# SUSTAINABILITY IMPULSE

From Chaos to Clarity –
Mastering Complexity with
Feature-Based Requirements
Engineering

Oliver Fels
SwissEd 2025

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## Enemy of the state: Complexity

The number one evil

More requirements
More dependencies
More complexity
More Chaos

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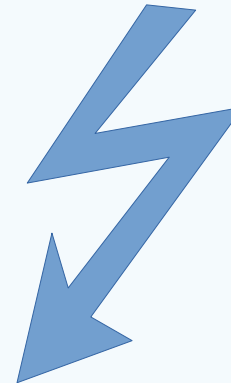
## Yet another complexity driver: History
From euphory to chaos



Dependencies

Requirements

Products & Variants

eline for 10 years
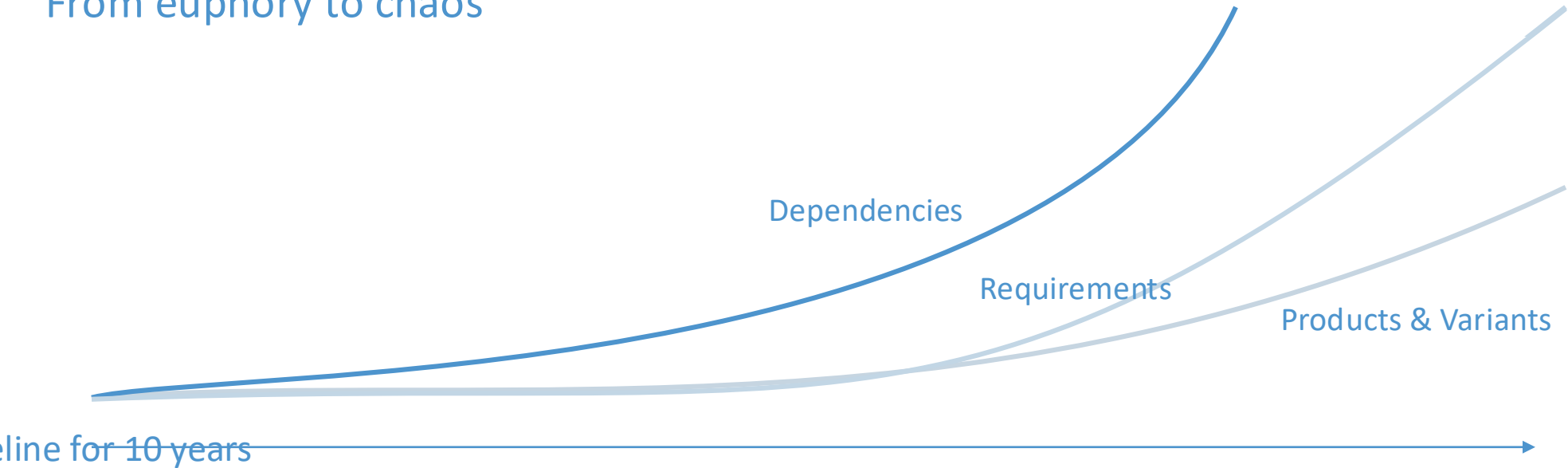
## Typical real word example

Company X

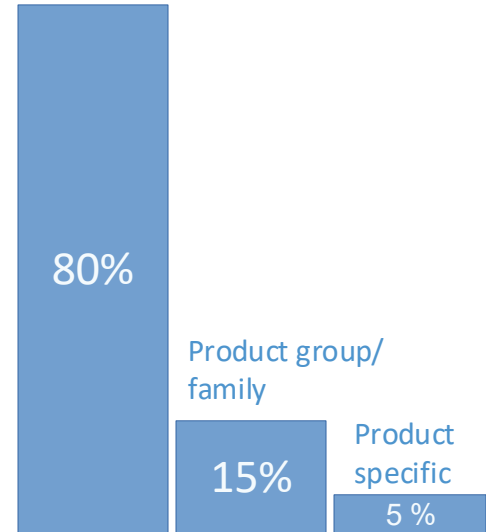In business: 25 years

Product lines: 4

Product families per group: 5

**Number of products in SAP: 12000**

**Number of requirements: Unknown**

**Number of requirements dependencies: too many**

Global requirements
Norms, corporate, market, etc.

