

DIGITAL MANUFACTURING: STRATEGIC AND ORGANIZATIONAL CHALLENGES

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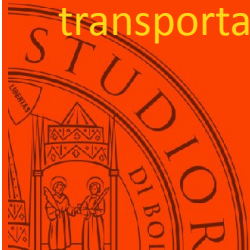
Background



How can *Germany become the leading factory equipment supplier for Industrie 4.0*? How can Germany further improve its competitiveness as a production location through Industrie 4.0? What role can Germany play in setting standards and how can Industrie 4.0 benefit people in the world of work? Plattform Industrie 4.0 aims to find answers to these questions through dialogue. Together, companies and their employees, trade unions, associations, science and politics want to make a big impact.



The Industrial Internet Consortium (IIC) will enable and accelerate adoption of the Industrial Internet which is essential to growth and competitiveness in key industry sectors, including: manufacturing, transportation, energy, healthcare, buildings, utility infrastructure, defense, and emergency response.

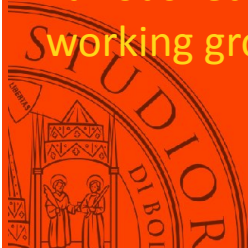
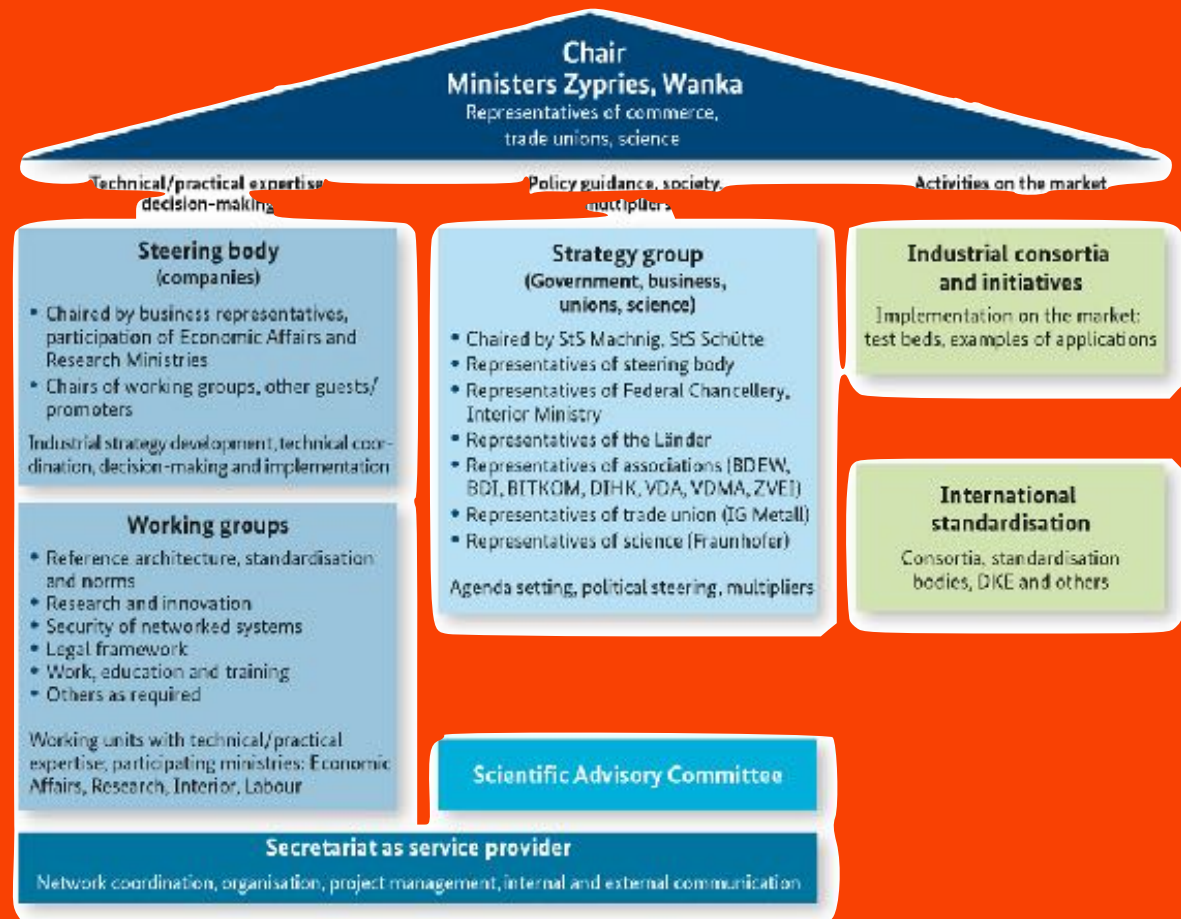


Background



The term 'Industrie 4.0' was for the first time mentioned at **Hannover Messe of 2011**.

