

Scaling up innovation and technology

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Panellist:



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Keith Waller

Programme Director,
Construction Innovation Hub

#ceconference2023



Scaling up innovation and technology

Keith Waller

25 January 2023



with



From R&D to Deployment



with





We will look to procure construction projects based on product platforms comprising of the kit of parts, production processes, knowledge, people and relationships required to deliver all or part of construction projects”

THE CONSTRUCTION PLAYBOOK

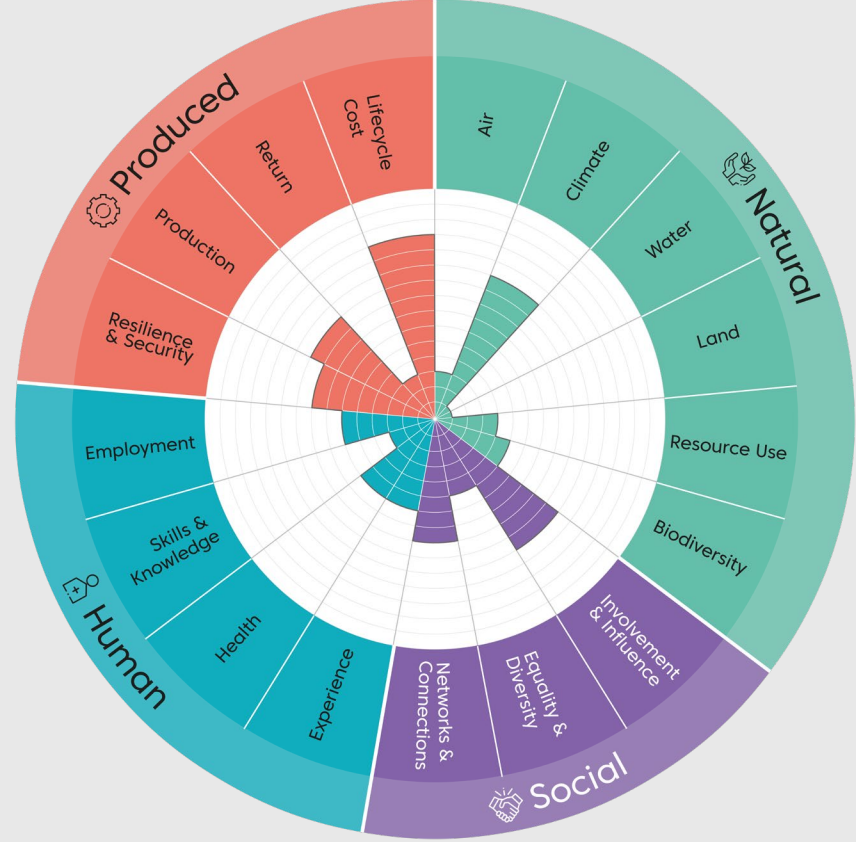


Construction Playbook
(Dec 2020, updated 2022)



Transforming Infrastructure Performance (2017)

THE PRODUCT PLATFORM RULEBOOK



What do we mean by “sandpits”?

Sandpits provide a safe space to develop, test and refine innovative solutions, products and approaches to:

- de-risk their application on live projects;
- build understanding and capability amongst industry and clients;
- test interoperability and scalability, and;
- measure how these approaches add value and support the broader objectives.



What did we seek to demonstrate through the sandpits?

- Could this approach boost productivity, add value and provide opportunities for growth?
- Could we use the sandpits to prove that the platform approach would accelerate delivery and reduce waste?
- Could we prove that using a manufacturing approach delivers a reduction in energy use and carbon saving – both in construction and in operation?
- Could we demonstrate collaboration and flexibility - not just on projects but across sectors?
- Could we prove safer ways of working, better quality and better services?
- Could we create the right space for innovation to come forward and de-risk it for the future?



Installation Time - Concrete pre-cast frame

Traditional (in-situ)

30 days

(curing included) with

3 specialist trades

Formwork,
reinforcement,
concrete)

Sandpits

Top of foundations to
completed frame:

5-day installation

(including mobilisation & demobilisation)

5 operatives

260 total hours in 5 days

20

crane lifts:

- 6 beams
- 6 columns
- 12 slabs

27

components

7 'just in time'
deliveries



Could we prove safer ways of working, better quality and better services?

- Through a designed process we reduced the reliance on unplanned activities - significantly reduced potential for accidents and taking the guesswork out
- Fully finished toilet podules in the Education Sandpits – quality improved with reduced maintenance and, in turn, improved services
- By moving traditional jobs to a more controlled environment we can build a more inclusive and diverse workforce

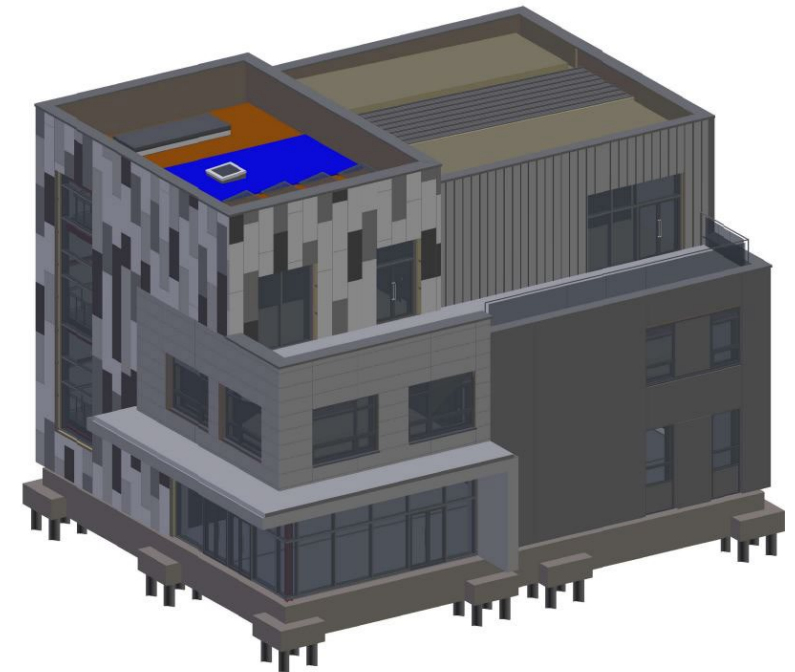
In a study of over 500 construction projects, it was found that 39% of all injuries on construction projects happen because of rework and there is a 70% greater probability of being injured while attending to rework

(REWORK RISKS: 39% of injuries occur during rework... - BBI Services; Quality and Safety in Construction: Creating a 'No Harm Environment' (researchgate.net))

Could we create the right space for innovation to come forward and de-risk it for the future?



