SUSTAINABILITY AND DATA-DRIVEN PLM – THE PERFECT STORM

Two trends that enforce themselves

PLM Road Map™ EMEA & PDT Europe 2022

Digital Transformation and PLM – a call for PLM professionals to re-define and re-position the benefits and value of PLM

CIMdata®   18 & 19 October   **•eurostep-**

Jos Voskuil

www.virtualdutchman.com

TacIT
The Know-How to Know Now

Our technical journey -It all started around 2014

TacIT
The Know-How to Know Now

Chances of Success with Product Innovation Platform Technology Increases with PDM and PLM Success

Technologies { Product Innovation Platforms →
PLM →
PDM →

	Reactive	Repeatable	Integrating	Collaborating	Orchestrating
Key Business Indicators	Status Quo	Eliminate waste	Improving Product Quality and Cost	Efficient Product Innovation	Efficiently Expanding Product Diversity
Job Performance Metrics	Few or None	Time/Efficiency	Productivity and Scalability	Enable Performance Improvement	Enable Strategy Improvement
Processes and Practices	Ad Hoc	Robust	Across Internal Functions	Value-Chain Involved	Value-Chain Engaged
Technology	Disparate	Functionally Siloed	Coordinated	Connected	Adaptive
Organization	Tribal	"Territorial"	Internally Cross-Functional	Cross-Value-Chain Through NPI	Cross-Value-Chain Through Life Cycles

Growing priority to adopt standards →

Marc Halpern

Gartner

TacIT
The Know-How to Know Now

Digital Transformation: From coordinated to connected

	Reactive	Repeatable	Integrating	Collaborating	Orchestrating
Key Business Indicators	Status Quo	Eliminate waste	Improving Product Quality and Cost	Efficient Product Innovation	Efficiently Expanding Product Diversity
Job Performance Metrics	Few or None	Time/Efficiency	Productivity and Scalability	Enable Performance Improvement	Enable Strategy Improvement
Processes and Practices	Ad Hoc	Robust	Across Internal Functions	Value-Chain Involved	Value-Chain Engaged
Technology	Disparate	Functionally Siloed	Coordinated	Connected	Adaptive
Organization	Tribal	"Territorial"	Internally Cross-Functional	Cross-Value-Chain Through NPI	Cross-Value-Chain Through Life Cycles

