

Green Configuration and Regulatory Compliance

Henrik Hulgaard, VP of Product Management

We support the world's largest manufacturers

— Model-based approach to solving the world's most complex configuration challenges!



ASML



HEIDELBERG



ABB

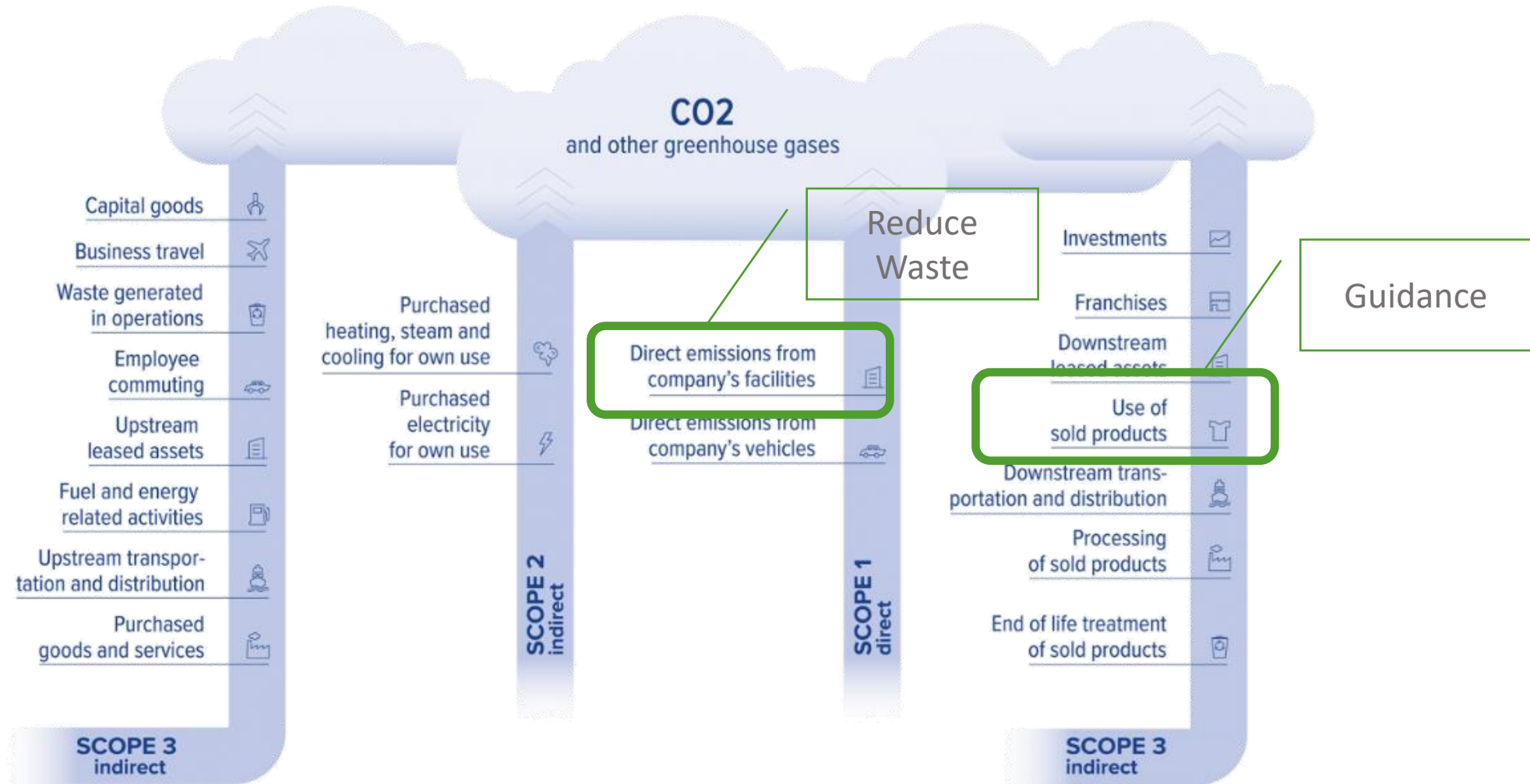
The image features a central, green-tinted photograph of the Earth from space. Overlaid on the Earth is a large, circular graphic consisting of three thick, dark green arrows that form a continuous loop, symbolizing a cycle or sustainability. The background is a soft, out-of-focus green. A semi-transparent dark green rectangular box is positioned horizontally across the middle of the image, containing white text.

How can a configuration solution make
manufacturing companies more sustainable?

Where can configurators play a key role in reducing emissions?

