Digital Transformation: Best Practices and Learned Lessons

NAMES19

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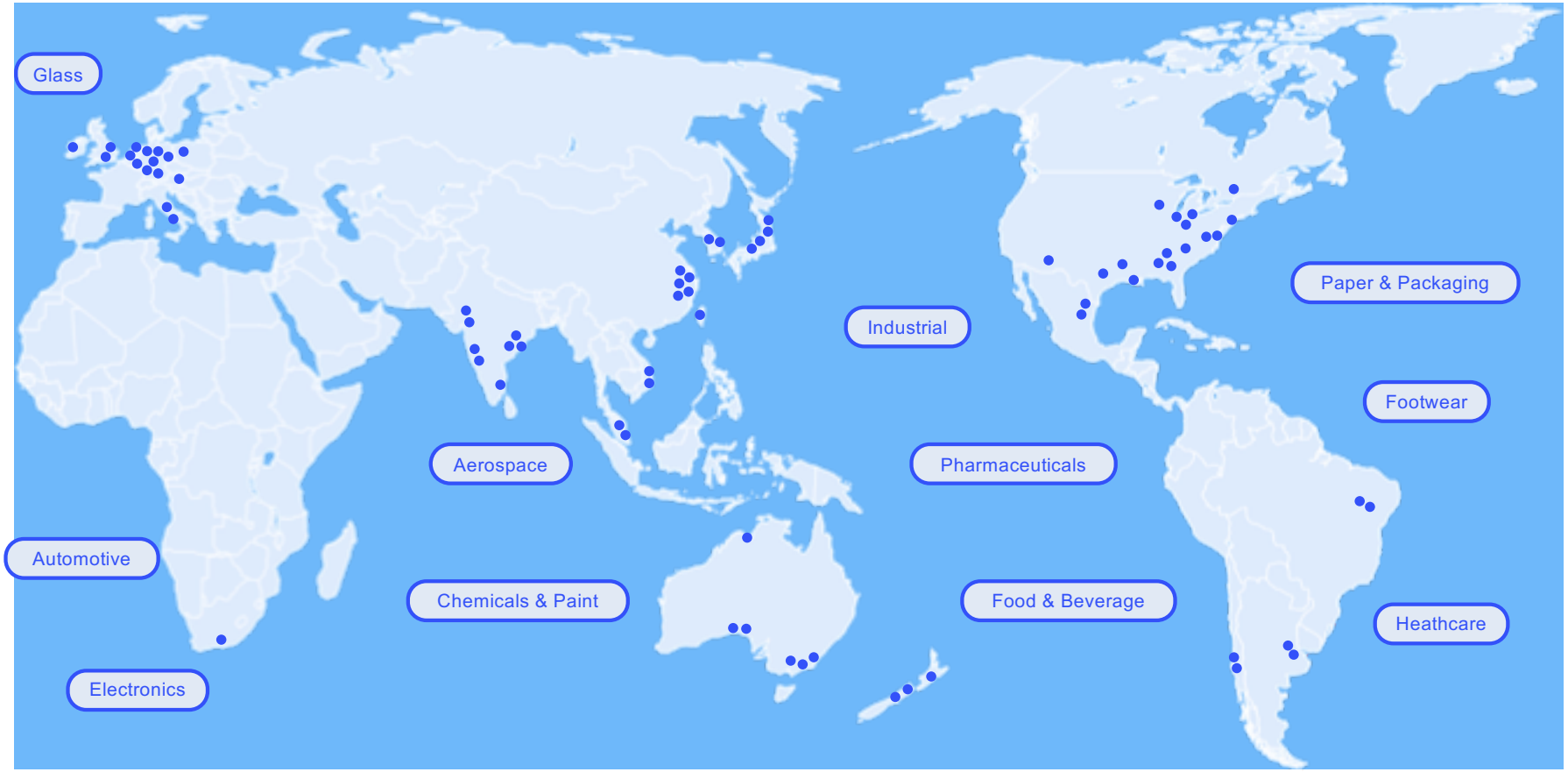
April 16, 2019

So what have we learned…
And what do we hope you'll take away

1. **Smart factories do not enable smart companies**
2. **Manufacturers can't digitally transform**
3. **Most of the application vendors you meet here won't solve your problems**

We've seen a lot…



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Lessons from the front lines

600 million cans per year

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Highly automated processes …

