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Technology | Learning | Platforms

Indecomm Technology

DIGITAL ENGINEERING AND ENGAGEMENT

Technology trends for 2018
- Digital Twins

Technology Trends 2018 – Gartner Research

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Intelligent	Digital	Mesh
		
AI Foundation	Digital Twins	Blockchain
Intelligent Apps and Analytics	Cloud to the Edge	Event Driven
Intelligent Things	Conversational Platforms	Continuous Adaptive Risk and Trust
	Immersive Experience	

Digital Twins – Agenda

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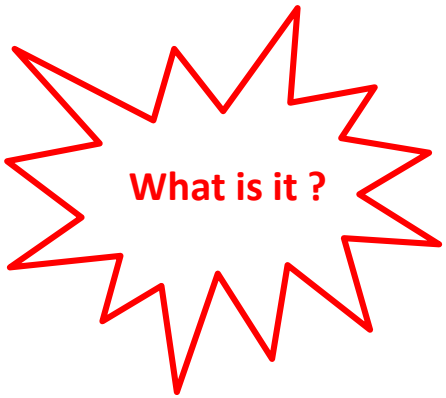
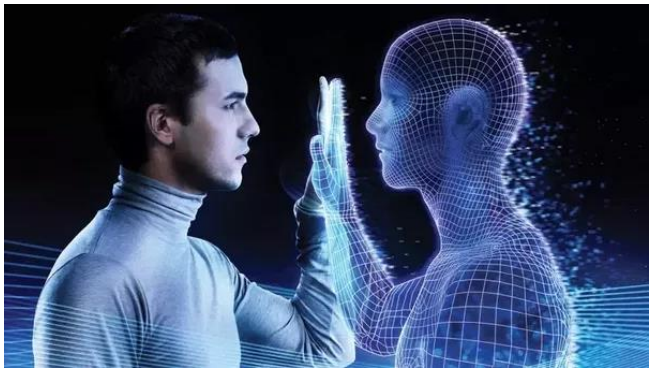


Digital Twins – Legacy



A **Digital Twin** is a digital representation of a real-world entity or system together with it's associated environment.

- Live and kicking for 15+ years now
- Simulators / Digital Prototypes
- Manufacturing and Process Engineering applications
  - NASA
  - Aircraft manufacturers
  - Automobile Industry
  - Heavy Machines

Digital Twins – Types

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STATUS TWINS

- Device Management
- Product Control

OPERATIONAL TWINS

- Industrial Operations
- Process Control
- Reliability

SIMULATION TWINS

- Behavior replication
- Performance simulation

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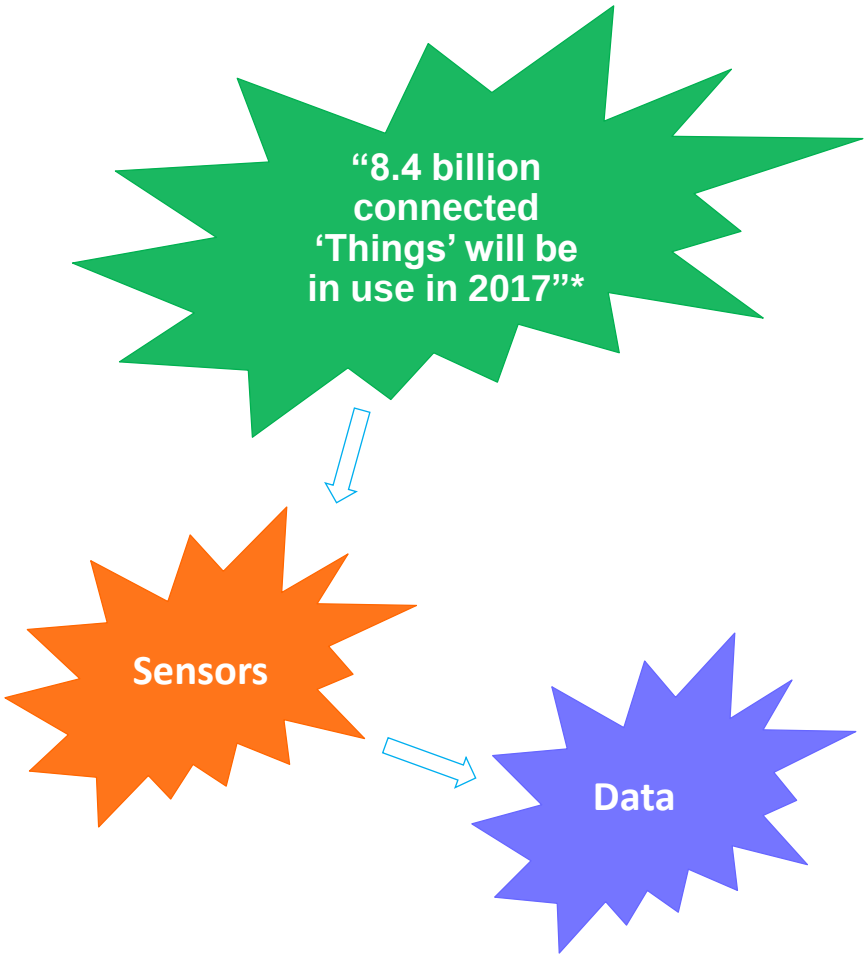
The IOT context