The Greenhouse Gas Protocol

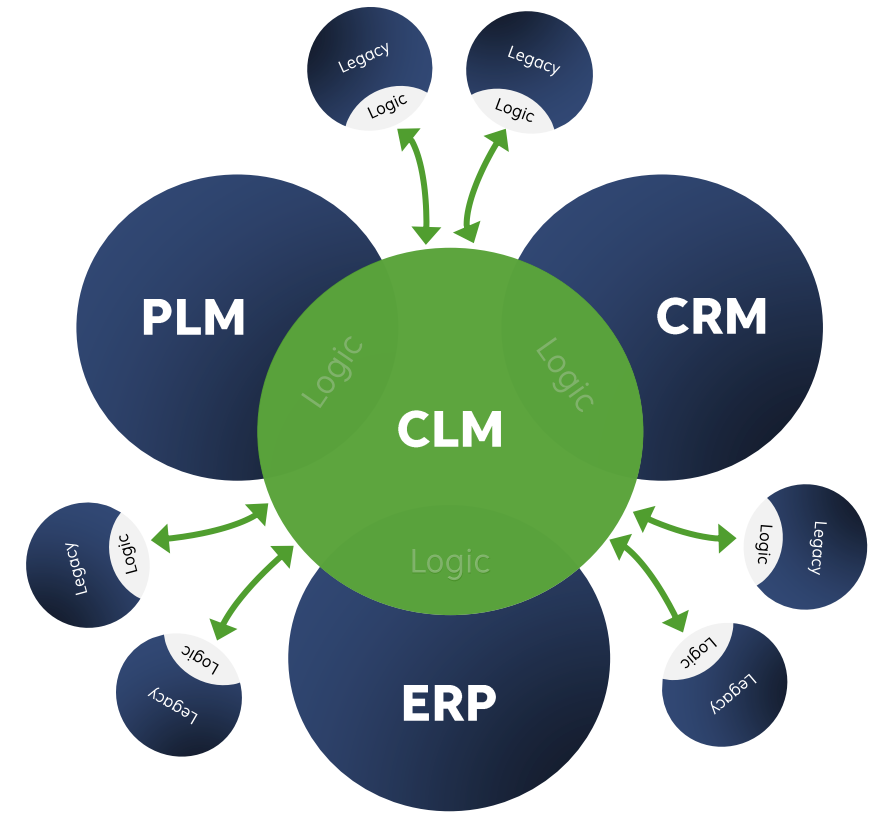
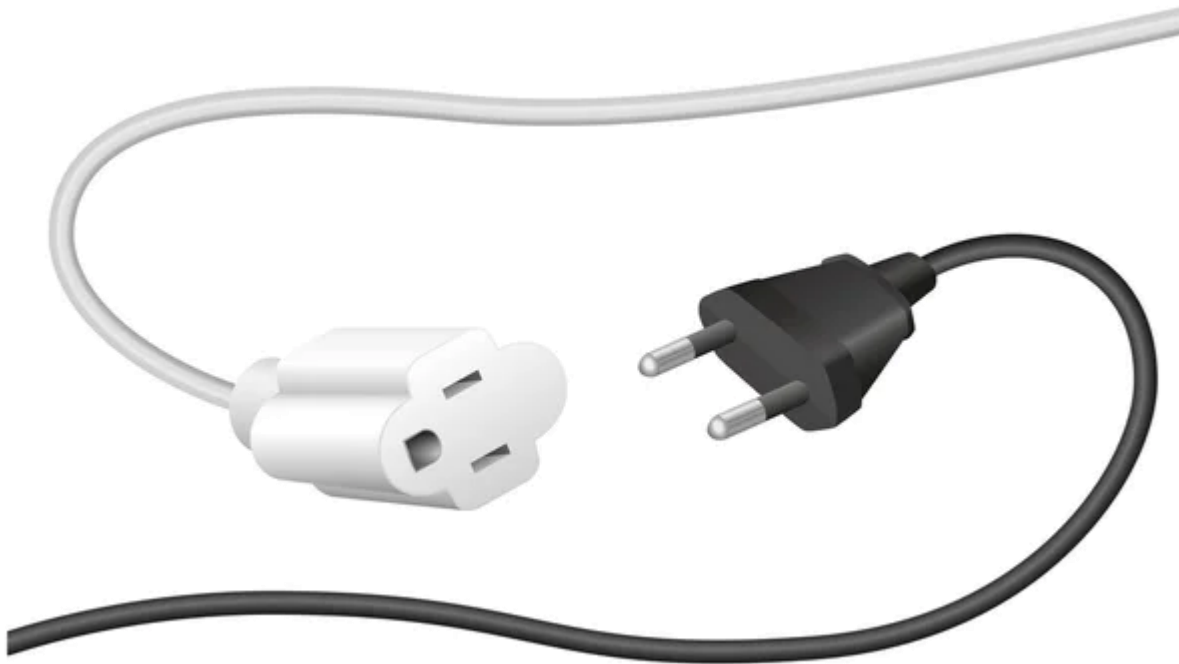
A Corporate Accounting and Reporting Standard



Reduce Waste

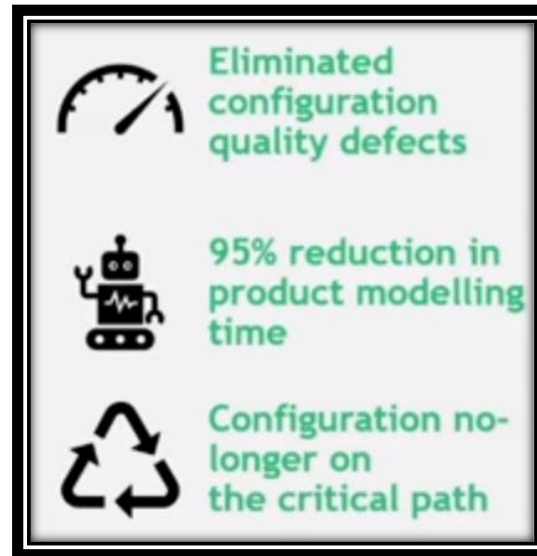
Reduce Waste

- Alignment between engineering rules, commercial rules and manufacturing reduce waste due to misbuilds



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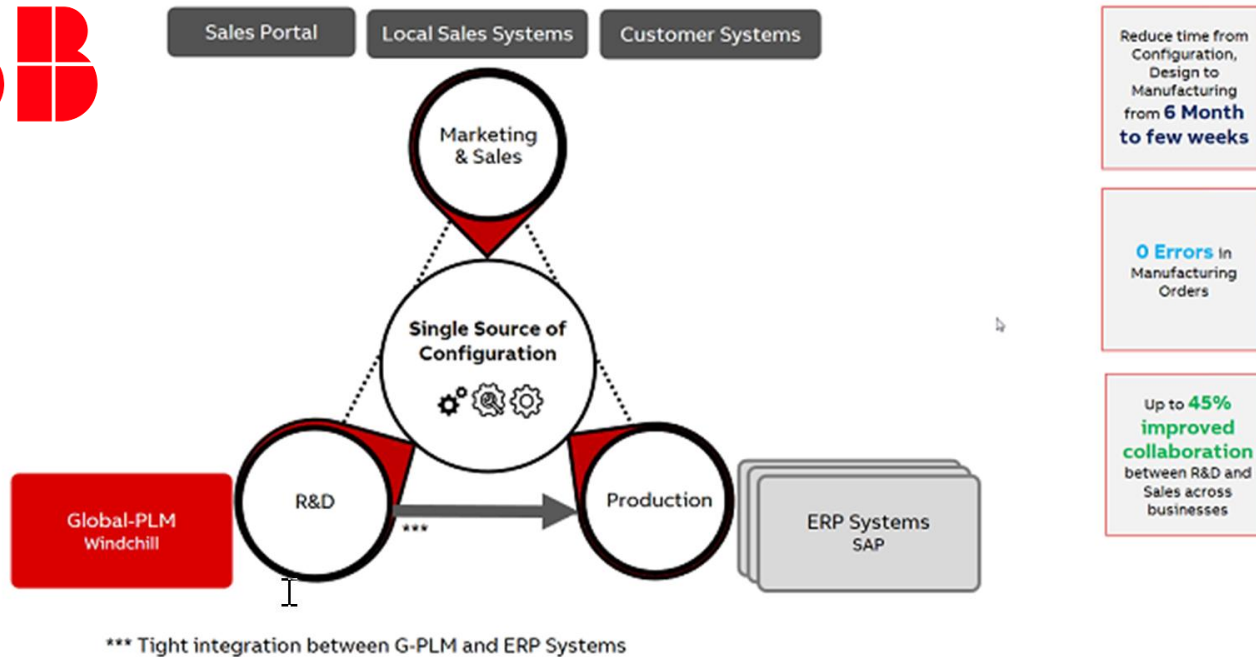


Alex Crawford, Director of Engineering Operations,
[CLM Summit 2021](#)



Reduce Waste

- Alignment between engineering rules, commercial rules and manufacturing reduce waste due to misbuilds



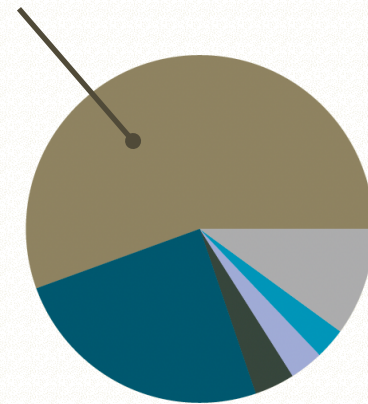
Guidance

Scope 3 Emission

- **Scope 3**: emissions in the company's downstream value chain
- For manufacturing companies, more than half of scope 3 emission come from use of **sold products**, often accounting for several times the impact of its scope 1 and 2 emissions.