80%

Product group/ family

15%

Product specific

5 %

**Typical distribution of requirements**

## Typical shortcomings

~~ReUse~~

~~Modularity~~

~~Synergy usage~~

~~Structure~~

~~Dependency Management~~

~~Common Methodology~~

## Typical results

Misunderstandings

Redundant work

Quality issues

Lack of oversight

Knowledge drain

Many more

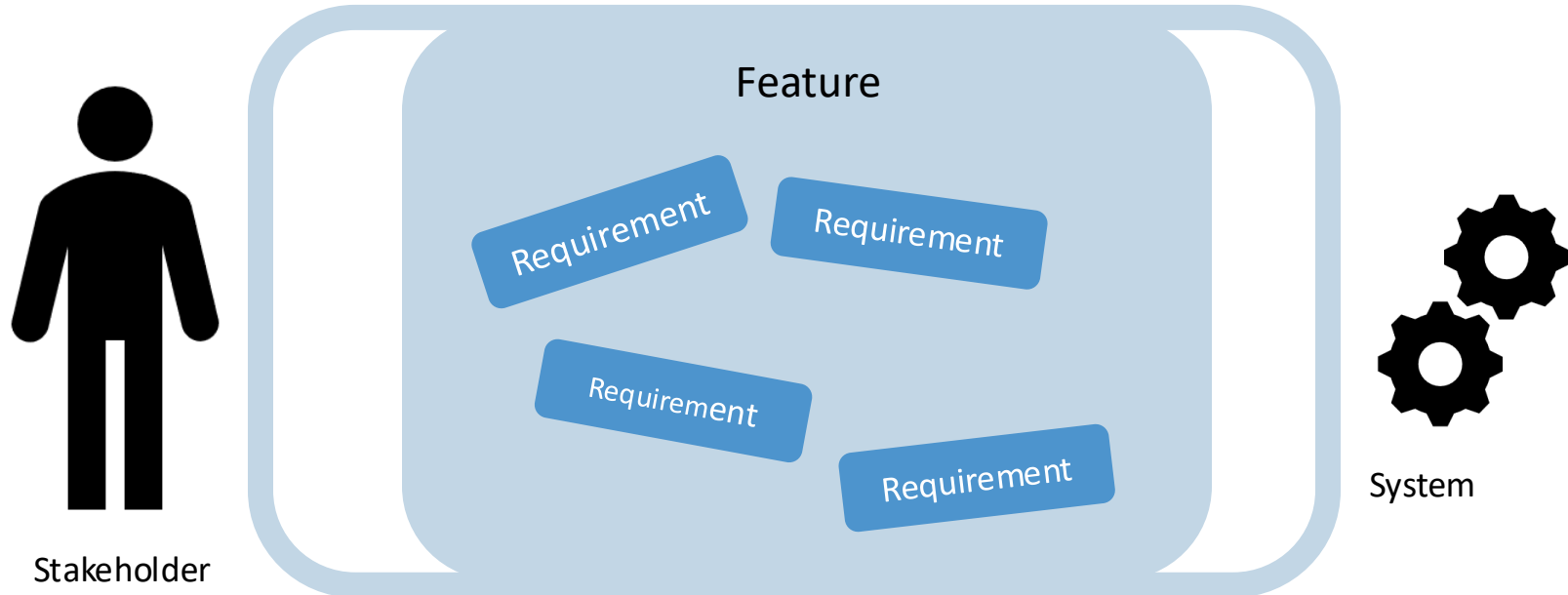## The role of requirements & stakeholder management

- First line of defense against costly mistakes

- Communication base

- Portfolio enabler and organizer

- Quality Enabler

What it needs: A consistent methodology encouraging reUse, modularity and structure

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## Introducing Feature Based Requirements Engineering (FBRE)
The feature – an encapsulating entity

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## Introducing Feature Based Requirements Engineering (FBRE)
Examples

