Managed Services for **Complex Integration**

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IDC ANALYZE THE FUTURE

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Supply Chain Integration and Management Challenges

Facing a rising tide of data volume, distribution, and diversity.

Enterprises were responsible for 53% of all data created in 2018.

33 ZB

of new data was created in 2018. IDC estimates a five-year compound annual growth rate of **25%** to result in **103 ZB** of new data created in 2023. (1 ZB = 1 trillion gigabytes)

86%

of the 33 ZB volume was generated by **replication and distribution,** creating data liabilities.

27%

of this new data was **useful if tagged,** but **only 25%** of the useful data **was tagged,** resulting in the majority of useful data being undefined and its integrity unknown.

16%

of the new data created in 2018 was real-time. This is forecasted to grow to **25%** by 2023.

82%

of supply chains view data and analytics as either critical or very important to the future success of their business.

Source: IDC, Supply Chain Survey, April 2020

Source: IDC, Worldwide Global DataSphere Forecast, 2019–2023

Data is being created at the edge and in the core, and distributed to end points at rest and in motion.

Integration in the Digital Economy is Complex and Dynamic

INGEST
Average of 9 unique data sources per pipeline

Data Sources
- Applications
- APIs
- Files
- Repositories
- Streams
- Trading partners

IT is being asked to integrate 26 new sources or targets every month.

TRANSFORM
Average of 4 different data types

Data Types
- Transactional
- Entities
- Geospatial
- EDI
- Relational
- Nonrelational
- IoT

DELIVER
Average of 8 unique targets per pipeline

Targets
- Applications
- APIs
- Data warehouses
- Data lakes
- Analytics
- Trading partner systems

Source: IDC, Data Integration and Integrity End User Survey, 2019

Most companies "miss" material amounts of available data.

Only **26%** of supply chains say that their analytics capabilities are comprehensive.

43% say they have good but not comprehensive analytics.

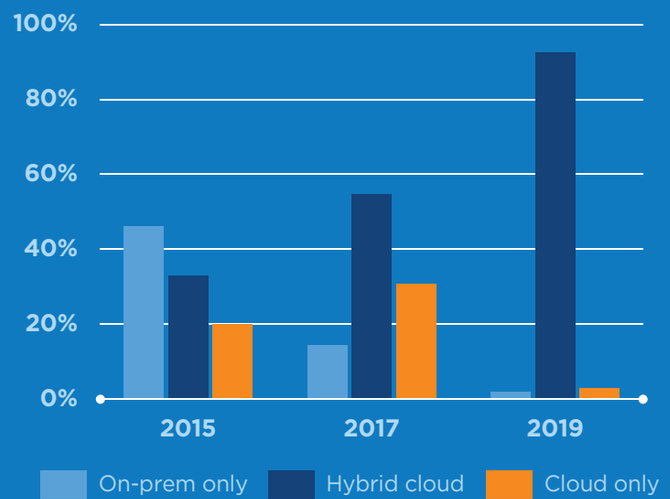
31% say their analytics are insufficient or poor.

Source: IDC, Supply Chain Survey, April 2020

Highly Distributed and Diverse Data Environments Are Common in the Digital Economy

Legacy data management technologies and data types continue to be a part of digital environments.

Data Environments for Data Integration Solutions

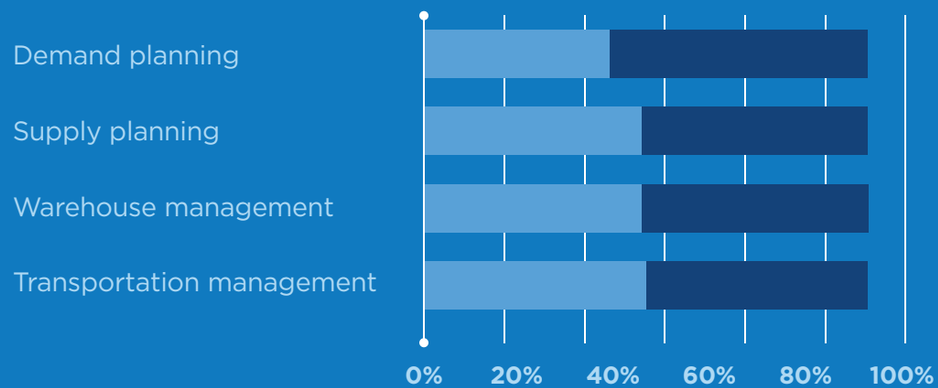


Source: IDC, Data Integration and Integrity End User Survey, 2019

The diversity of data management technologies adds to the complexity:

- Mainframe
- Relational databases
- Analytical databases
- Data lakes
- No SQL
- In-memory
- Streaming

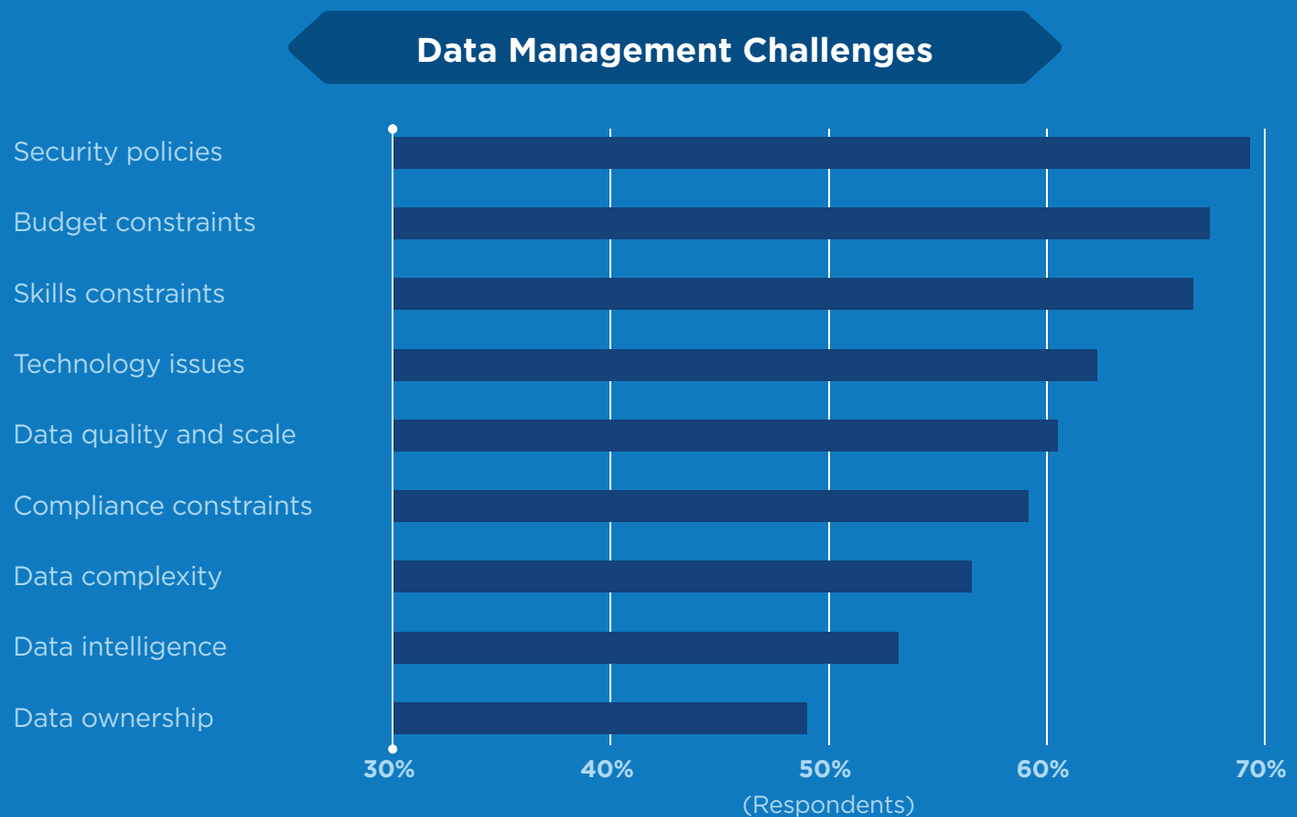
Almost 90% of supply chains either are already on the cloud or plan to be within 12 months for material portions of their supply chain applications.



81% of supply chains are participating in at least one multi-enterprise B2B commerce network.