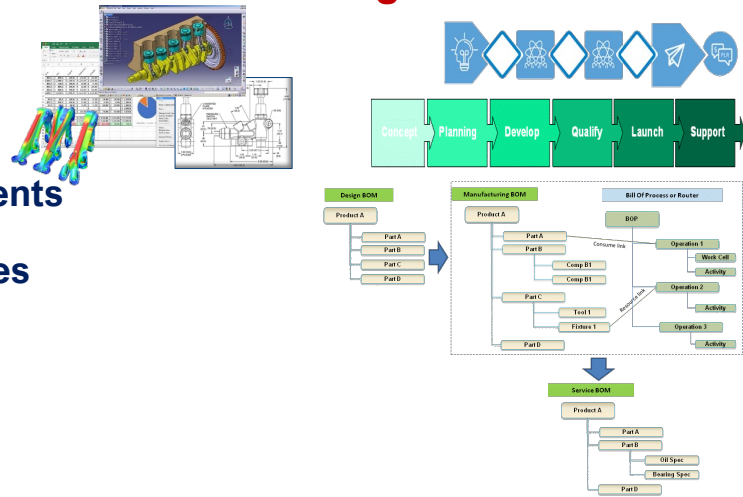**DIGITAL TRANSFORMATION**

TacIT
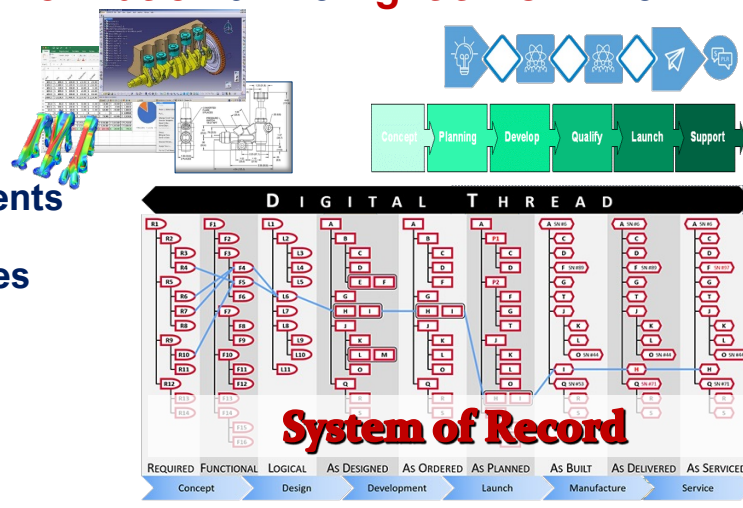*The Know-How to Know Now*

Coordinated

Providing the **right information** at the **right time** in the **right context**

Requires:

- **Delivered in documents**

- **Predefined processes**

- **(BOM) structures**

TacIT
The Know-How to Know Now

Coordinated

Providing the **right information** at the **right time** in the **right context**

Requires:

- **Delivered in documents**

- **Predefined processes**

- **(BOM) structures**

- **Digital Thread**
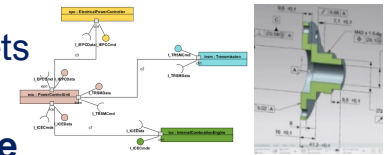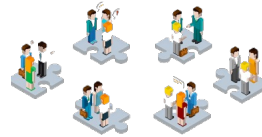
TacIT
The Know-How to Know Now

Connected

Providing **actual** information for **anyone** connected in **any context**

Requires:

- **Datasets** and **accountable people**
- **Models** running on **shared/federated** datasets
- Accurate/qualified data:
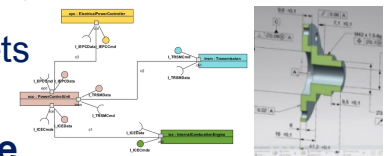 **Data Governance & Enterprise Architecture**

TacIT
The Know-How to Know Now

Connected

Providing **actual** information for **anyone** connected in **any context**

Requires:

- **Datasets** and **accountable people**
- **Models** running on **shared/federated** datasets
- Accurate/qualified data:
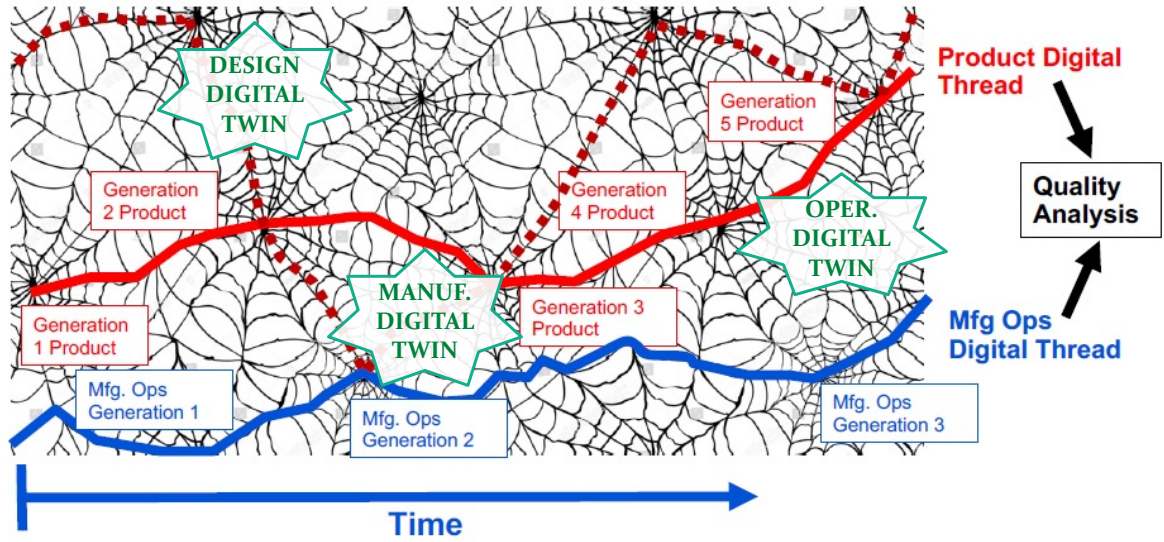 **Data Governance & Enterprise Architecture**

