



MIMOSA/OpenO&M OIIE Meeting to Discuss
Industry Digitalization
Nov. 16, 2017



Introduction

Ken Dunn:

Director Information and Data
Architecture, BP

Chairman of Board, MIMOSA

Secretary Information Standards Sub-
Committee IOGP



OPEN INDUSTRY DIGITALIZATION FORUM!



This free **OPEN FORUM** is organized by MIMOSA and hosted by SAP to help attendees learn more about using standards to manage your supplier ecosystem with the SAP Asset Intelligence Network (AIN). Lunch sponsored by BP.

When: November 16, 2017

Objectives

- 1) Hear why this is important from your industry peers
- 2) See how to use standards to improve interoperability
- 3) Learn more about how SAP AIN uses standards



Industry Digitalization Meeting - Agenda, Thursday Nov. 16



8:30 AM	Welcome / Opening / Safety Moment	Ken Dunn, BP
9:00	Keynote Speaker – Industry Digitalization and the OIIE	Alan Johnston, MIMOSA/OpenO&M
9:30	Standardizing the Military	Jim Colson – U.S Army Logistics Support
10:00	OIIE ILAP POC	Robert Skaar, Statoil (Remote)
10:30	Break	
11:00	Achieving Interoperability thru Digitalization	Marcus Stumpner, Professor, Univ S.A. Co-Op Research Center for Interoperability
11:30	An OEMs Perspective on Standardization	Greg Serangeli, Caterpillar
12:00	Lunch	
12:30	Digitalization in Material Management	Peter Eals, ECCMA
1:00	Condition-Based Maintenance and Standardization	Pak Wong, PdMA
1:30	Industry Data Sheets as a Digitalization Enabler	Ron Montgomery, Interoperability Consultant
2:00	SAP Perspective on Interoperability / OIIE	Mark Pyatt, SAP
2:30	Break	
3:00	<u>PANEL DISCUSSION: Value Impact of Digitalization based on OIIE</u>	Barb, Ken, Greg, Jim [James Fort moderates]
3:30	Joint Working Group for Interoperability	Barb / Manoj, DOW Chemical
4:00	Introduction to MIMOSA OIIE POC (OGI Pilot)	Alan Johnston, MIMOSA/OpenO&M
4:30	End of Day Wrap-Up	Ken Dunn, BP



MIMOSA Members Meeting Agenda

Friday, Nov. 17

8:00	Report back from MIMOSA Technical Committees	Leads
8:30	CFO Report	Cliff Pederson
9:00	Website Status / Update	Markus Stumpner, University S.A.
9:30	Proposal for Revisions to Office Holder Structure	Alan / Ken (TBD)
10:00	Break	
10:30	CEO Report	Alan
11:00	Board of Director Elections	Ken
12:00	Board Meeting Election of Officers	Ken
12:30	Board Meeting / Report to Members	Ken / Alan
1:00	Adjourn	

