

Challenges in managing controlled technical data in a digital world

Huge shifts in technology and public policy have eroded barriers that once impeded the flow of information, resources, and products.

Compliance must be an enabler for companies seeking to take advantage of these trends, particularly in the area of technical data management.



Readiness for digital transformation

DIGITAL MATURITY* NEEDS CULTIVATION AND VISION



EARLY



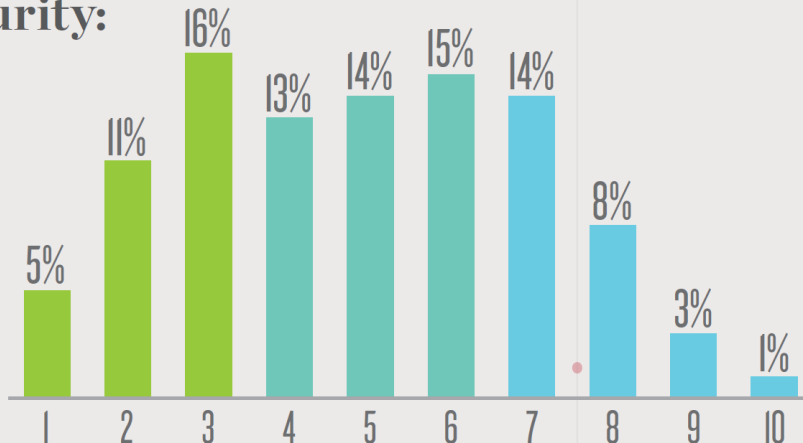
DEVELOPING



MATURING

Companies are unprepared, largely due to internal obstacles.

An organization's digital maturity:



87%

believe digital technologies will disrupt their industry



44%

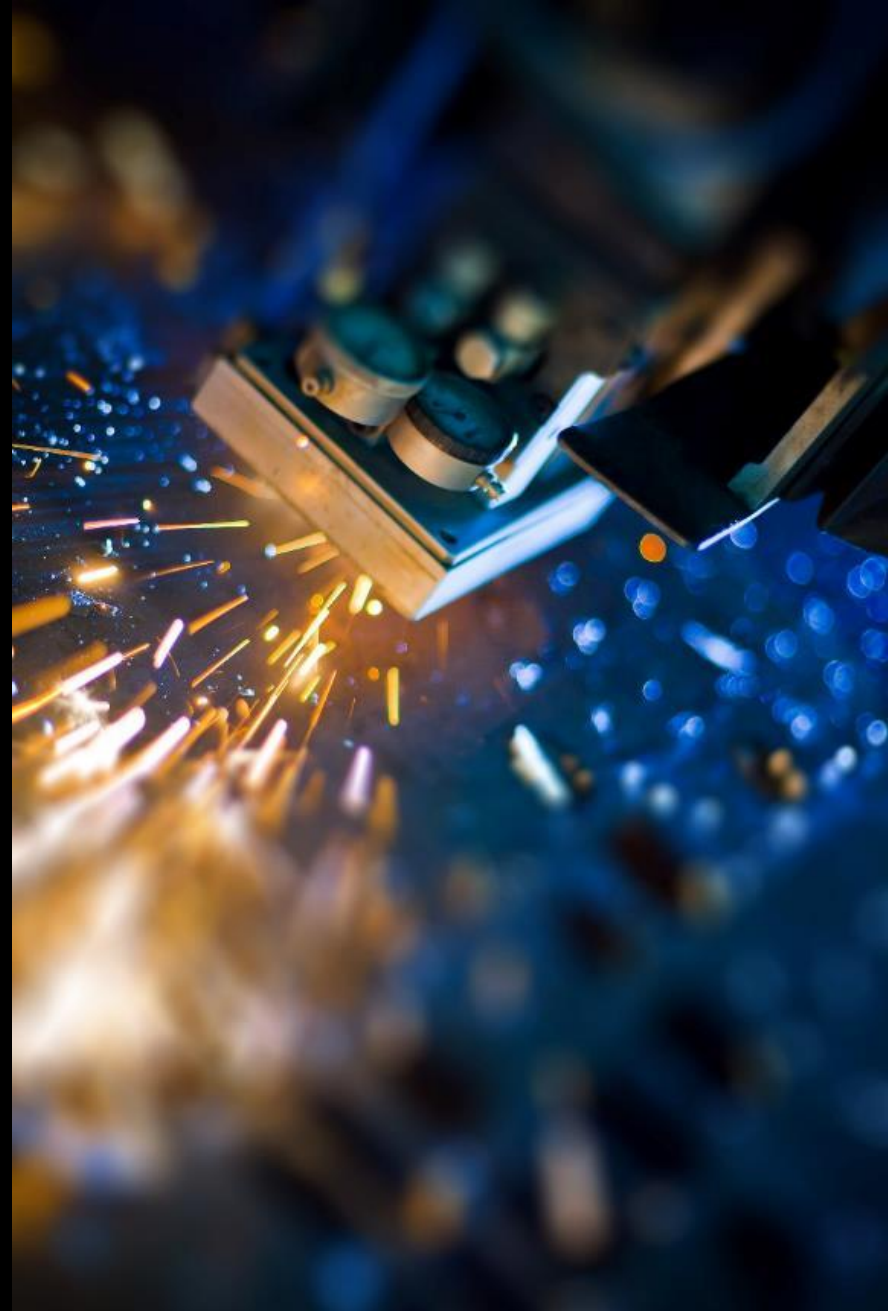
feel adequately prepared for disruptions projected to occur in their industry due to digital trends

Source: MIT Sloan Management Review and Deloitte, 2016 Digital Business Study.

