

# **INDC Final Project**

Research Proposal

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**The influence of IT and AI development  
to decision making processes  
in the economic and military sectors**

Information Technology and Artificial Intelligence is already influencing a lot if not all decision-making processes in the economic and the military sector.

Technological development in the next years but particularly in the more distance future will push this influence to a new quality. It seems that especially the military sector in the western world is reserved to approach some of the new possibilities.

Furthermore, the economic sector appears to be more advanced in implementing Artificial Intelligence driven systems in their decision making.

Today the use of Information Technology is omnipresent. The use of this technology usually doesn't require a specific skillset or expertise. These facts lead to the situation that within the decision-making process the decision maker and the advisors of the decision makers are not always aware if or how their data was processed. This is particularly the case if in addition to Information Technology some kinds of Artificial Intelligence are used. The nature of the

technology makes it very difficult to track the process and to understand why certain results are produced.

Decision making is a process that is ongoing all the time to enable yourself to adjust the own situation in respect to the desired outcome. There are multiple concepts how to construct and utilise a decision-making process in the respective environment. Most, if not all of them follow the same general sequence. They analyse the situation, to find the gap between the actual situation and the desired situation. The analyse is followed by a planning process how to minimize or neutralise the gap by developing possible courses of action and assess them to find the best suited for the problem. Implementing this plan concludes the process and restart it with controlling measures to enable a new situation analysis.

All those steps are usually information technology supported. Lately a lot of those processes are artificial intelligence supported as well. Not always is the impact of the used technology to the decision-making process comprehensible.

Within every military the ability to speed up the decision-making process to increase the operational temp is crucial. This narrative makes it obvious that especially military is interested in any technology that is improving and speeding up the decision-making process.

Beside the benefits of being able to make better decisions faster this shift has downsides as well. The non-transparency of the used technology was already mentioned before. As more the way data is processed is not understandable for the decision maker and the advisors of the decision makers, the greater the risk that information is decision driving that is actually unreliable.

The goal of a fast decision-making process might not allow a human control in every step of the process. New technological development in the future might enable military to rely on artificial intelligence for decision making and or command and control of weapon systems.

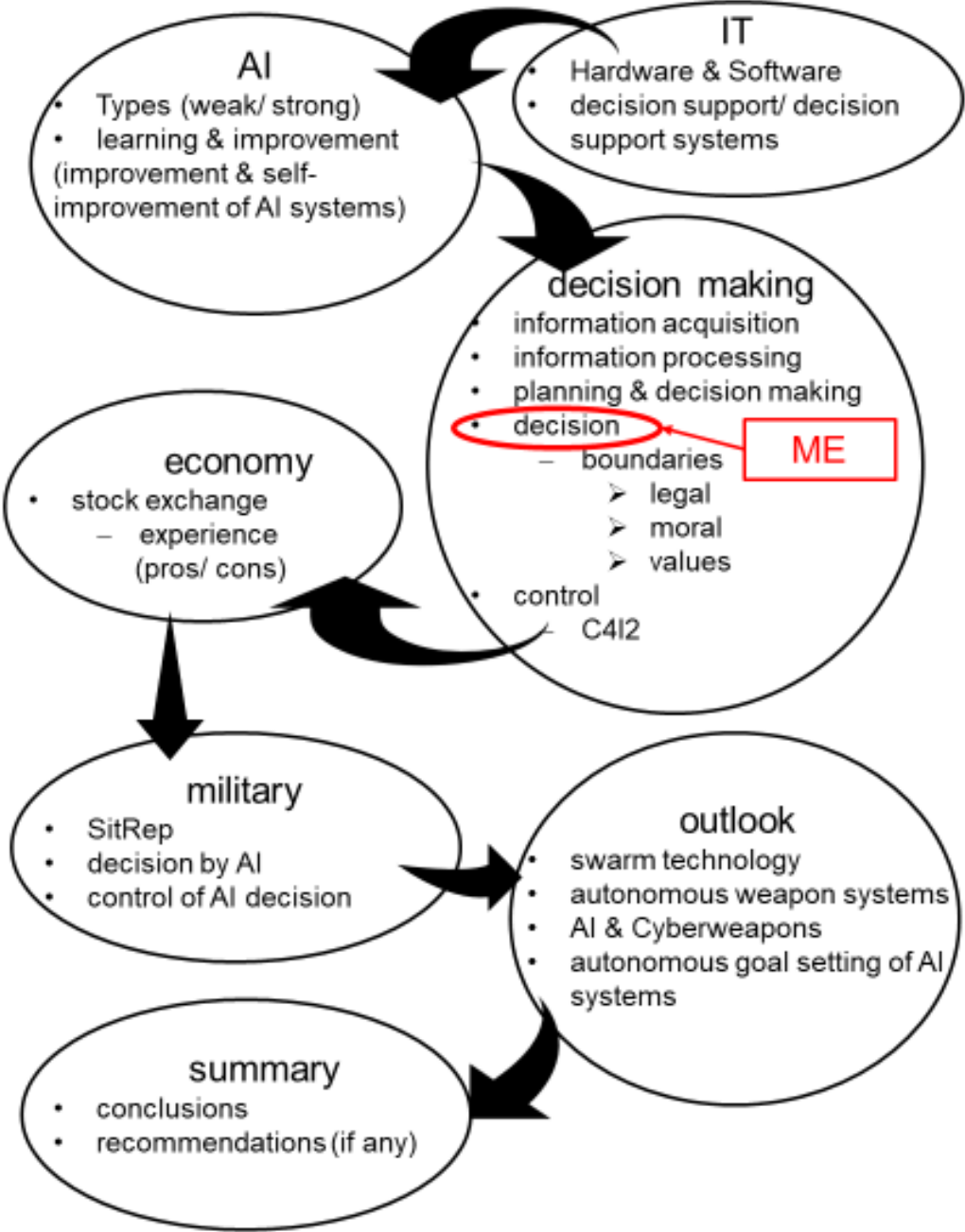
Military organisations don't have the chance to ignore any technological development that's influencing their warfighting capabilities if they want to stay competitive or stay superior to their adversaries. Military operates within given boundaries. Within the western militaries those boundaries are mainly driven by values. Ethical and moral values lead to laws and procedures that the military is following.

The question to be researched is what impact has Information Technology and Artificial Intelligence within a decision-making process.

To answer this question, it is necessary to analyse the present development of information technology and artificial intelligence in respect to decision making. Furthermore, the possible developments of especially artificial intelligence have to be researched. During this analysis the focus is the impact on a decision-making process. To understand the impact, it is necessary to have a general discussion about decision, decision making and the related processes.

Decision making processes underlie certain boundaries. Another question emerging from increasing use of technology is if the same boundaries will, should and could apply in future decision-making processes.

The flow of the research project is depicted in the following layout:



The project is focusing on theoretical research. Nevertheless, if at any point of the process it is appropriate piratical examples will be included.

The guiding question during the whole project will be as follows. What is the influence of Information Technology (IT) and Artificial Intelligence (AI), and the development of them, to the decision-making process, especially in the economic and the military sector?

To complete the research and to have a starting point to focus on, the intent is to answer supporting questions during the research process.

At what stage of development is IT and AI at the moment? How is this influencing the decision making?

What opportunities and what risks is the use of AI in a decision-making process?

What is the approach of different sectors, especially the economic sector, towards using this technology?