The structure of the platform
 The platform is steered and led by the federal minister for economic affairs and energy, Brigitte Zypries, the federal minister of education and research, Prof. Johanna Wanka, and high-ranking representatives from industry, science and the trade unions. Experts from business, science, associations and the trade unions develop operational solutions together with representatives from various federal ministries in thematic working groups.



Background



As the premier digital industrial company, **GE coined the term Industrial Internet in late 2012.** It estimates the Industrial Internet could be a \$225 billion market by 2020, and has made significant investments in the Industrial Internet. It created GE Digital, its software business dedicated to making digital the core foundation of GE's operations. GE is one of the companies that founded the Industrial Internet Consortium to accelerate the development, adoption, and widespread use of interconnected machines and devices, intelligent analytics, and people at work.

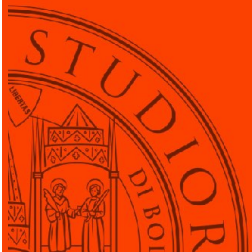
MEMBERS



Background

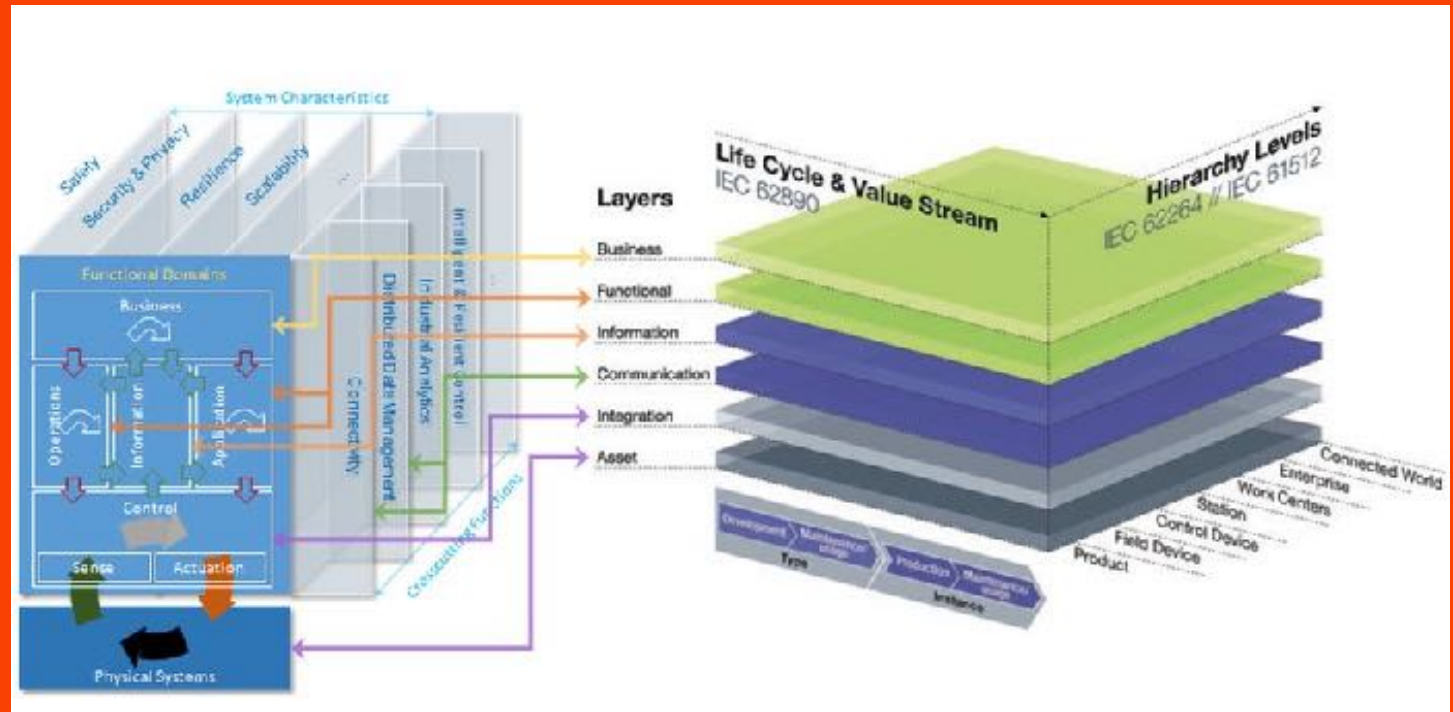


Representatives of Plattform Industrie 4.0 and the Industrial Internet Consortium met in Zurich, Switzerland to explore the potential alignment of their two architecture efforts - respectively, the Reference Architecture Model for Industrie 4.0 (RAMI4.0) and the Industrial Internet Reference Architecture (IIRA). The meeting was a success, with a common recognition of the complementary nature of the two models