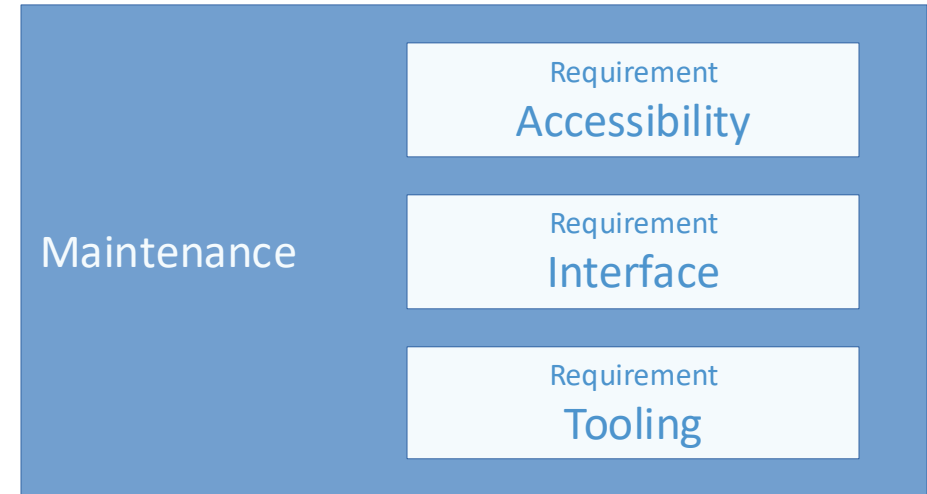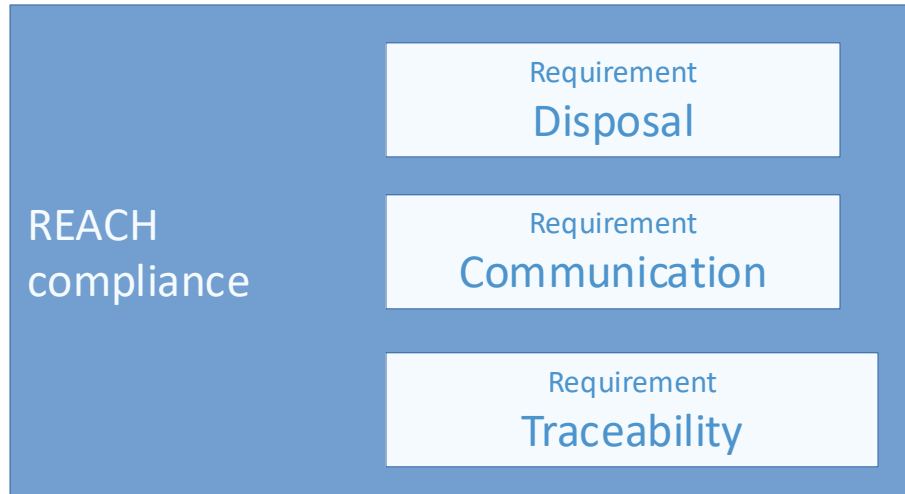| Motor control | | Motor control Variant |
|---|---|---|
| | **Requirement** Torque | **Requirement** Torque 2 |
| | **Requirement** Power consumption | |
| | **Requirement** Failure mgmt. | |
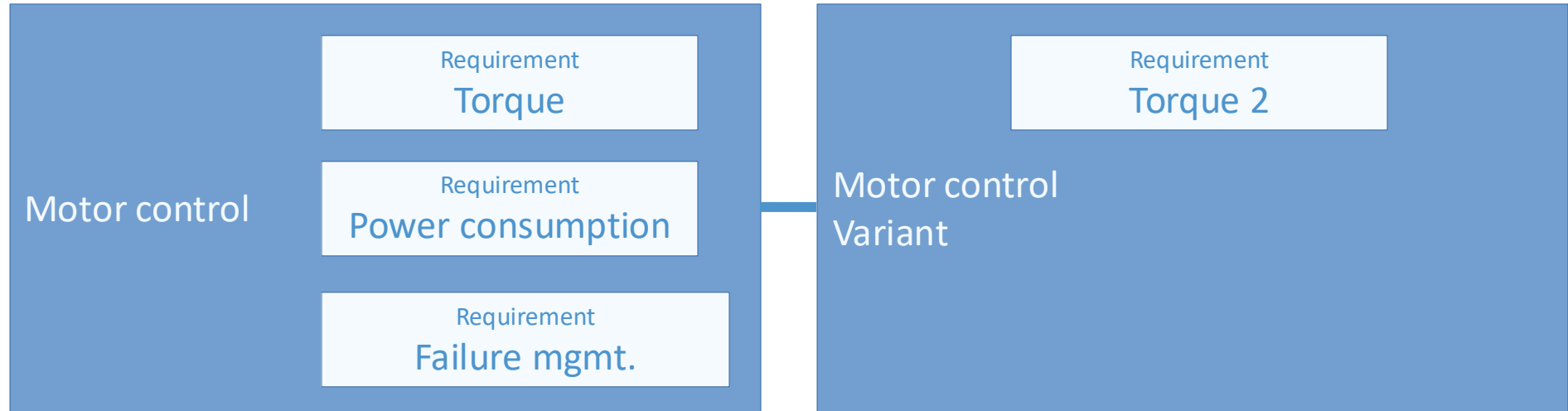
Feature encapsulates every spec. regarding motor control. Variants inherit from the parent.
Result: Corporate wide, there is only one definition of "motor control" to be referenced.