** Call for Nominations for Board Positions in Advance of the meeting*

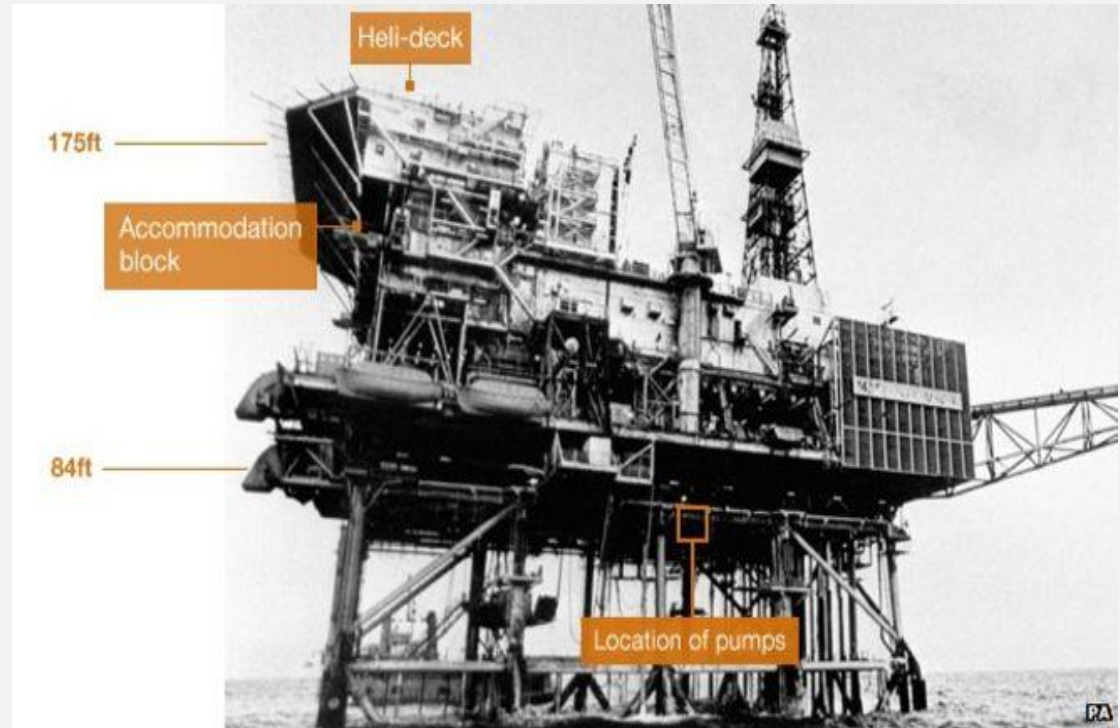




Safety Moment

Occidental Piper Alpha disaster – 6th July 1988

- A minor failure in a maintenance handover procedure caused a condensate leak which ignited
- Escalated due to a sequence of events
- 167 men died, total loss of the platform



We must never trivialise safety

We must learn from disasters



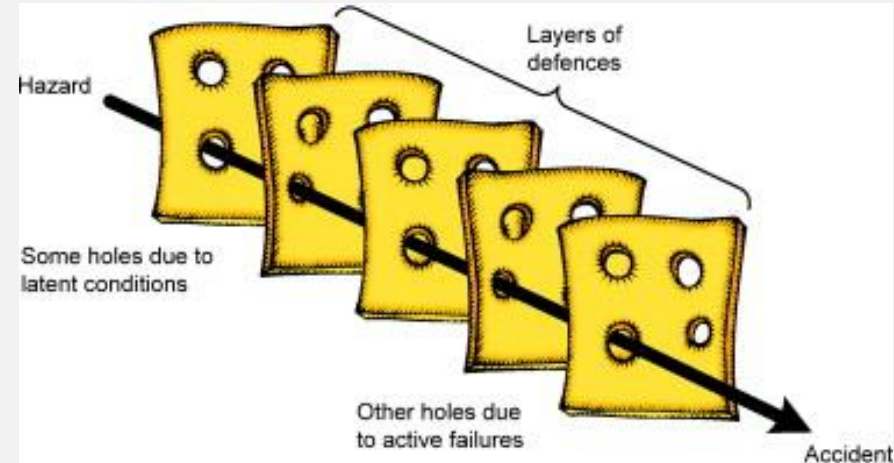
"Piper Alpha oil rig fire" by Source (WP:NFCC#4). Licensed under Fair use via Wikipedia

- <https://www.youtube.com/watch?v=BdRcALtA8CE>
- <https://www.youtube.com/watch?v=HCkvRrlsZ08>