- Highly efficient
- Continuous improvement
- Data-driven culture

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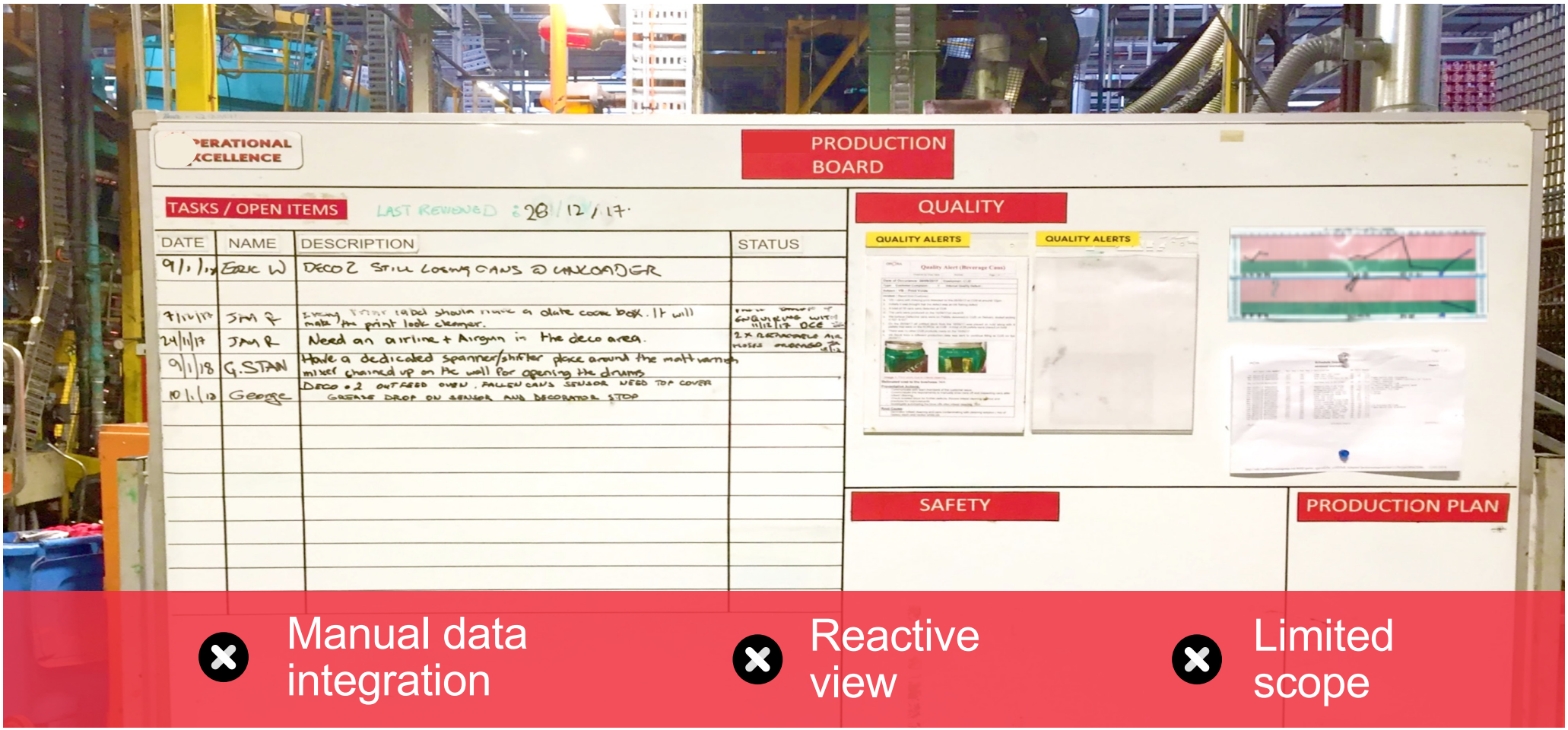
Supported by analog reporting and fragmented analysis



- Manual data integration
- Reactive view
- Limited scope

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Forbes

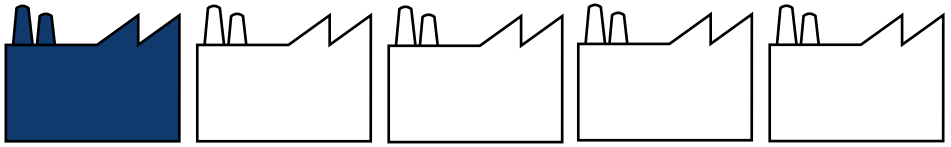
84% of companies fail at digital transformation

74% of IoT projects not considered a success

Two approaches

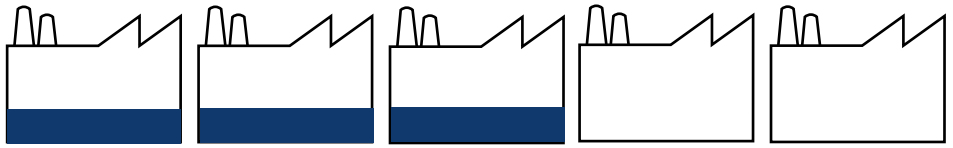
Smart Factory

- **Pilot first:** Deploy initiative across the end to end process in a lighthouse facility
- **Pros:** Controlled IT environment; Initiative support, build best practices
- **Cons:** Limited applicability across other facilities



Foundational Capability

- **Targeted capability:** Rapidly deploy capability across multiple facilities
- **Cons:** Implementation complexity; coordination challenges; fragmented IT and OT technology and operational environments
- **Pros:** Real-world considerations for scale are defined up front; Coordination is forced. Scale, scale, scale



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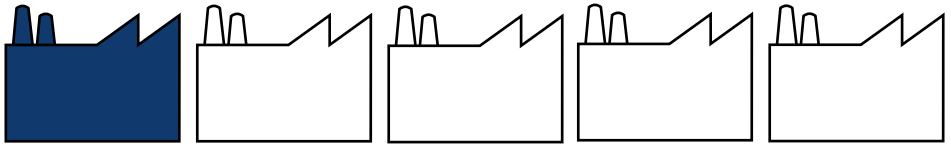

