

# Challenges of Global Supply Chain & How InterSystems IRIS Addresses Them





# Speakers



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Ltd



# Agenda



- State of Supply Chain Today
- InterSystems IRIS – Accelerating Time to Value
- Benefits in Action - Use Cases from M-Tech
- Product Roadmap for the Future
- Key Takeaways
- Q&A





# **State of Supply Chain Today**



# Supply Chain Business Challenges Faced Today

The top 5 business challenges identified:

Lack of accurate end-to-end visibility and reporting with actionable insights

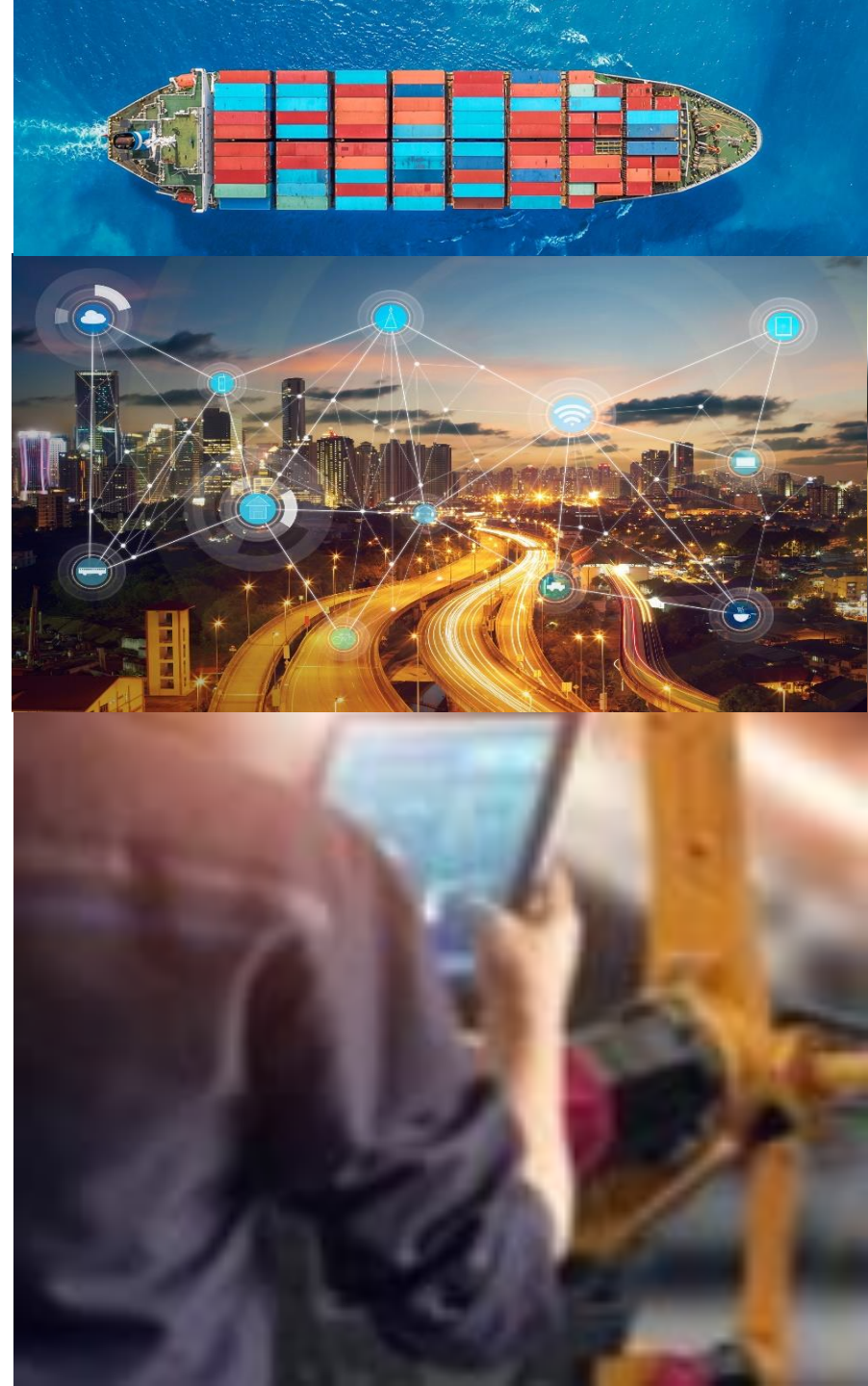
Data silos and difficulty integrating and normalizing disparate data

Difficulty performing analytics to support the business. Need predictive and prescriptive recommendations/options