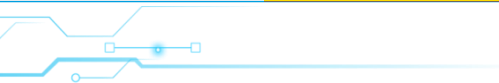
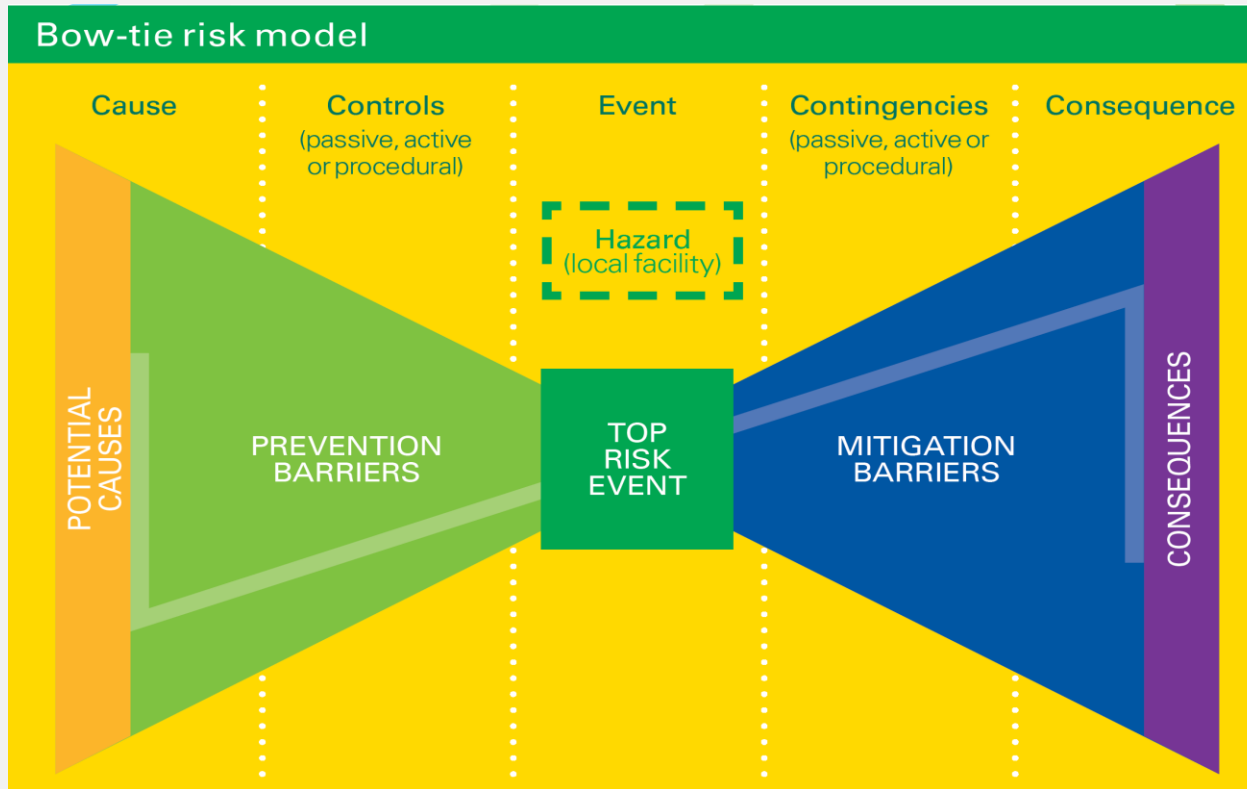


Safety Moment – Information and the “Swiss Cheese” Model

- Piper Alpha is a classic “Swiss Cheese” series of escalating problems
- Information is not one of the slices, or layers of defence
- “Information touches every discipline”
 - **Engineering, Construction, Commissioning, Operations...**
 - **In fact, it is involved with every layer**



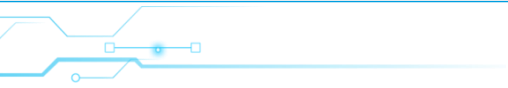
Bow-Tie Model



Information and barriers for safety

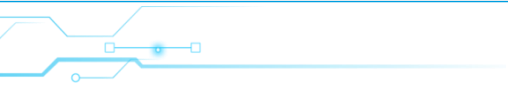


- Trusted information of known provenance, quality and accuracy
 - Tells you where the holes are
 - Tells you how big the holes are
 - Helps you to make the holes fewer and smaller
 - Build-in appropriate checks and balances
- Slices from the same piece sometimes have holes that line up
 - Culture, groupthink, blind spots, etc





Opening



BP at a glance



72

countries

74,500

employees

\$2.6bn

underlying replacement
cost profit
(2015 \$5.9bn)

17,810

million barrels of oil
equivalent – proved
hydrocarbon reserves^a

3.3

million barrels of oil
equivalent per day –
hydrocarbon production^a
(2015 3.3mmb/d)

1.7

million barrels of oil
refined per day
(2015 1.7mmb/d)

^aOn a combined basis of subsidiaries and equity-accounted entities.

Our strategy



Shift to gas and advantaged oil in the upstream



Invest in new large-scale gas projects, pursue quality oil projects in core basins and seek out new opportunities in selected regions.

Market-led growth in the downstream



Build competitively advantaged businesses in manufacturing and expand our marketing businesses.

Venturing and low carbon across multiple fronts



Pursue new ventures and partnerships to meet rapidly evolving technology, consumer and policy trends, and develop cross-business solutions to create new opportunities or strengthen our existing relationships.