Source: IDC, Supply Chain Survey, April 2020

Supply Chain Management and Integration in the Digital Economy Is Hard, Demanding New Technology and Skills



Source: IDC, Data Integration and Integrity End User Survey, 2019

The use of new technology is the **top driver of change** in the supply chain, according to IDC's 2020 survey, but companies consistently report data quality and data integration challenges.

Specialized analytics tools to manage data and data integration are **prioritized by 47%** of manufacturing and retail supply chains.

The ability to ingest broad and deep data sets to inform better decision making will be the **single largest differentiator** of supply chain performance in the future.

The skills to manage this complexity in the supply chain are difficult to find, but necessary to improve operational and analytic outcomes.

Source: IDC, Supply Chain Survey, April 2020

Use Cases

These use cases are examples of the need to integrate external systems with internal systems.

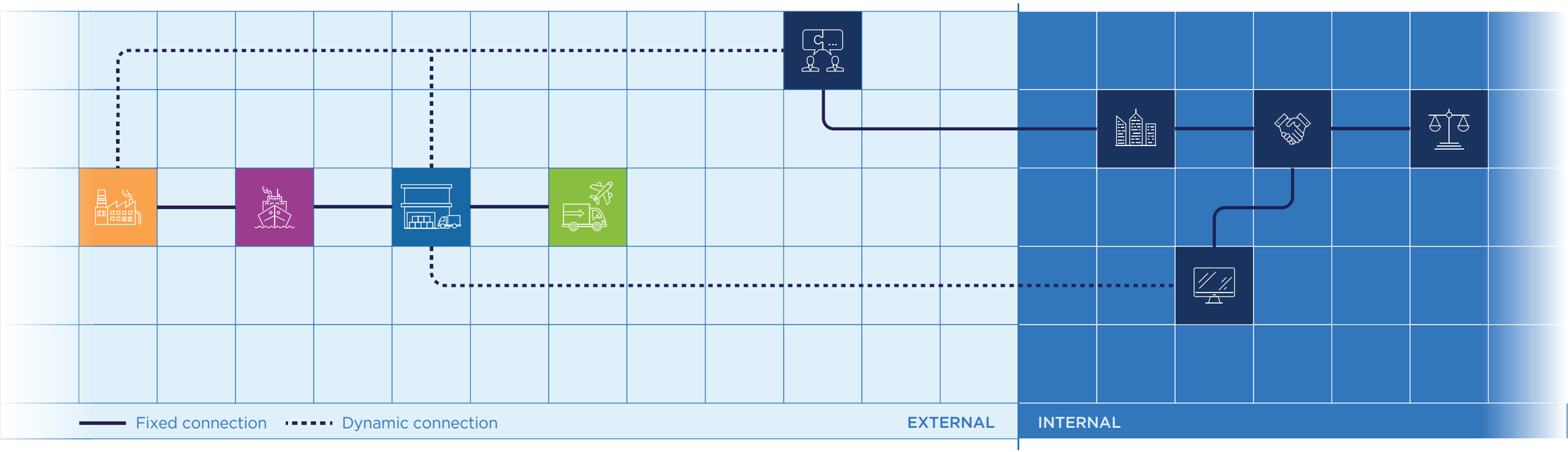
- Each use case has a different set of systems, entities, and operational characteristics.
- Each use case has unique integration characteristics and requirements.
- These use cases also share common elements and characteristics.

Integration challenges are therefore, paradoxically, both unique and common.

1. Inventory stock and location checks
2. Track and trace
3. Supply chain finance
4. Just-in-time manufacturing
5. Supply chain disruption management

Use Case

Inventory Stock and Location Checks



COVID-19 has exposed supply chain inventory management limitations:

"I don't know where things are or how much I have."