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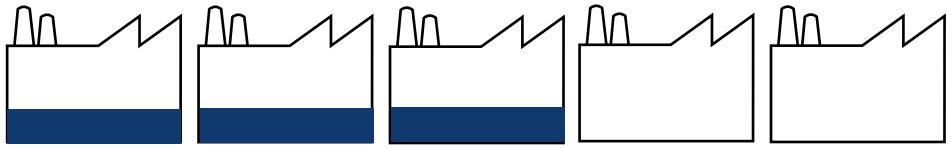


Science projects vs Scale deployments

Smart Factories doesn't address underlying issues

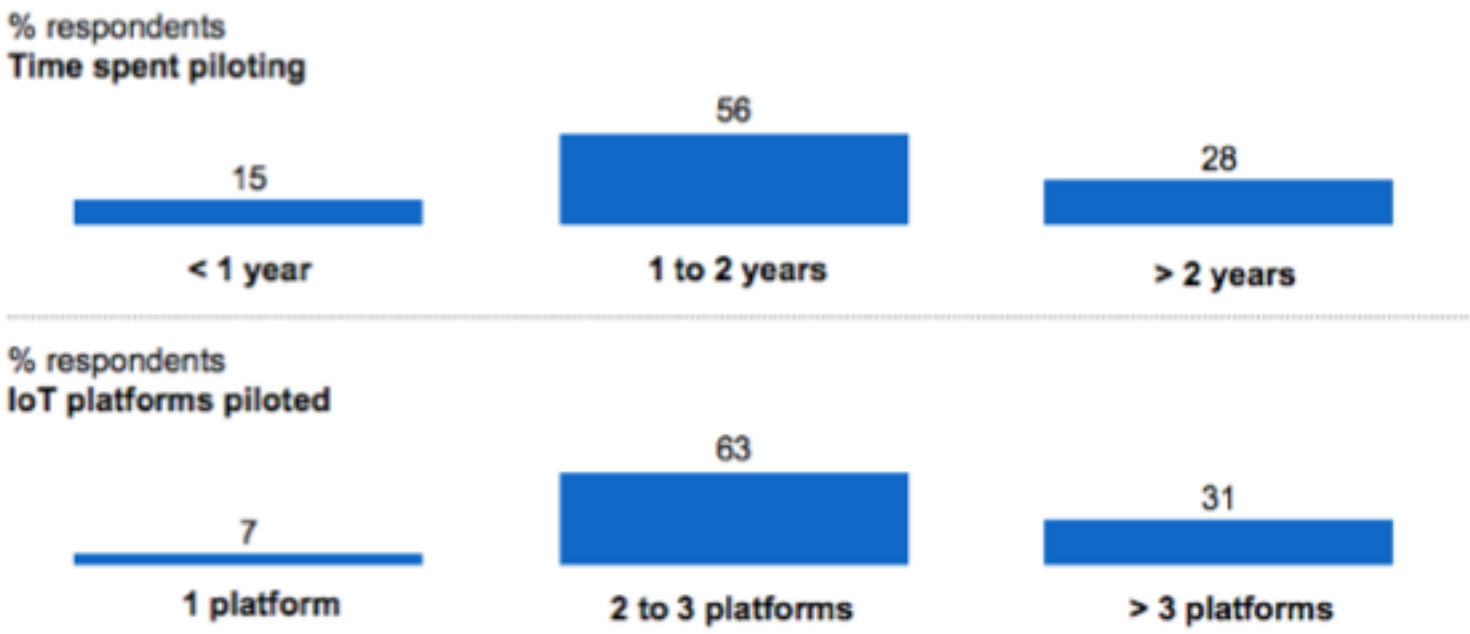
Digital façade:

- Islands of innovation (data, systems)
- Optimized for environments that are not broadly applicable
- Don't identify/address the scale challenges

Building the operational capability for transformation

Unfortunately, most enterprises remain in pilot purgatory

Figure 5: Difficulties in transitioning to large impact at scale



Source: McKinsey & Co/WEF, January 2018

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Why initiatives fail

Picking the **wrong places** to start

✗	Inaccessible or irrelevant data
✗	Knowledge and operational gaps
✗	Inability to scale beyond the project

Enterprises can't digitally transform… unless the plants can transform

There are **organizational** and **technical** attributes at each facility that are the primary determinants of successful projects

It's not the overall level of sophistication in these areas that determined success … **but instead, selecting projects that align with the current level of Readiness**

Digital Readiness

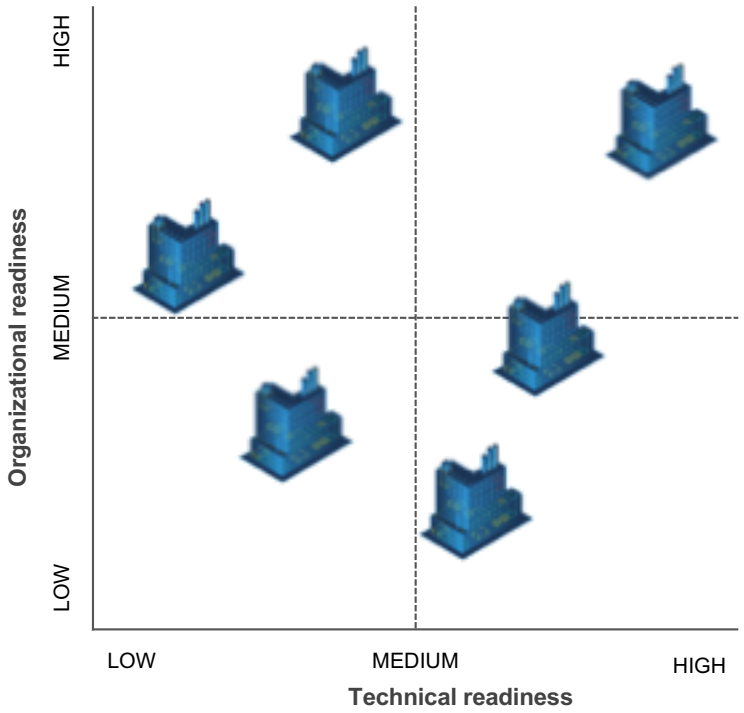
Understanding your plant's maturity on these attributes helps you take the right approach

