What is DMADV?

DEFINE | MEASURE | ANALYZE | DESIGN | VERIFY

DMADV
a framework focused primarily on developing a new service, product or process as opposed to improving an existing one

Useful when implementing **new strategies and initiatives** because of its basis in data, early identification of success, and thorough analysis

DMADV is most applicable to examining and improving the customer relations side of the company

Components of DMADV

D	DEFINE	Define the project goals and customer (internal and external) deliverables
M	MEASURE	Measure and determine customer needs and specifications
A	ANALYZE	Analyze the process options to meet the customer needs
D	DESIGN	Detailed design of the process to meet the customer needs
V	VERIFY	Verify the design performance and ability to meet customer needs

DEFINE: Clarify project goals and customer deliverables

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- ☐ **Identify project purpose, process and/or service**
- ☐ **Identify and set realistic and measurable goals**
  - ☐ **Organization**
  - ☐ **Stakeholder(s)**
- ☐ **Create and achievable schedule and guidelines for review**
- ☐ **Identify and assess potential risk and brainstorm possible mitigations**

MEASURE: Determine customer needs and specifications

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- ☐ **Define requirements and market segments**
- ☐ **Translate Voice of the Customer to Critical to Quality Requirements**
- ☐ **Identify critical design parameters**
- ☐ **Design scorecards with appropriate KPI's**
- ☐ **Assess the production process capability**
- ☐ **Assess the product performance**

ANALYZE: Align to customer goals

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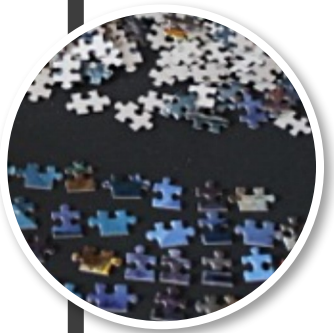
- ☐ **Develop design alternatives to test and verify**
- ☐ **Identify the optimal combination of requirements – value within constraints**
- ☐ **Develop conceptual designs**
- ☐ **Evaluate and select the best components**
- ☐ **Develop the best possible design to put forward**



DESIGN: Streamline goals to best meet customer needs

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- ☐ **Prioritize elements of the design**
- ☐ **Develop a detailed and high-level design for the selected alternative**
- ☐ **Develop a detailed prototype model**
- ☐ **Identify possible errors and make necessary modifications**

VERIFY: Check that customer specifications are met

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- ☐ Validate acceptability to all stakeholders
- ☐ Run a pilot to confirm capability and quality
- ☐ Complete pre-pilot and pilot production runs
- ☐ Confirm expectations
- ☐ Expand deployment
- ☐ Document lessons learned
- ☐ Develop plan to transition to a routine operation

Summarizing DMADV

WHEN TO USE

- When a product or process is not in existence and one needs to be developed
- When the existing product or process exists and has been optimized (using either DMAIC or not) and still does not meet the level of customer specification or capability

DMADV

TYPICAL TOOLS TO USE

- 5 Why
- Business Process Map
- Cause and Effect Diagram
- Control Charts
- Cost-Benefit Analysis
- CTQ Tree
- DOE (Design of Experiments)
- Pareto Analysis
- ANOVA
- Gauge R&R
- SIPOC Analysis
- Regression Analysis
- Root Cause Analysis
- Value Stream Map