Challenges

- Security (external and internal)
- Variety of API formats and protocols
- Variety of internal system interfaces
- Elastic demand
- Balancing working capital costs and customer service performance

External

- Buyers (procurement)
- Suppliers (shipping)
- Consigners (inventory)
- Distributors (logistics)
- IoT devices (RFID, GPS)

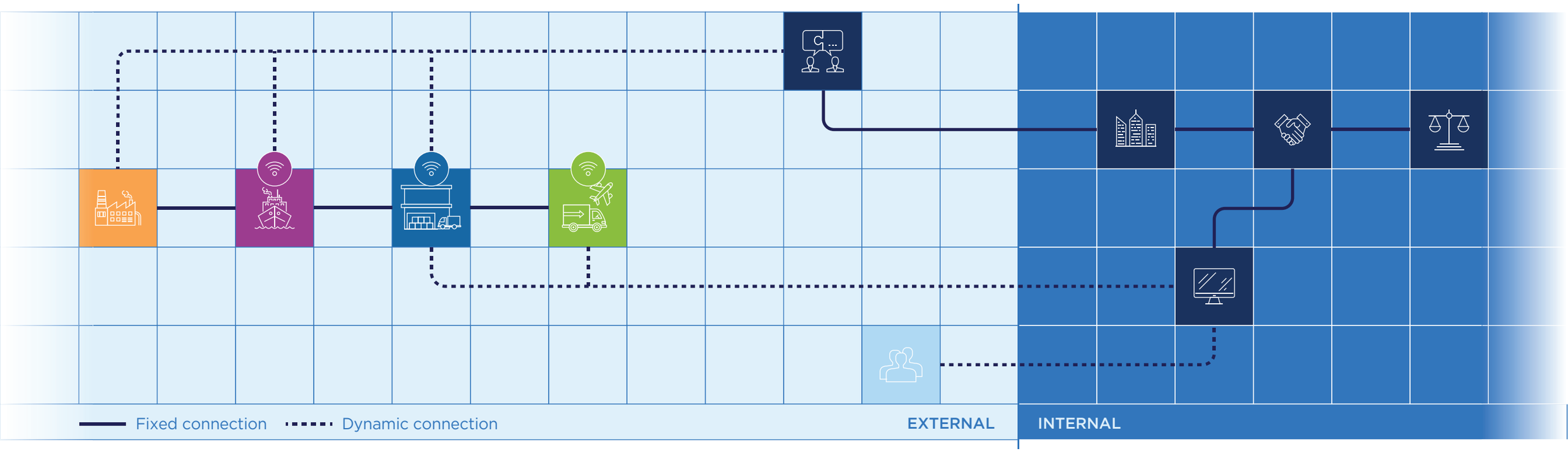
APIs

Internal

- Inventory management systems
- Warehouse systems
- Store information systems
- Sales systems
- Procurement systems

Use Case

Track and Trace



Supply chains cannot respond to something they don't see: End-to-end supply chain is the top area of focus for visibility.

Source: IDC, Supply Chain Survey, April 2020

Challenges

- Security (external and internal)
- Variety of API formats and protocols
- Variety of internal system interfaces
- End-to-end data visibility
- Elasticity
- Brand image and expectations

External

- Buyers (procurement)
- Suppliers (shipping)
- Distributors (logistics)
- IoT devices (GPS, temperature, RFID)