Organizational Readiness	
✓	Commitment & Budget
✓	Skills & Resourcing
✓	Leadership & Metrics

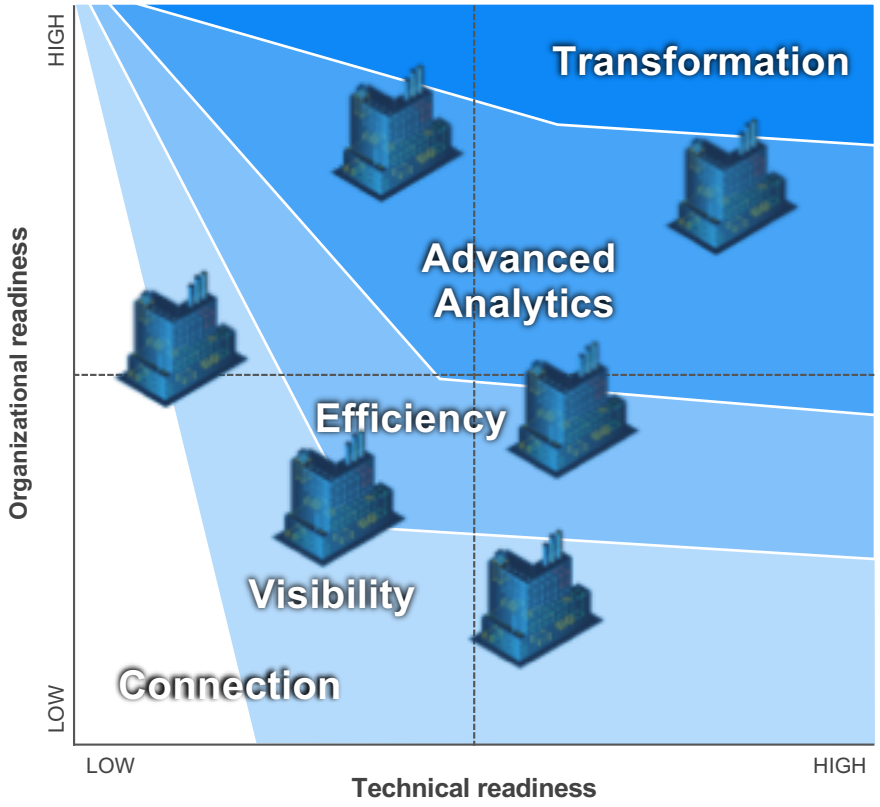
Technical Readiness	
✓	Connectivity & Accessibility
✓	Cloud & Security
✓	Policy & Data

Digital Readiness:
Plants vary widely within the same enterprise

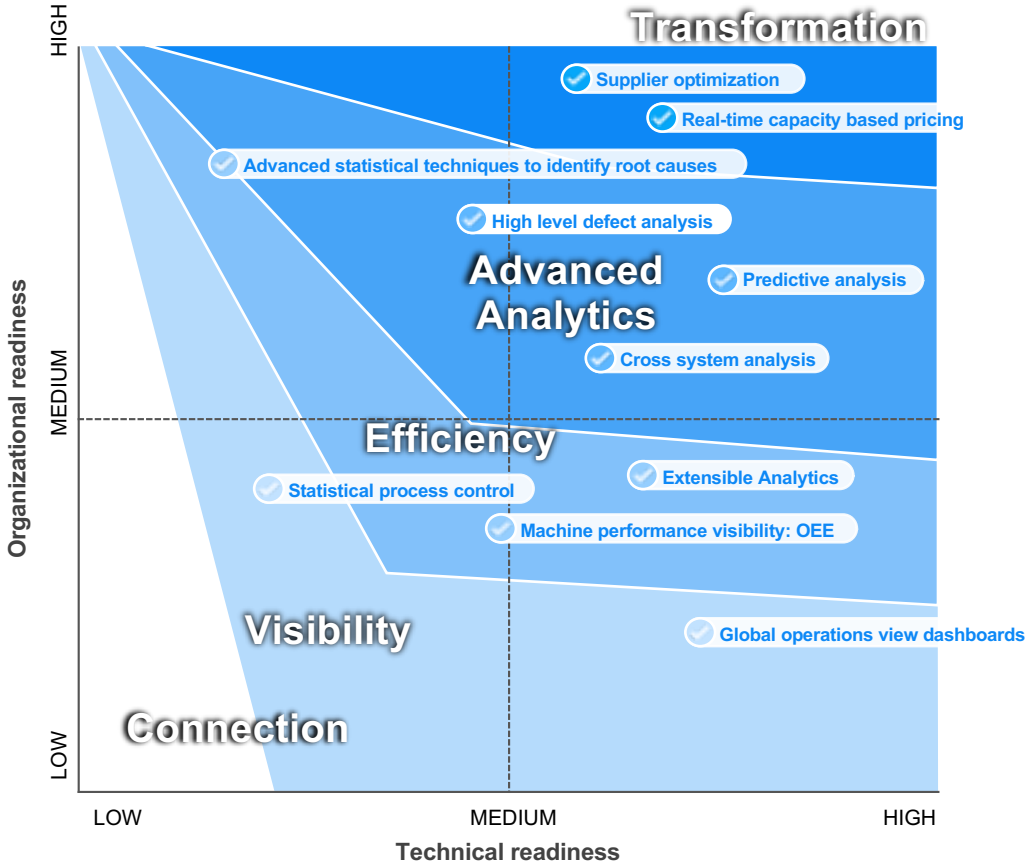
Understanding where **individual plants** sit in terms of **organizational** and **technical** Readiness, allows companies to select the appropriate use cases that will more readily deliver value.