How are companies responding?

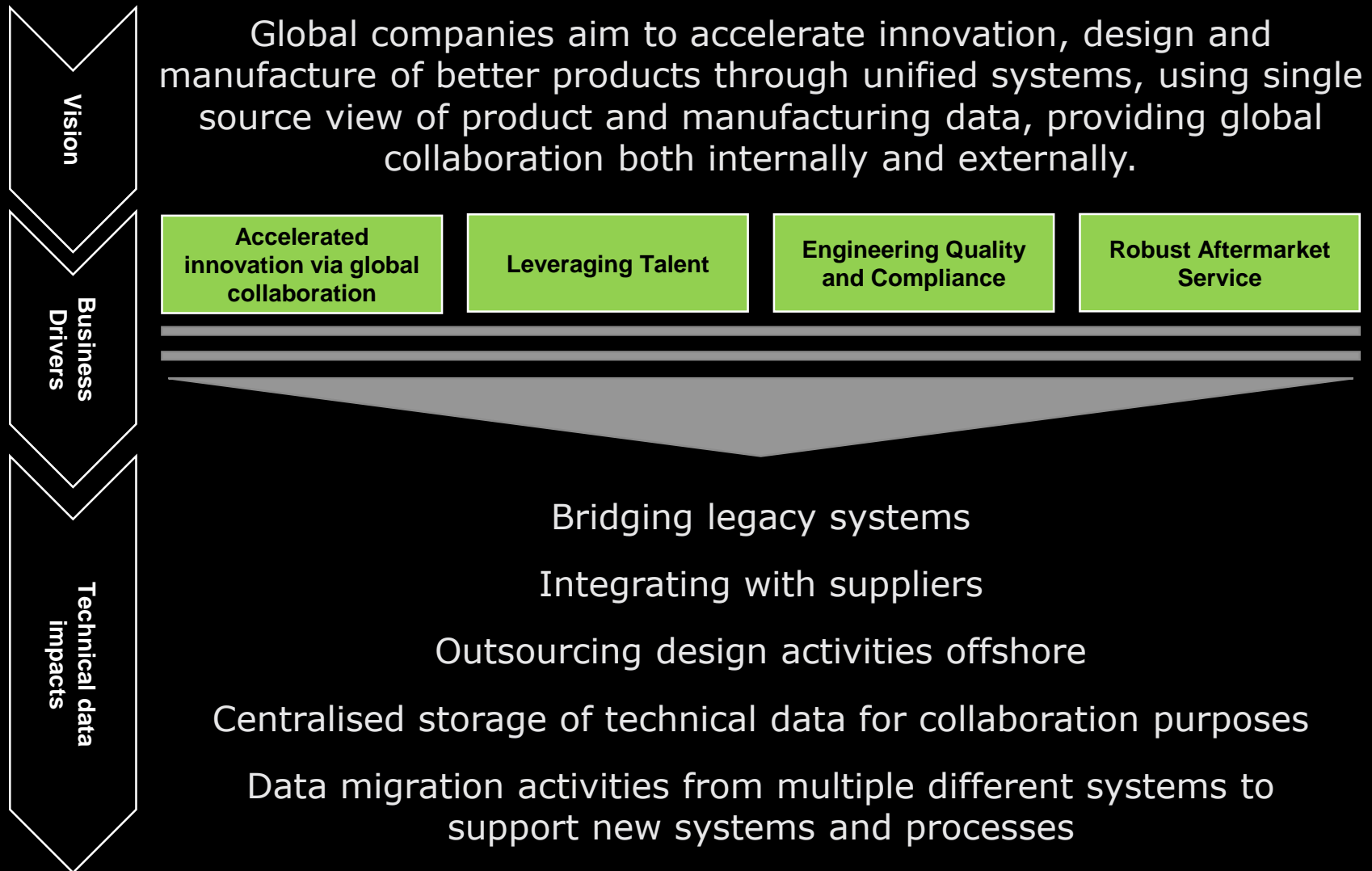
Companies are seeking to drive efficiency across global engineering functions through:

- Standardisation of engineering processes and tools across companies
- Prioritising their needs, gaining an understanding of what differentiates their business in order to build a vision and execution plan



PROCESS AND TOOLS OPTIMISATION

Process and Tools optimisation



What is the impact on technical data?