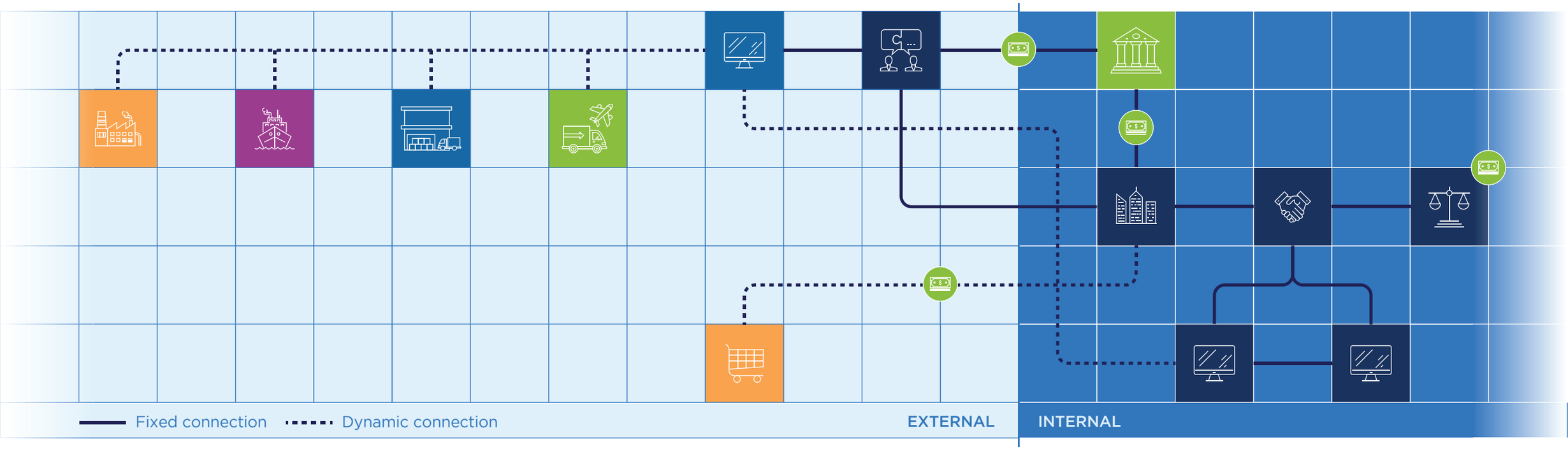
APIs and EDI

Internal

- Logistics systems
- Quality systems
- Site information systems
- Procurement and accounts payable systems

Use Case

Supply Chain Finance



42% of supply chains report cost reduction — including working capital — as an important driver of change.

Source: IDC, Supply Chain Survey, April 2020

Challenges

- Manage physical, information and financial flows
- Security (external and internal)
- Regulatory controls and reporting
- Variety of API formats and protocols
- Variety of internal system interfaces
- Cash flow liquidity and working capital requirements

External

- Buyers (accounts payable)
- Suppliers (invoicing)
- Distributors (orders, invoicing)
- Financial Institutions (payments)

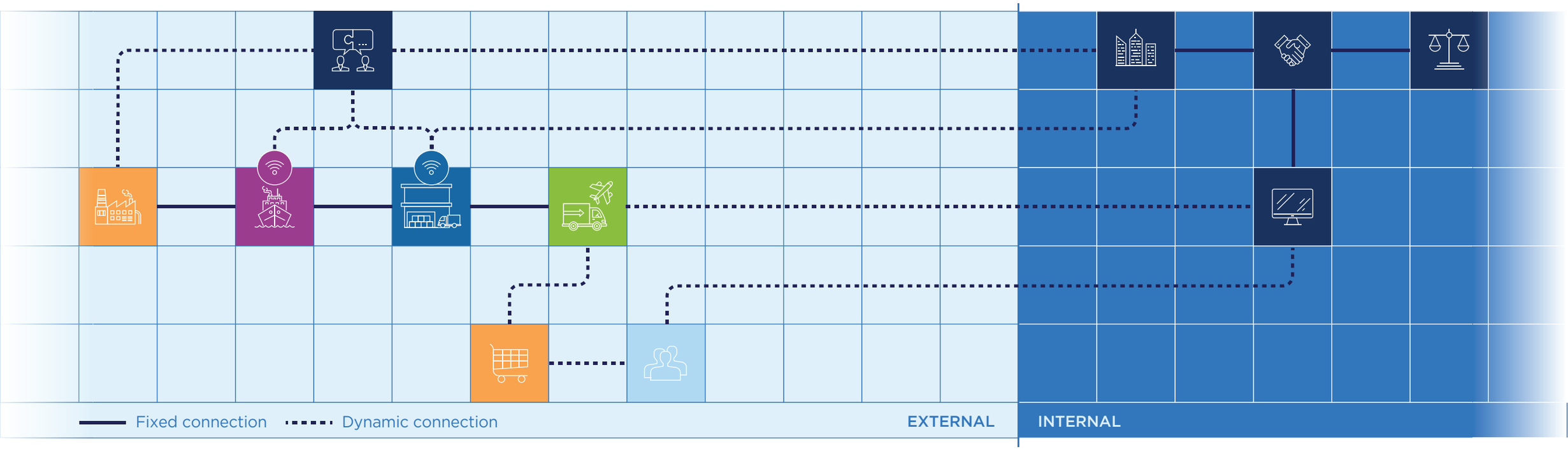
EDI

Internal

- Procurement and accounts payable systems
- Receiving systems
- Payments systems
- General ledger accounting systems

Use Case

Just-in-Time Manufacturing



Cost and factory optimization balanced with service performance.

