

Understanding military decision making methodologies and
utilizing them in the cooperate environment

Ran Tamir

As my career is split between serving in the armed forces (as an officer for 14 years) and as a manager in the mining industry (for 23 years), I found many similarities between the two spheres. For years I have been successful in applying “*the military way*” and namely *military decision making methodologies* in mine management. I am proud and honored to share my experiences.

The objective of this paper is to provide an insight to the military process of decision-making, what can be implemented in the civilian world and how.

It is important to state that this methodology has been continuously evolving, adapting, being tried, tested, evaluated, improved and documented at great cost (Blood and taxpayer’s money) and this evolution has turned *the art of war* to a science.

The military is very much like any other organization striving to survive and succeed only it has been around longer, is much better documented and has invested considerable resources to asking and answering fundamental questions regarding achieving goals under pressure.

Military decision-making embodies all aspects of war making in a set of definitions, guidelines and processes in order to be able to;

- Set Objectives,
- Respond to change under limited resources & time restriction,
- Operate under sometime conflicting internal interests and human nature.

Since all military organizations are older than commercial ones, enjoy national level resources that allow them to study, teach and accumulate information they are ideal as a source of knowledge.

It is important to state now and at every point that although the philosophy and methodologies have evolved and matured, when the people applying it are not (evolved and mature) bad things happen and rivers of blood have flowed to prove it so.

This paper will attempt to demonstrate military principals for decision making that focus on:

- The overall decision making process,
- How to determine the issues to deal with.
- Structured goal setting,
- Obtaining Situational awareness,
- Operating in high level of uncertainty, and
- Adopting to continuously changing environment,
- **The overall** decision making process, is based on the assumptions:
 - That all its actions derive from a higher echelon objectives.
 - That the military’s (and any of its sub units) role is to provide its higher echelon with more than one option and solution together with the best estimate of the end result (state), cost and consequences to all effected in the planning phase.
 - That once events start to unfold a process of OODA is set in motion and time & changing environment become additional factors.
 - That decisions are made in adherence to set principals / best practices / guidelines that have been developed and adopted (with variations) by most fighting organizations as the “principals of war”.

- The process also acknowledges and addresses our limitations:
 - That all decisions are made based on limited (best-known) information and assessment of our situation.
 - The limit of our resources and capacity.
 - Our ability to comprehend and respond in time (by altering or not altering) to changing circumstances.
 - The human compatibility to the tasks (physical conditions, ability to operate in varying stress levels, personality, mental condition).
 - The team's conviction and cohesiveness (as very little is done by one person alone).
 - The conflict of focusing on a set mission and getting it done "come hell or high waters" versus understanding the overall picture and questioning the validity of the task and its contribution to the intent.
- In order to be able to perform its goals with the limitations mentioned processes and procedures have evolved to insure that:
 - A good understanding of the upper echelon's objectives and intents is achieved.
 - As much information as possible is collected, analyzed, presented and elevated to the status of decision supporting information.
 - A set of options are developed based on different guidelines.
 - A structured process of comparing the options and selecting the suitable option is chosen is in place.

- ***How to determine the issues to deal with.***

One of the greatest conflicts the military acknowledges is to be structured and focused on one hand and be open minded and aware of the surroundings at the same time. There are two aspects to this issue. The planning stage and the operation stage (we make this distinction for the sake of this argument although in real life it is not always a clear cut).

1. Decisions are made based on assumptions that are based on the best information available so the x factor and its size are unknown.
2. Once you have taken an action you have destabilized a known situation (well, at least a guesstimation) created a new one.

As you are focusing on the execution of the plan are you assessing the new situation?

Are you assessing it using the plan's yardstick? One can use the analogy of using a flashlight to light a corner of a room versus a turning on the main light to see the whole room (the grand picture).

The solutions are:

1. A structured methodical, formal evaluation is carried out similar to a checklist. This method assists us bringing in all past experience, insure no known items fall off the table and focuses us on what we need to address but here lays the pitfalls;
 - a. The feeling that if we have completed the checklist we're "good" therefore we do not need to further investigate.
 - b. The thought that the checklist covered everything.
2. Multiple functions look at the same situation from different angles to create a 360 picture.
3. Dedicated function is charged with challenging any and all the components of the plan.
4. Dedicated observers are tasked with looking over (and overlapping) the entire field.

5. Everybody on the field reports to one collection agency of progress and changes thus creating an online picture that includes the adjacent fields as well.

- **Structured goal setting,**

At every level the military leader takes the upper echelon's intent and translates it to a workable, measurable plan. In many cases (time permitting) it is validated by his commander. Everything that follows from that point on is subject to that objective. It states in a very structured, summarized and general way who will accomplish what, no later than, by what actions (highest "loftiest" description possible), in order to (allow the next phase of the general plan to happen).

