Understanding Capability-Based Planning

The Swiss Armed Forces are currently in a transition phase to base their development on a capability-based approach. Several armed forces worldwide have already implemented this and encountered problems. To avoid similar setbacks, it is necessary for the Swiss Armed Forces to focus on the core of the capability-based planning method, including its rigorous application.

By Constant Despont

Today's strategic environment is straining the armed forces of countries around the globe. Alongside great powers such as China and Russia, threats such as international terrorism have re-emerged. Armed forces must therefore deal with unconventional threats and still retain the ability to counter more traditional threats. Moreover, the rapid development of new technologies within the private sector is both an opportunity and a challenge, as it can increase the impact of the threats mentioned above. Armed forces are thus in a state of competition with their opponents. To some extent, this also applies to the Swiss Armed Forces.

Switzerland as a neutral country is not part of a defense alliance such as NATO. Therefore, its armed forces are solely responsible for the defense of its national territory against any type of threat. The Swiss military doctrine states that it must always be prepared for the worst case scenario, such as a high-intensity conflict against a state actor. Similar to any other military, the Swiss Armed Forces struggle to achieve their objectives with limited resources. The Swiss military is still heavily reliant on Cold War systems, such as heavy armored vehicles. It lags in terms of new capabilities brought by the latest Revolution in Military Affairs (RMA), including technologies like Artificial Intelligence (AI) and

Theory room of the Training Center of the Swiss Armed Forces in Lucerne. *Nique Nager / VBS/DDPS*

Unmanned Vehicles (UV). These technologies are changing the way future conflicts are approached and, above all, the way they are fought.

To fill this gap, the Swiss army – following many other armed forces around the world – have begun a transition phase that will allow them to move away from their past development planning method to replace

outdated weapon systems with more modern ones. For this purpose, the Swiss Armed Forces decided to implement a development planning method called capability-based planning (CBP).

This method emerged in the US military after the end of the Cold War. The arms race with the Soviet Union had put US finances at risk. In light of the new strategic

environment, the US Department of Defense (DoD) based its development trajectory on what its armed forces should be capable of providing in the future without focusing on a specific enemy. This approach was intended to produce a multi-purpose force that used its resources more effectively. Countries in alliances with the US subsequently adopted and adapted CBP to promulgate common standards.
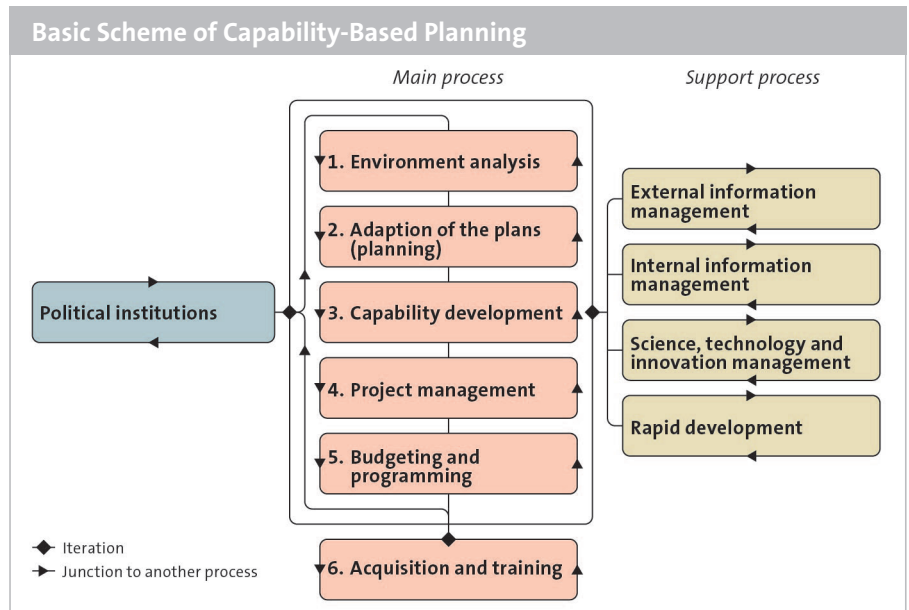
However, after 30 years of development and implementation by various states, CBP remains a challenge for many armed forces around the world. This is due to the increasingly complex and competitive environment in which they must operate, sometimes forcing armed forces to adopt a development planning reminiscent of that of private companies. However, difficulties are also due to a lack of thorough understanding of the method, its basic principles, and its limits. The causes of failure are comparable for private companies and armed forces: the implementation of a development strategy that does not meet real demand and the inability to fully execute this strategy. CBP can eliminate these causes of failure for both entities. That said, the basic scheme (see graph) provides a standard that can be adapted to the situation of each armed forces.

Basic principles

The emergence of new technologies as well as the increase in competition puts private companies and armed forces in a difficult situation. Indeed, both must continually reinvent themselves to remain competitive

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by including new technologies to be more efficient or by anticipating the actions of their competitors to counter and overtake them. CBP enables entities to reinvent themselves by focusing development planning on the concept of capability. Capability, also called "operational capability" in the Swiss Armed Forces, describes what needs to be done to achieve a particular goal without specifying how to do so. As an example: 200 people need to be transported between Zurich and Geneva. The capability sought here is their transportation. The choice of means to that end is dependent on conditions such as the financial resources available or the importance of the desired capability. In essence, CBP is about determining what needs to be done (capability) and how to do so most efficiently.

