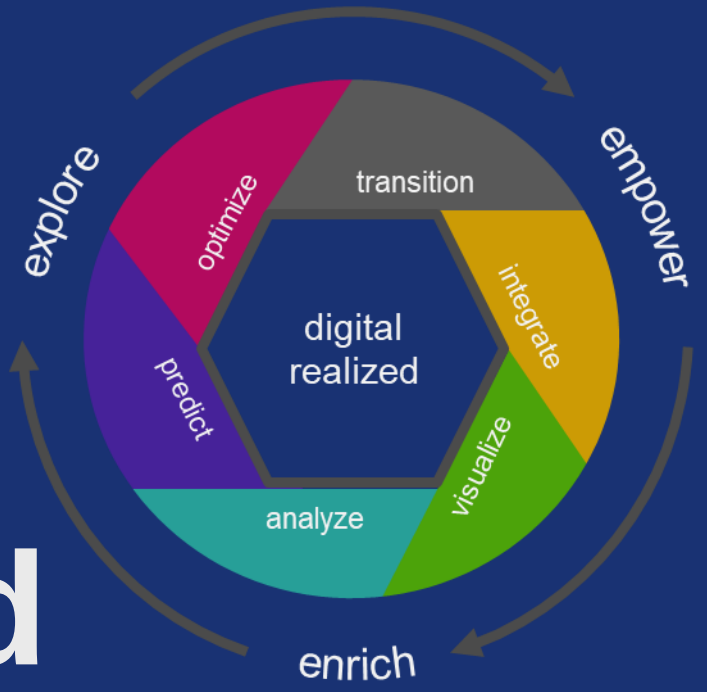

Digital Realized

Designing Your Digital Manufacturing Journey

Webinar: Tuesday 13th October 2020

Designing Your Digital Manufacturing Journey

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Agenda

- ATS Company Introduction
- The case for Digital Transformation
- Is Digital Transformation Oversold?
- Three things your Digital Transformation program does not need
- How to design your Digital Manufacturing Journey
- Q&A and wrap-up

Our Domain Knowledge

- Controls & Robotics
- Converge IT-OT
- Digital Quality
- MES / MOM
- PLM
- Digital Transformation
- Cyber Security

Solutions & Services

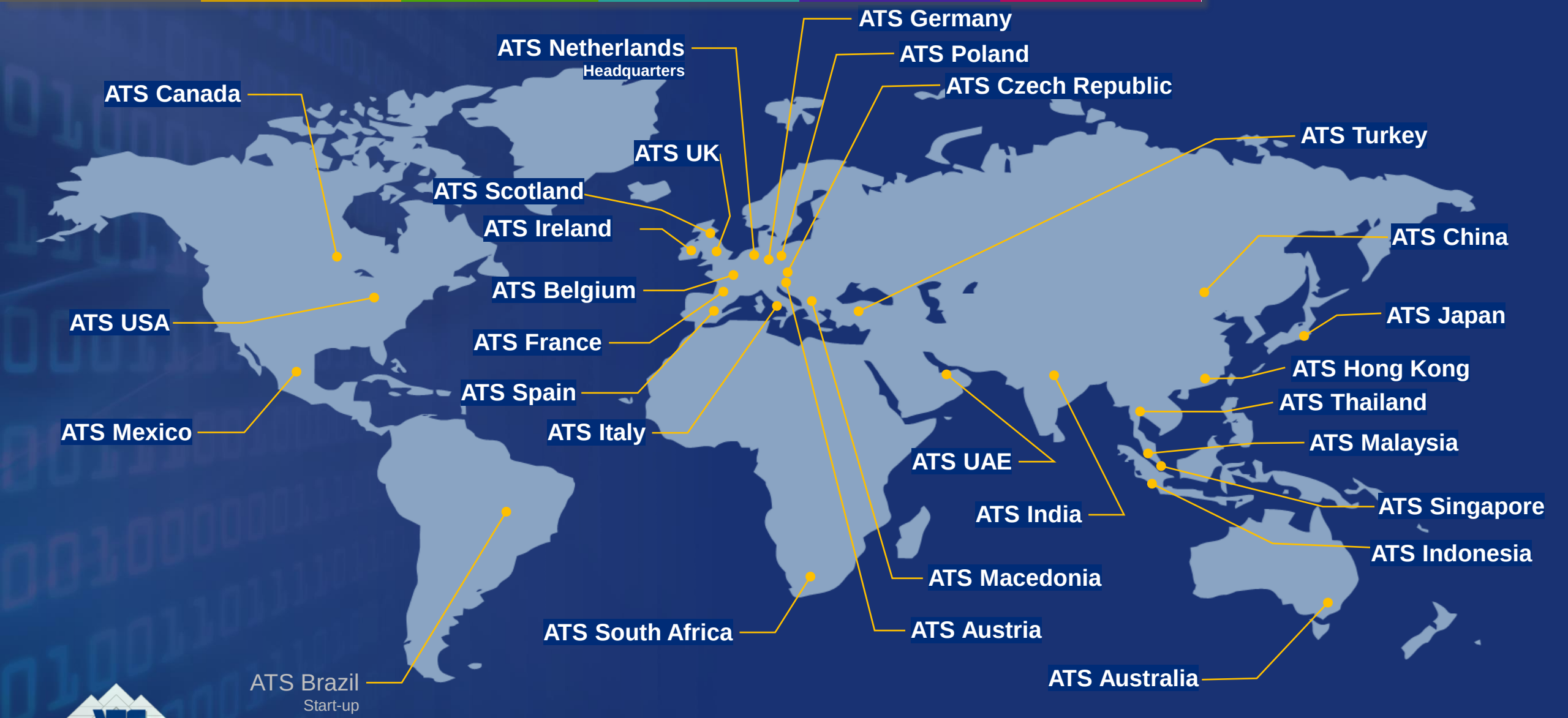
your success

Tactics
Get the job done **now**

Strategies
Get the job done **long term**

"Our trusted experts lead manufacturers in their digital transformation to achieve sustainable operational excellence"