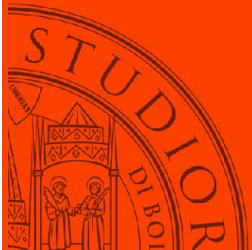
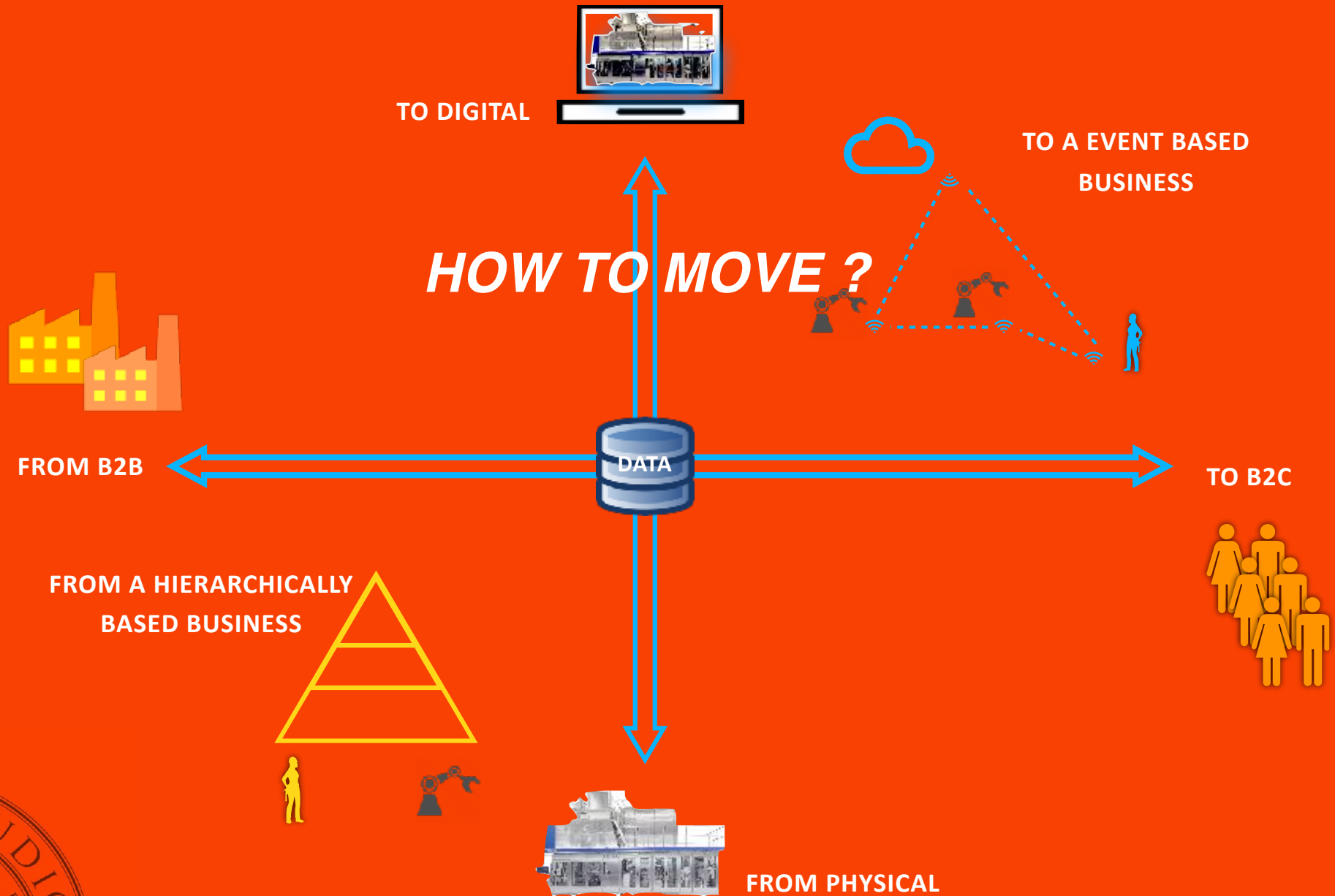


Background

We began looking at the technical issues. With RAMI 4.0, Industrie 4.0 focuses on manufacturing in depth; IIRA crosses multiple application domains. Industry as a whole needs to be able to work across domains; manufactured goods are one of those domains. As a concrete example, an automobile containing multiple manufactured components needs to work together as a single unit (all manufacturing so far). But when it's parked at home charging its batteries overnight, it needs to be able to connect to the smart grid. Clearly, these domains must interoperate.