Basic Scheme of Capability-Based Planning

Main process — *Support process*

Political institutions

1. Environment analysis
2. Adaption of the plans (planning)
3. Capability development
4. Project management
5. Budgeting and programming
6. Acquisition and training

External information management
Internal information management
Science, technology and innovation management
Rapid development

◆ Iteration
➤ Junction to another process

CBP works as a top-down approach. In a private company, this means that the board of directors defines a development strategy with certain guidelines, based on which the employees deliver a product or service to the customers. In the context of the armed forces, the staff or council of generals responsible for planning the development of the armed forces are at the top, while the soldier performing the task is at the base. This top-down approach requires that development planning be organized vertically, from the top of the hierarchical pyramid to the bottom. The development itself must be organized in a way to ensure full coherence within the process ranging from the strategy issued by the top of the pyramid to its execution at the base of the pyramid. To this end, CBP should be organized as a coherent development system (see graph) to ensure that the previously set strategy is effectively implemented and brings the anticipated results.

Though the specifics of the strategic environment will vary, the development planning of companies and armed forces must quickly react to current challenges (reaction) and to anticipate future challenges (anticipation). The latter requires long-term development planning. The time horizon of any planning exercise will be dictated by sector-specific needs and the environment in which the process occurs. For a company active in the field of information technology, for instance, this time horizon can be very short, from one year to two years, whereas a com-

pany active in the aeronautics industry will have a much longer planning cycle. In the context of the armed forces, the same conundrum between reaction and anticipation applies. To solve this issue, it is necessary to set up support processes. These support processes must relieve the main process from time-consuming tasks such as research and development of new technologies.

Another goal of these support processes is to provide the information needed for the main process to run smoothly. Information can be internal and external. The latter includes, for example, the environment in which the actor operates, the progress of competitors, or the development of national and international laws. Internal information includes the state, its current capabilities, or the possibilities to improve its functioning. A third type of support process is required for armed forces only. This process must provide a rapid response to a threat encountered in a theater of operation. This type of process is particularly important for armed forces engaged in combat operations, such as France in Mali. However, it is less important for countries like Switzerland, which is not engaged in this type of operation. Because each support process has its own time horizons, such efforts require coordination with the main process to ensure efficient support.

CBP in armed forces

CBP can be visualized as a basic scheme describing the armed force development system (see graph). The development sys-

tem is composed of a main process and support processes. The former includes the steps following a coherent top-down approach. The latter ensure the execution of related tasks. The management of the main process is generally the responsibility of the planning body of the armed forces; in the Swiss Armed Forces this is the task of the Armed Forces Staff (AFS). The starting point for the main process is to be found in political institutions. Typically, a government issues a national defense strategy that mentions the objectives to be fulfilled by the armed forces.

The main process consists of six steps in total and starts with an *environment analysis*. This step determines the threats that the armed forces can face. It specifies conditions such as geography, meteorology, socio-cultural context, political context, or new technologies under which the armed forces will have to operate.

The second step is the *adaptation of plans*. During this stage, the planning body relies on the agency in charge of military operation. In the Swiss Armed Forces, this agency is the Joint Operations Command. Based on the environment analysis, the Command operationalizes the objectives received from the government and specifies them in military terms. This specification includes several documents: a war scenario, operational concepts, an overall strategy for the armed forces, specific strategies for certain objectives, and a doctrine for the armed forces. After that, the planning body prioritizes in each documents a key focus regarding the risks and the missions to be performed. This step should define how the armed forces intend to fulfil the various tasks that need to be performed, to define the necessary capabilities, and to set a level of ambition for the development of the armed forces as well as to define development trends. The latter describe a research domain, like AI and UV, which is especially important for the armed forces.

The third step is *capability development*. In this step, the planning authority, with the support of the military operations authority, defines the capabilities that need to be developed to achieve the set objectives. To do so, the capabilities the armed forces already possess are subtracted from the capabilities in need, resulting in the "capabilities gap." The various capabilities contained in the capabilities gap are prioritized according to their importance for the success of the respective task or the risk that their absence poses for the task.

The prioritized capabilities are then taken forward into the fourth step, *project management*. The development team is responsible to find variants of hardware or software solutions to fill the capability gap. These are then presented to the planning body, which chooses the most suitable one. A solution could be the acquisition of a new weapon system or simply a change in the doctrine that enable a better result with the same resources. The evaluation method the US DoD uses to examine the practicality of proposed solutions is an analysis containing the following factors: Doctrine, Organization, Training, Material, Leadership, Personnel, Facilities, and Policy (DOTMLPF-P). The selected solutions are then *budgeted and programmed* in a fifth step, and, as a last step, *procured* by the armed forces.