Our Global Presence



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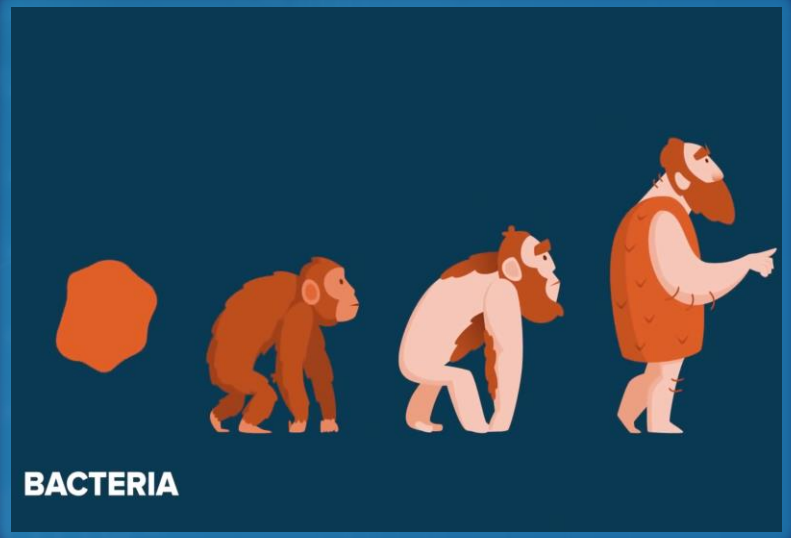
The case for Digital Transformation