Safe physical space to fail/succeed



And a digital space to test and learn



constructioninnovationhub.org.uk

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Andreea Vihristencu

Professional Services Consultant, Asite &
G4C Co-Chair

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**What's stopping construction
industry to digitalise?
(And some remedies)**

ANDREEA VIHRISTENCU

Andreea Vihristencu



Professional Services Consultant @Asite
National Co-Chair @G4C



Key areas



**Overcoming Platform
Complexity and Fragmentation**



**Resolving Non-standardised
Data**



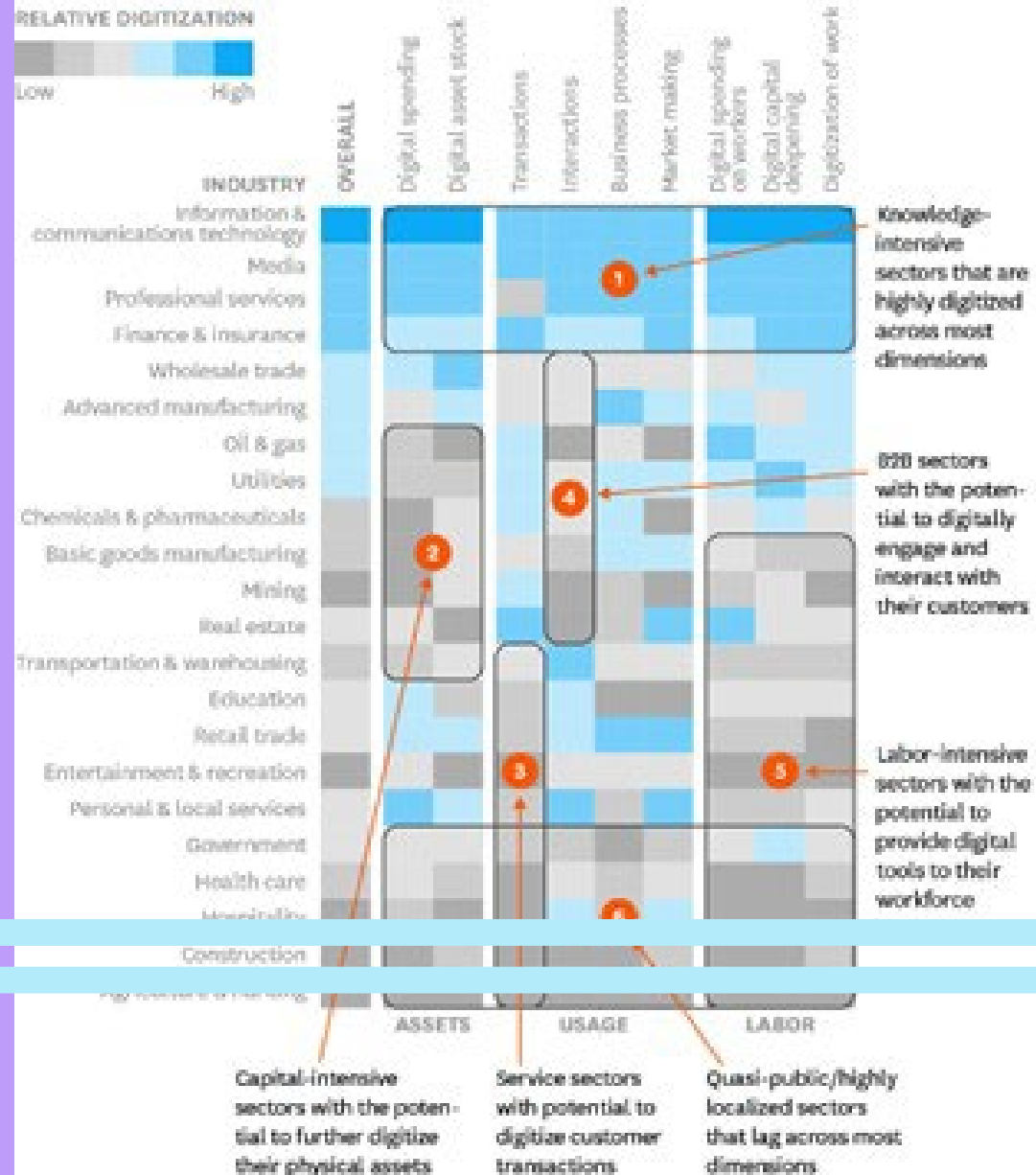
**Mindset Change and Tackling
Skills Shortage**

HOW DIGITALLY ADVANCED IS THE CONSTRUCTION INDUSTRY

According to **McKinsey Global Institute** industry digitization index, the construction industry ranked second from last in its list of digitized sectors.

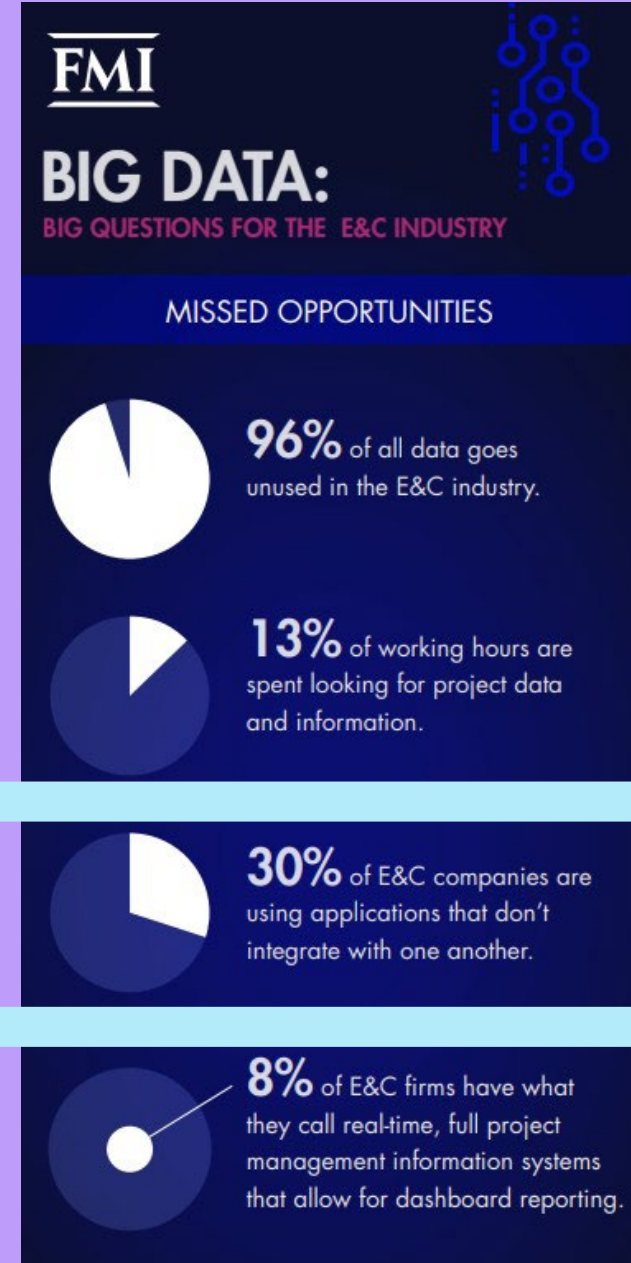
How Digitally Advanced Is Your Sector?