Percentage of scope 3 emissions

Use of sold products



Electrical Equipment &
Machinery

From "Value Change in the Value Chain: BEST PRACTICES IN SCOPE 3 GREENHOUSE GAS MANAGEMENT"

Optimal Product Selection

- **Example:** finding the pump that has the lowest power consumption for a given set of requirements (scope 3), will over time out-weight the energy used to manufacture the pump (scope 1 and 2)

All Results

Filter list

RESET

Discontinued Products

☐ False (72)

Application area

☐ HVAC OEM (15)

☐ Municipal water supply (1)

☐ Municipal wastewater (1)

☐ Industrial utilities (1)

☐ Industrial processes (1)

[Show more](#)

Application

☐ OEM Heat pump (7)

☐ OEM Boiler (5)

☐ Domestic heating (5)


☐ OEM Space heating (3)

☐ OEM Solar thermal (3)

[Show all](#)


PRODUCT

UPM3 OEM
UPM3 is a boiler integrated circulator externally controlled via a signal cable entry.




VARIANT

UPM3 - 59C90100




VARIANT

UPM3 - 59C90102




VARIANT

UPM3 - 59C90103




VARIANT

UPM3 - 59C90104



VARIANT

UPM3 - 59C90300



Configit®

11

Optimal Configuration Reduces Scope 3 Emissions

- A configurator supports an **end-to-end approach**, linking engineering parameters with customer requirements
- Ensures alignment through manufacturing and deployment
- **For example:** the configurator determines the software parameters that needs to be set when deploying



UPM3 HYBRID

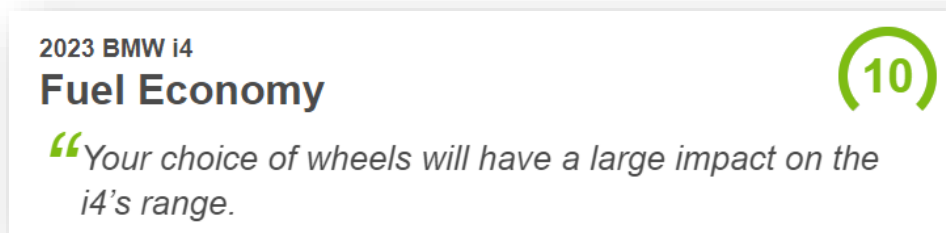
By combining external controlling through signal entry with internal self-controlling, the UPM3 HYBRID covers all your circulator needs in one product, providing you with access to a full range of settings.

SETTING VIEW

PROP. PRESS.: CURVE 1		
PROP. PRESS.: CURVE 2		
PROP. PRESS.: CURVE 3		
PROP. PRESS.: AUTOADAPT		
CONST. PRESS.: CURVE 1		
CONST. PRESS.: CURVE 2		
CONST. PRESS.: CURVE 3		
CONST. PRESS.: AUTOADAPT		
CONST. CURVE: CURVE 1		
CONST. CURVE: CURVE 2		
CONST. CURVE: CURVE 3		
CONST. CURVE: CURVE 4		
PWM PROFILEA: 4M		
PWM PROFILEA: 5M		
PWM PROFILEA: 6M		
PWM PROFILEA: 7M		
PWM C PROFILE: 4M		
PWM C PROFILE: 5M		
PWM C PROFILE: 6M		
PWM C PROFILE: 7M		

How is it done in practice?

- **Add parameters** about sustainability to the configuration models, linked to the technical parameters through rules
- Use the configurator to **guide** the user to find the best trade-off between **price**, **performance** and **sustainability** dimensions