Modernizing the whole group



Simplify and modernize so we can continue to compete and seize new opportunities with our partners and stakeholders in a changing world.

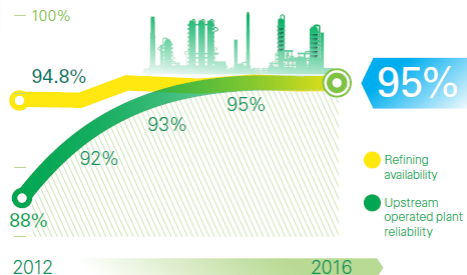
The foundations for strong performance



Safe, reliable and efficient execution

Operational excellence is essential to our success. Good safety leads to reliable operation of our assets, greater efficiency and ultimately better financial results.

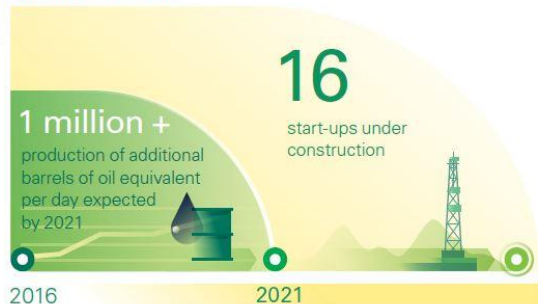
Operating reliability and availability



Distinctive portfolio with optionality

Around the world, we are investing in upstream projects – expected to deliver operating cash margins 35% better than 2015 levels. We are driving sustainable competitiveness in our downstream business, with a focus on customers, cost efficiency and margin capture.

Disciplined growth



Focused on delivering competitive returns

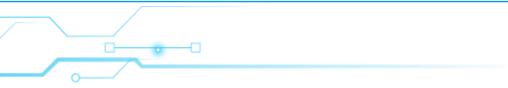
In 2014 we set out our financial framework in response to the sharp decline in the oil price. The framework underpins our commitment to sustain the dividend for our shareholders. We have been meeting those expectations each year – and even reaching our cash cost reduction target a year early. We also reduced our upstream and downstream headcount by a total of 6,000 in 2016 – a reduction of 17% since 2014.

Digitization can be defined as creating digital versions of previously analog or physical items. An example would be creating a digital work order that was previously a paper work order. This is really the beginning step for an asset management company to go digital.

Digitalization on the other hand, is the use of digital technologies to change a business model and provide new ways and opportunities of doing business; For example, utilizing data from the digital work order you produced via digitization to improve current business processes. Digitalization is essentially a transformation within a company that utilizes digital technologies and data to improve the way things are done.

Digital transformation is a more holistic view, in that it not only focuses on digitizing and digitalizing, but also focuses on how to implement these changes throughout an organization. It engages the entire company and the people that make up the company, rather than just the processes and the data that are part of the company.

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Digital Offering



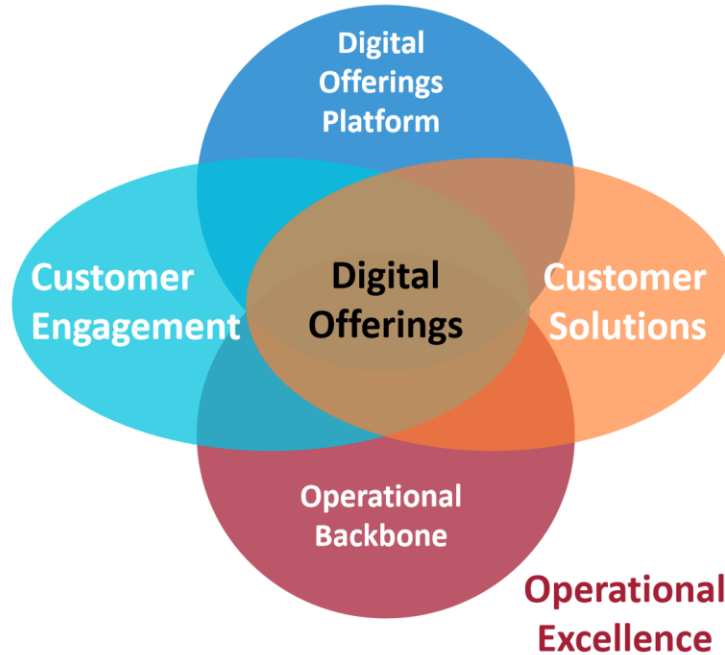
For Digital

An operational backbone is not enough.