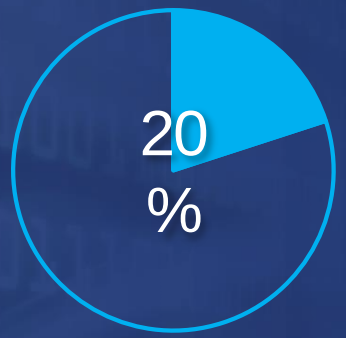
Digital Evolutionists



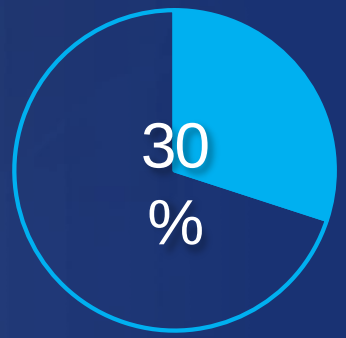
Digital Revolutionists

The case for Digital Transformation

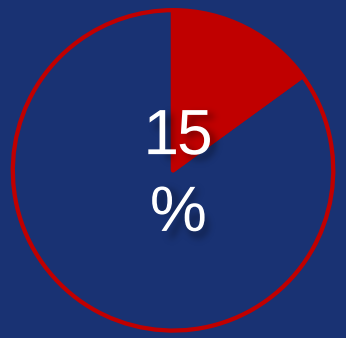
The Statistics



Increase in revenue

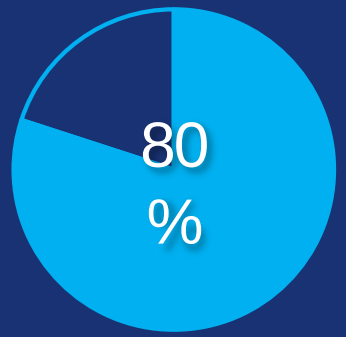


Increase in profits

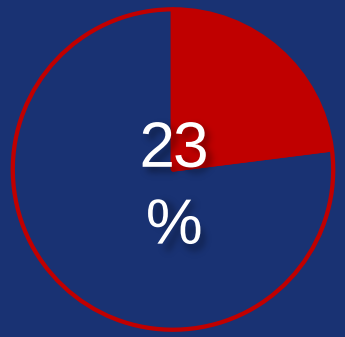


Enterprise Approach

Plan to invest in digital



Digital as critical



Have a robust strategy

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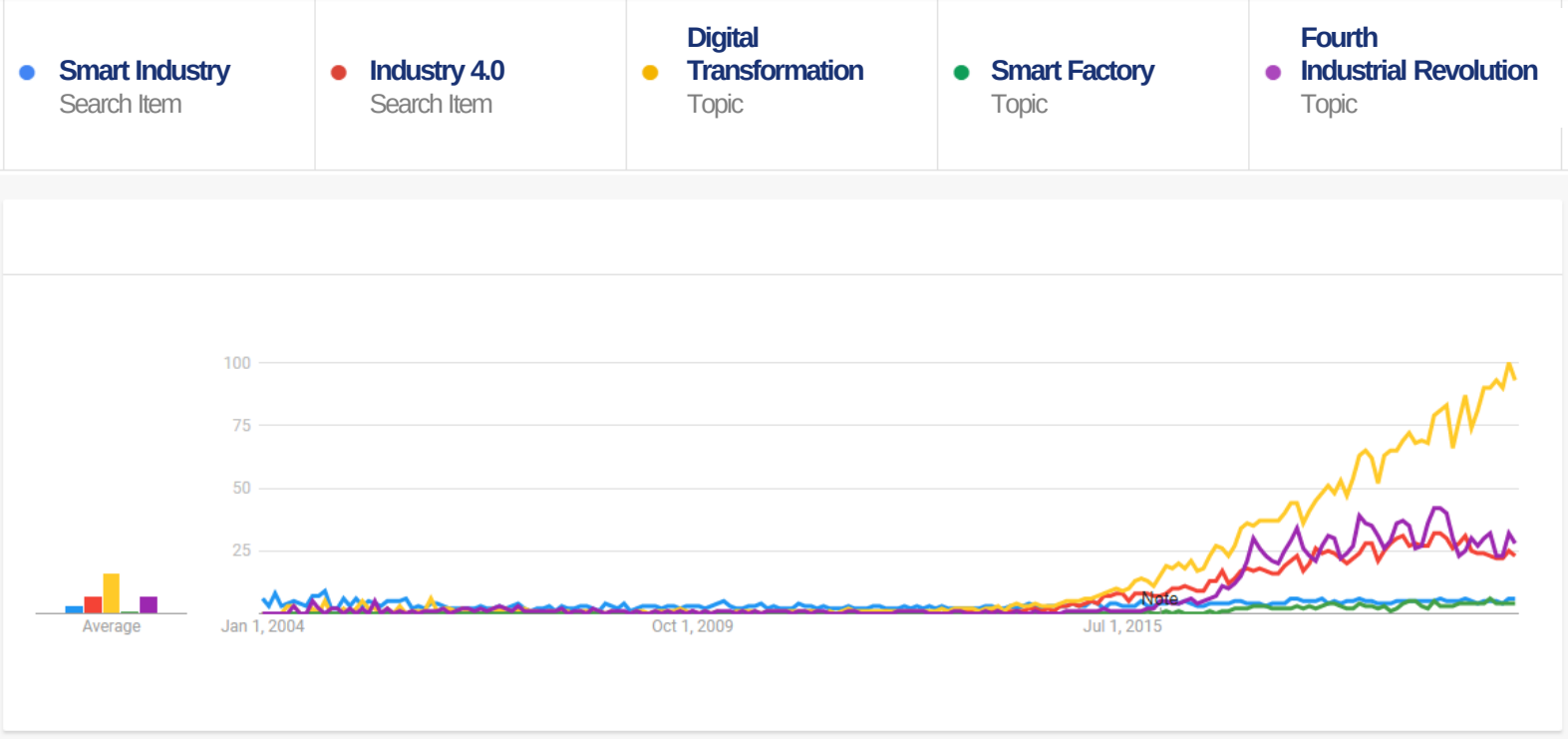
Is Digital Transformation oversold?



Is Digital Transformation oversold?

Is Digital Transformation oversold?

Are companies willing to invest in Digital Transformation?

80%

…of companies think its necessary

What are the benefits in terms of revenue?

20%

What are the results so far?

60%

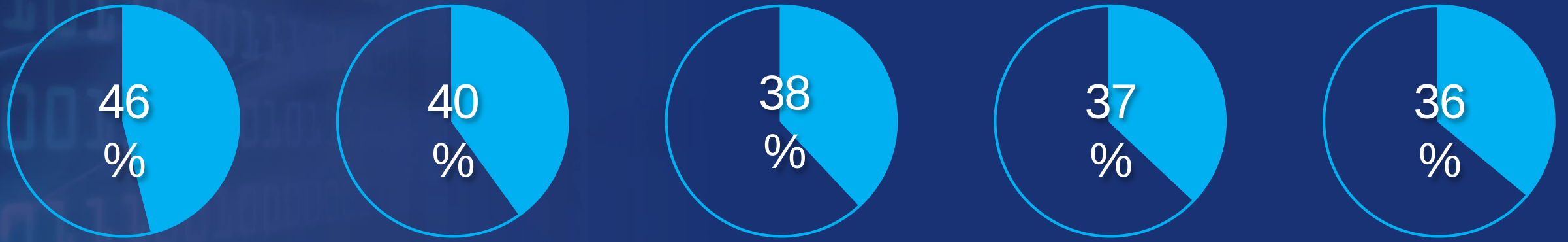
…of companies see limited to no results from Digital Transformation

What are the benefits in terms of profit?

30%

Is Digital Transformation oversold?