Shifts in Traditional Business Management



R&D PROCESS: From B2B..

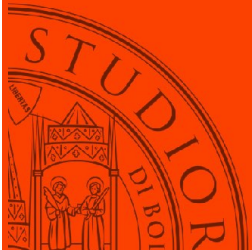
THE MAIN ISSUE FOR R&D IS:

ARE WE ABLE TO TECHNICALLY SATISFY THE PRODUCT SPECIFICATIONS COMING FROM THE CUSTOMER?

WE KNOW-HOW: *DOMINANCE OF PRODUCT-CENTRIC MODEL*



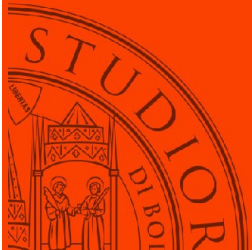
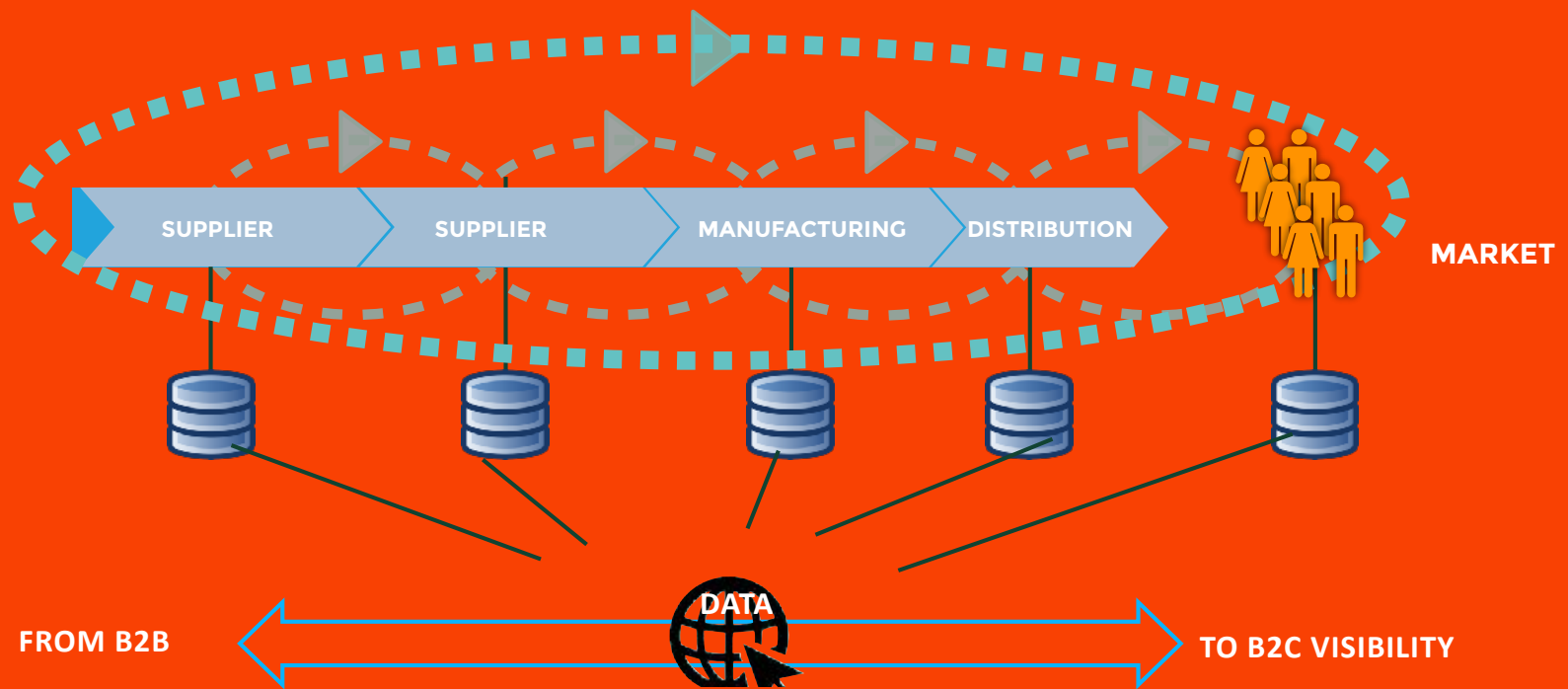
B2B VISIBILITY