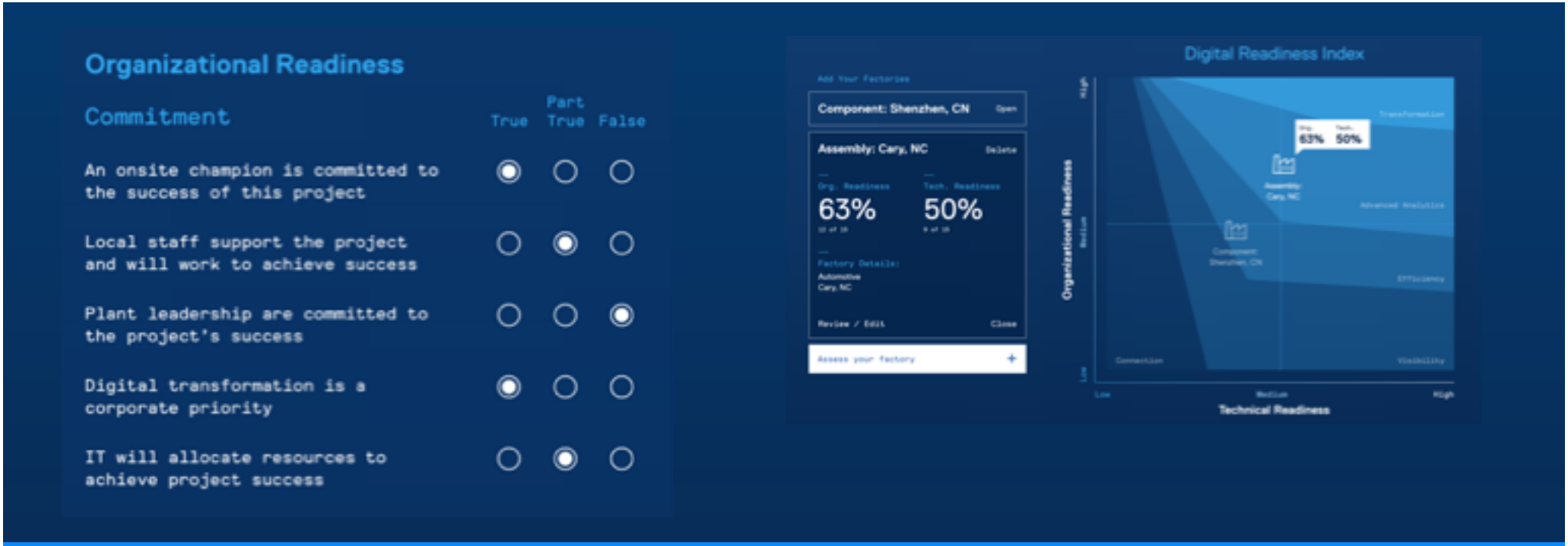
We've discovered plants tend to be segmented among five different zones of Digital Readiness



By understanding your plant's Digital Readiness, organizations can determine quick wins



Digital Readiness Index:
Assess your own organization's readiness



sightmachine.com/**digital-readiness**

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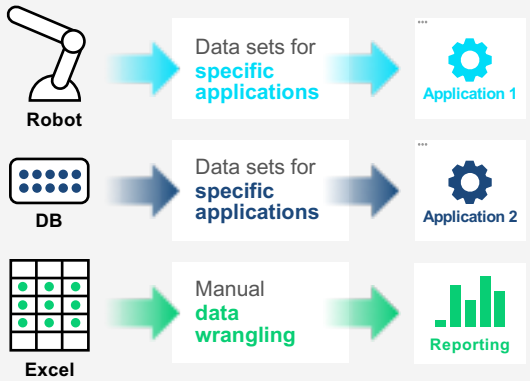
In manufacturing, we've found the biggest challenge is variety

Technology handles data volume and velocity well.
Variety remains daunting. Manufacturing is the most extreme environment for variety