Five Common Challenges



Security Concerns

Infrastructure High Cost

Technology Not Scalable

Integration Issues

No Global Support

Image: freepik.com

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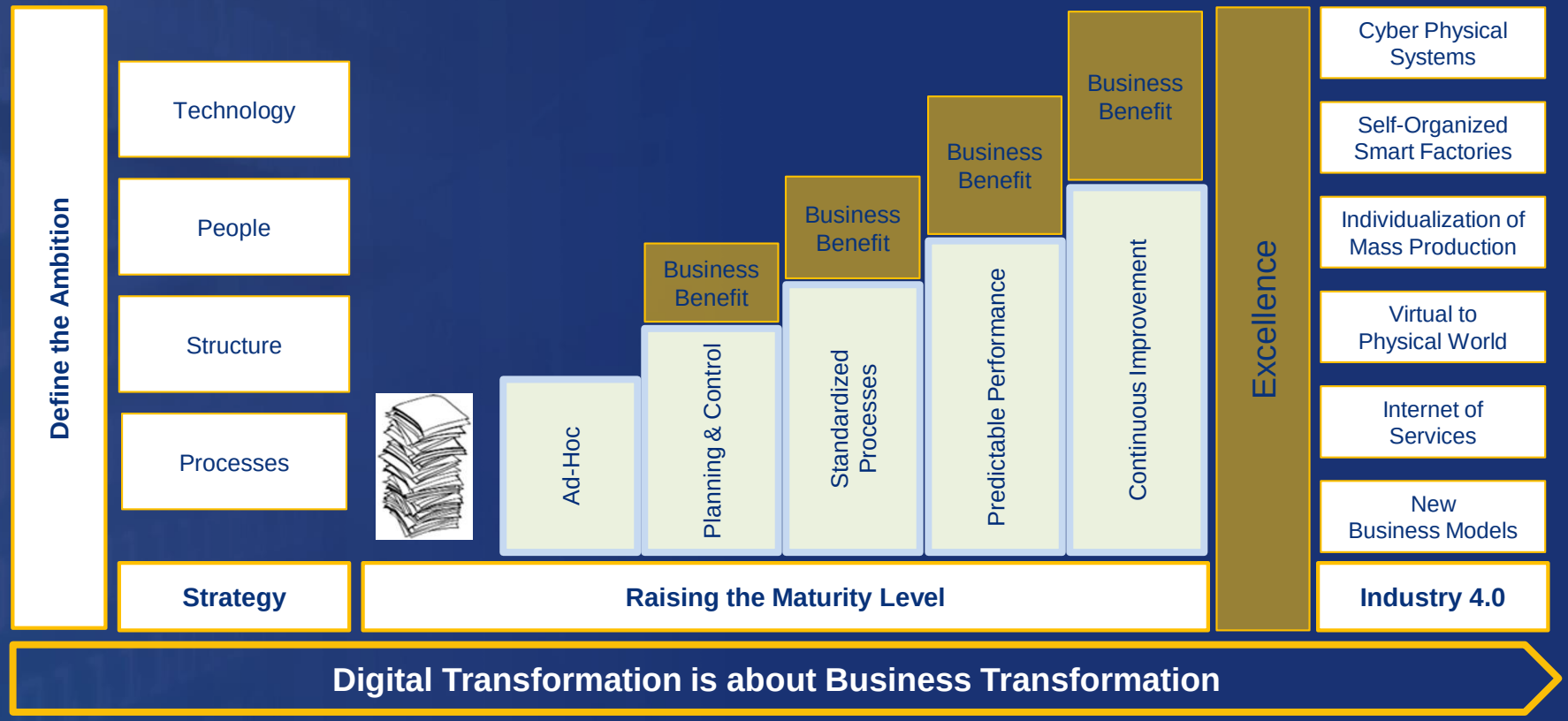
Three things Digital Transformation does NOT need

Common misperceptions about Digital Transformation

1. Release of Personnel (or Recruitment of new Human Resources)
2. Moving everything into the Cloud (Industry 4.0)
3. Endless Budget

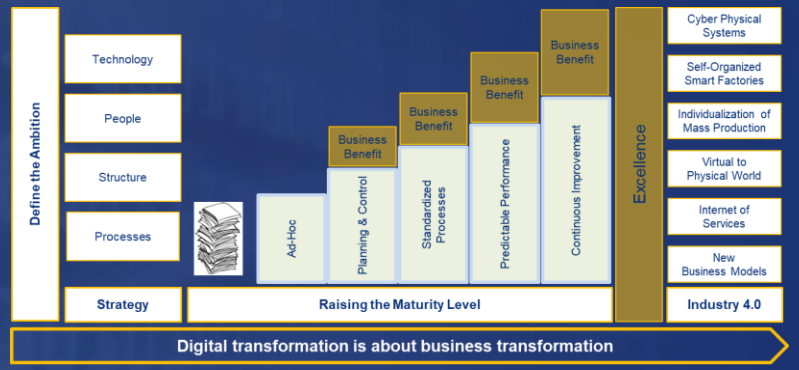
Three things Digital Transformation does NOT need

1. Release of Personnel (or Recruitment of new Human Resources)



Three things Digital Transformation does NOT need

1. Release of Personnel (or Recruitment of new Human Resources)



Three things Digital Transformation does NOT need

2. Moving everything into the Cloud

Digital Transformation is about Business Transformation

Three things Digital Transformation does NOT need

2. Moving everything into the Cloud

So what about the *Cloud* then, aye?




Three things Digital Transformation does NOT need

3. Endless budget

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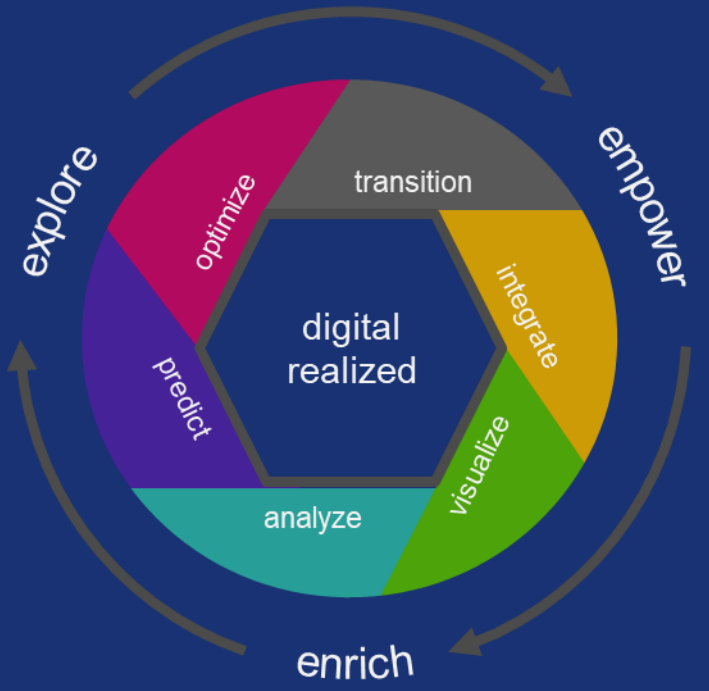
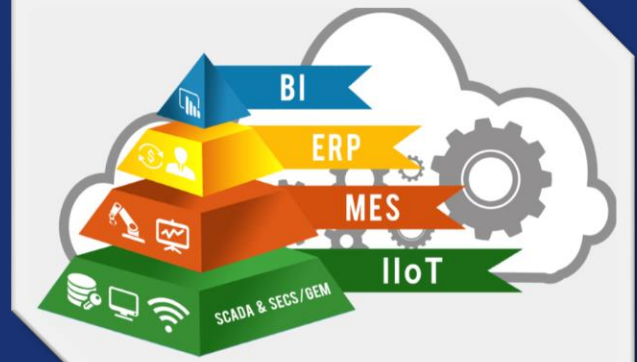
Designing Your Digital Manufacturing Journey

