

# Applying the DMAIC Process to Enhance Knowledge Sharing in the U.S. Army Training and Doctrine Command (TRADOC)

Knowledge Management (KM) is a vital tool in today's world, being the catalyst for change and growth in organizations across industries and sectors. The rapid evolution of this discipline brings to the forefront the challenges of managing explicit and tacit knowledge, pushing for solutions that are adaptable, innovative, and result oriented. An example of an institution that has successfully harnessed the power of KM is the U.S. Army Training and Doctrine Command (TRADOC). It offers a unique perspective on the application of the well-structured methodologies in the KM processes, ensuring optimal operational efficiency. Among the various methodologies TRADOC utilizes, DMAIC is a standout.

## Understanding DMAIC and Its Importance in Knowledge Management

DMAIC is a data driven quality strategy for improving processes. It's an acronym representing the five phases that make up the process: Define, Measure, Analyze, Improve, and Control. Originating from the practice of Six Sigma, DMAIC is highly acknowledged for its effectiveness in driving operational efficiency and quality outcomes. This methodology stands out for its systematic approach to problem solving, which makes it a perfect fit for KM. In the sphere of KM, DMAIC is a roadmap for enhancing the effectiveness of knowledge creation, sharing, and utilization within an organization.

Each phase in the DMAIC methodology holds critical importance in managing knowledge. The 'Define' phase marks the commencement of the journey, identifying a problem or opportunity within the knowledge sharing process. This could involve recognizing knowledge gaps, highlighting inefficient information flow, or discovering underutilized knowledge resources. The Measure phase provides a comprehensive view of the current state of knowledge sharing, incorporating both quantitative and qualitative measures. This can involve assessing knowledge sharing sessions' frequency, the utilization rate of knowledge repositories, or collecting feedback from employees about their experiences with current knowledge sharing practices.

The 'Analyze' phase digs deeper into the collected data to find the root causes of the identified issues. This phase is essential to uncover whether there are technological barriers that hamper effective knowledge sharing or if there's a lack of a knowledge sharing culture. After thorough analysis, the 'Improve' phase takes over, devising solutions tailored to address the problems at hand. The solutions can range from implementing new knowledge management software to revising knowledge sharing protocols or initiatives aimed at fostering a more collaborative culture.

Finally, the 'Control' phase ensures the sustainability of these improvements. It involves continuous monitoring and adjustments to keep the knowledge management process aligned with organizational needs and changes. The phase is about ensuring the improvements in knowledge sharing are not just a one-off event but are ingrained in the organization's practices, constantly evolving, and improving. Thus, DMAIC's five stages provide a comprehensive framework for refining knowledge management processes and improving operational efficiency.

## The Unique Knowledge Management Challenges of TRADOC

TRADOC, a four star command unit, plays a critical role in shaping the U.S. Army by designing, acquiring, and building the future Army. It is an organization teeming with information and knowledge, both explicit and tacit. Explicit knowledge refers to knowledge that is codified and externalized, and it resides in documents, manuals, procedures, and rules. This type of knowledge is typically straightforward to manage and distribute, as it is already packaged in a form others can consume.

On the other hand, tacit knowledge refers to knowledge internalized within individuals and is typically unspoken and unwritten. It is challenging to manage as it includes insights, intuitions, ideas, and experiences, which often remain unshared due to the lack of effective mechanisms to capture and distribute them. In TRADOC, tacit knowledge can include the valuable experiences of trainers in the field, the lessons learned during operations, or the insights gained from managing complex military projects. Managing these distinct types of knowledge is a significant challenge within TRADOC.

## Application of DMAIC to Knowledge Management in TRADOC



To address these challenges, TRADOC has integrated DMAIC into their KM process. It has offered a systematic approach to manage the diverse types of knowledge within the command unit. Let's look at how each stage of DMAIC applies to KM within TRADOC:

1. Define: The definition phase involves identifying a problem or an opportunity within the knowledge sharing process. TRADOC's KM office aims to establish a clear understanding of the KM landscape and the operational context within the unit. Here, specific project goals aligned with TRADOC's strategic objectives are clearly articulated. Outlining the project scope is also an integral part of this stage, as it helps ensure focus and manageability.
2. Measure: The measure phase is about quantifying the existing systems. In the context of TRADOC, this phase involves assessing the current state of knowledge sharing. This includes evaluating the effectiveness and efficiency of explicit knowledge use, and the degree of tacit knowledge sharing among personnel. To capture the full extent of knowledge management, this phase employs both quantitative and qualitative measures.
3. Analyze: The analysis phase involves a deep dive into the data to uncover the root causes of knowledge sharing inefficiencies. This might involve detecting patterns, identifying bottlenecks, and understanding the structural or cultural barriers hindering effective knowledge sharing. In the case of TRADOC, this could include issues such as outdated KM systems or a lack of awareness about the importance of sharing tacit knowledge.