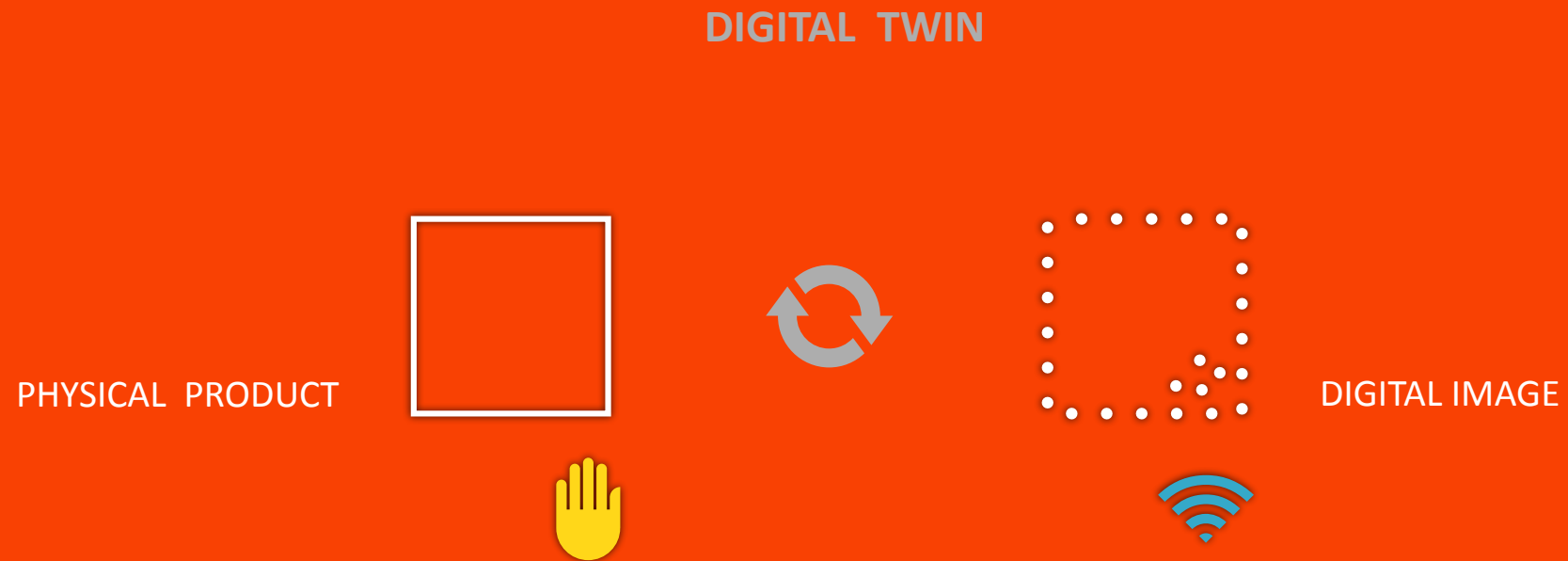
..to B2C.

THE MAIN ISSUE FOR R&D IS:
ARE WE ABLE TO UNDERSTAND AND INTERACT WITH OUR CUSTOMER'S VALUE CHAIN?