A Methodological Approach



Designing Your Digital Manufacturing Journey

PLATTFORM INDUSTRIE4.0



SMART INDUSTRY READINESS INDEX
CATALYSING THE TRANSFORMATION OF MANUFACTURING

acatech
DEUTSCHE AKADEMIE DER TECHNIKWISSENSCHAFTEN

MESA INTERNATIONAL
Where Manufacturing Meets IT

Designing Your Digital Manufacturing Journey

- Industry 4.0 (Industrie 4.0)
  - Cyber-physical systems, IoT, Cognitive computing, Smart factories, Big Data (AI/ML)
  - RAMI 4.0 – The Reference Architectural Model for Industrie 4.0

- ISA-95 (S95) Enterprise–Control System Integration
  - Functional hierarchy, Functional domains, Resource and Process modelling

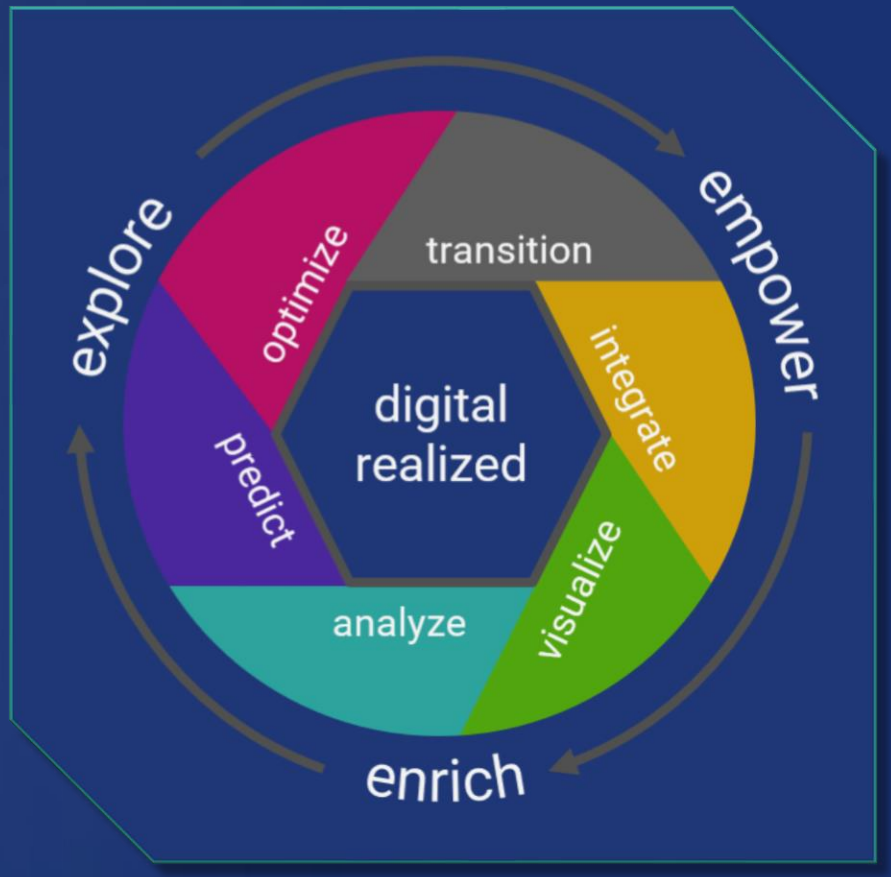
- Singapore Smart Industry Readiness Index
  - 3 Building Blocks, 8 Pillars, 16 Dimensions

- acatech Industrie 4.0 Maturity Index
  - 6 Stage Development Path

- MESA Manufacturing Maturity Model
  - 5 Manufacturing Maturity Levels

Designing Your Digital Manufacturing Journey

Digital Realized is a Methodological Approach to Digital Transformation based on Industry Best Practice and recognised Technology Standards