An analysis of digital assets, usage, and labor.



OVERCOMING PLATFORM COMPLEXITY AND FRAGMENTATION

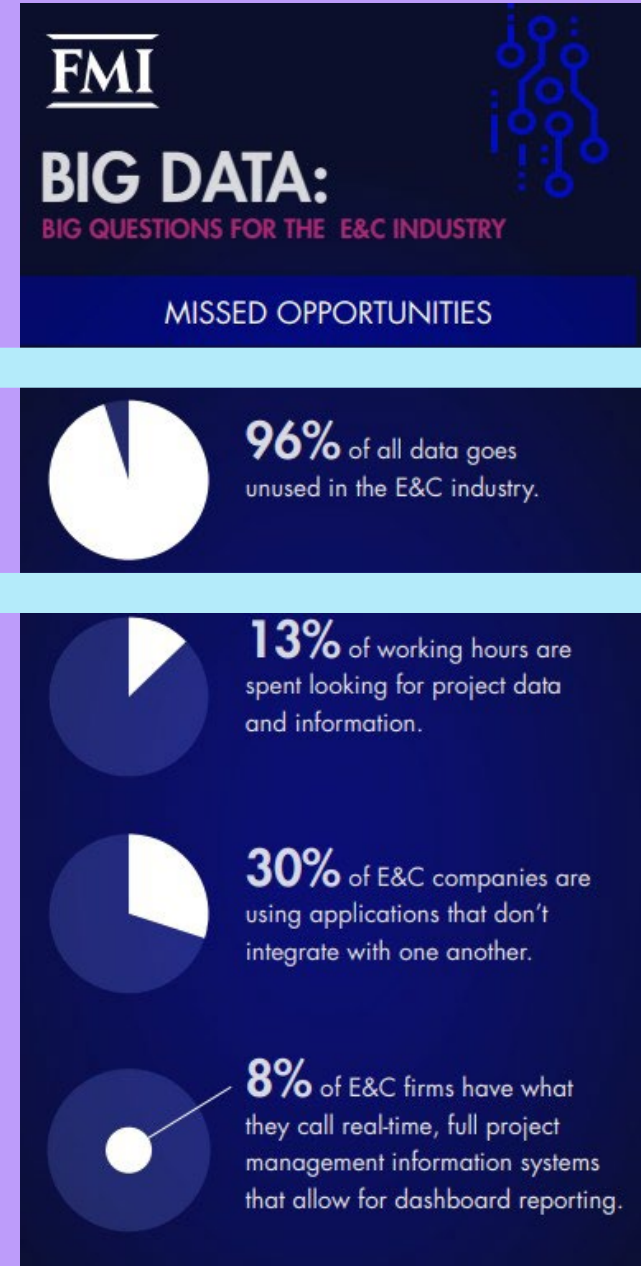
FMI states that **30%** of E&C companies use applications that don't integrate. This means workers rely on single one-off solutions to complete their work and keep their projects moving, leaving the door open for disorganization, failure to share information, and a slip in standards.



RESOLVING NON-STANDARDISED DATA

According to **FMI**, **96%** of all data in the E&C industry goes unused.

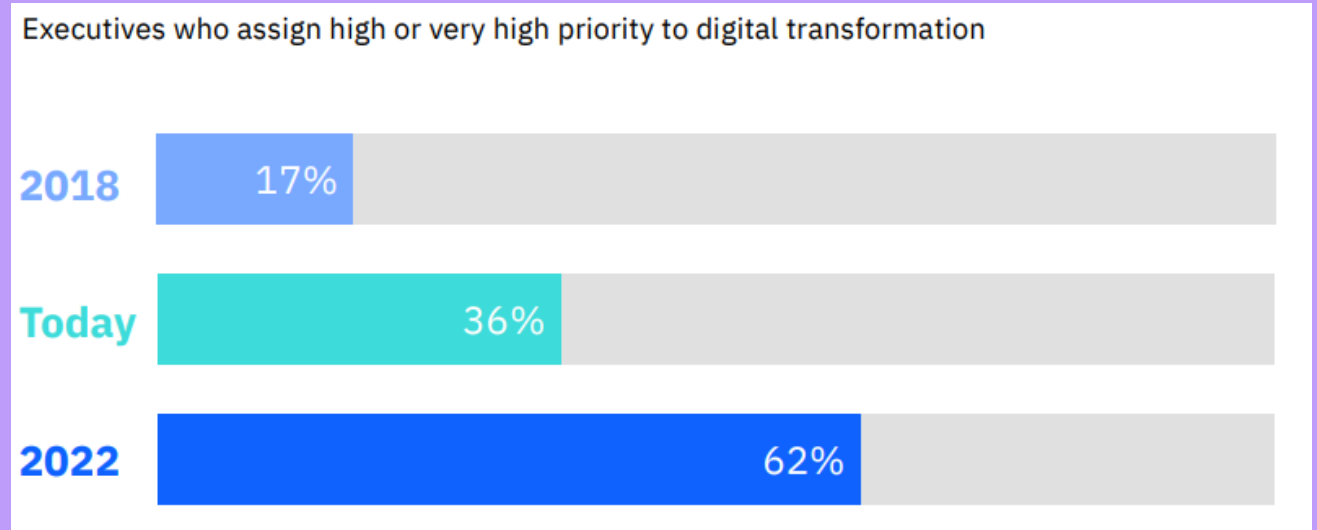
Emerson, the multinational manufacturing company, 30% of initial data created during design and construction phases is lost by project closeout.



MINDSET CHANGE AND TACKLING SKILLS SHORTAGE

According to [JBKnowledge](#), the information technology services company, subcontractor dependence on spreadsheets decreased only **1%** from **2018 to 2019**.

In the wake of the pandemic, IBM states that **62%** of executives have assigned “high or very high priority” to digital transformation in 2022, compared to just **17%** in 2018



The takeaway

Construction leaders and organizations must realize that construction technology is no longer a nice- to-have but a **must-have**. They should be ready to embrace what construction technology offers. Without overcoming the barriers that stand in their way, they risk getting left behind.





Thank you!

