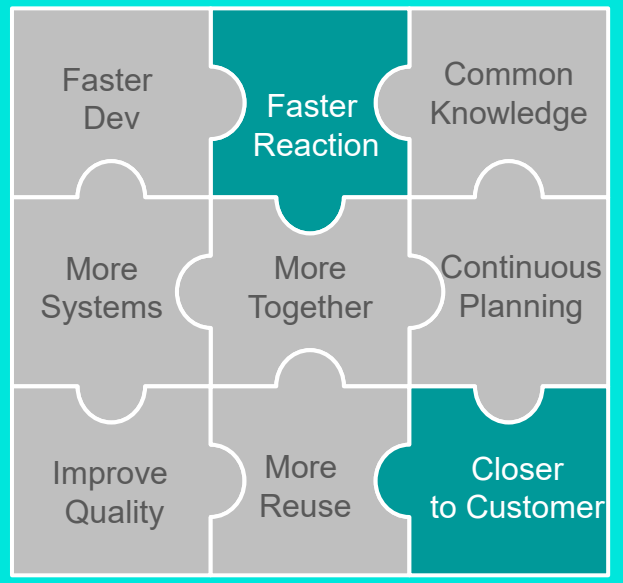


MVP (Minimum Viable Product)

What's part of it, what not? Challenges for Hardware development

SIEMENS

Definition

An **MVP (Minimum Viable Product)**
is the simplest version of a product that could be released to users. It includes just enough features to satisfy early adopters and provide feedback for future development. The goal of an MVP is to quickly validate a product idea with minimal resources and effort.

My extension for hardware products:
In the hardware context, it must be particularly emphasized that the MVP (Minimum Viable Product) is already defined in such a way that **it can cope with functional enhancements and increasing demand without requiring significant changes to its core design or architecture.**

Requirements for the MVP version

All decisions regarding requirements (of all versions) that cannot be changed in later versions must be part of the MVP version.

Goal:

The initial design should allow for easy modifications and enhancements. This means that as you identify new features or improvements, you can integrate them without a complete redesign.

MVP (Minimum Viable Product) <-> MMP (Minimum Marketable Product)

Minimum Viable Product (MVP)

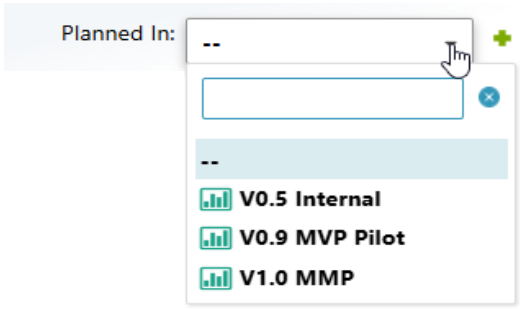
- **Purpose:** To validate a product idea with the least amount of effort and resources.
- **Features:** Includes only the core functionalities necessary to meet the needs of early adopters and gather feedback.
- **Goal:** To test assumptions, learn from user feedback, and iterate quickly.
- **Focus:** Learning and validation.

Minimum Marketable Product (MMP)

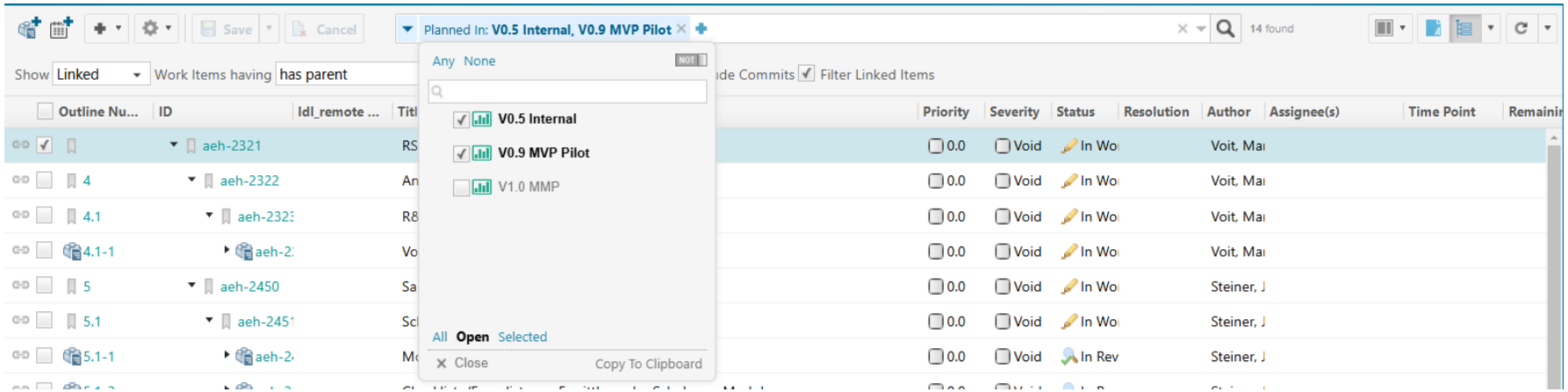
- **Purpose:** To release a product that is ready for the market and can be sold to a broader audience.
- **Features:** Includes all the essential features that make the product marketable and provide value to a larger user base.
- **Goal:** To generate revenue and establish a market presence.
- **Focus:** Market readiness and value delivery.