- What is the BIG "new"?
- IOT – pushing the benefits of implementing Digital Twins
  - Bridging the gap between product design & usage.
  - Realtime reporting on the product throughout lifecycle.

* Gartner 2017

** M&M research 2017

Digital Twins – Benefits

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Enabling mass customization

Increased quality of materials

Real-time optimized warehouse management & intralogistics processes

Continuous visibility post-shipment/sale of the product

Enablement of the “as-a-service” offering for assets and products

Digital Twins Case Study – European Engineering Conglomerate

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Using real-time data feeds and digital images of the manufacturing facility and the manufacturing shop floor, visual indicators highlight the problem area within the plant and the specific machine on the shop floor that is "down."

- Real time updates on status of plant.
- Highlights problems that might arise in units.
- Re-route production order
- Ability to “learn” from the outage.

Digital Twins Case Study – US Space Exploration Company

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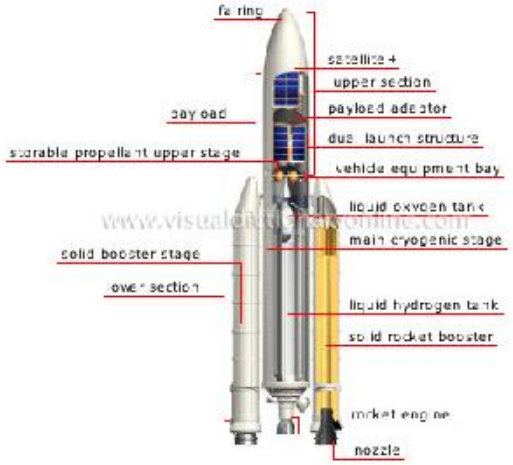

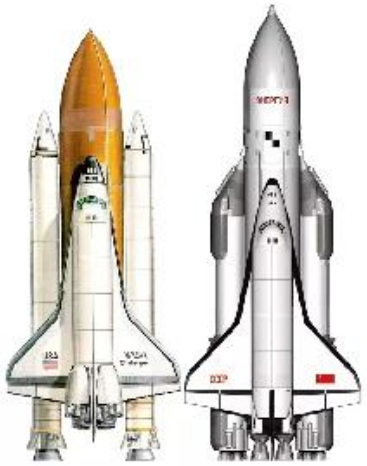

- Extensive usage of digital twinning for modelling and simulation.
- Rockets and Capsules designed using advance twinning software.
- Handles 25000+ part assemblies with ease
- Enables designing in context
- Simulate motion to check separation of stages of a rocket
- Creation of machined metal scale models

Digital Twins Case Study– European Luxury Car Manufacturer

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- Clients expect quality, diversity and individuality.
- 30% less development time using digital twins.
- Time to market for models : 16 months
- Analysis without creating prototypes
- Real-time production process monitoring

Digital Twins Case Study – European Wind Energy Firm

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- Europe's northern most wind farm.
- Low temperatures, extended period of darkness lead to maintenance challenges.
- Sensors on turbines generate operational data for consumption of digital twin.
- Enables engineers visualize structural stresses as they happen.
- Provides future prognoses helping engineers take informed decisions.

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Thank You