- **Obtaining Situational awareness,**

The ability to respond in the best way to the changes is depended on detection, identification and comprehension of the environment and is defined as **situational awareness**. The battlefield is a fast pace dynamic environment where the comprehension of the state of affairs from an hour ago may not be valid two hours from now. That, in turn may lead to decisions (solutions) that may have been valid in the past but will not resolve the evolving situation.

Comparison of poor versus strong Comprehension and response

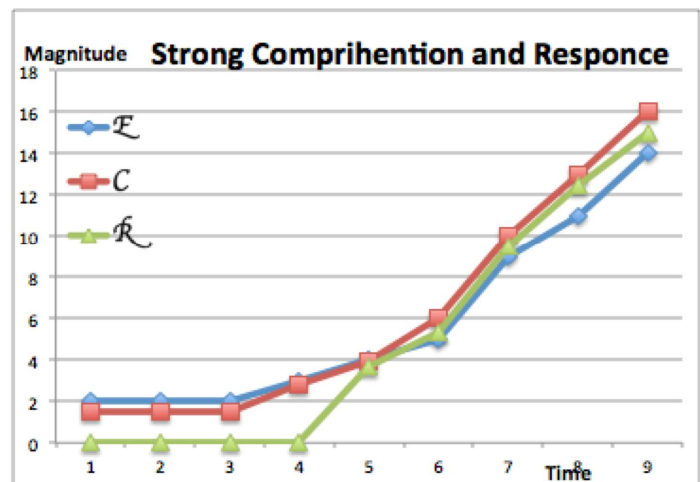
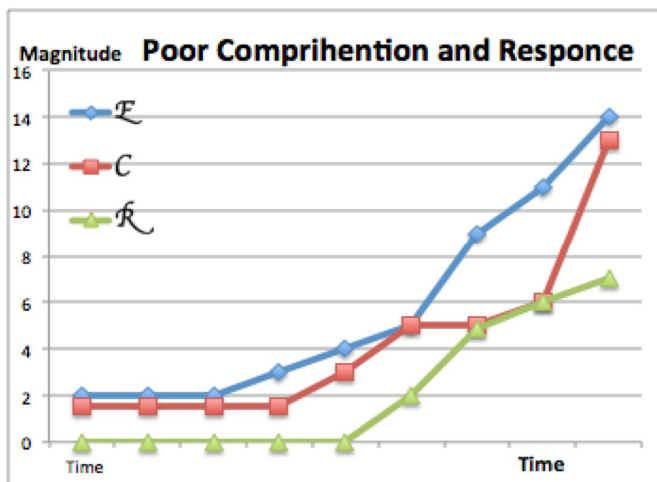


Figure 1

Figure 2

E – Transpiring event magnitude (similar in both graphs) along the time.

C - Comprehension of events along time (correlating to event magnitude)

R – response to events magnitude and time.

Poor comprehension of events leads to delayed and none effective response. The closer the understanding of the unfolding event is to the events themselves the higher the probability of effective response. This graph represents a single event even though

- **Operating in high level of uncertainty, and**

As much as we try to create controlled environments we still operate in high level of uncertainty do to the fact we have not achieved a good situational awareness. Still events are unfolding and unanticipated circumstances preset themselves. If a proactive response is not possible the there is a need for a high level of robustness that will allow sustainability. **The higher the quality and strength of the SA process the lower the investment in the robustness of the operation is required.**

High level of robustness requires strong leadership capable of making decisions, discipline, flexibility, adaptability and a strong cohesive team able to understand and carry out instructions.

- ***Adopting to the continuously changing environment,***

Response due to good (or bad) SA is divided into two groups, the first utilizes existing solutions (hardware and process) by altering them and the second creates new solutions. Both cases require overcoming the challenge of change. Survivability depends on the quality and rate of change a system is capable of.

3. How (and why) civilian organizations can benefit by applying those methodologies.

- I. Similarities: (just a few)
 - a. Measurable Goal oriented.
 - b. Continues changing environment.
 - c. Resource restricted.
 - d. Utilize people and equipment.
- II. 2000 years of proven, documented, analyzed failures to learn from.
- III. National level resource investment in creating and refining methodologies across the board.
- IV. Simplified guidelines for complicated situation.
- V. Pushing the envelope.
- VI. An old establishment continuously changing.
- VII. A learning organization.

The lifecycle of a task (even if continues) is shaped the same at all levels. It is continuously monitored and impacts how data is systematically collected organized and correlated not only to compare to benchmarks and measure improvement, but to build and maintain a high level of understanding of the operating environment that ultimately supports decisions, plans and favorable outcome.