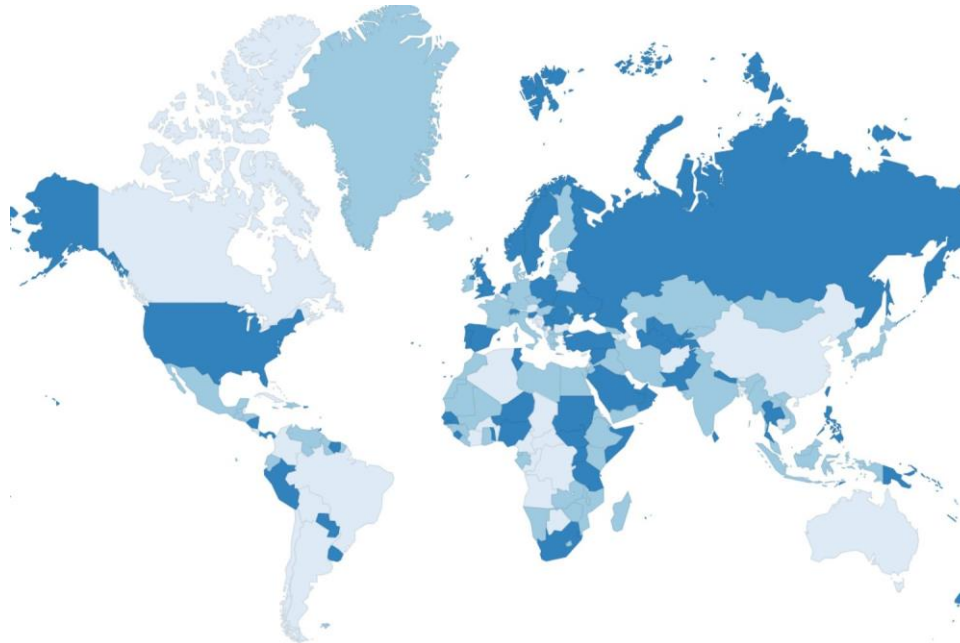
Regulatory Compliance

Managing Rules across Markets

Engineering rules control technical constraints of the product



Market rules are used to control the commercial presentation of the product



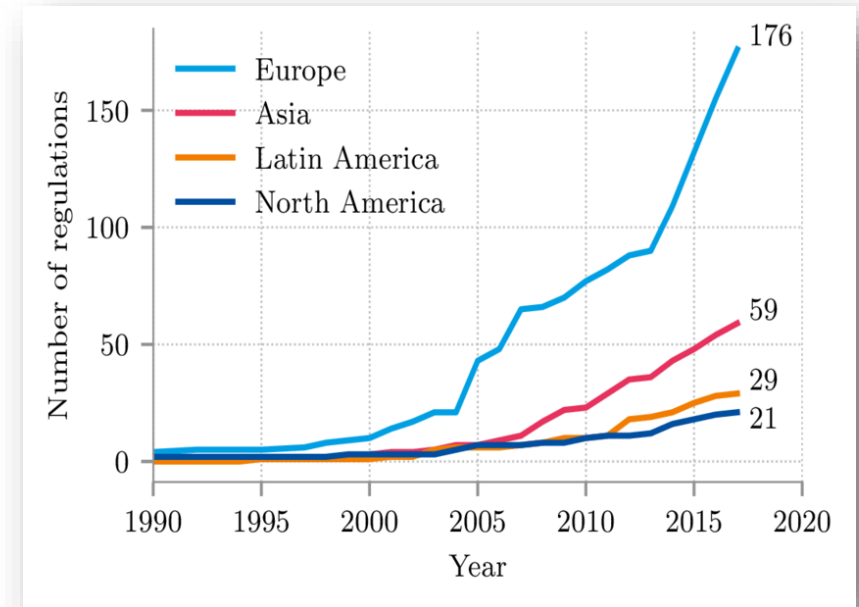
Increase in Customization and Regulatory Compliance

- Even the **simplest product exists in multiple variants** for example, due to different market requirements, both commercially and from regulations



Increase in Regulatory Compliance

- Manufacturing companies see an **increase in regulatory compliance rules**, in particular within environmental rules and sustainability.
- Examples of recent regulation:
 - **EU Packaging and Packaging Waste Regulation** (PPWR) has the objective that all packaging placed on the EU market must be recyclable by 2030
 - The **EU Digital Product Passport** (DPP) is digital sustainability data of the lifecycle of physical products, gradually being rolled out until 2030



9x

more regulations in EU since
2004

All

Manufacturing companies in
EU will have to have a solution
to the DPP by 2030

96%

of all companies in EU will be
affected by the Corporate
Sustainability Reporting
Directive (CSRD)

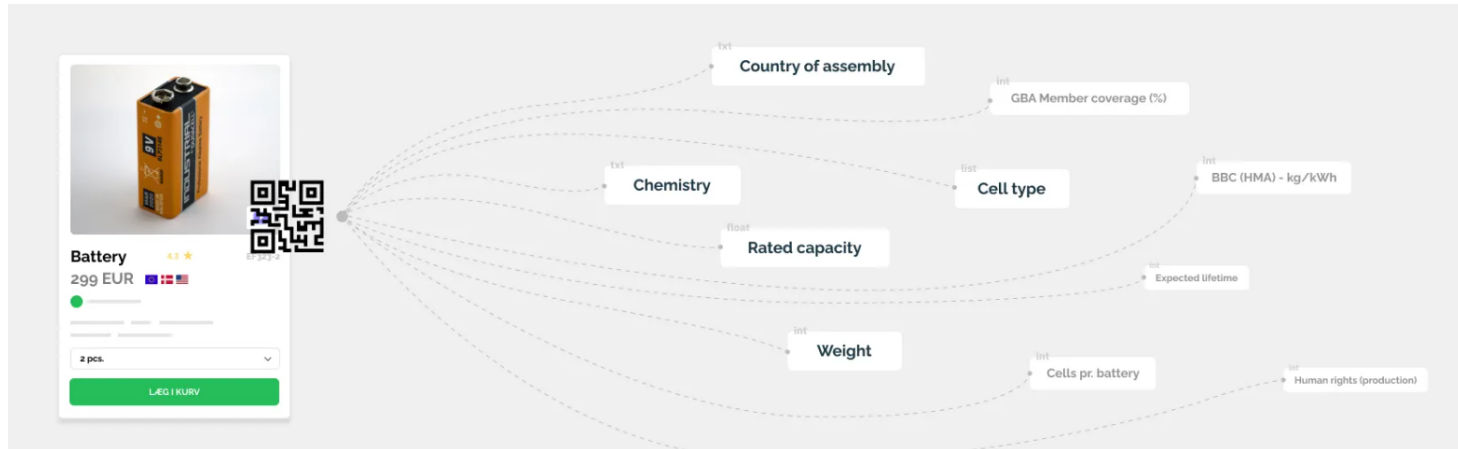
An Example: Food Packaging

- Consider deciding on the **packaging** of bananas.
- **Logistical constraints:** constraints related to the transport of the products. For example, "rigid" types of packaging allows products to be stacked.
- **Cost constrains:** Different packaging has different cost and **tax** elements. For example, in Sweden the packaging is taxed depending on the degree to which the products meet the requirements for **environmentally sound packaging** (see e.g. <https://npa.se/en/producer-responsibility/packaging-fees>)
- **Regulatory constraints:** rules regarding **food safety** wrt. packaging varies across markets (see e.g. https://eur-lex.europa.eu/summary/chapter/food_safety.html)

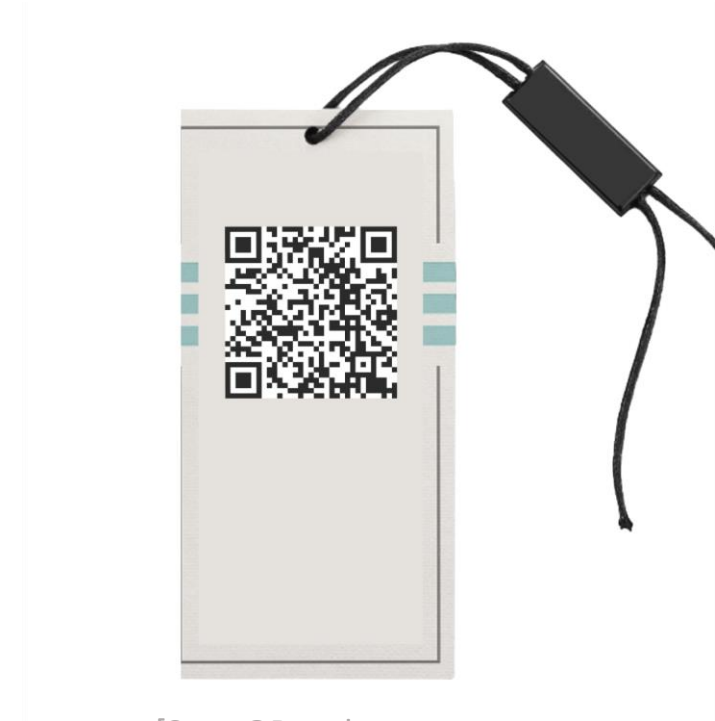


Digital Passport for Configurable Products

- The Digital Product Passport (DPP) is used to **collect and share product data** throughout its entire lifecycle used to illustrate a product's sustainability, environmental and recyclability attributes.