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Karine Bartle

Head of Development for Infrastructure
Projects, Wincanton

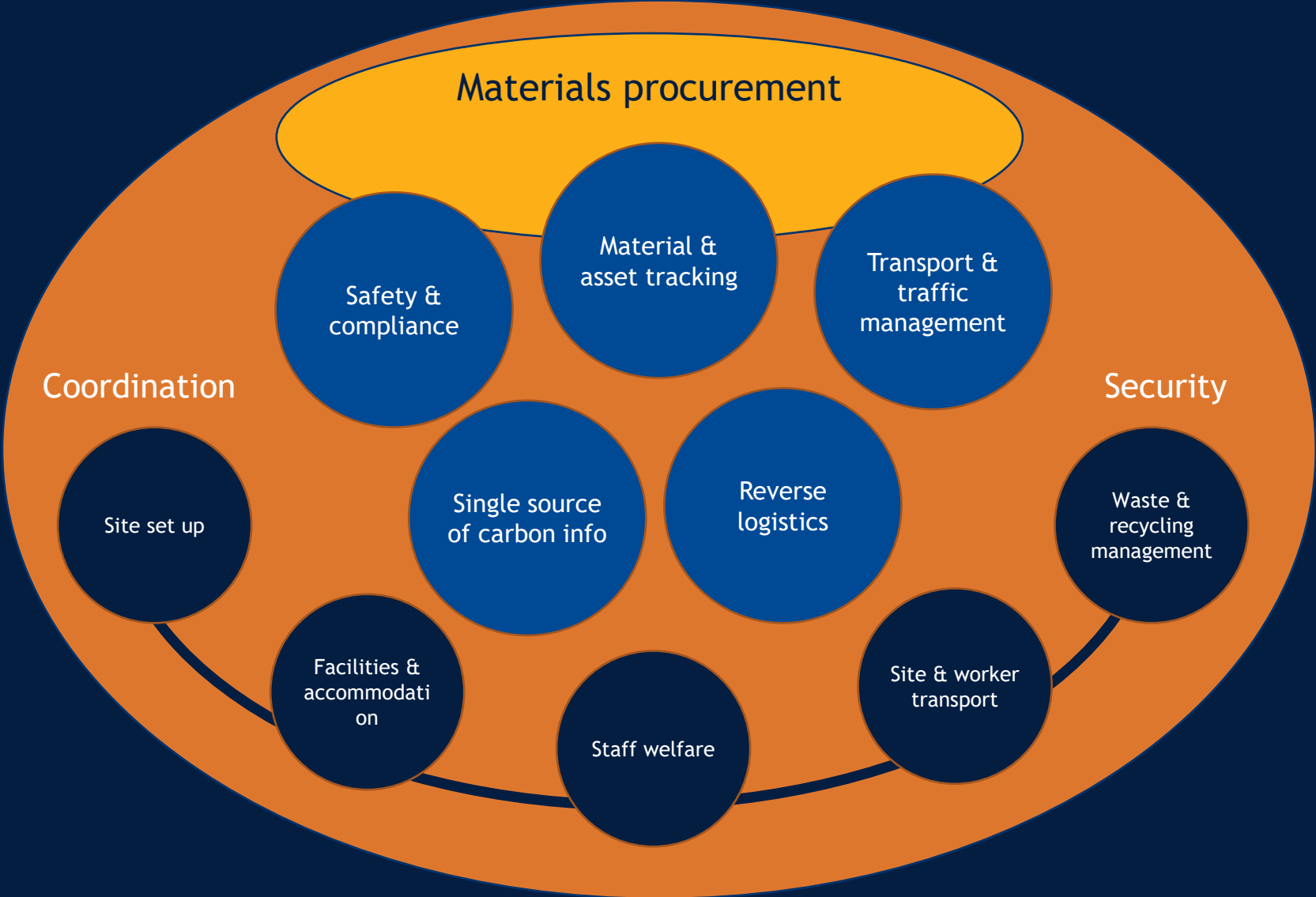
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Construction Logistics

Wincanton

The possible breadth of logistics in construction



What logistics means to Wincanton...

Wincanton

Right resources

Right place

Right time

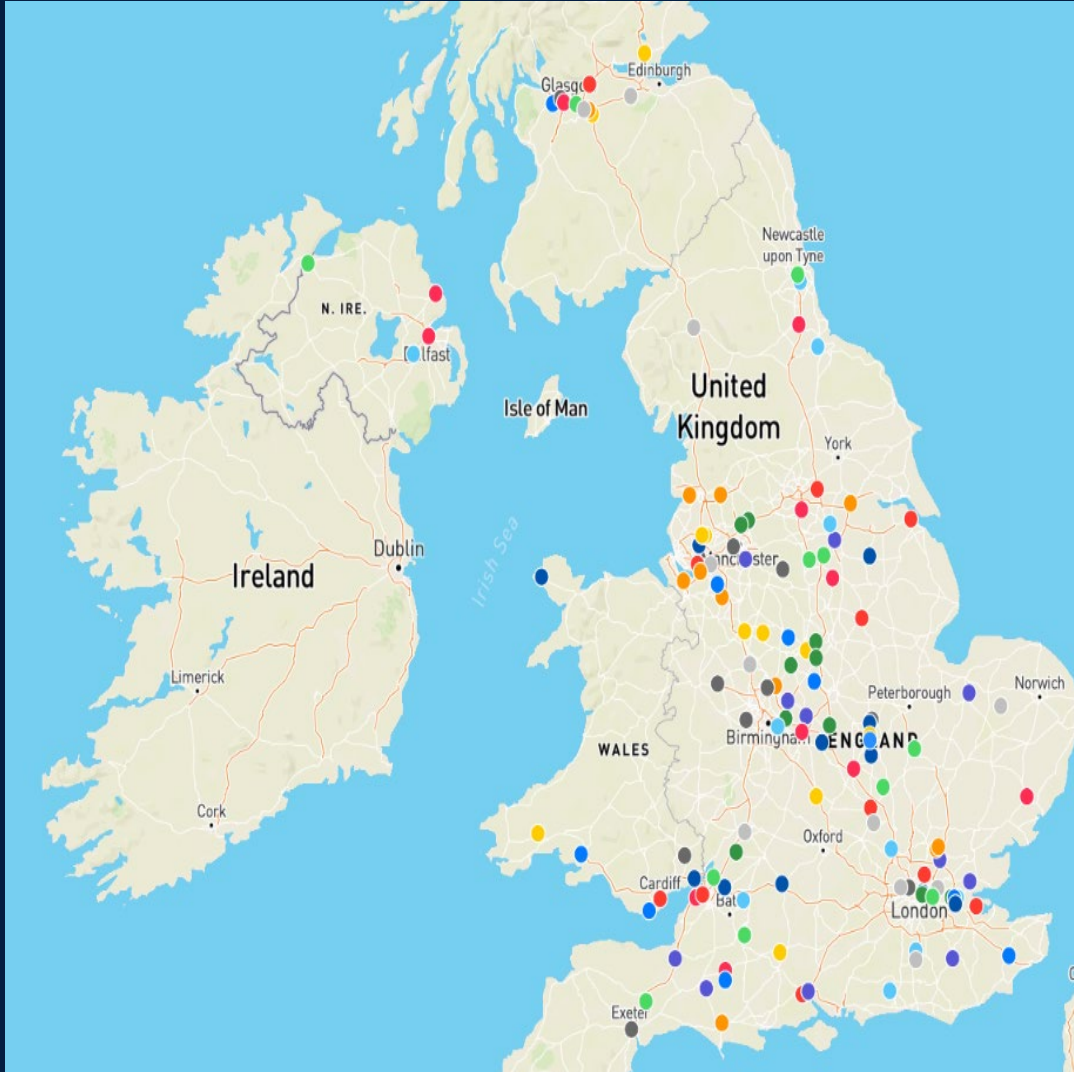
Right quality

Right cost

.....with visibility

Who are Wincanton?