Delivering transformation at scale

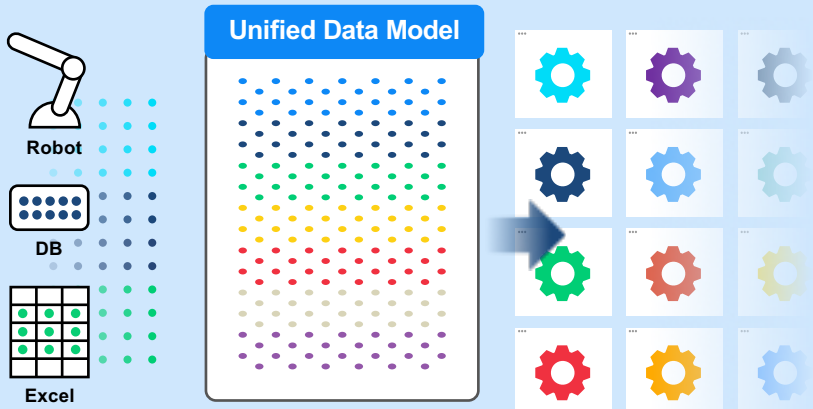
Traditional approaches involve silos of data structured for each application

- Non-reusable data sets
- Distinct, unrelated data structures for each application



Solve data variety up front with a unified platform of production data useful for multiple applications

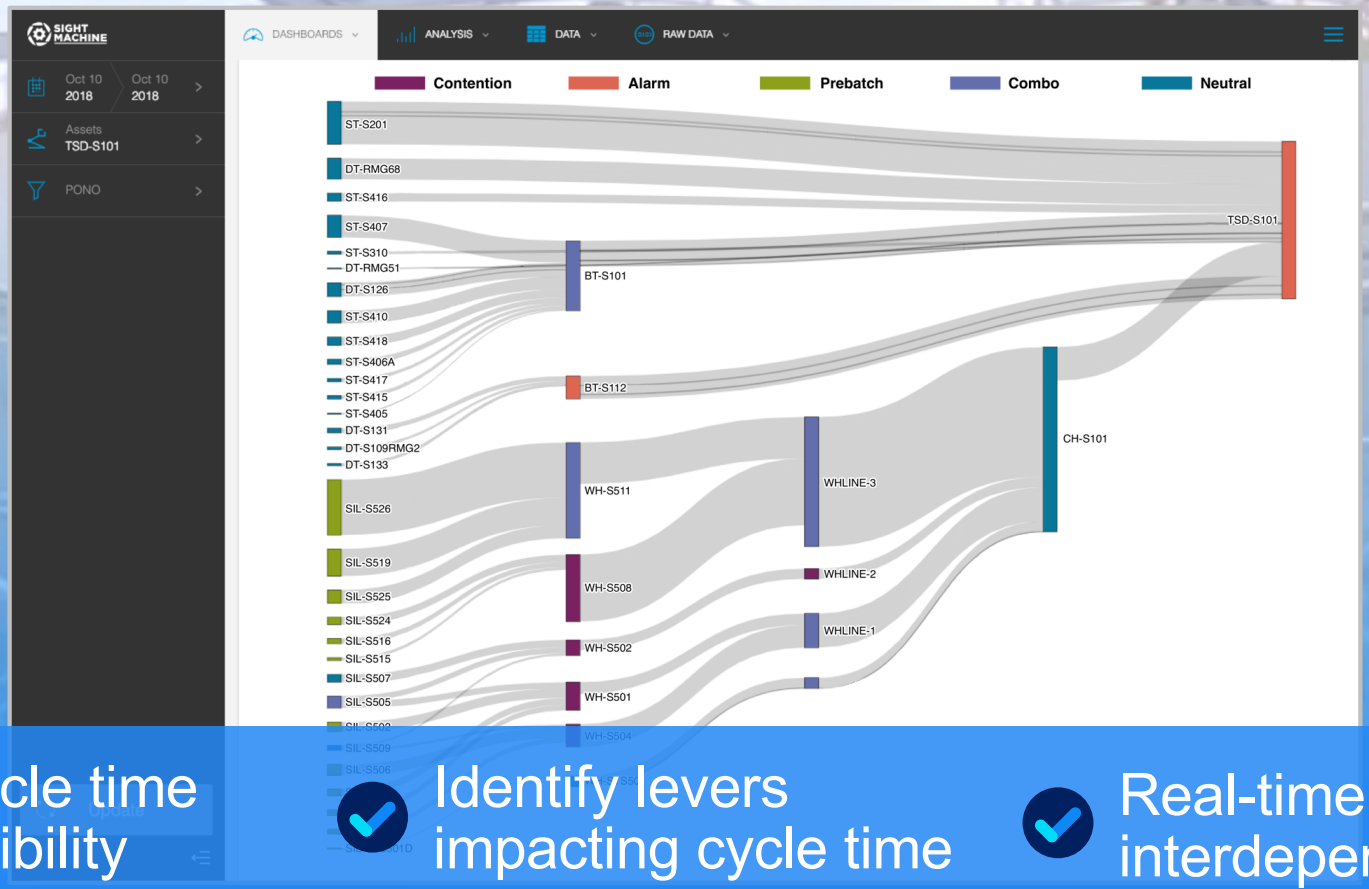
- Rapid application deployment
- Single source of truth: Apps built on a unified data structure