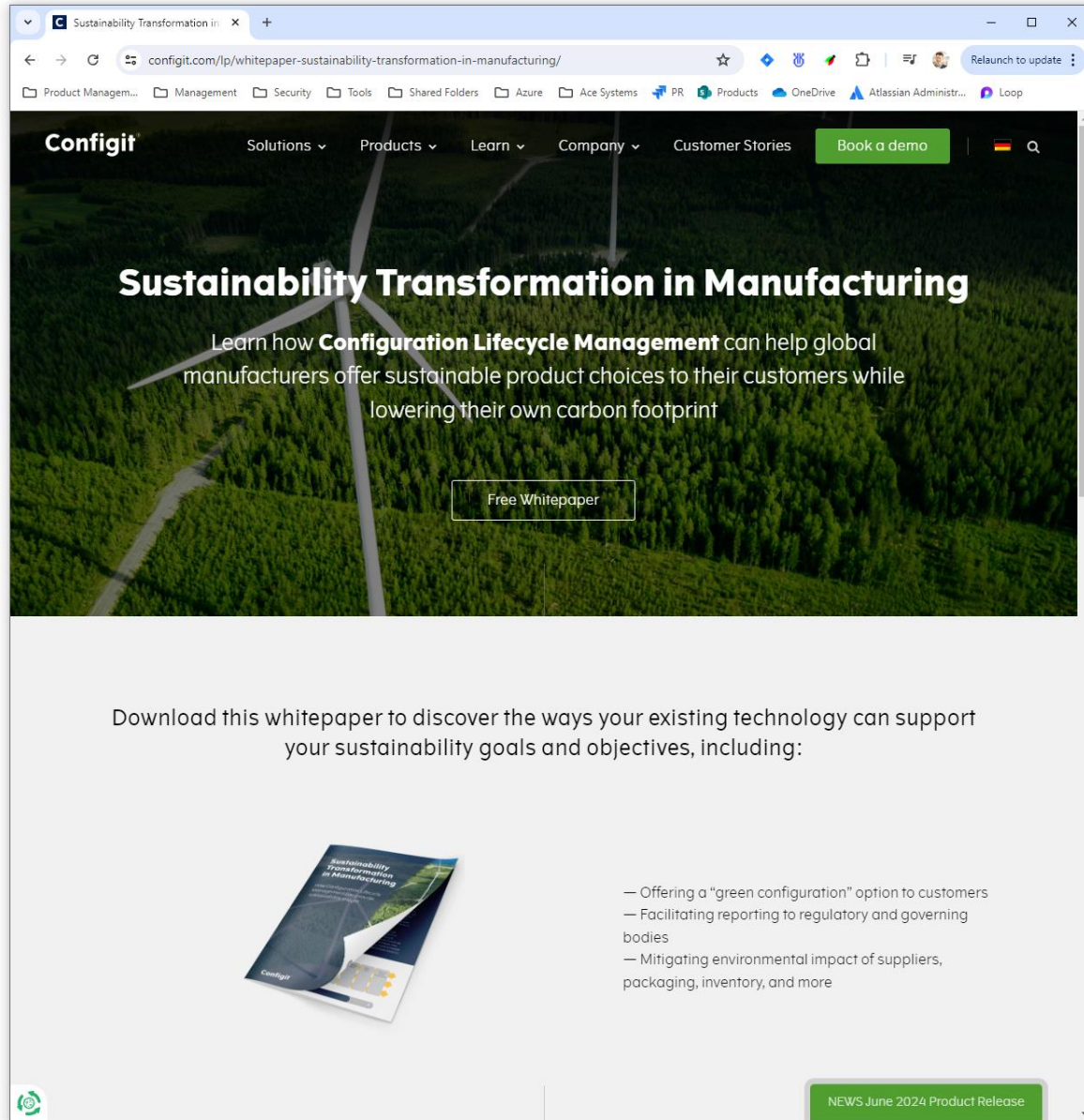
- For **configurable products**, each instance will have its own passport, requiring manufacturers to track individual configurations through their life-cycle.



[Scan QR code to see example product passport]

Learn More

- Go to configit.com
- [Whitepaper](#)
- [Blog](#)



The screenshot shows a web browser window displaying the Configit website. The URL bar shows configit.com/lp/whitepaper-sustainability-transformation-in-manufacturing/. The website header includes the Configit logo and navigation links: Solutions, Products, Learn, Company, and Customer Stories. A green button labeled "Book a demo" is visible. The main content area features a large image of a forest with a winding path, overlaid with the text "Sustainability Transformation in Manufacturing". Below this, a sub-headline reads: "Learn how **Configuration Lifecycle Management** can help global manufacturers offer sustainable product choices to their customers while lowering their own carbon footprint". A button labeled "Free Whitepaper" is centered below the text. Further down, a section titled "Download this whitepaper to discover the ways your existing technology can support your sustainability goals and objectives, including:" is followed by a list of bullet points: "Offering a 'green configuration' option to customers", "Facilitating reporting to regulatory and governing bodies", and "Mitigating environmental impact of suppliers, packaging, inventory, and more". To the left of the text is an image of the whitepaper cover. At the bottom of the page, there is a footer with the Configit logo on the left and a green button labeled "NEWS June 2024 Product Release" on the right.

Configit® Solutions Products Learn Company Customer Stories Book a demo

Sustainability Transformation in Manufacturing

Learn how **Configuration Lifecycle Management** can help global manufacturers offer sustainable product choices to their customers while lowering their own carbon footprint

Free Whitepaper

Download this whitepaper to discover the ways your existing technology can support your sustainability goals and objectives, including:

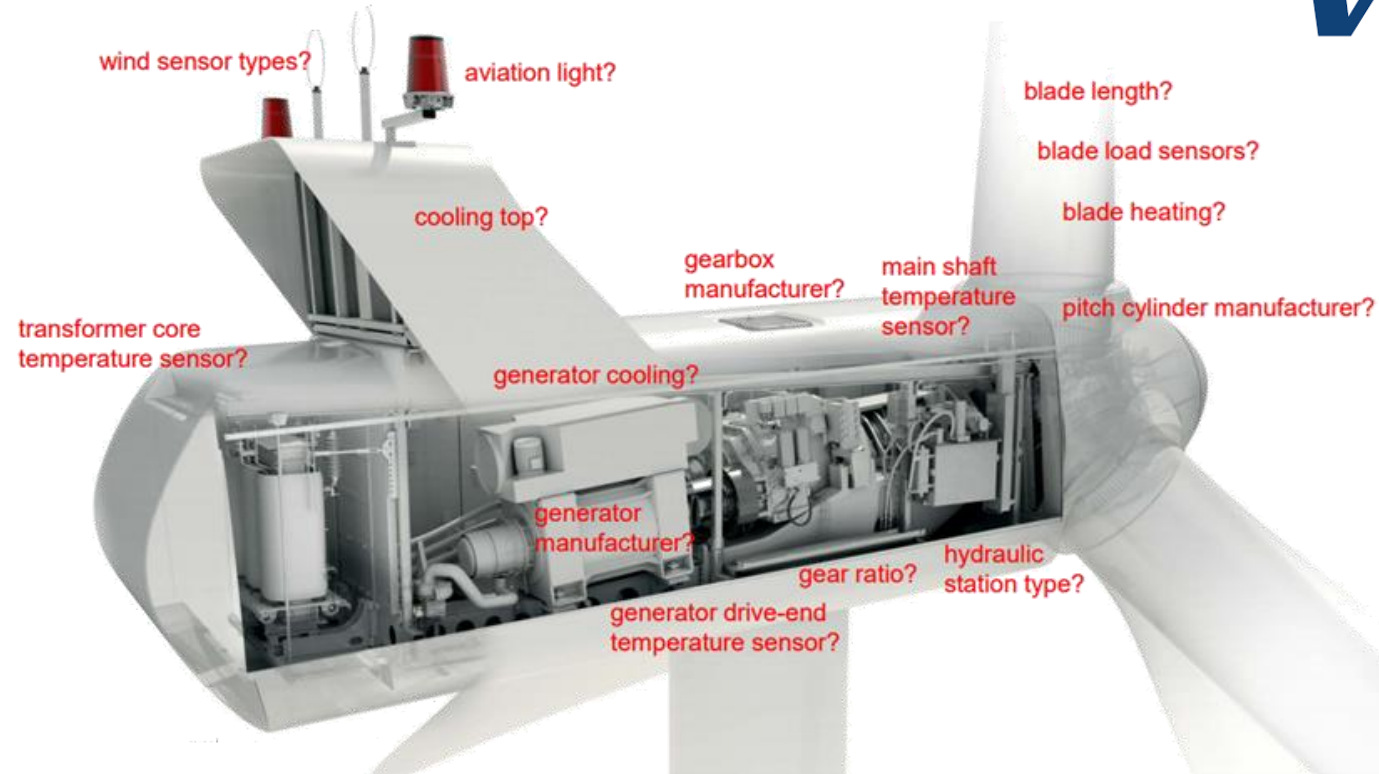
- Offering a "green configuration" option to customers
- Facilitating reporting to regulatory and governing bodies
- Mitigating environmental impact of suppliers, packaging, inventory, and more

NEWS June 2024 Product Release

Misc Slides

Software Parameters: Vestas Wind Turbines

Vestas



50.000+ software parameters
pr. wind turbine

Challenges in Manufacturing are Speeding up the Requirement for Digital Transformation