PLATTFORM INDUSTRIE4.0

ISA-95

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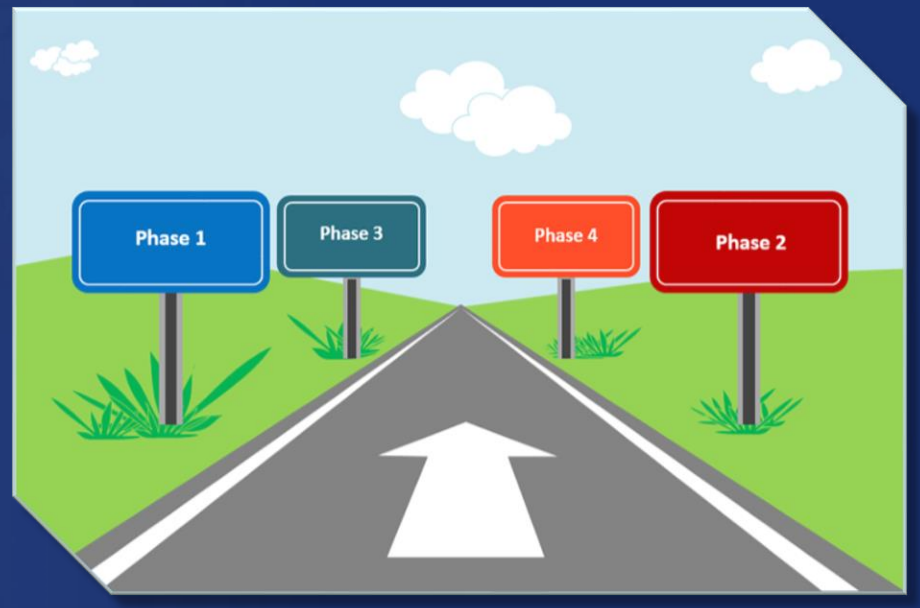
Designing Your Digital Manufacturing Journey

When designing your Digital Manufacturing Journey we start with the ‘explore’ phase in which we consider your specific business inputs. These typically include…

Your current and future business strategy

Your current processes and challenges



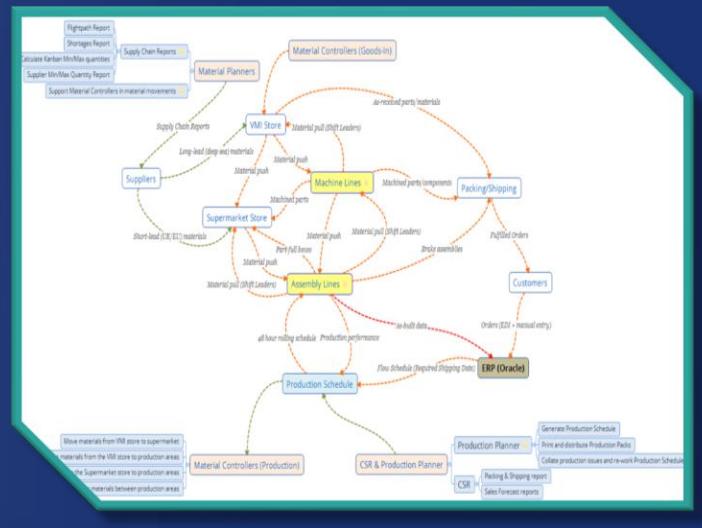
Your targeted benefits and expected ROI

Your current IT systems and technology solutions

Designing Your Digital Manufacturing Journey

- We play-back what we've learned using site-maps, process flow charts, architecture diagrams and supporting slide decks.

- Playback sessions give you a unique perspective on your own business and provide insights into new ways to approach and overcome business challenges through the incorporation of new Digital capabilities.



Designing Your Digital Manufacturing Journey

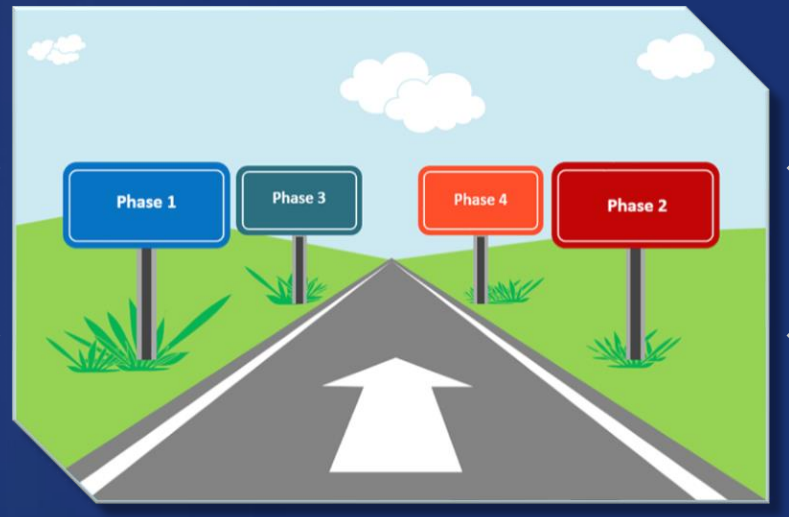
Moving on through the ‘explore’ phase we then analyze your business & operational inputs and apply our methodological approach, the output of which is your Digital Roadmap.

Business case and value proposition development to demonstrate the potential ROI of Digital

A gap analysis study to determine new and improved technology solutions to deliver new Digital capabilities

Your current and future business strategy

your current processes and challenges



Your targeted benefits and expected ROI

Your current IT systems and technology

Designing Your Digital Manufacturing Journey

Define how each challenge might be solved and what value could be realized

Identify Challenges

Understand problems the business faces today, in partnership help define future ambitions, business & technology strategies

Define Capabilities

Define the new capabilities that are required to overcome the challenges. At this stage we do not consider specific products or technologies.

Quantify Benefits

Define and quantify the benefits in order to construct a value proposition, business case and projected ROI.

Designing Your Digital Manufacturing Journey

Inventory & WIP

xx%??

Production volume

xx%??

Productivity / Overhead

xx%??

"What does good look like?"

Waste, Overhandling

xx%??

Cost of Quality

xx%??

On Time Delivery

xx%??

- Construct a business case, value proposition and projected ROI
- Attach value to the challenges, inefficiencies and improvements that have been identified

Designing Your Digital Manufacturing Journey

Mapping the challenges to capabilities and benefits

Per Week

- Waste $28k
- Waste $32k
- CoQ $9k

Challenges

Understand problems the business faces today, in partnership help define future ambitions, business & technology strategies

Capabilities

Define the new capabilities that are required to overcome the challenges. At this stage we do not consider specific products or technologies.

