

Key Concepts: DMAIC and DMADV



KEY LEARNINGS: KEY CONCEPTS: DMAIC AND DMADV

1. Introduction: Why Do We Need These Frameworks?

- Six Sigma doesn't settle for "good enough"—it aims for near perfection.
- DMAIC and DMADV are structured approaches that help solve problems and build efficient systems.
- These frameworks prevent recurring issues and ensure long-term success instead of quick fixes.

2. What is DMAIC? (For Existing Processes)

DMAIC stands for:

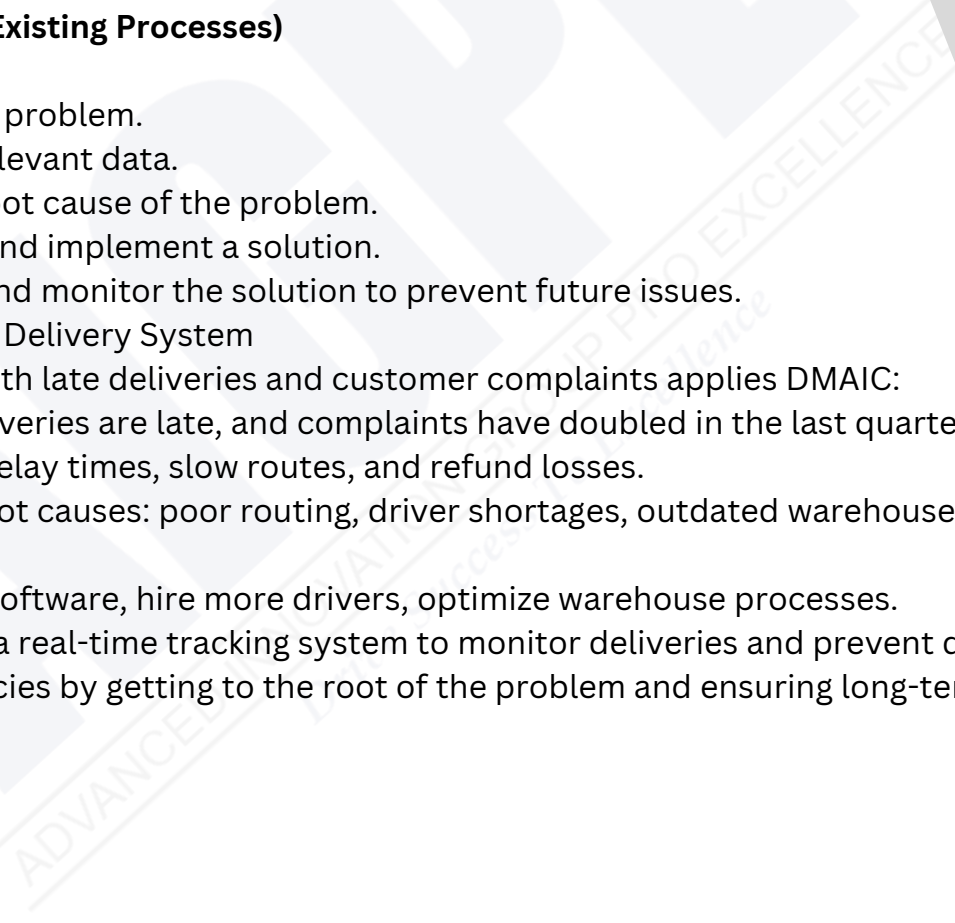
- Define – Identify the problem.
- Measure – Collect relevant data.
- Analyze – Find the root cause of the problem.
- Improve – Develop and implement a solution.
- Control – Maintain and monitor the solution to prevent future issues.

Example: Fixing a Failing Delivery System

A company struggling with late deliveries and customer complaints applies DMAIC:

1. Define – "15% of deliveries are late, and complaints have doubled in the last quarter."
2. Measure – Analyze delay times, slow routes, and refund losses.
3. Analyze – Identify root causes: poor routing, driver shortages, outdated warehouse systems.
4. Improve – Upgrade software, hire more drivers, optimize warehouse processes.
5. Control – Introduce a real-time tracking system to monitor deliveries and prevent delays.

DMAIC solves inefficiencies by getting to the root of the problem and ensuring long-term solutions.



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3. What is DMADV? (For Creating New Processes)

DMADV stands for:

- Define – Establish the need for a new process.
- Measure – Identify customer expectations.
- Analyze – Evaluate potential risks.
- Design – Develop a well-structured solution.
- Verify – Test the solution before full implementation.

Example: Designing a New Airline Ticketing System

An airline wants to launch a smooth, fast, and reliable ticketing system using DMADV:

1. Define – Customers want a user-friendly ticketing experience.
2. Measure – Research what features matter most (speed, security, mobile access).
3. Analyze – Identify potential risks (system crashes, cybersecurity threats).
4. Design – Create a fast, intuitive interface with backup systems.
5. Verify – Test in real-world scenarios to handle millions of transactions smoothly.

DMADV ensures the new process works perfectly before launching to avoid costly failures.

4. DMAIC vs. DMADV: Choosing the Right Tool

- DMAIC repairs existing processes (e.g., fixing slow deliveries, reducing hospital wait times).
- DMADV builds new processes (e.g., designing a new hospital wing, launching a new product).
 - Key distinction: DMAIC = Fix what's broken.
 - DMADV = Build from scratch.

By choosing the right framework, businesses ensure efficiency, customer satisfaction, and long-term success.

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