A digital offerings platform takes a company from digitized to digital.

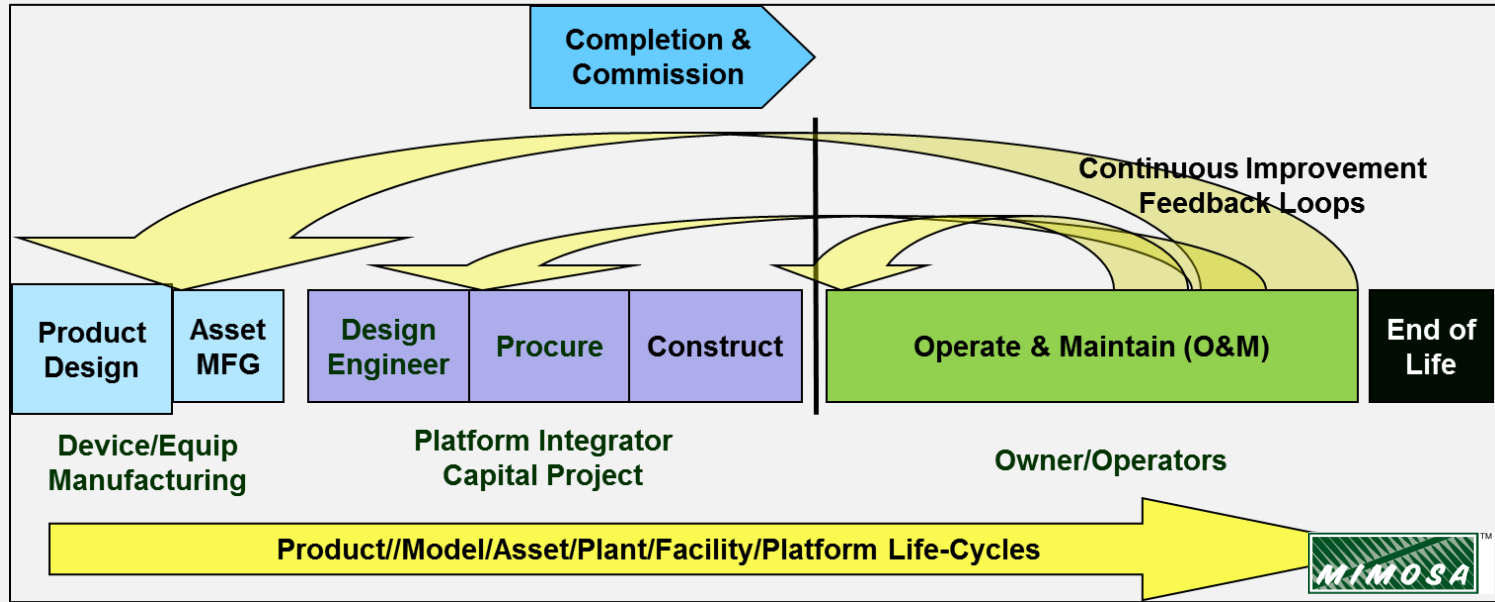
Source: Ross et al, "Designing Digital Organizations," MIT CISR Working Paper No. 406, March 2016.