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## Introducing Feature Based Requirements Engineering (FBRE)
Examples

| REACH compliance | Requirement **Disposal** | | Maintenance | Requirement **Accessibility** |
|---|---|---|---|---|
| | Requirement **Communication** | | | Requirement **Interface** |
| | Requirement **Traceability** | | | Requirement **Tooling** |

Features encapsulate knowledge in a unique and modular way be reUsed.

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## Introducing Feature Based Requirements Engineering (FBRE)
### Assigning to components/products - Before
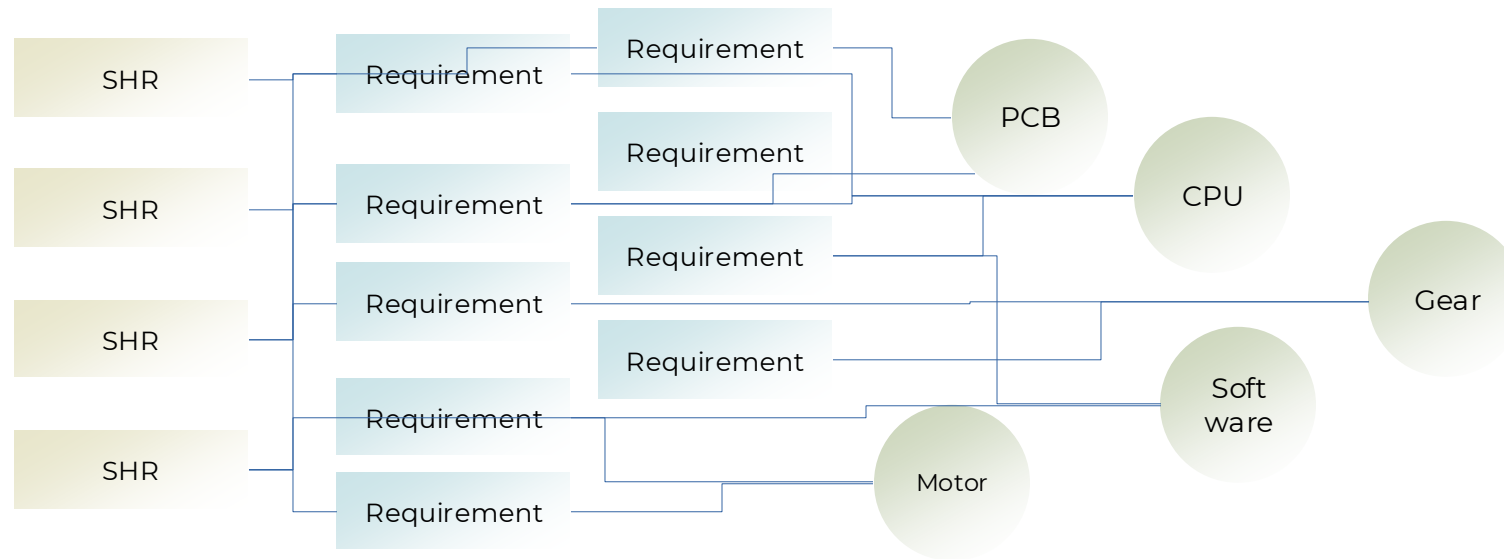