Discussion:

- Setting objectives,
Setting objectives is always the responsibility of the highest authority of each level of hierarchy. It is the cornerstone of the planning process and represents the intent of the decision maker in light of the task his higher echelon dictated. In order to keep an open mind it is disconnected from resources and limitation thus avoiding being channeled and into solutions and a loss of opportunities. Although at times this concept causes a feeling that the objective is unrealistic and unobtainable it is driven by the need and not the resources. The bases for this concept is, you say what you need and I come back with the plan to get it done! It maintains a formal structured format and is preceded by the higher echelon's intent. A good objective translates the upper echelon's intent to a plan. An example of an objective will be the allied forces objective for operation Overlord, the first face of the invasion to Europe in 1944,

D DAY OBJECTIVES:

“The objective of the AEF for the first 40 days is to create a lodgment that would include the cities of Caen and Cherbourg (especially Cherbourg, for its deep-water port). Subsequently, there would be a breakout from the lodgment to liberate Brittany and its Atlantic ports, and to advance to a line roughly 125 miles (190 km) to the southwest of Paris, from Le Havre through Le Mans to Tours, so that after ninety days the Allies would control a zone bounded by the rivers Loire in the south and Seine in the northeast’.

The structure of an objective usually follows the format of:

“Who will do what by what method (a restriction that manifests the HA’s guidelines for planning) no later than time in order to what and allow who (other than the said unit) to other unit’s mission and be ready for the next mission”.

This statement provides sufficient information as to the *who*, *what* and *why* so the best solution can be developed and implemented.

A translation of this statement to the industrial environment (HME tire shortage of 2004) is:

The mining department will minimize the effect of HME tire shortage and price hike in order to maintained operational capacity of M4.5 tpa and hold to this year tire budget by implementing a tire utilization plan.

- Planning.

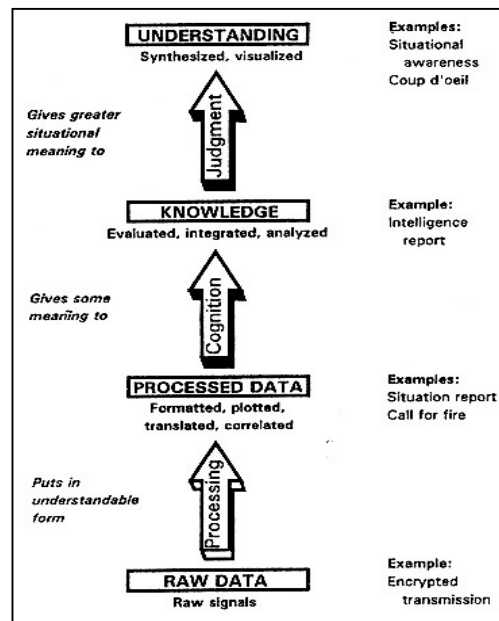
Plans are nothing, no plan has stood the test of battle but (!) planning is everything
(Gen. Dwight D. Eisenhower)

The planning phase is curial in the military sphere for the following reasons;

- Allow creating and managing resources to initiate and respond to changing environments and circumstances.
- The correct planning process demands intimate knowledge and understanding of the environments and impacting forces that allow better response as events start to evolve.
- Create, at least a concept and a starting point.

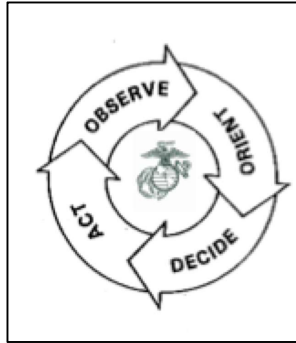
The planning philosophy states that planning is driven by the objective that in turn drives a method that is developed in light of the planning guidelines and is benchmarked to the principals of war (best practices) every step of the way. In addition it creates options (at least three) that are compared, evaluated graded. The one most suited to adhere to the objective and maintain the balance between the best practices and resources is the one to be chosen and developed to implementation. Some basic questions the planners deal with are what is the environment? What capacities and resources do we have? What resources (methods, assets [humane and hardware] do we need to develop / acquire? Since the objective drives the solution the supporting elements are responsible for tailoring solutions, not laying restrictions, even if sometime the cost is not realistic and the entire plan is deemed inapplicable.

- Turning data in to decision supporting information.
The information hierarchy is one of the pillars of the decision making process where 3D 360 data is collected and thru a process becomes decision supporting information.
By collecting, editing, assigning meaning and understanding the trend a picture emerges that creates a snapshot of a situation. As this snapshot is time sensitive and is valid for a short duration this is an on going process.