Practice

I specify for each requirement or features in which version, it is required



So, I simply can filter for requirement or features related to a specific version



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What must an MVP include

1. **Core Functionality**: The MVP should solve the primary problem or fulfill the main need of the target users. This is the essential feature that defines the product.

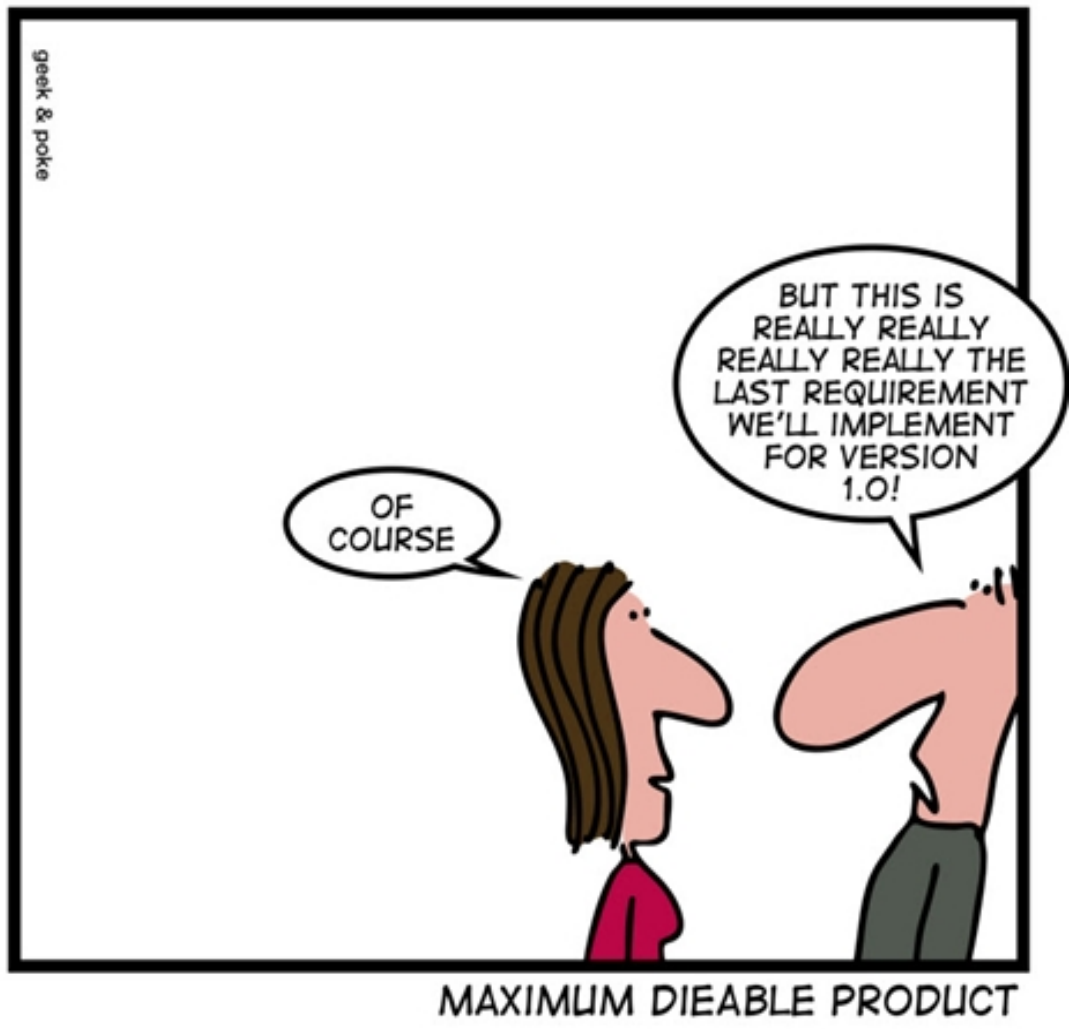
… and a lot of nonfunctional requirements