Wincanton



Largest **British** owned logistics company

160+ locations with over **16m sqft** of space

People business employing 20,000 people

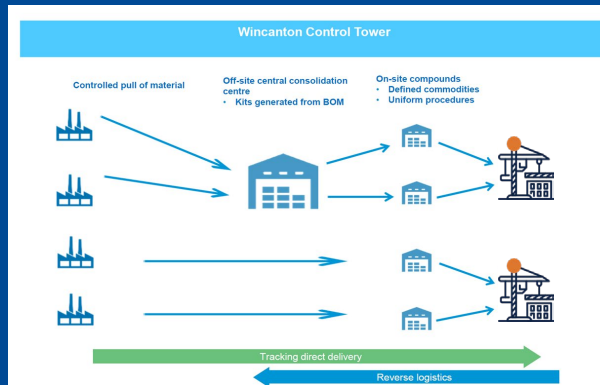
8,000 vehicles supported by **700** approved subcontracting partners

Operating across **multiple** sectors

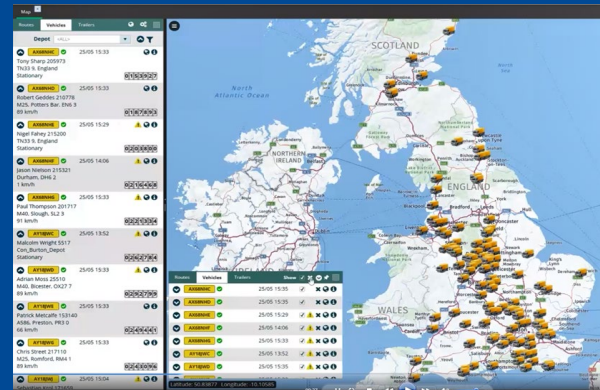
Technology to enable logistic control

Wincanton

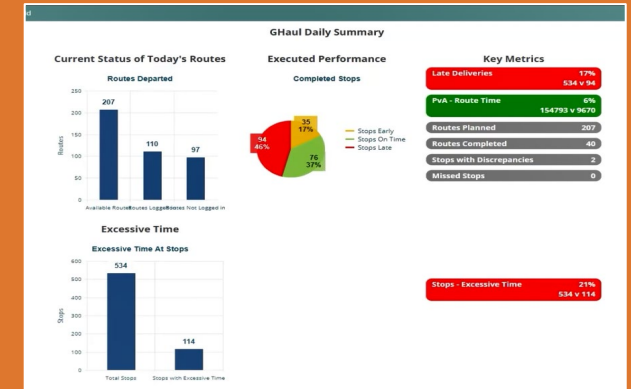
Understand project plans and logistic requirements



Get visibility of logistics flows and performance



Use data to improve logistics and optimise operations

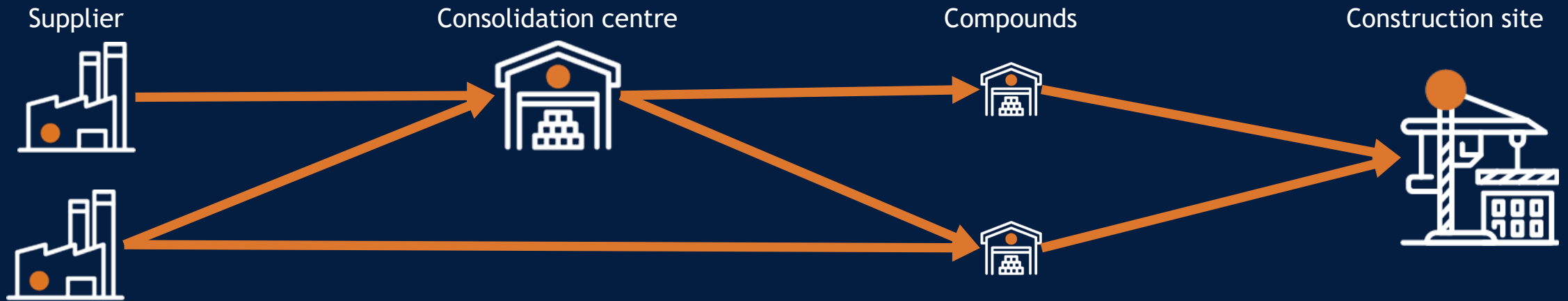


Understand & measure

Optimise

An opportunity enabler...

Wincanton



Visibility of supply issues/ opportunities

Inbound supply chain control

Local milk-round collection

Consolidation centre(s)