- Maintaining situational awareness.
The understanding of the environment we operate in is referred to as “*situational awareness*”- *SA*. It includes as many components as possible. This understanding depends on good collection of data and implementation of the information development and interpretation. Further more it depends on creating a balanced picture that takes a broad look more of turning on the light rather than shining a focused beam at a corner. If implemented correctly, will assist us in avoiding pitfalls such as outdated assumptions that cause wrong interpolation of information.
 - It will allow to identify opportunities that otherwise might be lost.
 - Prevents “over-focus” or tunnel vision.
 - Questions the validity of the actions taken

In order to maintain the balance between what is know about the surrounding – the *SA* and our initiation of or response to events we maintain an action loop, the OODA – Observe, Orient, Decide & Act. The first 2 segments of the loop have to do with building the *SA*, the third is the planning process with a decision at the end and the fourth is the implementation. Once we have attempted to initiate a change (disturbing the *Equal Librium*) we have created a new situation thus the loop starts again.



- Prioritizing and the use of the ongoing root cause analyses as an integral part of the decision making process.

The military concept of prioritizing involves:

- Monitoring the opponent's time scale – is ability and effectiveness of his actions and re-actions. In linear processes this could equate to the mining verses the milling operations.
- The length of time a solution we put together is valid and the window of opportunity.
- Measuring priorities in how long do I have before I have to react or shut down rather than assigning them a number, might present more than one item at the same criticality level and will suggest opening the bottleneck rather than setting them one after the other. This method could deeply impact both problem resolution effectiveness and the structure of the organization.

As the military is always engaged in gaining the upper hand as a method of survival it is continuously driven to change and improve. A robust system is set in place that is parallel to the command structure. It is responsible for force readiness, i.e. the army is equipped with the correct hardware, is trained in the correct methods to the correct level and is conducting R&D in the correct direction. It hands over to the commanding general in the field assets to deploy. Further more it is continuously gathering information & feedback to improve and disseminates digested ready to implement solutions. It is dedicated to this task, is staffed by the best members of the veteran pool that rotate between this duty and combat duty and led by up and coming leaders (the positions are a must for promotion thus it is a rout the best strive to get). It is referred to as the Doctrine and Tactics division.

- The application of “continues improvement” as a part of the process.
The culture of continues improvement is linked to the culture of debriefing and goes from top to bottom. RCA is not performed just when something fails; it is done on every action continuously as there is much to learn from success as well. Information is collected, evaluated, edited and disseminated to other units for implementation.

- The type of leadership desired the selection and training of leadership. How many times have you seen an add in the wanted section in the paper “wanted! A talented division commander”. One of the greatest investment the military makes is in its leadership. The definition of what “right leadership” is how to find the right candidates and how to groom them for success is carries such great importance that the top echelon of the military leadership is heavily engaged in. the higher you look too leaders the greater facilities they have for understanding the “big picture” and making the right decision. One important point to make is that seasoned leaders often have strong “gut feelings” that have been acquired thru the process that brought them to the position they hold, that is the key to good decision making.
- The adaptation process, factors leading to the change process and pit fall warning signs. One implementation tip is for the organization leadership to go thru a learning and “war game” session. It is best to go thru establishing the organization objective writing, OODA cycle, SA and information hierarchy not by outsourcing to a consultant but by spending time and effort so it is owned. A consultant can work one on one with the leader and assist **in the background**. It is best that the leadership team presents and coaches the lower levels (2 levels below them) using relevant events and examples. Second implementation tip would be to spend as much time as necessary to insure the teams master the essence not just the formalities.

Conclusions:

“Those who do not have a structured process sometime succeed, those who have a structured thought process sometime fail”.

There are many documents to show the military’s utter failure to carry out any of the philosophy it devised at such high cost. There are many documents to show that good man with very good intentions made horrendous decisions with far reaching effects. Yet the military, understanding that forever it will function under pressure that takes man and machine to the limit of their ability, has made an honest effort to create *some* tools for *some* control over the chaos that is a battlefield. The military process is an evolutionary process with all its advantages and disadvantages and anyone, at any level, that is in a decision-making environment should find his ways to learn from it.

Understanding and creating an objective, maintaing a balance between a well-organized plan and flexibility is one of the greatest hurdle together with tunnel vision that comes with focus. Turning raw data to meaningful decision supporting information creates the *know* that is both the foundation of a successful plan and a false sense of self-confidence, the foundation of failure.

Creating and comparing COA is essential in order to arrive at the best plan for the right reasons. Creating and maintaining situational awareness is curtail for decision making and effort is needed to have SA that suet's the environment's pace.