2. **Basic Design and Usability**: The product should be functional and user-friendly, even if it's not fully polished. This includes ensuring that the hardware is safe to use.
3. **Prototyping and Manufacturing Feasibility**: The MVP should be designed in a way that it can be easily prototyped and manufactured. This often involves using readily available materials and components.
4. **Durability and Reliability**: The hardware should be durable enough to withstand typical use and provide a reliable performance.
5. **Cost Efficiency**: The MVP should be cost-effective to produce, allowing for small-scale production runs to test the market without significant financial risk.
6. **Feedback Mechanism**: Include a way for users to provide feedback on the hardware product. This could be through surveys, user testing sessions, or direct communication.
7. **Compliance and Safety Standards**: Ensure that the MVP adheres to relevant safety and compliance standards, which can be more stringent for hardware products.
8. **Scalability**: Design the MVP with future scalability in mind, allowing for improvements and additional features.

What must an MVP include for Hardware products

1. **Design Flexibility**: The initial design should allow for easy modifications and enhancements. This means that as you gather feedback and identify new features or improvements, you can integrate them without a complete redesign.
2. **Manufacturing Scalability**: The MVP should be designed with manufacturing processes that can be scaled up. This includes using materials and components that are readily available and ensuring that the production process can be ramped up to meet higher demand.
3. **Cost Efficiency**: As production scales, the cost per unit should ideally decrease. This involves optimizing the design for mass production and finding cost-effective suppliers.
4. **Supply Chain Management**: Ensure that the supply chain can handle increased production volumes. This includes having reliable suppliers and logistics in place to support larger production runs.
5. **Compliance and Standards**: As you scale, ensure that the product continues to meet all relevant safety and compliance standards, which may vary by region and market.
6. **Managing older Versions or Variants:** Decide, how you want to handle requests for older versions / replacements or variants and keep the consequences for your production, supply chain, quality control, documentation, customer support and compatibility in mind.

It's not an easy decision, but less features means earlier market success



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Definition Quiz

Was ist das Hauptziel der MVP-Version?

- ❑ A Damit ich schon erste Umsätze erzielen kann
- ❑ B Damit ich das Produkt auf einer Messe ausstellen kann
- ❑ C Damit die Fertigung ihre Maschinen bestellen oder anpassen kann
- ❑ D Damit ich die Produktidee mit möglichst geringem Aufwand an Mitteln und Ressourcen validieren kann

Mehrere richtige Antworten möglich

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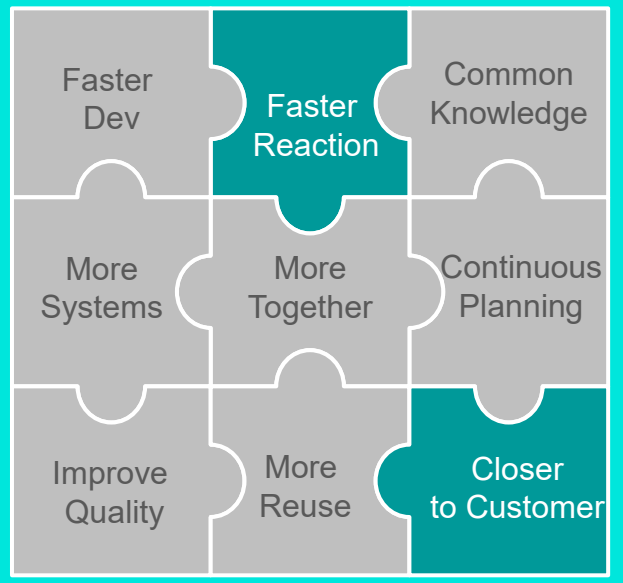

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Q&A