JIT deliveries

Kitting vs Job BOM

Consolidated delivery to site

Transport control/sequencing

Reverse logistic management

Material disposal

Proactive reporting

Material visibility & MI

Thank you

Karine Bartle

Head of development - Infrastructure

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Dale Sinclair

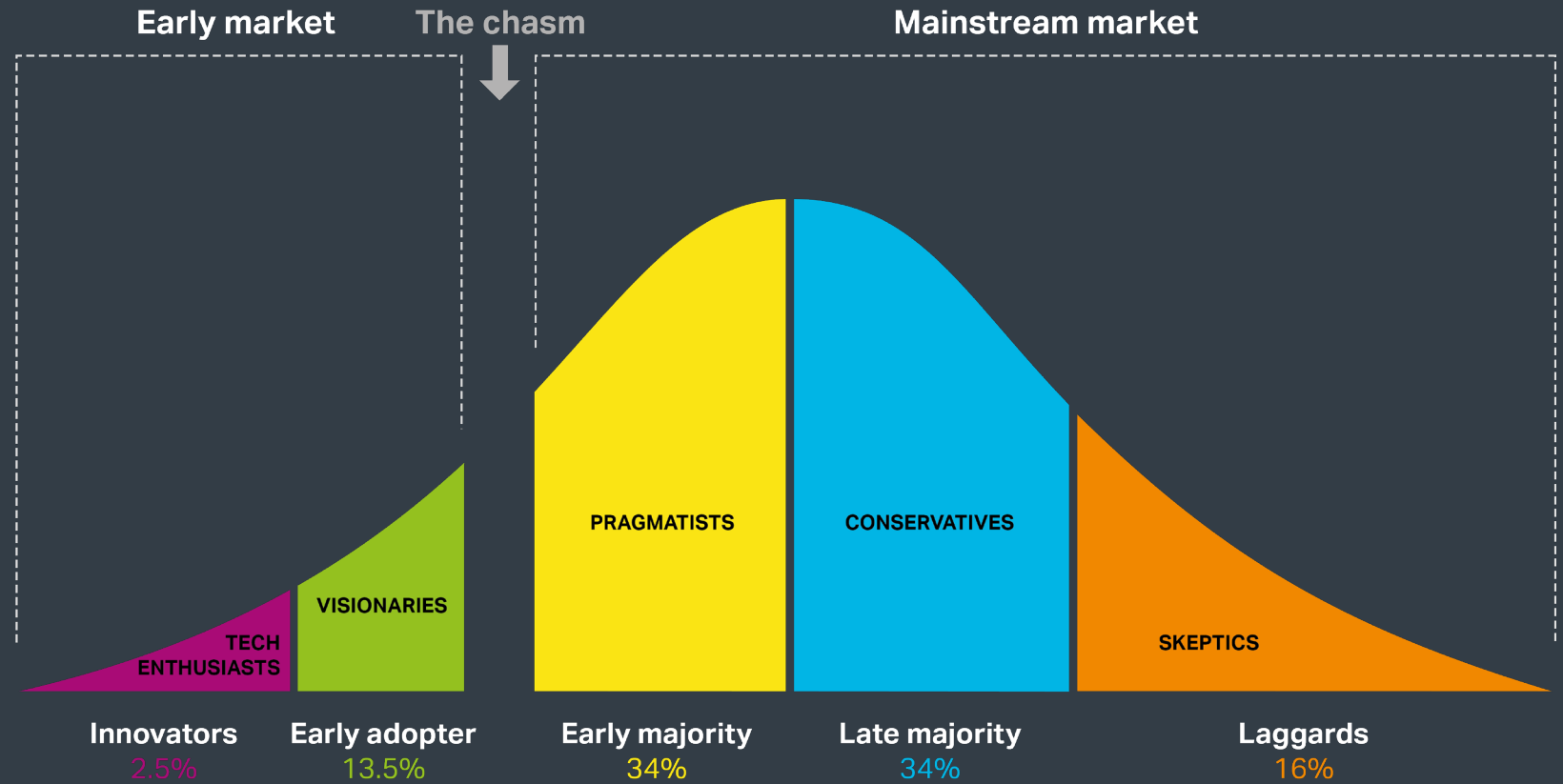
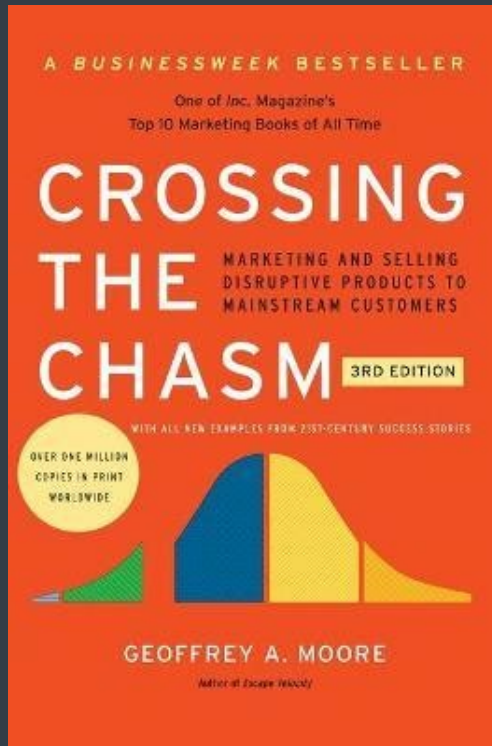
Head of Digital Innovation, WSP

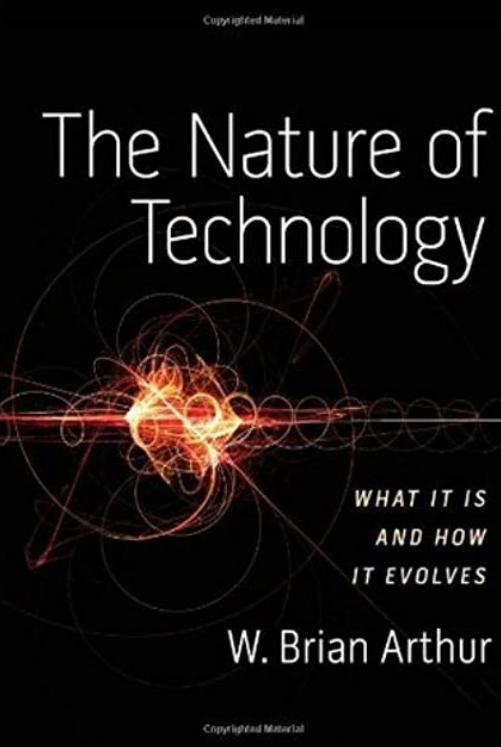
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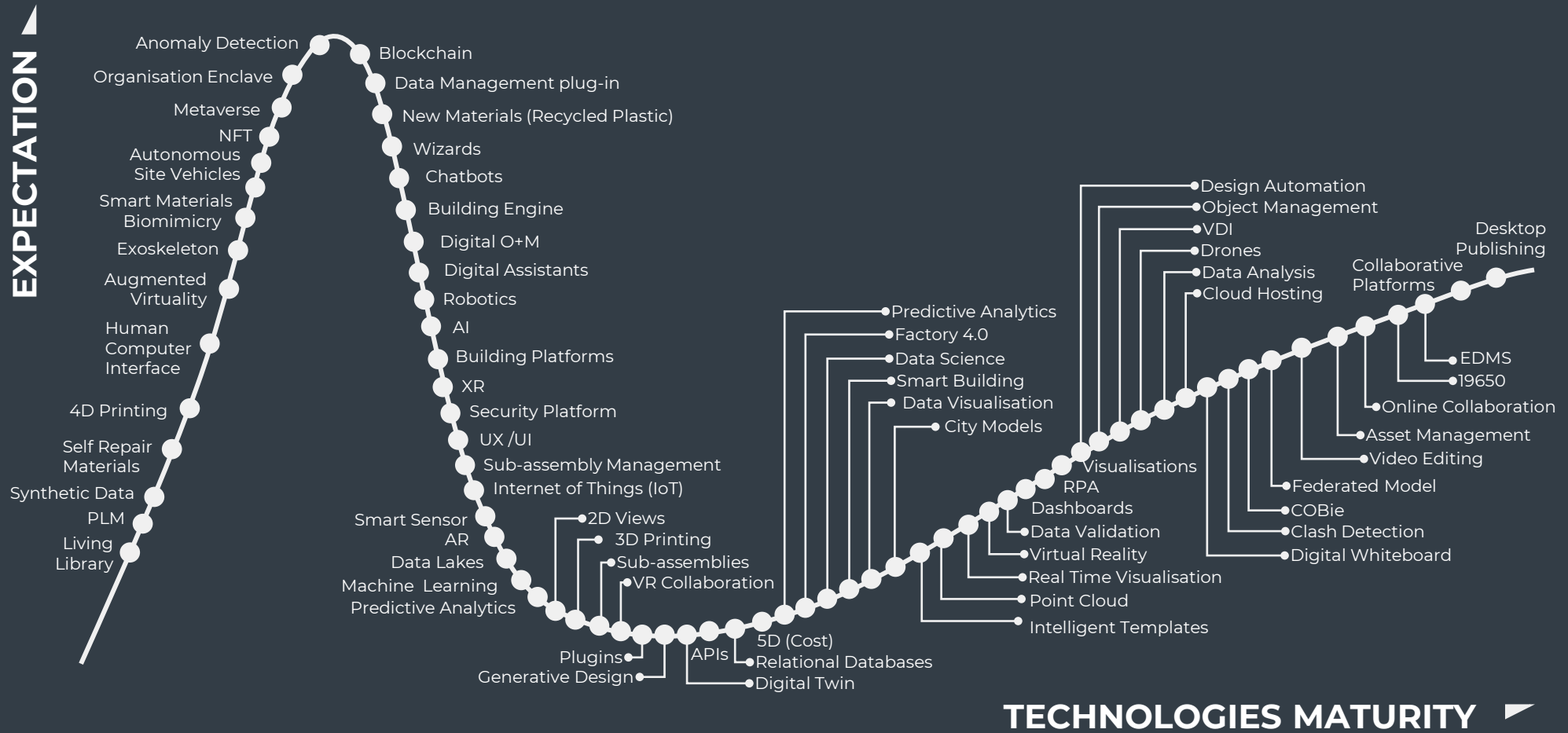
WSP Digital Innovation