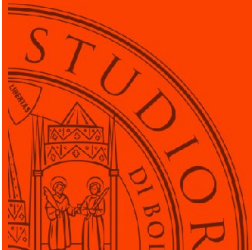
WE KNOW-WHY: EMERGING OF SERVICE-CENTRIC MODEL



PRODUCT: from Digital Twin



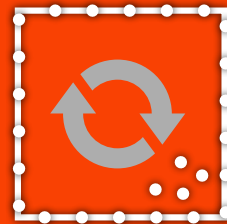
IT LINKS SEQUENTIALLY THE PHYSICAL PRODUCT
WITH THE DIGITAL IMAGE



..to Bi-Modal Product

BI-MODAL PRODUCT

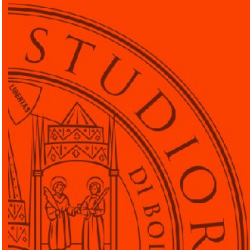
PHYSICAL OBJECT



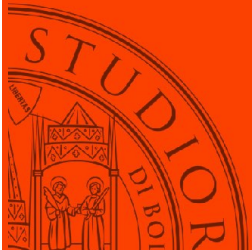
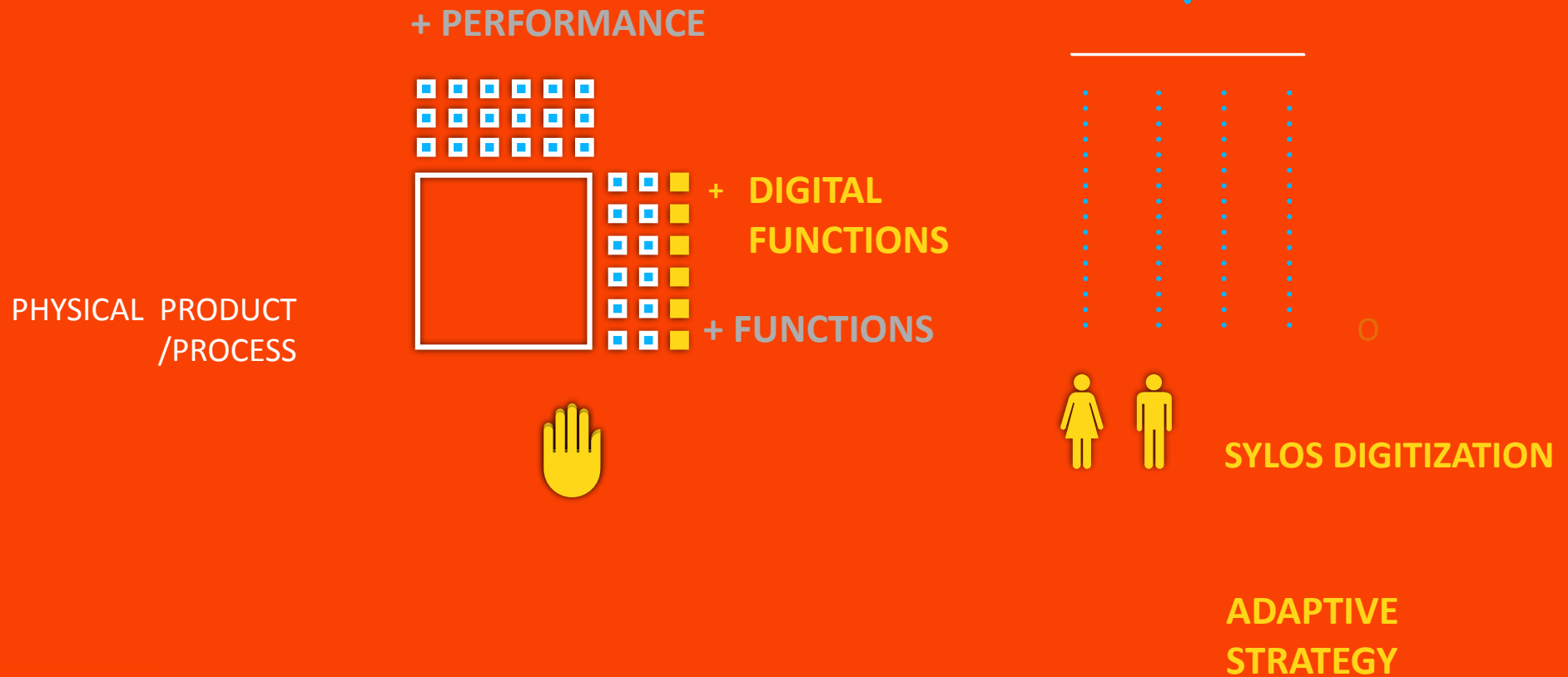
DIGITAL IMAGE