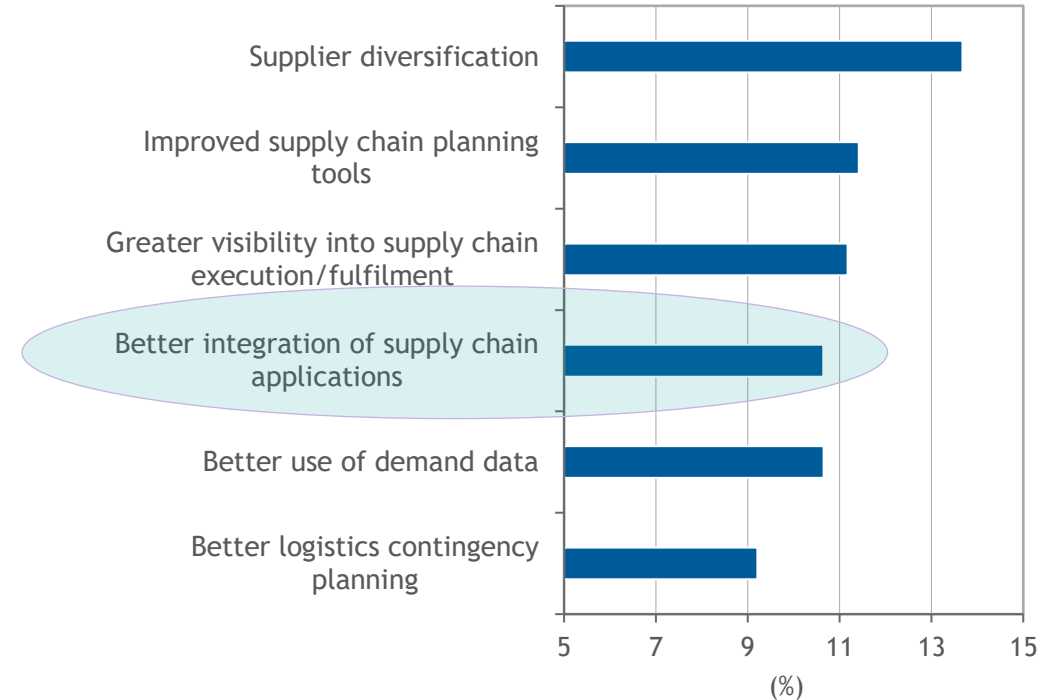
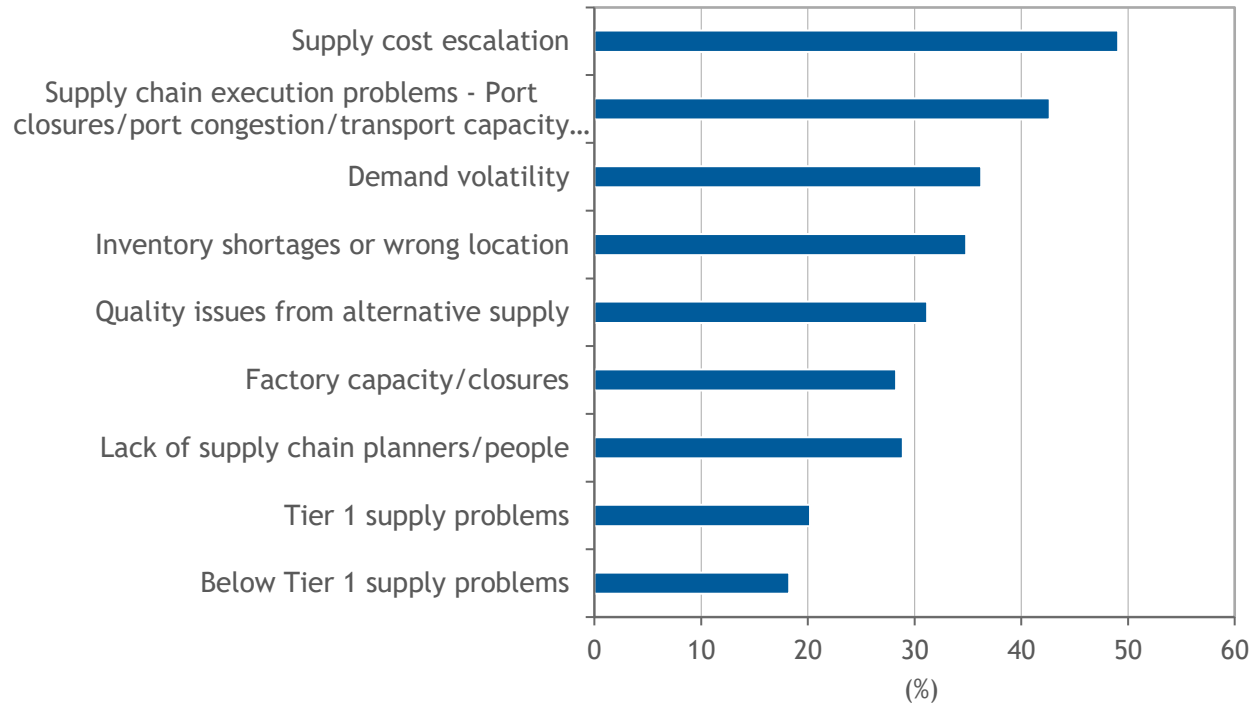
Significant manual processes which require data manipulation and corrections