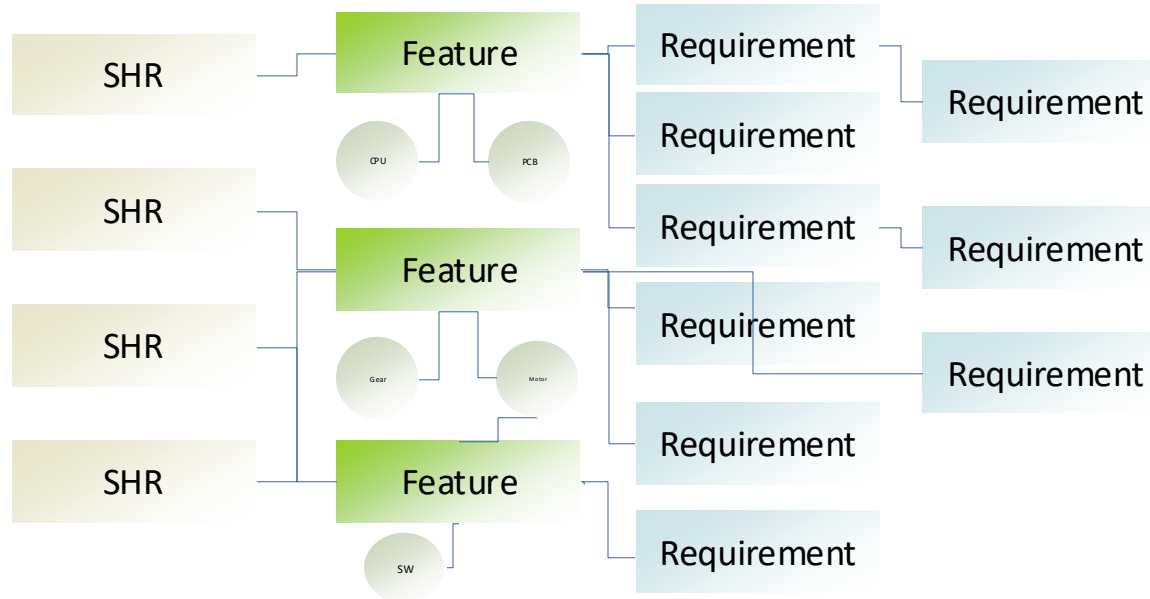Requirements have m:n relationships in a way which increases the dependency complexity

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## Introducing Feature Based Requirements Engineering (FBRE)
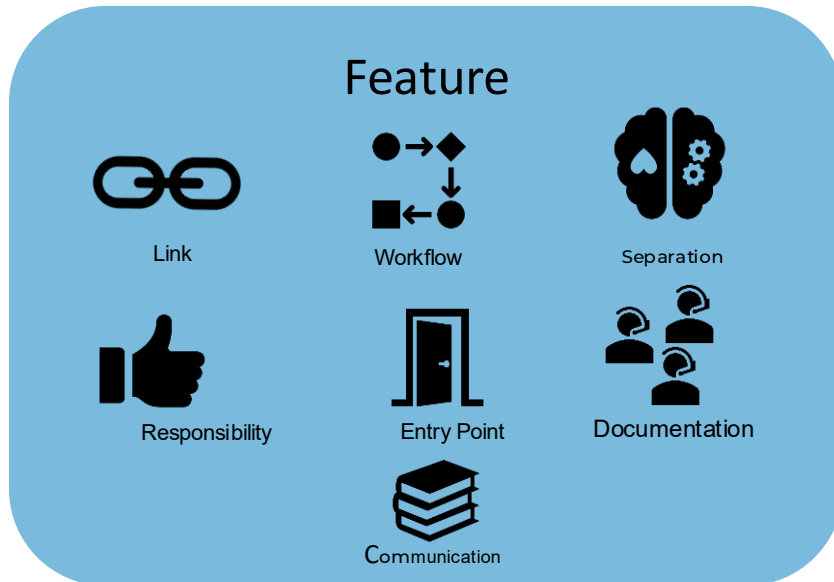## Assigning to components/products - After



Linking components and products to features greatly reduces complexity.

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## Benefits of a game changer



Feature

Link

Workflow

Separation

Responsibility

Entry Point

Documentation

Communication

- Glues together stakeholder and solution space.
- Associating features and epics improves the workflow
- Enables feature responsibility and commitment
- Is an entry point for documentation, impact % gap analyis
- Enables reUse and modularity
- Provides a common ground to talk about
- Streamlines communication

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**Thank you for your attention !**

And of course you have questions. So please: Ask.

More information?
Get in touch: https://www.sustainabilityimpulse.com