Source: IDC, Supply Chain Survey, April 2020

Challenges

- Security (external and internal)
- Maintaining connectivity
- Timeliness of data
- Variety of API formats and protocols
- Variety of internal system interfaces
- Elasticity

External

- Suppliers (orders)
- Distributors (logistics)
- IoT devices (GPS and condition)

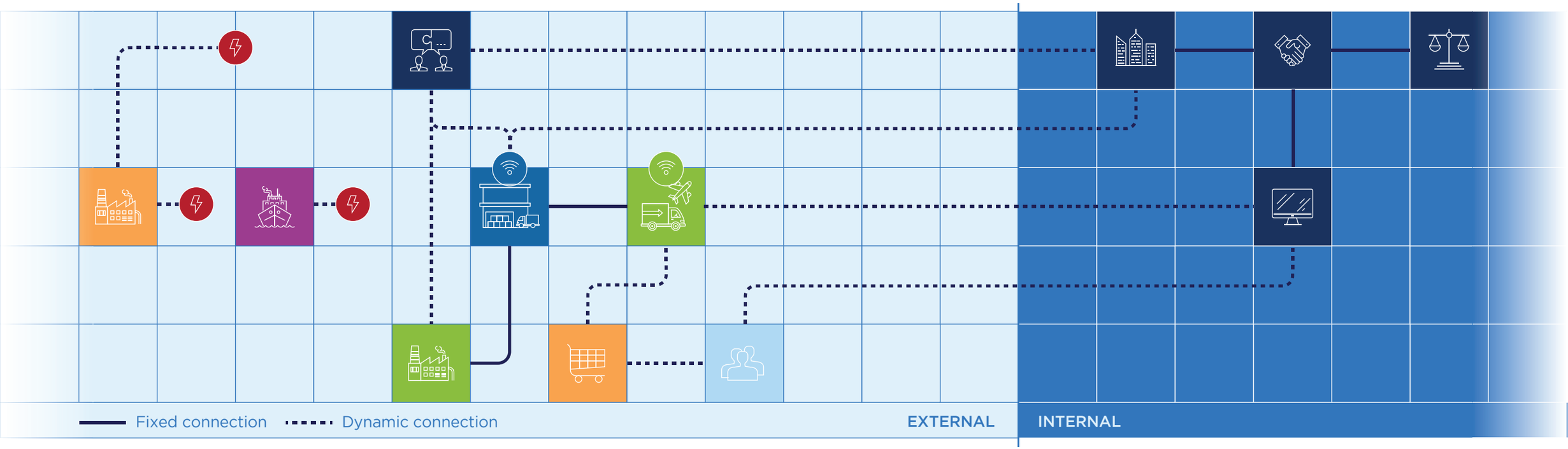
APIs and EDI

Internal

- Production planning systems
- Manufacturing execution systems
- Receiving systems
- Distribution systems
- Inventory management

Use Case

Supply Chain Disruption Management



Supply chain resiliency is the second-highest driver of change in the supply chain.

Source: IDC, Supply Chain Survey, April 2020

Challenges

- Security (external and internal)
- Limited end-to-end data visibility
- Supply chain calibration and collaboration
- Timeliness of data
- Minimizing downtime
- Short timeline for new partner onboarding
- Different varieties of API formats and protocols

External

- New/alternate suppliers
- New/alternate distributors
- Global/regional diversification
- End-to-end visibility
- Broken connections

APIs and EDI

Internal

- Production planning systems
- Receiving systems
- Distribution systems
- Manufacturing execution systems
- Inventory management

Data Exchange in the Digital Economy

Platform and managed services requirements

Functional
- API protocols and data format variety
- End-to-end data visibility
- Process orchestration
- Self-service

DevOps
- Partner onboarding and mapping
- Internal systems API enablement
- External to/from internal mapping
- Monitoring and management

Nonfunctional
- Secure and compliant
- Scalable and elastic
- Flexible and adaptable
- Available and auditable
- Valued user experience for IT and business users

DataOps
- Pipeline develop/deploy
- Statistical quality control
- Analytics develop/deploy

Benefits of platform and managed services modernization

Unification
- Harmonization of disparate and diverse integration solutions
- Visibility across information flows to enable better-informed business decisions
- Centralized and collaborative governance for efficient control

