer or software engineers, who may know how the binary data are processed, but we need people who use the system as a tool to support the warfighter. The functional expertise resides with the people who input data, search for data, and most importantly, know what stakeholders need the system to do.

Second, from among those users, choose two JLLIS users and two JTIMS users to work as a team to resolve this problem in conjunction with the JLLIS and JTIMS technical advisors as subject matter experts. The team would be required to clearly define the problem, and, based on that definition, they would determine the endstate that would indicate that they had succeeded in solving the problem.

Third, the team would prepare a plan detailing how to move from the current situation to its desired endstate. The plan would indicate how much time would be required to resolve the issue and identify what other resources would be requested to be successful.

Fourth, using a facilitator, bring the team and its supervisors together to discuss the project to ensure everyone has a common understanding. Remind the supervisors that this is the action officers’ project and a test of this approach to problem-solving.

Fifth, since this is an experiment, the team and the facilitator need to document what they do, what the results are, and any other observations that might prove relevant.

Sixth, the facilitator would observe the process and provide periodic guidance without micromanaging. It is important for the facilitator to allow the team to develop and go through the expected four stages—often called storming, norming, forming, and performing. The facilitator will record observations related to both the project and the group dynamics.

The team will examine the issues related to the two deputy directorates and their computer systems, clearly define the problem, and determine what desired endstate a solution should achieve. The team would determine how to arrive there.

Why use such a technique? Reiterating what General Dunford stated, “As leaders, create an environment within which innovation, the questioning of conventional wisdom and creativity are not only allowed, but actually encouraged . . . and assume you don’t have all the answers.” Given the culture of DOD, one of the challenges will be that supervisors will want to help and get involved. The supervisors are committed to success and may not be comfortable standing by while someone else handles a decision. It is hard to let go and let a junior employee take on a high-visibility challenge without a supervisor.

In *It Worked for Me*, in the appropriately titled chapter “Trust Your People,” Colin Powell tells how he prepared President George W. Bush for his first international trip to meet with Mexican President Vicente Fox. He assigned two junior Mexico desk officers to brief the President. He did not know them—he didn’t even know their names—but he knew that they would knock themselves out to do a good job. Secretary Powell explained that there would be no PowerPoint presentation and there would be no rehearsals. No one would speak except those two junior desk officers:

The day came; the President and his party entered the conference room and took their places on one side of my large conference table. . . .

I welcomed the President, introduced my key leaders, and then introduced the two action officers and turned them loose. . . . The two officers took off, and their performance totally met my expectations. They provided the President with everything he needed to know before he flew down to Mexico. The President asked penetrating questions and got solid answers. When it was over, he expressed his satisfaction, thanked everyone with a handshake and a smile, and swept out, assistants in his wake.¹¹

Conclusion

This experiment is about developing a problem-solving process by using teams from different groups to resolve a computer issue to prove or disprove the capability of the process. A successful process would provide a framework for resolving future problems with a holistic view and based on communications among groups. The importance of improving communication cannot be overemphasized. It starts with the affected divisions during the experiment, but managed appropriately, it could provide a tipping point—an event not so significant on its own, but one that provides the small measure that causes the scales to shift. Think of the first person to walk across the gym floor at the eighth-grade dance, after which the boys and girls mixed and danced. That one person was the tipping point.

If two or three groups communicate better, it is possible for that to become the norm rather than an anomaly. Both communication and the encouragement of leadership to communicate reinforce the concept that all the parts of the directorate are part of the same effort. Improving—or, better yet, encouraging—better communication is critical. When people were asked what the JLLIS/JTIMS problem was, there were eight different answers. It is unlikely that there are eight discrete problems; it is more likely that there are eight different perceptions of a single problem—a classic communication issue, which bears an eerie resemblance to the story of the blind men trying to describe an elephant.

The importance of resolving problems without involving management in every one of them may not be obvious, but it is critical. The future—and the near future at that—is dependent on our junior civilian employees. As those in uniform rotate through staff positions, it is the civilian employees who provide continuity. Today, well over half of civilian government employees are eligible to retire. How long should we wait before we begin to allow junior people to experience challenges? Military officers begin to take on responsibility, authority, and gain experience by their fifth year or promotion to O3. Thus, we need to begin to transfer authority and responsibility to the more junior employees at a similar level. Today, we refer things to supervisors that a civilian GS-12 could fix (incidentally, a GS-12 is comparable to a uniformed O3). In the next few years, as many civilian government employees retire, their replacements will begin at a lower paygrade; the GS-12 we hesitate to trust today may, tomorrow, be the most senior civilian in the work group.

Vice Admiral Kevin Scott, director of Joint Force Development, sent a note out last year titled “DJ7 Message to All Hands.” The emphasis and formatting are VADM Scott’s:

We are a multi-disciplinary group of professionals with a broad spectrum of skill sets necessary and valuable in their own right; however, we better achieve our objectives by coming together as a J7 team. . . .

Our Cultural Tenets: How We Must Operate

- *Build* positive relationships
- *Foster* teamwork
- Fluid communications
- Excellence *in all we do*
- Develop talent *around you*
- Be value added *in what and everything you do*

Trust and a Shared Environment—Integrated Effort.

I find it significant that every one of his tenets is an interactive trait, not

a technical skill. They describe how we should interact, not what tasks we should do. JFQ

Notes

¹ Julius Augustus Furer, *Administration of the Navy Department in World War II* (Washington, DC: Government Printing Office, 1959), appendix I, “Admiral E.J. King’s Philosophy of Command,” available at <www.ibiblio.org/hyperwar/USN/Admin-Hist/USN-Admin/USN-Admin-A1.html>.

² Natasha Gilani, “Bureaucratic vs. Flat Organizational Structure,” *Smallbusiness.Chron.com*, available at <http://smallbusiness.chron.com/bureaucratic-vs-flat-organizational-structure-24771.html>.

³ Peter Drucker, *The Frontiers of Management: Where Tomorrow’s Decisions Are Being Shaped Today* (New York: Truman Talley Books, 1986), 204.

⁴ Sydney J. Freedberg, Jr., “Kim Jong-un Has Much to Teach Pentagon about Speed: Gen. Hyten,” *BreakingDefense.com*, August 8, 2017, available at <https://breakingdefense.com/2017/08/kim-jong-un-has-a-lot-to-teach-pentagon-about-speed-gen-hyten/>.

⁵ Joseph F. Dunford, Jr., speech delivered at the graduation exercises of the National Defense University, Washington, DC, June 9, 2016; video available at <http://original.livestream.com/ndustreampremium/video?clipId=pla_e501087a-a2fc-4ec1-9c6a-1dd18f43dc97&rt=3&ra=483661>.

⁶ Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3150.25E, *Joint Lessons Learned Program* (Washington, DC: The Joint Staff, June 26, 2015), available at <www.jcs.mil/Portals/36/Documents/Doctrine/jlld/cjcsi3150_25.pdf>. Emphasis added.

⁷ CJCSI 3500.01H, *Joint Training Policy for the Armed Forces of the United States* (Washington, DC: The Joint Staff, April 25, 2014), A-8, available at <www.jcs.mil/Portals/36/Documents/Library/Instructions/3500_01.pdf?ver=2016-02-05-175034-967>. Emphasis added.

⁸ *Ibid.*, B-1.

⁹ *Ibid.*, D-8.

¹⁰ *Cool Hand Luke*, Stuart Rosenberg, dir., Warner Bros.-Seven Arts, November 1, 1967.

¹¹ Colin Powell with Tony Koltz, *It Worked for Me: In Life and Leadership* (New York: Harper, 2012), 74.