Case study: Global chemical manufacturer

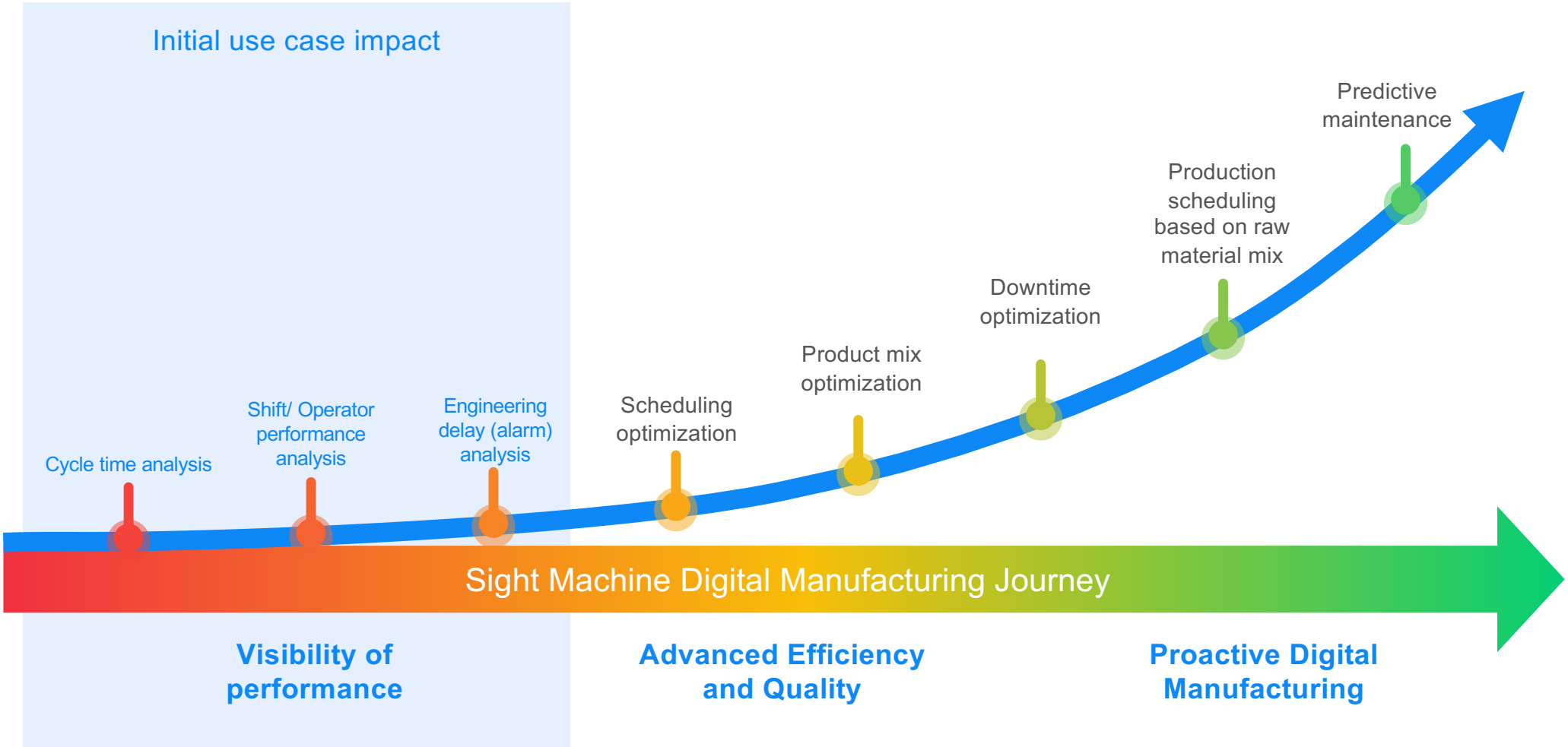
- Limited visibility into factors impacting production cycles
- Inability to optimize across the process

Sight Machine created a Digital Twin of the entire process identifying and quantifying contention and bottlenecks

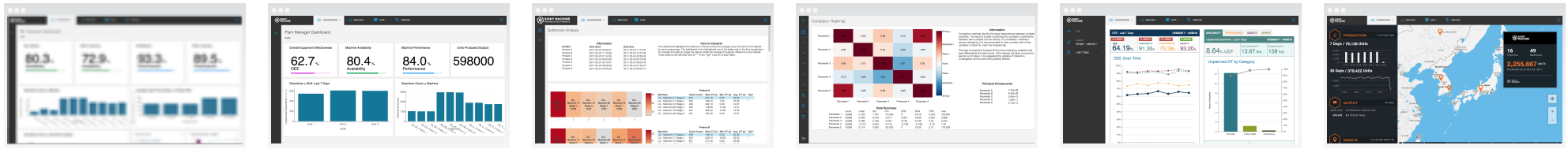


- Cycle time visibility
- Identify levers impacting cycle time
- Real-time process interdependencies

Current impact and future roadmap

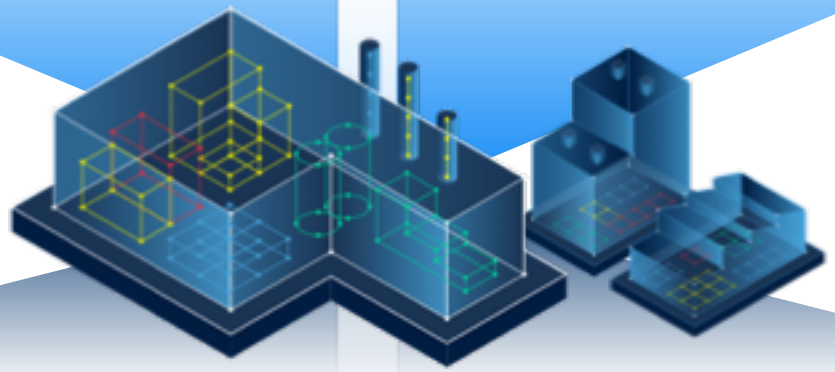


Once it is made useful, data serves multiple stakeholders



Machine Operators | Line Supervisors | Process Engineers | Data Scientists | Plant Operations | Corporate Operations