- A combination of:　　**System of Record** and **System(s) of Engagement**

TacIT
The Know-How to Know Now

Connected: Digital Twins and Systems of Engagement

Marc Halpern – PLM Roadmap/PDT Europe 2020

And we would slowly make progress

And we would slowly make progress

Our human story: …….

Regulations will come ..
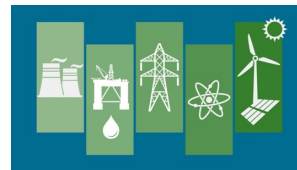
GHG reporting

Investments
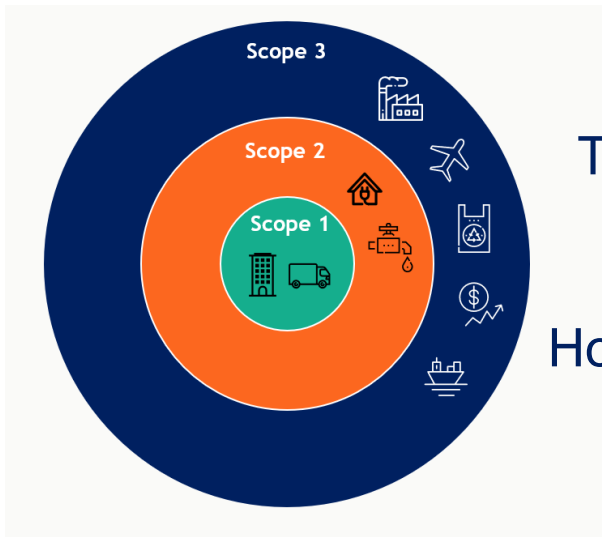
Carbon tax

Opportunities

Energy transition

TacIT
The Know-How to Know Now

Let's zoom in on the GHG protocol

The real challenge is on
Scope 3

How to influence Scope 3?

TacIT
The Know-How to Know Now

Manufacturers should get control of the full lifecycle

Ken Webster

'In the future you will own nothing and be happy'

...some interesting trends in the circular economy

PLM Road Map™ & PDT Fall 2021
*DISRUPTION—the PLM Professionals' Exploration of Emerging
Technologies that Will Reshape the PLM Value Equation*
November 16&17 Virtual-Live Event