WE WILL DESIGN A PRODUCT STARTING FROM ITS
SIMULTANEOUS BI-MODAL STRUCTURE



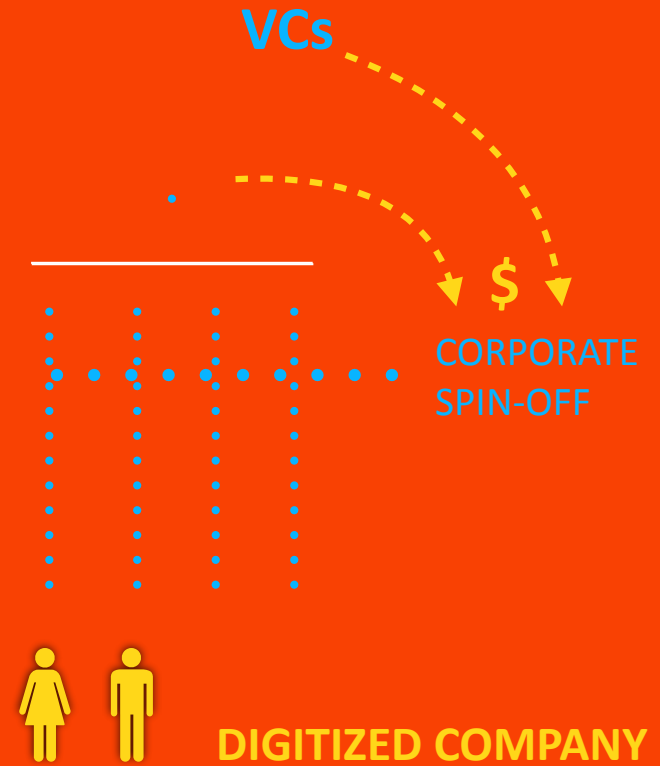
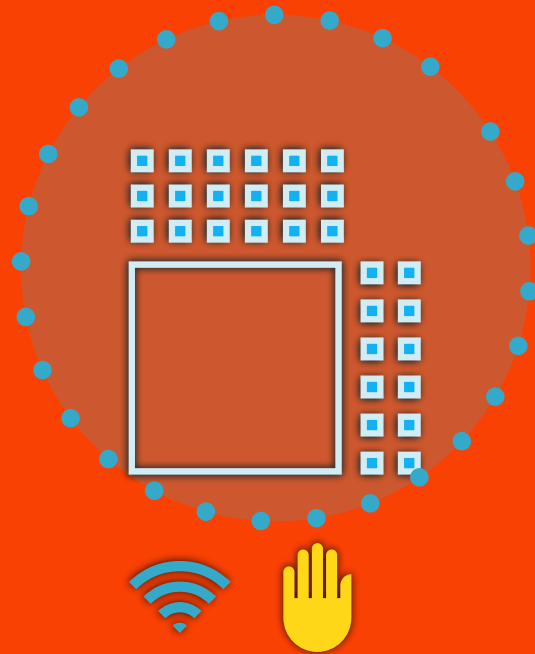
Digital Transformation : Managing Incremental Innovation



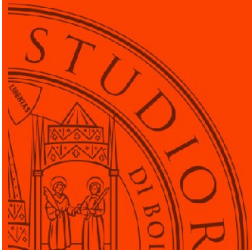
Digital Transformation : Managing Radical Innovation

10/11/2017

NEW BUSINESS MODELS
ENABLED BY
BI-MODAL PRODUCT
/PROCESS



DISRUPTIVE
STRATEGY

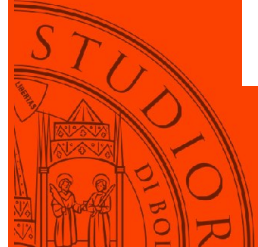
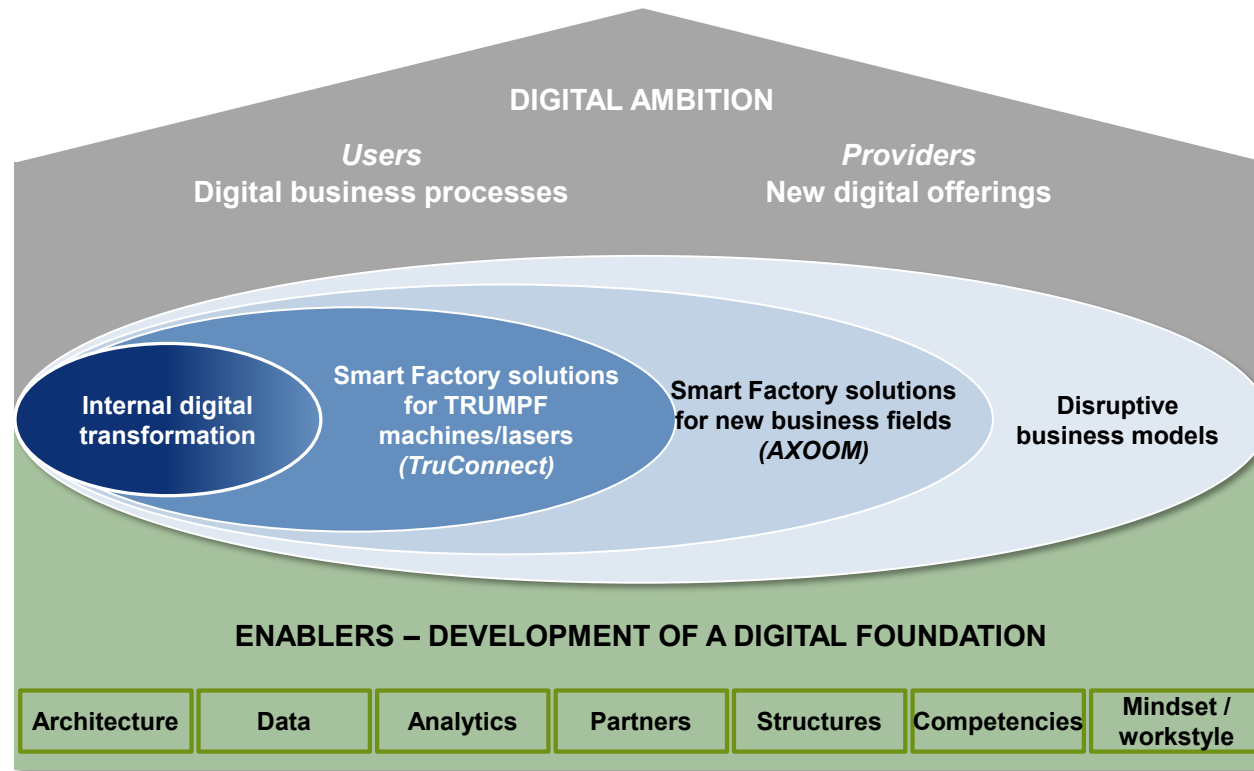