4. Improve: The improve phase is where the insights gleaned from the analysis phase are used to design and implement solutions. These might include updating the process for maintaining explicit knowledge resources, introducing new platforms for tacit knowledge sharing, or developing training programs to help individuals better understand and value the process of knowledge sharing.

5. Control: The control phase is about ensuring that the improvements achieved in the previous stages are sustained. This involves regular monitoring, reviews, and audits to verify the continued effectiveness of the new knowledge sharing processes. Feedback mechanisms and performance metrics are also established to provide data-driven insights for continuous improvement.

## **Case Study: Enhancing Tacit Knowledge Sharing among TRADOC Trainers using DMAIC**

To provide a real-world perspective on the application of DMAIC in KM, let's consider a case study from TRADOC, where the challenge was to enhance the sharing of tacit knowledge among trainers. The organization recognized that trainers' tacit knowledge, which includes experiences, insights, and personal teaching techniques, was an asset that remained largely untapped.

The Define phase established the goal: increase the sharing and utilization of tacit knowledge among trainers. During the Measure phase, surveys among trainers revealed many felt their personal experiences and insights were not being fully utilized. In the Analyze phase, the root cause was identified: there was a lack of a formal platform for trainers to share their experiences and insights.

The Improve phase saw the creation of an interactive online platform that enabled trainers to share and learn from each other's experiences and insights. The platform was designed to facilitate discussion, exchange, and interaction, making the tacit knowledge of trainers more accessible and usable. During the Control phase, the use of the platform was regularly reviewed, and the quality of discussions was monitored. Feedback was collected to further refine the platform and address any emerging issues, ensuring the platform's continued effectiveness in enhancing tacit knowledge sharing among trainers.

This real-world example illustrates how DMAIC can successfully be applied to enhance knowledge sharing in a large organization like TRADOC. However, it's important to note that DMAIC isn't a magic bullet that guarantees success. The process has potential pitfalls, such as its heavy reliance on quantifiable data, significant time and resource investment, and the risk of poor execution that could lead to misguided improvements.

## **Lessons Learned and Best Practices from DMAIC Implementation in TRADOC**

Despite these potential pitfalls, the successful implementation of DMAIC in TRADOC has highlighted several best practices that can guide other organizations looking to enhance their knowledge sharing:

1. **Clear Definition:** A precise definition of the problem and goals is crucial for the success of any DMAIC project. Having clear objectives provides a road map for the rest of the process.
2. **Comprehensive Measurement and Analysis:** The decisions made in a DMAIC project should be data driven. It's essential to gather comprehensive data during the Measurement phase and to thoroughly analyze this data during the Analysis phase. Skipping or rushing through these stages can lead to ill-informed decisions later.

3. Continuous Improvement and Control: The DMAIC process doesn't end with the implementation of improvements. These improvements need to be continually monitored and controlled to ensure they continue to deliver the desired results. This requires ongoing commitment and resources.

4. Stakeholder Involvement: The success of a DMAIC project depends heavily on the involvement of all stakeholders. This includes not only the KM team but also the end-users of the knowledge resources. Their input and feedback are crucial for shaping effective solutions and for ensuring buy-in during the implementation stage.

## The Way Forward: DMAIC and Knowledge Management

The DMAIC methodology, when applied thoughtfully and systematically, offers a compelling framework for improving knowledge sharing. The application of DMAIC in TRADOC, as seen in the case study, has demonstrated significant enhancements in tacit knowledge sharing among trainers, leading to improved operational efficiency. However, the success of DMAIC depends largely on the dedication of the organization and the stakeholders to commit to the rigorous process.

In the era of information, knowledge is power. Organizations that can effectively manage their knowledge have a strategic advantage over their competitors. As such, methodologies like DMAIC that can streamline and enhance KM processes are invaluable. By transforming their knowledge assets into a source of innovation, efficiency, and enduring success, organizations like TRADOC are not just surviving in this information era but are thriving. By learning from TRADOC's experience with DMAIC and KM, other organizations can follow suit, applying these best practices to their own unique challenges and opportunities, contributing to their own growth and long-term prosperity.

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This TRADOC OCKO publication was written by DeAngelo Lewis in June 2023. Want to learn more? You can respond to this article or access related articles, blogs, media presentations, and more at: <https://www.milsuite.mil/book/groups/tradoc-km>

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### **Notes**

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