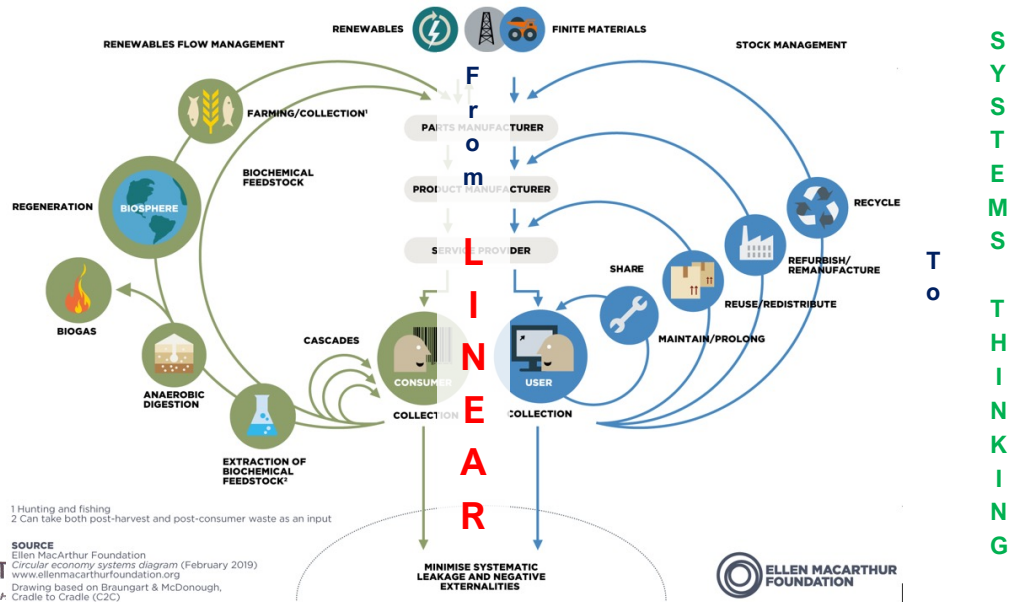CIMdata ←eurostep
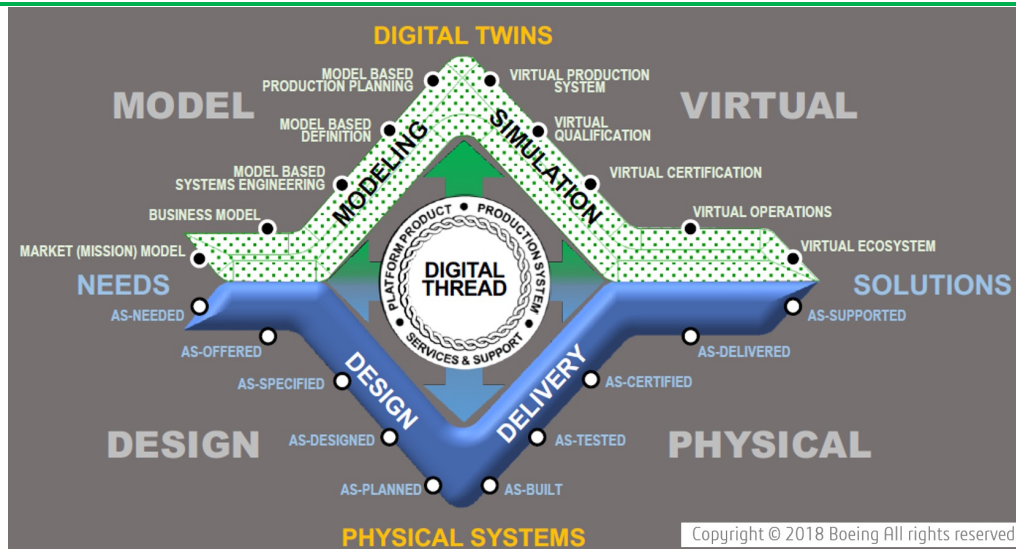
TacIT
The Know-How to Know Now
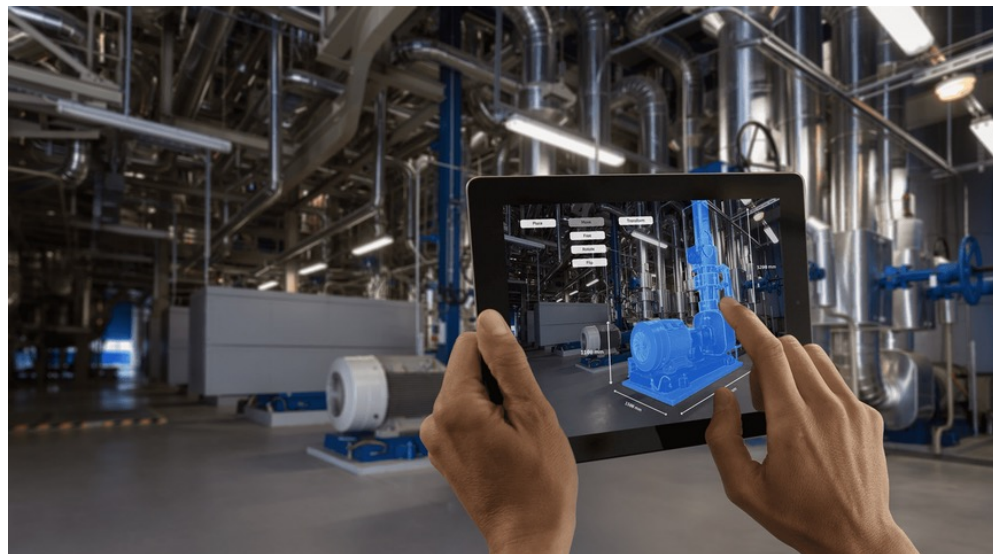