Managing Radical Innovation: AXOOM and TRUMPF

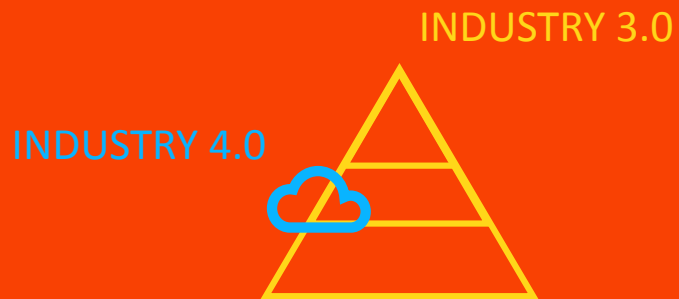
The digital transformation at TRUMPF



Digital ambition as starting point for digital priorities and enablers



Managing Organization



FORMAL POSITION

TEAM CREATION

TEAM UPSKILLING

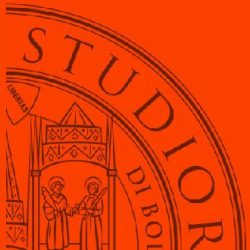
DIGITAL STRATEGY

-low term

-medium term

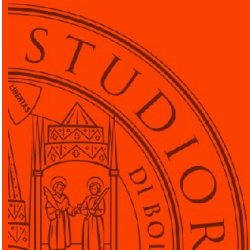
SPECIFIC BUDGET

BUSINESS MODEL DESIGN

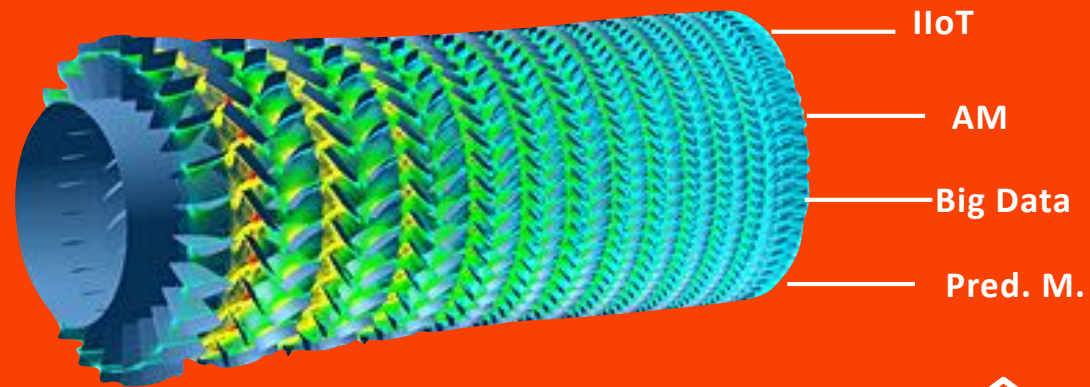


Executive Master at Bologna Business School

Developing and empowering skills for Digital Business Transformation



Managing Business Model Innovation: Servitization



**ROLLS ROYCE BUSINESS MODEL:
'POWER BY HOUR'**



From Capital to Operative Expenditures



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