Factory data can now serve the entire organization



Machines | **PLCs** | **CSVs** | **QMSs** | **Historians**

Building an automated, scalable platform for transforming, understanding and using manufacturing data

Acquire

Input **Collect**

- Windows shares/Excel
- PLCs
- MES/SAP
- Historians/ OPC
- Serialization
- Operator entry
- Image/quality

Structured

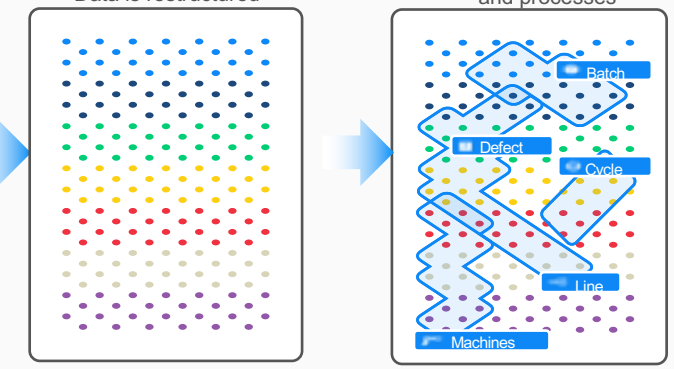
Unstructured

Contextualize & Model

AI Data Pipeline

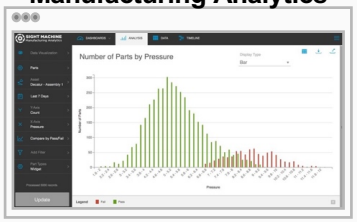
Transform and normalize
Data is restructured

Configure Digital Twin
of plants, lines, assets, products, and processes



Analyze & Visualize

Manufacturing Analytics



Manufacturing Visibility

Automated and streaming in real-time

The Economist
Theresa May v Brussels
Ten years on: banking after the crisis
South Korea's unfinished revolution
Biology, but without the cells
The world's most valuable resource
Google
Data and the new rules of competition

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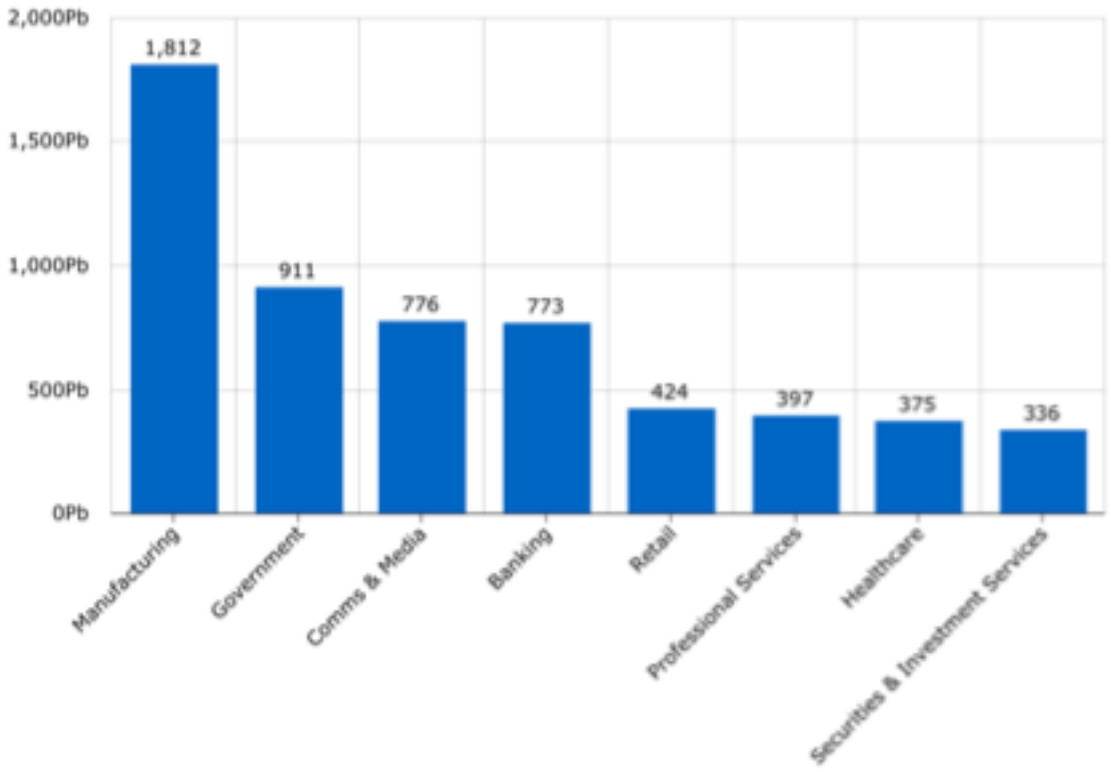

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Becoming a data driven manufacturer