Complexity



Supply Chain Disruption



Customization



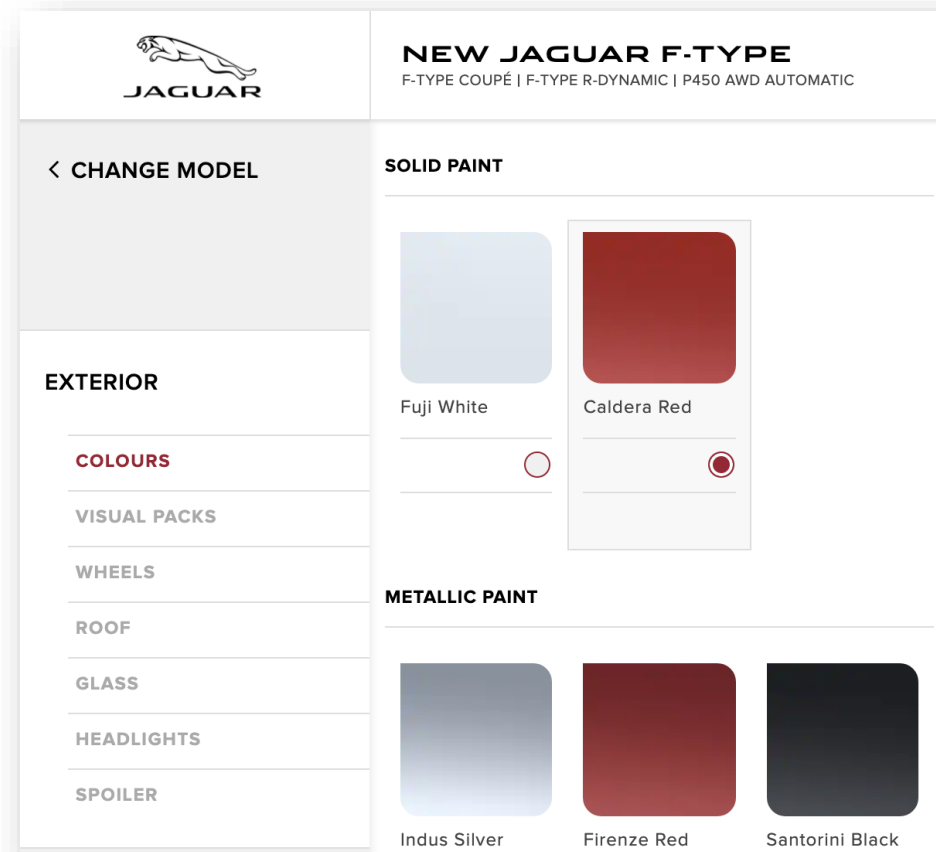
Green Configuration



3D-Real Time

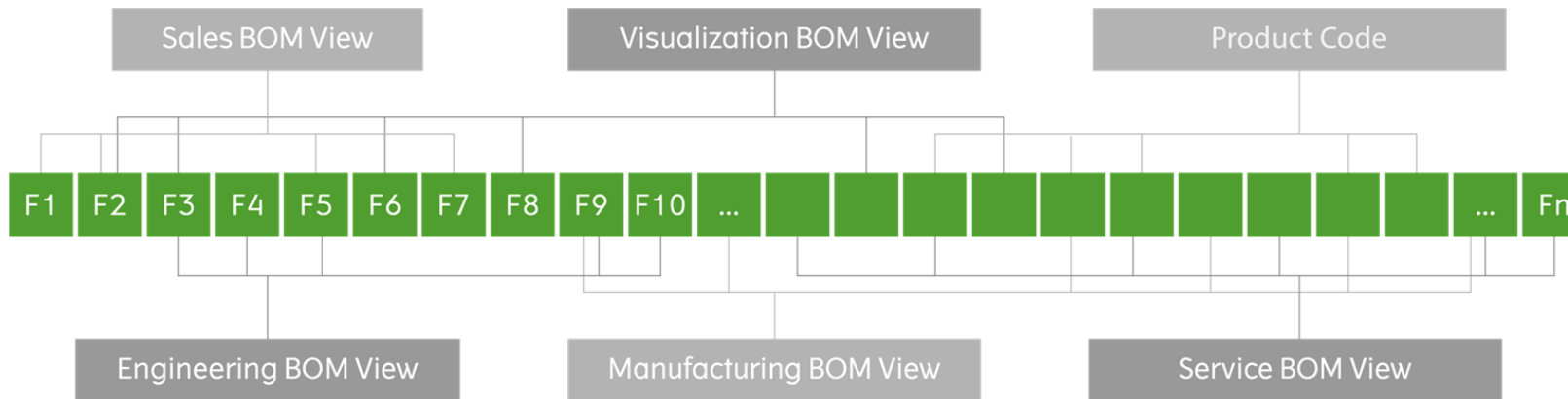
Features and Families

- **Feature** are used to characterize and differentiate product variants, e.g., “Fuji White” and “Caldera Red”
- **Feature Family** is a collection of features, e.g., “PaintColor”



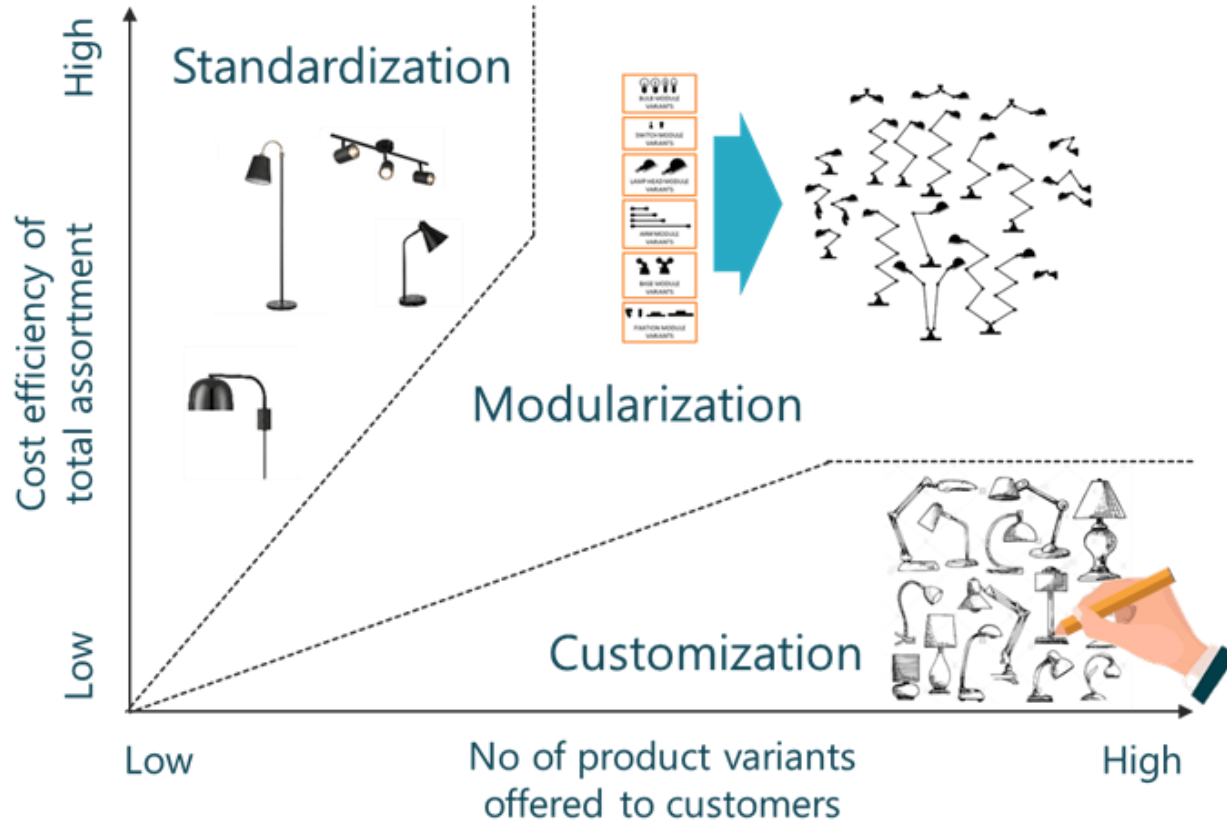
Configuration / Feature String

- The **configuration / feature string** defines the complete configuration and is the "DNA" from which other information (e.g. BOMs) can be derived



Feature String for an Audi A3

What is Modularization?



Modularization is an effort to combat the complexity challenge of customization.

With modularization, modules are designed that can be re-used in multiple configurable solutions.

This is a first step in enabling a Configure-to-Order process.

Benefits of Configit's Virtual Tabulation® Technology



Engineering

- Higher quality products
- Release new products faster
- Efficiently manage product development

Sales

- Reduce sales' time-to-close
- Increase customer satisfaction
- Eliminate configuration errors
- Greater profit margins with guided selling