Benefits

Define and quantify the benefits in order to construct a value proposition, business case and projected ROI.

- ROI $28k
- ROI $32k
- ROI $9k

Per Week

Designing Your Digital Manufacturing Journey

Review the options to achieve desired ROI

Per Week

Waste $28k	Challenges	Capabilities	Benefits	ROI $37k
Waste $32k				ROI $28k
CoQ $9k				ROI $69k

Per Week

Designing Your Digital Manufacturing Journey

#ID	Business Driver	Affected Business Area	Challenge Description	Cost to Deliver	Net Profit	ROI
10	Cost of Quality	Production	Equipment Faliing to Deliver to Specificatoin	£11,000	£1,043,290	94.84
13	Cost of Quality	Quality	Failed Audits Due to Quality Concerns	£14,000	£841,368	60.10
16	Improved Efficiency	Production	Information Manually Produced by Individuals	£30,000	£1,660,843	55.36
19	Improved Efficiency	Production	Low Production Efficiencies	£19,000	£776,691	40.88
18	Improved Efficiency	Production	Latest Documents Cant Be Found	£18,000	£678,230	37.68
17	Improved Efficiency	Production	Late Work Orders are Recognised too Late for Recovery	£17,000	£500,199	29.42
14	Manufacturing Intelligence	Production	Hard to Know Who is Working on What	£24,000	£523,037	21.79
15	Cost of Quality	Production	Incorrectly Qualified Personeel Performing Work	£10,000	£194,890	19.49
7	Improved Efficiency	Production	Dont Know the Location of Required Tooling	£60,000	£855,045	14.25
11	Reduction in WIP / FG	Inventory	Excess Amounts of Raw Materials	£19,000	£239,600	12.61
Total				£1,208,500	£11,429,061	403.66

Designing Your Digital Manufacturing Journey

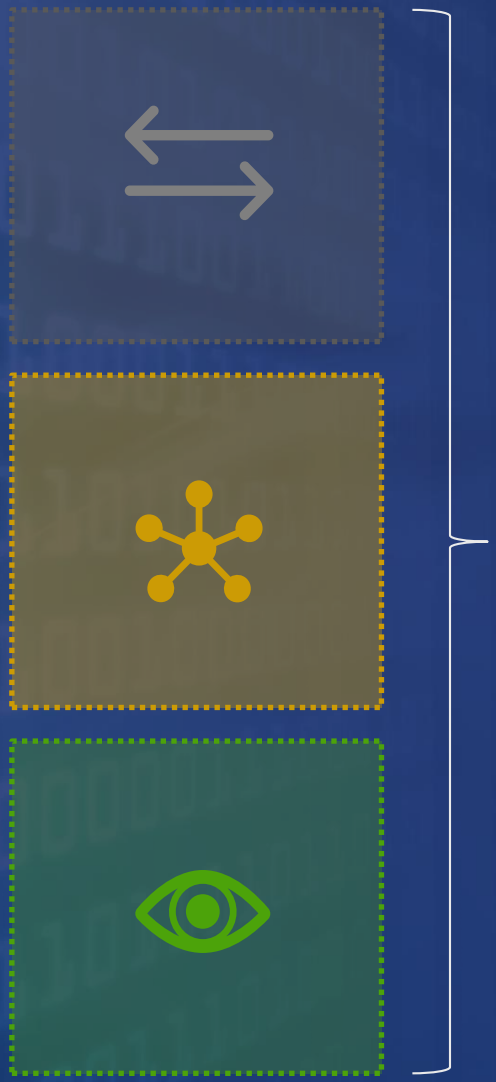
Align the capabilities to Digital technology stages

Capabilities

For each new capability we now consider best-in-class technology options to deliver these new capabilities.

TRANSITION	INTEGRATE	VISUALIZE	ANALYZE	PREDICT	OPTIMIZE

Designing Your Digital Manufacturing Journey



the first three technology stages ***empower*** the organisation and are very much foundational in providing the means by which digital transformation is enabled

Designing Your Digital Manufacturing Journey

- **transition**
  - move away from manual paper-based processes and operations to digital processes enabled through the use of (and where necessary, the introduction of) automation, digital equipment and computer based systems

- **integrate**
  - connect datasets and point solutions in order to establish a coherent, connected digital solution. at this stage the automatic collection of process and machine data becomes a key enabler for many of the capabilities that will follow

- **visualize**
  - digital dashboards, virtual representations of process elements and/or whole facilities. comprehensive real-time reporting capabilities including key metrics and other operational information of the manufacturing operations and environments

Designing Your Digital Manufacturing Journey

transition	network architecture & infrastructure	industrial standards & regulations	capable technology & machines	plant automation (PLC / tools)	mobile & remote devices
	location & tracking services	manufacturing operations management	finite capacity planning	defect & rework identification	definition & document management
integrate	overall equipment efficiency	dispatch & process execution	remote configuration & management	automated data collection	contextualised & consolidated datasets
	standards based interfaces	manufacturing & business intelligence	integration platforms (IoT/IIoT)	intelligent automation & devices	integrated supply-chain & logistics
visualise	material & part verification	live key performance metrics	live executive reporting	real-time notifications & alerts	live facility dashboard & mimics
	condition based monitoring	real-time data capture & presentation	supply-chain visibility & estimates	real-time stock reports and triggers	live asset monitoring

Designing Your Digital Manufacturing Journey

The subsequent technology stages provide the means by which we are able to ***enrich*** the capabilities previously delivered and to extend the solution through the introduction of more sophisticated capabilities and more advanced technologies