Delays in accessing data with 15% waiting up to 3 days. Improved Time to Decision

\*Based on InterSystems survey of more than 700 business leaders within Retail, CPG and Manufacturing organizations globally and confirmed by leading analyst firms.



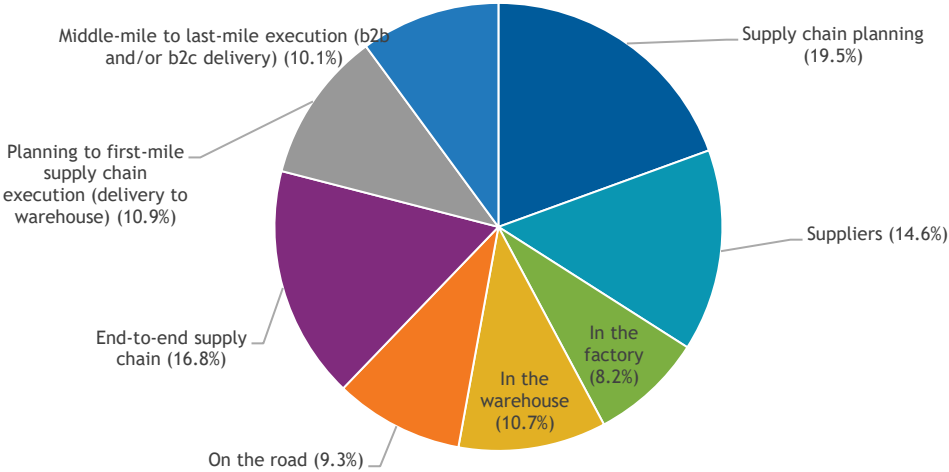
# Supply Chain Challenges ..... And What to do About it!



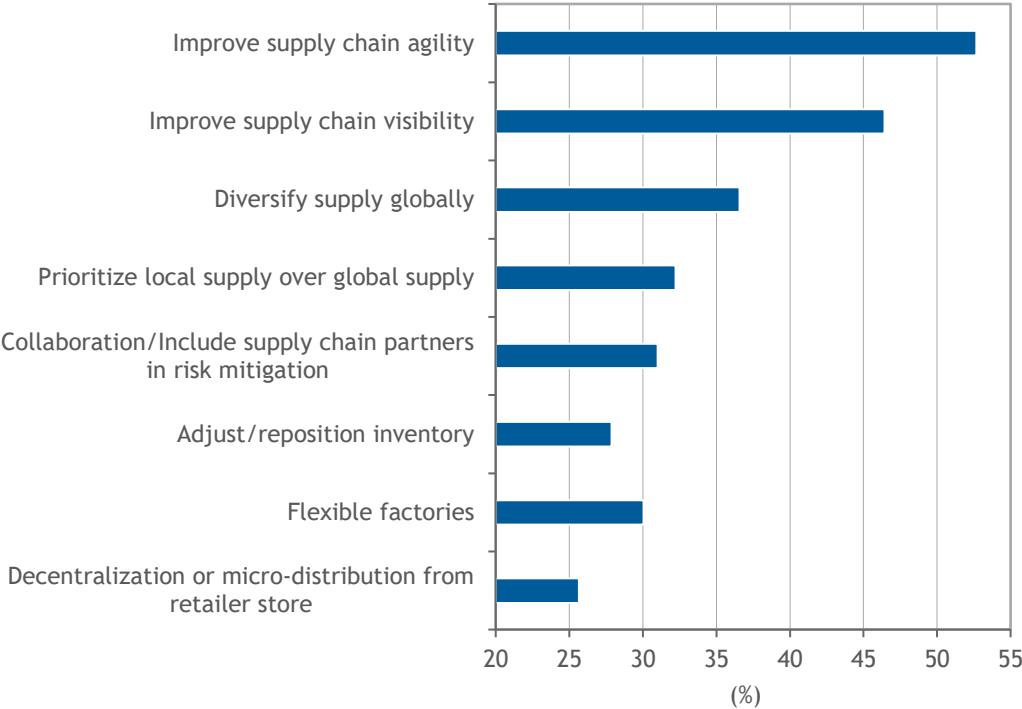
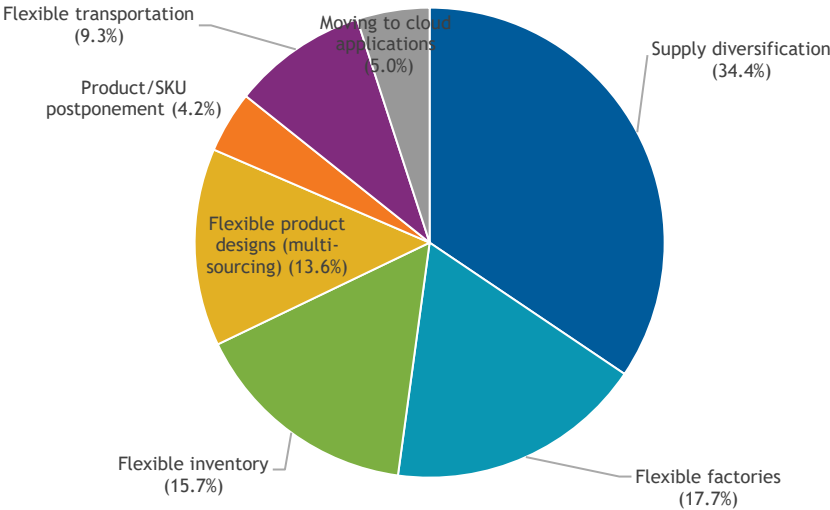
# Managing Risk