Service

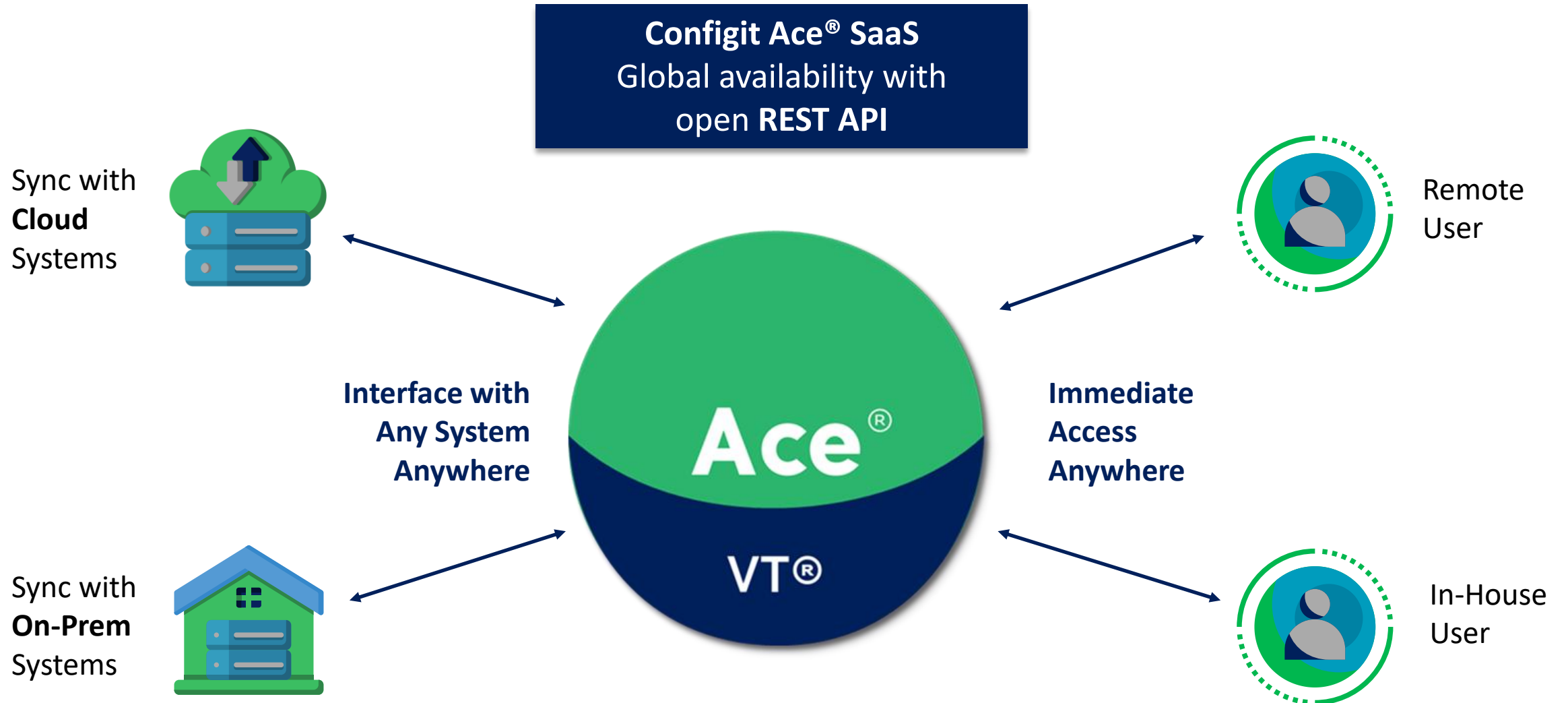
- Service products based on accurate data
- Generate service-based recurring revenue
- Increase brand loyalty with predictive maintenance
- Identify up-sell and cross-sell opportunities

Manufacturing

- Inbound orders are complete and accurate
- Send error-free BOMs to the correct plant
- No production line stoppages due to order errors



Immediate access anywhere to CLM shared-source-of-truth

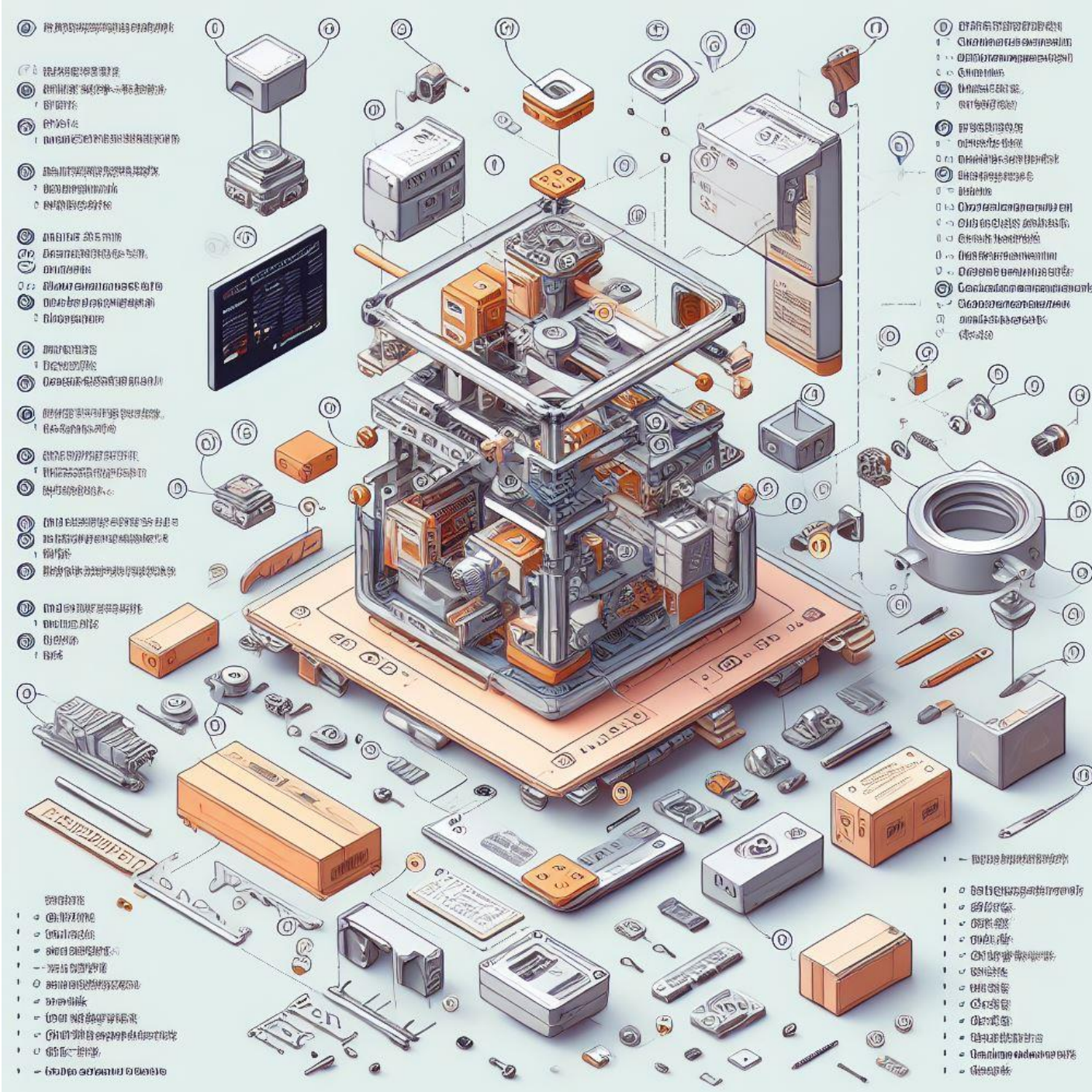


Generative AI and Configuration

Analysis shows that **modelling** is one of the most time-consuming part of projects

With complex products, there's no room for randomness

Combine Generative AI with Symbolic AI:
Use gen. AI to speed up the product modelling process



How to apply Generative AI?

It does not claim to provide the truth as it's based on probability and the data it's trained on

Can generate anything you want, but can't tell you if it ever existed

We focus on the **validation** of AI generated models





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