Designing Your Digital Manufacturing Journey

- **analyze**
  - providing actionable data and insights across all areas of manufacturing operations and the wider business to enable timely and informed decision making

- **predict**
  - providing the ability to anticipate and simulate failures or other significant future events in order to model and mitigate the impact, thereby reducing the risk of unexpected outcomes or interruptions to manufacturing operations

- **optimize**
  - develop and implement optimisation strategies that provide operational, process and energy efficiency gains through continuous improvement and cost benefit analyses

Designing Your Digital Manufacturing Journey

analyse	lean / six sigma investigations	root cause exploration and analysis	correlation and relationship investigation	trend identification and analysis	advanced big data analytics
	artificial intelligence & independence	self monitoring equipment	self diagnostics facilities	closed loop manufacturing	preventative maintenance algorithms
predict	predictive maintenance scheduling	tool life analysis & optimisation	intelligent integrated supply-chains	predictive service regimes	predictive quality & test regimes
	adaptive processes & equipment	facility simulation & optimisation	digital twin manufacturing	digital thread maturity	utilisation of predictive web services
optimise	smart factories & smart buildings	optimised energy consumption	virtual & augmented reality services	machine learning & intelligence	cyber-physical systems & solutions
	self optimising processes and equipment	automated & autonomous decisions	optimised material & purchasing	rapid facility reconfiguration	new product & service opportunities

Designing Your Digital Manufacturing Journey

Align the capabilities to Digital technology stages

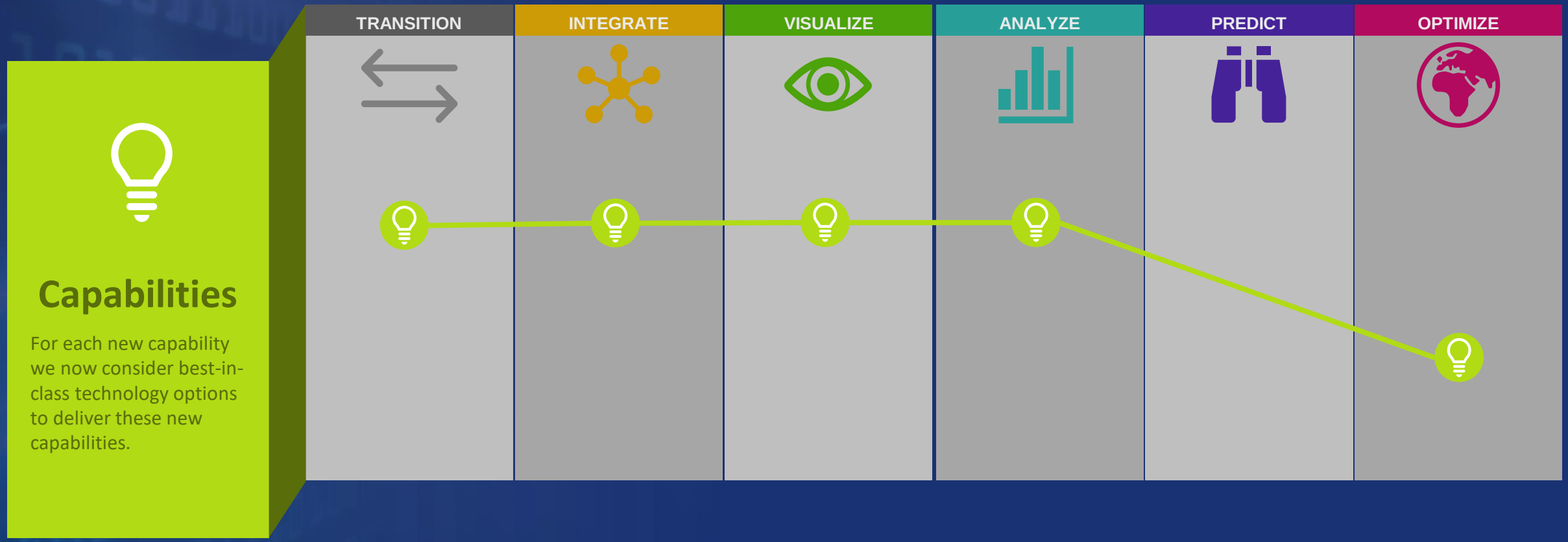
Capabilities

For each new capability we now consider best-in-class technology options to deliver these new capabilities.

TRANSITION	INTEGRATE	VISUALIZE	ANALYZE	PREDICT	OPTIMIZE

Designing Your Digital Manufacturing Journey

Create a Digital Roadmap describing your Digital Journey



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Create a Digital Roadmap describing your Digital Journey

Capabilities

For each new capability we now consider best-in-class technology options to deliver these new capabilities.

TRANSITION	INTEGRATE	VISUALIZE	ANALYZE	PREDICT	OPTIMIZE

Designing Your Digital Manufacturing Journey

Summing it all up:

- We have developed Digital Realized as a methodological approach to designing Digital Manufacturing journeys
- We work with you to identify challenges and capability requirements together with associated quantifiable benefits
- We identify appropriate technologies within key technology stages to support the delivery of the selected new capabilities
- We describe all of this, together with clearly defined delivery phases in line with your business and operational needs, in a Digital roadmap

Designing Your Digital Manufacturing Journey

Key take-aways:

- There is a compelling case for Digital and the time is now
- We have presented a clear insight into how digital aspirations can be realized to any level and within any budget
- ‘Digital Realized’ is the right tool for you and we are ready to help you realize your digital ambitions

Thank You!

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Q & A Session

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