Rapid Innovation



MIT CISR Annual
Research Forum
2017

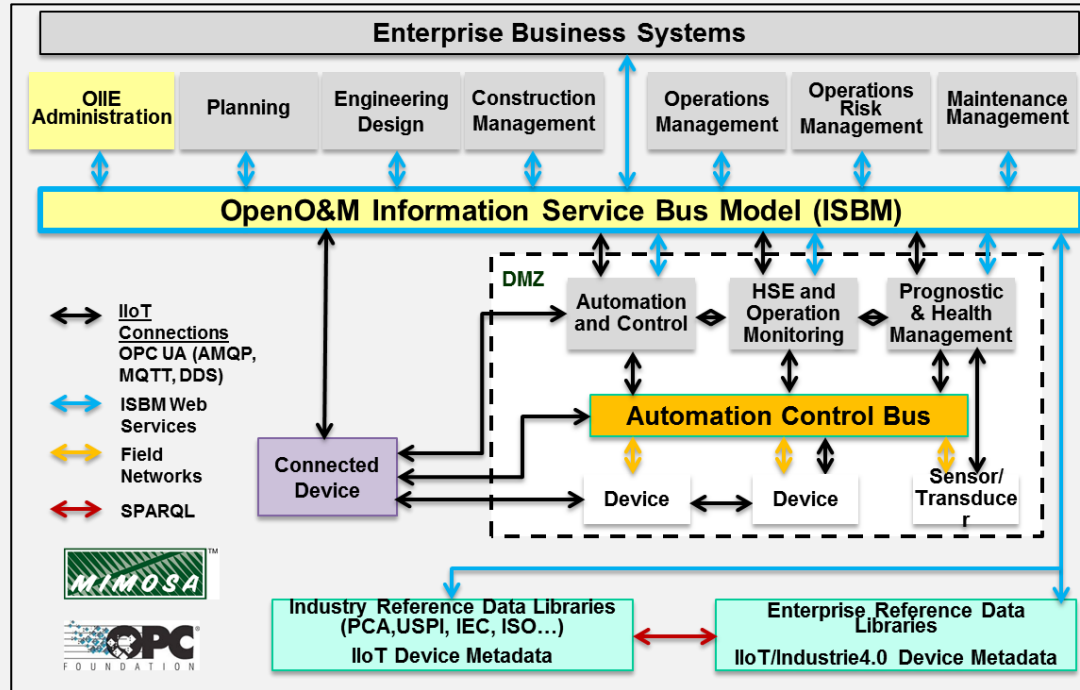
Asset Life-cycle Digitalization



Digitalization: Digital asset tracks the physical asset throughout the life-cycle