Challenges

- Significant **data cleansing activities** required to ensure violations do not occur as part of new solution implementation
- Many systems for storing and sharing technical data do not have **mature controls** for tech data management
- While controls can be implemented, these are often **heavily customised** as few companies have an out of the box solution
- **Regulations are constantly changing**, which presents a risk to heavily customised, system based controls.

Solutions

- Develop a **data management strategy** to support ongoing collaboration
- Companies that implement tech data controls in IT systems must **engage all parties** (e.g. export controls, engineering, IT) as early as possible in the design phase
- Assess the **cost/benefit** of more sophisticated solutions for **attribute based access controls**

Global Trade Automation

Solutions to manage intangible exports

There are several software solutions designed to enable companies to protect their intellectual property and export-controlled technical data. Examples of service providers in the market include:

Some of the key solution providers

- Nextlabs
- Titus
- Symantec
- Boldon James
- OpenText
- Brainloop
- Other solutions such as PLMs, MS software (e.g. Sharepoint, Office 365), and Cloud Service providers have enabled export management functionality

Key functionalities

- Centralised access management
- Metadata tagging
- User activity monitoring and reporting
- Marking of controlled data
- Document classification
- Data Loss Prevention
- Secure file transfer platforms
- Automated audit trails
- Data analytics

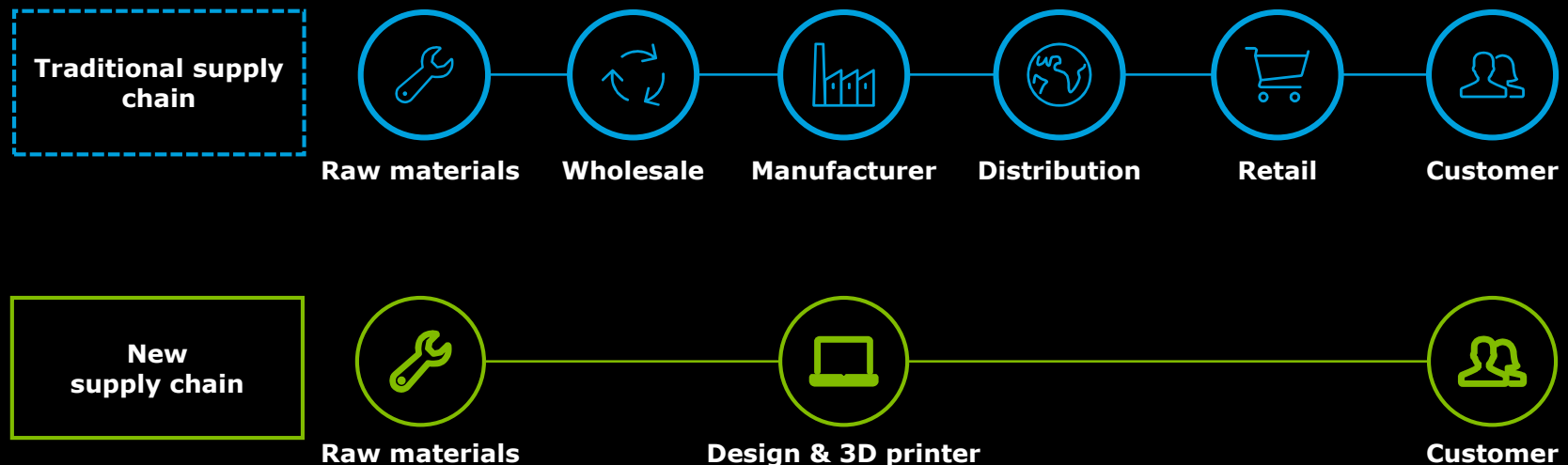
(Please note that the above list is provided for illustrative purposes, and is not a comprehensive list. Deloitte has not independently reviewed each solution, and provides no assurances regarding their functionalities or effectiveness.)

Understanding the solutions' functionality strengths and weaknesses is critical

DISRUPTIVE TECHNOLOGIES

Supply chains will be reconfigured and follow new rules

Digital technologies disrupt traditional business models in a way that forces all participants to redefine their overall role – Example of 3D printing



Technology controls will be a critical component of compliance in the new supply chain

Manufacturing examples

IoT spans the manufacturing value chain and address multiple challenges, but create new issues for export controls



Predictive maintenance

Tracking asset condition, part and system failures, and operating performance to maximize uptime

- Evaluation of controls on data that is transferred in relation to system performance (e.g. for digital simulation models)



Intelligent products

Equip products with IoT capabilities, create a new revenue stream from existing products

- Encryption considerations for IoT chips
- Potential for controls on information that is gathered or communicated



Connected factory

Automate processes on the factory floor, monitor for progress and issues remotely

- Evaluation of controls on data that is transferred in relation to manufacturing and production

What lies ahead?

- **Ecosystems** typically bring together multiple players of different types and sizes in order to create, scale, and serve markets in ways that are beyond the capacity of any single organization—or even any traditional industry.
- Their diversity—and their collective ability to learn, adapt, and, crucially, innovate together—are key determinants of their longer-term success.
- Export controls cannot be seen as a blocker to global collaboration – it must be positioned as an **enabler**, and part of the **solution**.



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