Visibility

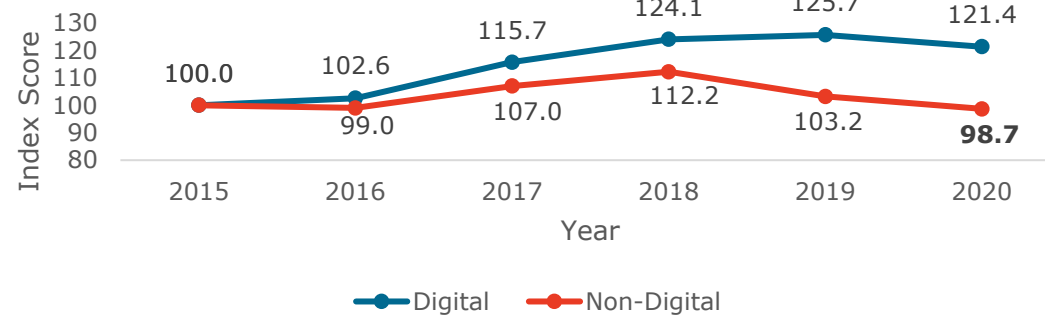


Agility



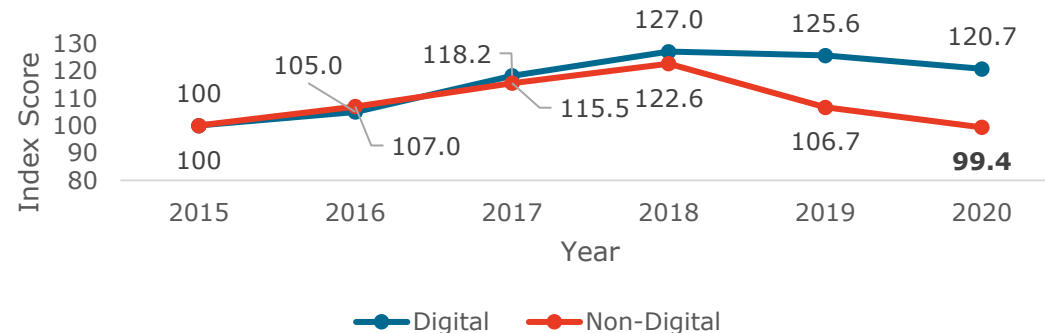
# DX Correlates with Performance

**RPI - Digital vs Non-Digital Manufacturing Organizations**



- The RPI (Revenue Performance Index) for the Digital Organizations has shown an improvement from 100 to **121.4** from 2015 till 2020. On the contrary, the RPI for the Non-Digital Organizations has shown a decline from 100 to **98.7**.