In the case of the Swiss Armed Forces, four examples of support processes in the basic scheme of CBP may prove critical to future efforts. First, *external information manage-*

Any armed force in the world can use CBP to plan their development.

ment can be conducted jointly by the military intelligence and the Federal Intelligence Service on an annual basis. Second, *internal information management* could build on the work done within the AFS by the agencies Armed Forces Planning and Management Development Defence. Third, *science and technology and innovation management* can be handled by the Science and Technology domain of the Federal Office for Defence Procurement, Armasuisse. A fourth support process, *rapid development*, is less critical for the Swiss armed forces since they are not actively engaged in a combat theater.

Barriers to CBP
Although CBP has been successfully implemented in many private companies, several countries still have difficulties applying it properly, for various reasons. CBP requires a high degree of coordination and a very specific organization of the development processes to produce a coherent development. A problem appears when the planning body uses CBP as a method without an adequate development system. CBP requires a thorough awareness of the development method and a working development system. It is also necessary that the whole system is transparent and that data used across different domains has common

standards to be interoperable. Ensuring this coherence across an entire armed force is particularly difficult, as the different branches of an armed force (air, land, sea, space, and cyber) tend to develop their own standards and fiercely defend their prerogatives.

Moreover, CBP tends to compel armed forces to plan its development like a private company would do. This approach, however, is not particularly suited for an administrative agency such as the DoD that usually prefers stability over innovation and security over risk management. Another potential problem is the management of financial resources. Financial constraints are often considered at a late stage, which leads to the development of financially unsustainable solutions. To make matters worse, some countries try to solve all problems encountered in theaters of operation with particularly expensive new technologies. The US Navy's electromagnetic railgun, for instance, was intended to hit targets at 300 kilometers away and reach them at a speed of Mach 7. This project cost half a billion dollars and failed due to complexity and cost. Russia, on the other hand, delivers a better solution based on and optimizing an already mastered technology, instead of developing a completely new technology.

These barriers can be overcome relatively easily by setting up a development system with a specific focus on the analysis phase. However, external constraints for the armed force also stand in the way of CBP's proper functioning. Pressure from certain lobbies can lead to the development of capabilities or weapons systems that serve economic rather than military objectives. Similarly, political bodies tend to set objectives that are more related to domestic politics or foreign policy than defense policy. In both cases, the consequences for development planning can be very harmful. Armed forces can mitigate these risks by explaining to the relevant political authorities their harm to the overall objective.

CBP for small states
Although CBP is an initiative developed by the most powerful armed force in the world, the US, it is still possible for smaller states to use it. In that, they face similar challenges: an increased need to legitimize the use of taxpayers' money and the complexity of the strategic environment in which they must operate. The use of resources is more straightforward for small

states than for the US, which is perpetually engaged in conflicts around the world. Small states' main objective is the defense

It is important to put in place an adequate structure to apply CBP correctly.

of their own territory. In addition, they can benefit from the experiences acquired by great powers without paying the price. For example, Austria uses CBP to plan its development despite its very small budget. In principle, membership with an alliance such as NATO does not pose a problem to CBP. Ultimately, CBP can be used by any armed force in the world to plan their development. The obligations set by an alliance are merely additional guidelines to strengthen the cooperation of the individual members. Membership within such an alliance also allows the delegation of the development of certain capabilities to alliance members.

CBP per se does not pose any problem in its application for neutral states either, as Austria demonstrates. Switzerland has agencies that can take over most of the steps and support processes of the basic scheme. However, it is important to mention that the Swiss Armed Forces – and to a larger extent the Federal Department of Defence – do not issue two documents that form the basis of CBP: a national defense

strategy and an armed forces strategy. The Security Policy Report that forms the basis for security thinking is not a national defense strategy but rather a set of guidelines for national security. A strategy for the armed forces that describes in specific terms how the armed forces will be used has not existed in Switzerland since the end of the Cold War. If the Swiss Armed Forces want to implement CBP effectively, it is necessary to develop such strategy papers. Without them, the coherence of the entire development system will be compromised.

The future of CBP

In 2018, the Swiss Armed Forces started to implement CBP for their development planning. In a constantly changing strategic and technological environment, it is no longer possible to rely on the weapon systems replacement approach. CBP allows for the coherent development of all related processes. Using the notion of "capability" allows for innovative development by moving away from the simple replacement of outdated weapon systems. Apart from the purchase of new equipment, the concept also introduces profound changes on the doctrinal and organizational levels.

It is important to put in place an adequate structure to apply CBP correctly. Involved agencies must ensure sufficient coordination of different processes, allowing for

regular and recurring development. It is also necessary that barriers to the proper functioning of CBP are recognized and addressed early enough to avoid derailing the entire development planning process. The application of this method in practice is complicated for armed forces, as it pushes them out of their comfort zone to adopt a mindset more like a private company. However, given the current strategic environment, there is no better alternative.

In the case of the Swiss Armed Forces, potential solutions to unconventional threats may be emphasized more strongly. Some essential documents such as a national defense strategy and its operationalization in an armed forces strategy could be useful. However, as mentioned already, the Swiss Armed Forces have most of the administrative agencies necessary for the successful implementation of CBP at their disposal.

For more on Military Doctrine and Arms Procurement, see CSS core theme page.

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