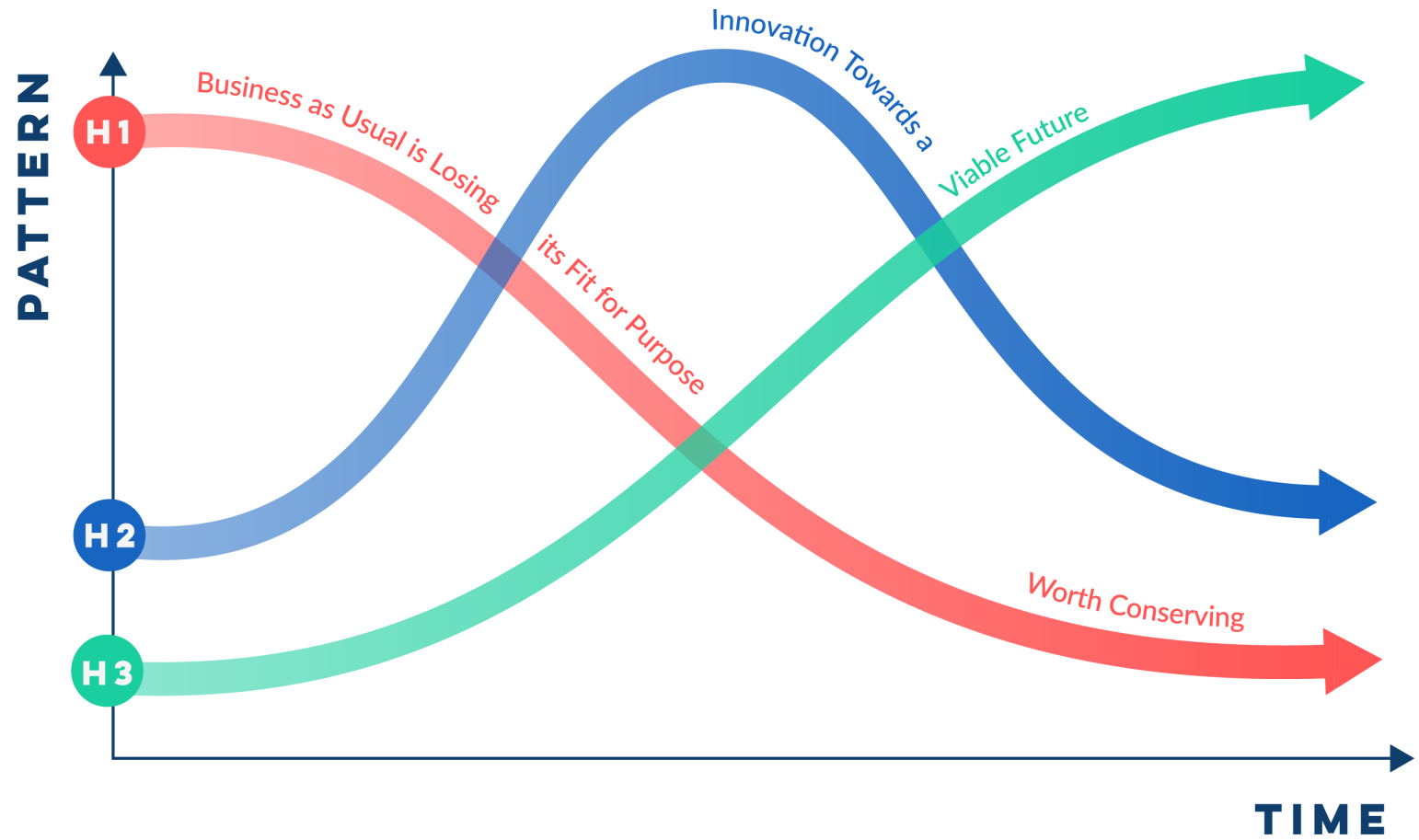
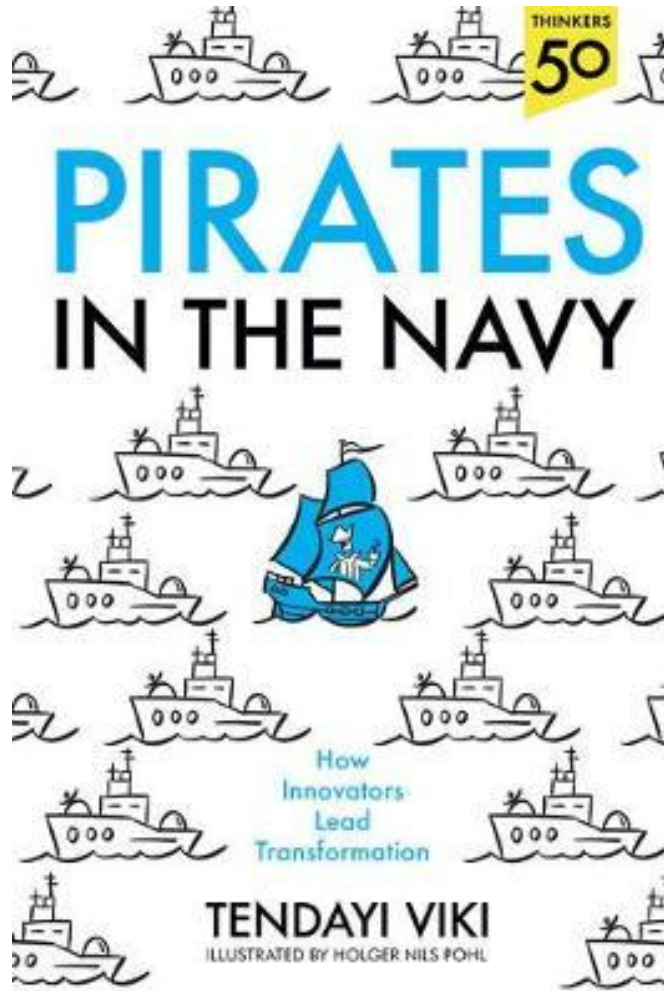
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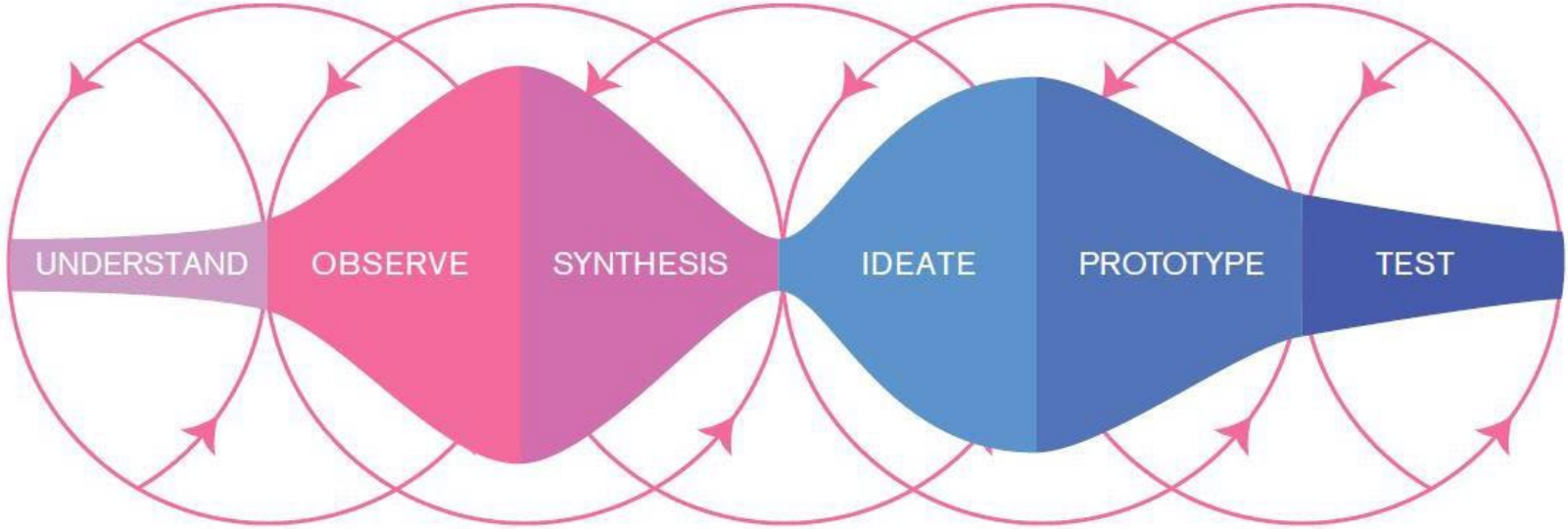
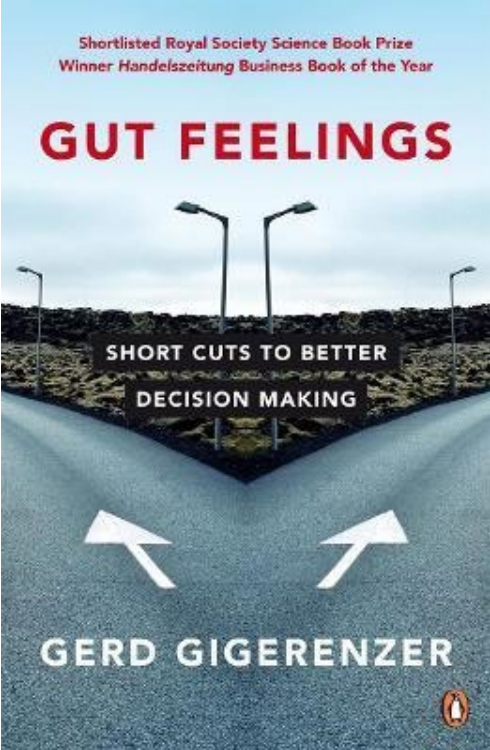
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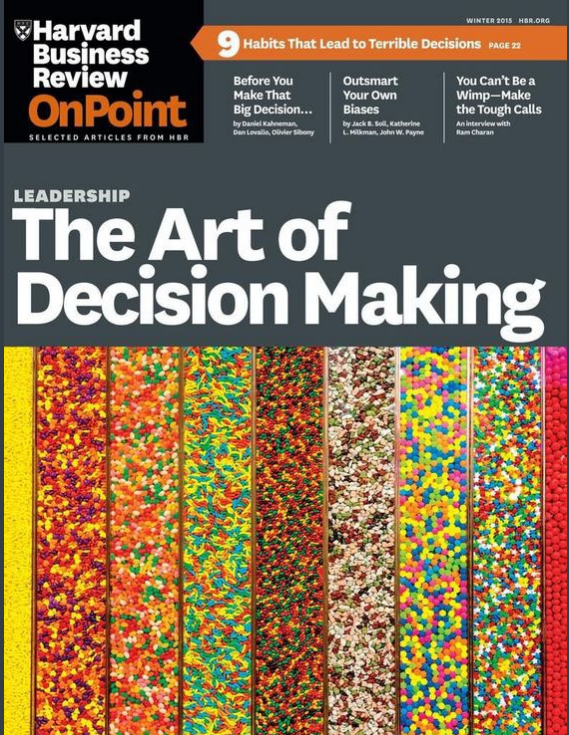










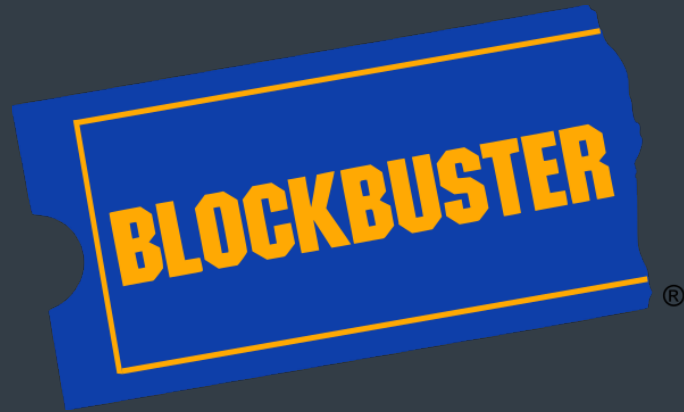


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“Organizations can absorb
only so much change”

Gartner Research



Change

Optimised Traditional



Disruption

Paradigm Shift

Thank you

WSP Digital Innovation

January 2023



wsp.com

slido



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