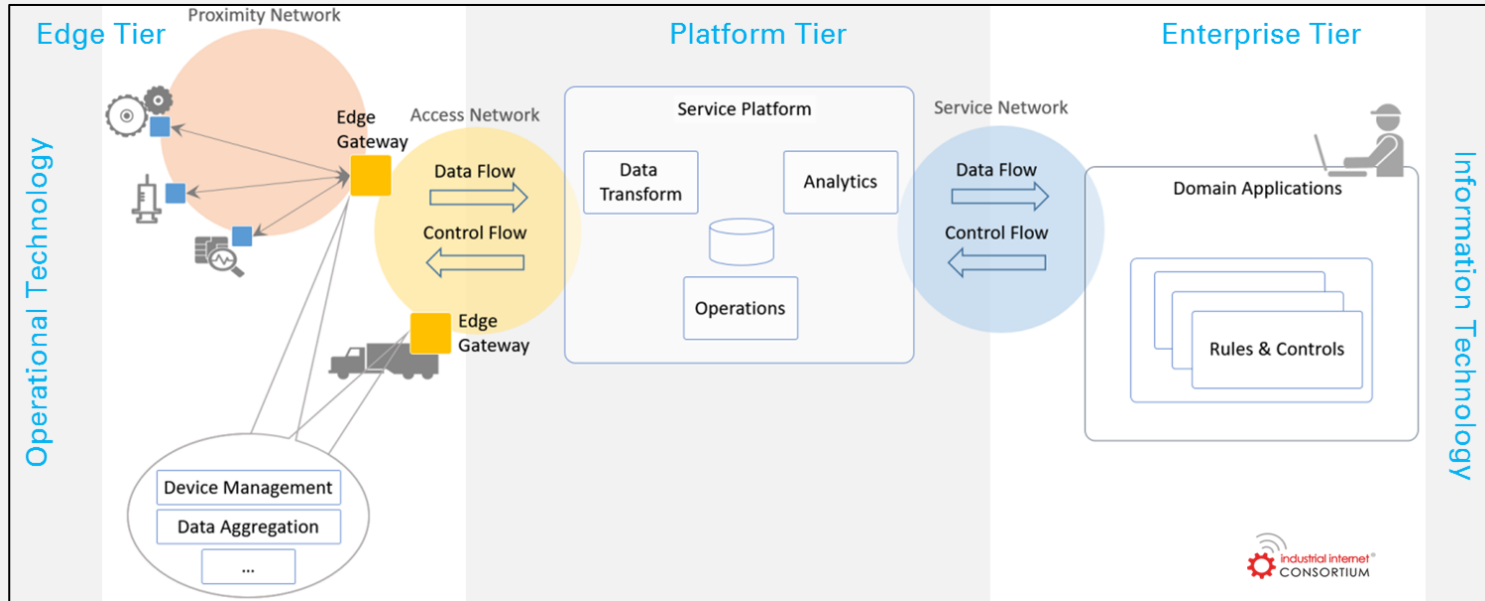
System Communication Digitalization

Open
Industrial
Interoperability
Ecosystem
(OIIE)
Architecture



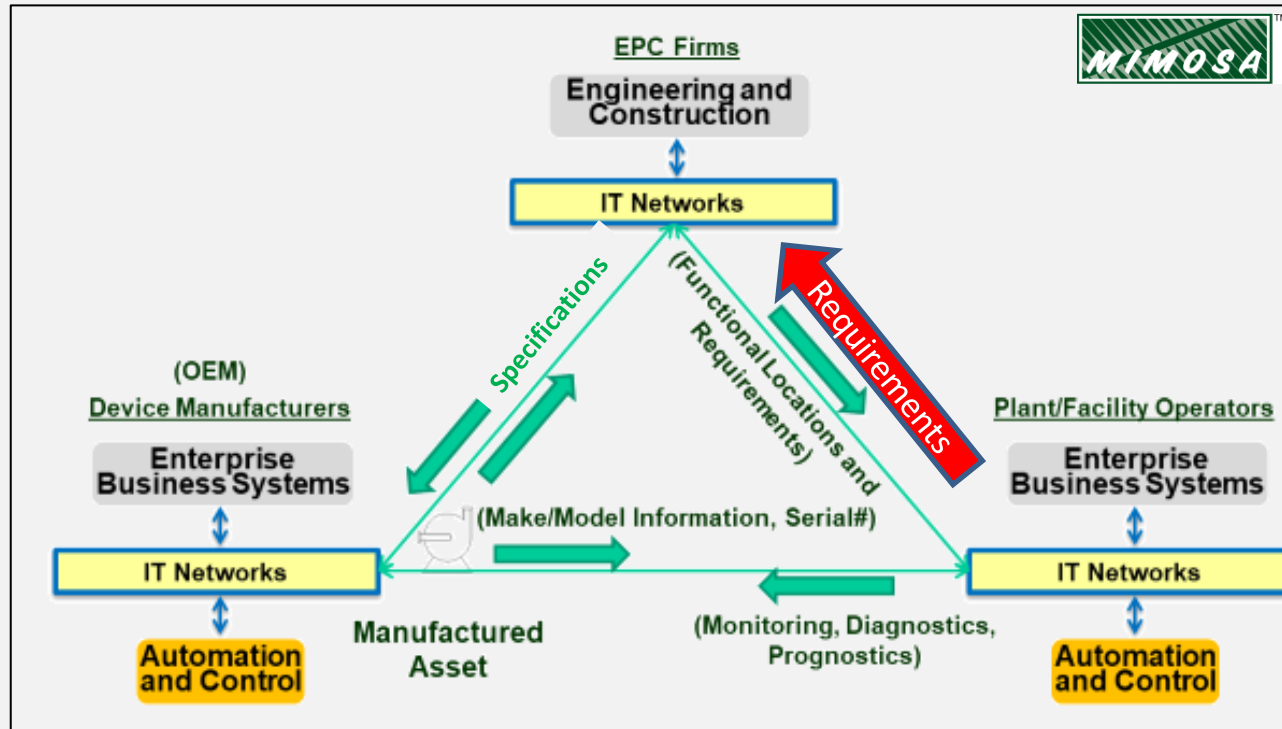
Digitalization: Information flows between systems are fully digital

IIOT Digitalization



Digitalization: End-to-end exploitation of the Industrial Internet of Things

Ecosystem Digitalization



Digitalization: Information and business flows between parties are digital

BP Interoperability Objectives



- The BP Interoperability Program will deliver integrity of asset information across a wide range of operations systems
- Through collaboration with software vendors and other owner operators, drive the adoption of the **Open Industrial Interoperability Ecosystem (OIIE)** as the industry standard solution architecture
- Drive to production deployment as soon as possible through POC work in the **OIG Pilot environment**