The relation with the circular economy

TacIT
The Know-H

The need for connected environments

The dream sold at management level

Digital Twins have reached management level

"One of the key elements that you need to have in place is digital maturity. You need to have the supporting data infrastructures, such as PLM and access to high-quality data from testing and from the real data environment, either in manufacturing or in service"

TacIT
The Know-How to Know Now

The Sustainability dimension

MoSSEC

TacIT
The Know-How to Know Now

The need for Digital Twins

- DESIGN   MBSE – make many trade-offs in the virtual world, performing Life Cycle Analysis on materials used, operations, maintenance & upgradeability.

80 %

- MANUFACTURING   Virtual plant design allows the company to design the optimal flexible plant with the minimum of energy consumption.

- OPERATION   Feeding a virtual model to analyze and optimize the physical asset in operation (even if unreachable)
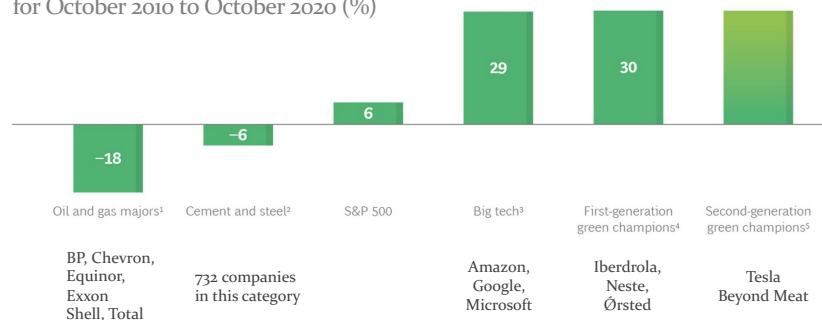
TacIT
The Know-How to Know Now

BONUS: The Next Generation of Climate Innovation

The Next Generation of Climate Innovation

March 2021
By Kanika Chandaria, Marco Duso, Michel Frédeau, Jesper Nielsen, Dennis Pamlin, and Cornelius Pieper

Leading in the new reality:
Climate & Sustainability   **BCG**

Average Total Shareholder Return
for October 2010 to October 2020 (%)

−18	−6	6	29	30	

Oil and gas majors[1]	Cement and steel[2]	S&P 500	Big tech[3]	First-generation green champions[4]	Second-generation green champions[5]
BP, Chevron, Equinor, Exxon Shell, Total	732 companies in this category		Amazon, Google, Microsoft	Iberdrola, Neste, Ørsted	Tesla Beyond Meat

Disruptors are coming from outside
Incumbents can evolve in 2 directions or become extinct

TacIT
The Know-How to Know Now   www.bcg.com/en-in/publications/2021/next-generation-climate-innovation (March 2021)

Our Mission

Digitalization

Sustainability

Digital Twins

TacIT
The Know-How to Know Now