Scalability and Resiliency
- Leverage cloud infrastructure and ecosystem connectivity for optimal uptime and broad reach
- Agility to respond quickly to customer or market changes
- Managed data quality increasing trust of data-driven outcomes in the extended enterprise

Digital Business
- Enabling digital transformation initiatives with data and agile integration
- Faster time-to-market
- Improved customer and partner engagement
- Focus on business operations and transformation for growth

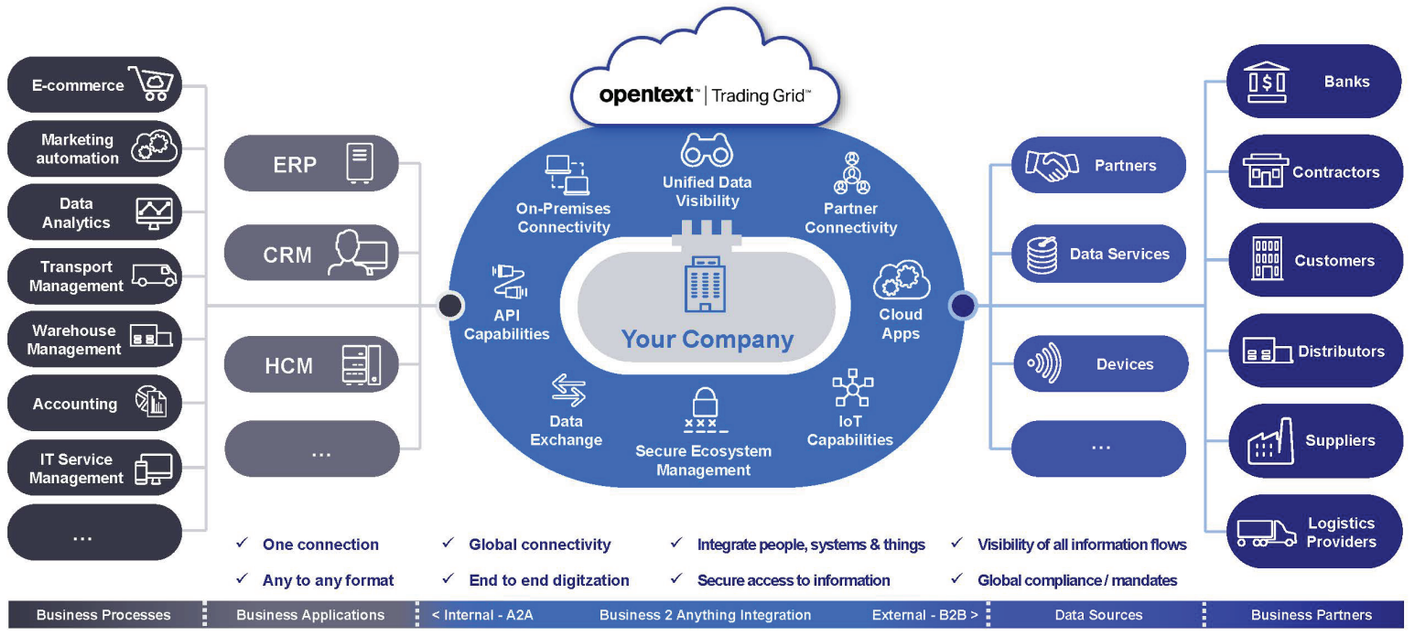
Cost Optimized
- Leverage economies of scale in infrastructure to lower operational costs
- Leverage availability of in-demand technical skills to optimize human capital costs
- Enable partners with visibility and self-service to lower inquiry and onboarding time

opentext™ | Trading Grid™

The industry's only unified integration platform connecting 1 million trading partners and processing 26 billion transactions per year.

The platform is a cloud-based environment, providing the flexibility and scalability to connect, optimize, and grow a business.

OpenText Trading Grid – Connect Once. Reach Anything.



Single Unified Platform
Support complex integration needs and business demands with a single solution to improve governance and efficiency

Power of the Network
Leverage pre-built cloud community to extend reach to any partner, any region and accelerate time to value

Enable the API Economy
Manage growing integration complexity and demands for speed, while embracing old and new forms of integration

Self-service or full managed services
A tiered approach to business integration, empowering any size company to leverage an enterprise-grade integration platform