**PPI - Digital vs Non-Digital Manufacturing Organizations**



- The PPI (Profit Performance Index) for Digital Organizations has shown an improvement from 100 to **120.7** from 2015 till 2020. On the contrary, the Non-Digital Organizations has shown a decline from 100 to **99.4** in the same period.





# The Future of Supply Chain

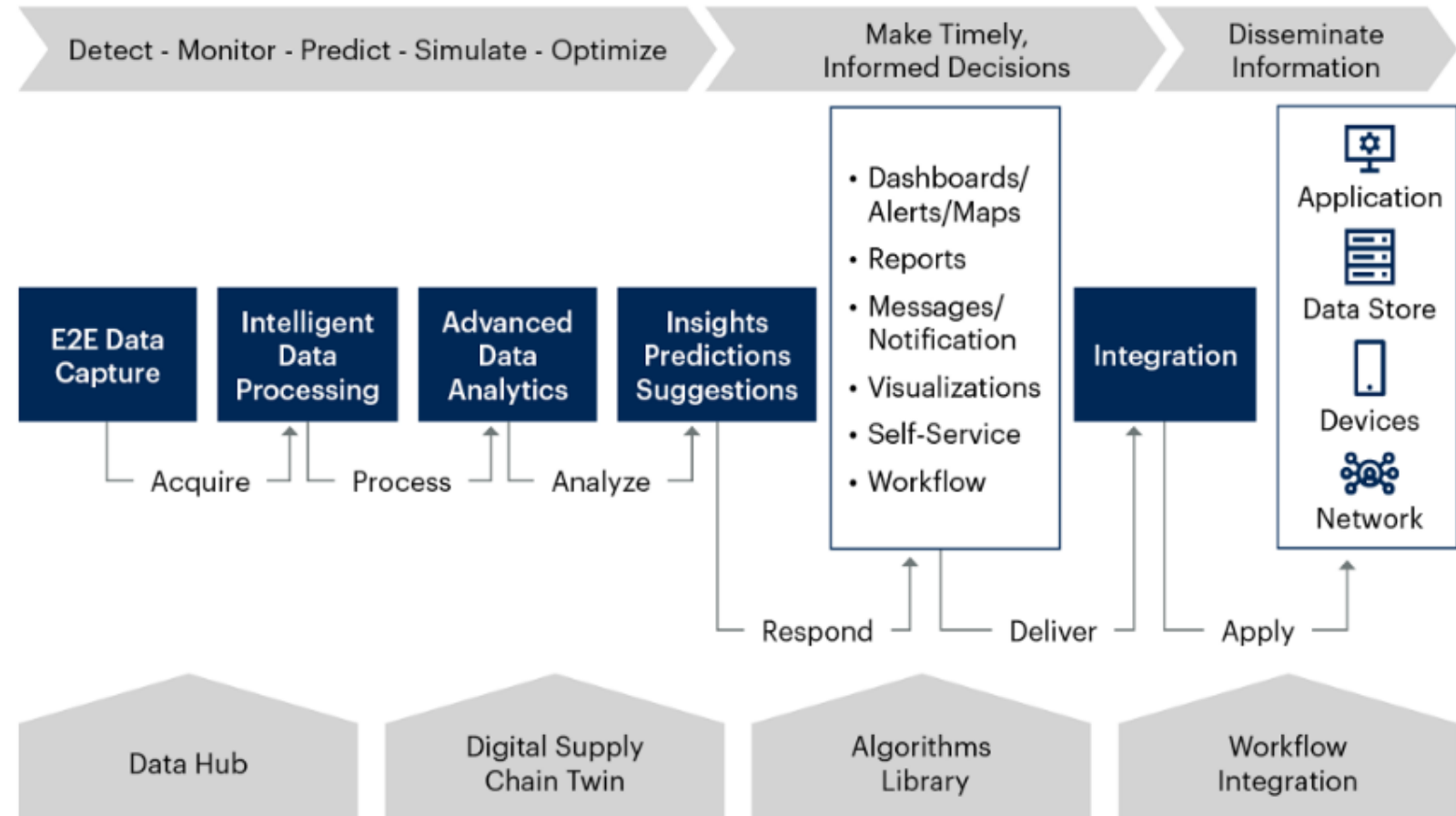
- Data through analytics to action
- Resilient to both internal and external disruptions
- Collaborative at Scale
- Predictive/Prescient where possible
- Fast where not possible



# Supply Chain Digital Transformation – What's Missing

*No connective horizontal data layer.*

## Supply Chain Command Center



Source: Gartner  
757414\_C





# InterSystems IRIS - Accelerating Time to Value



# InterSystems IRIS - Accelerating Time to Value

InterSystems provides the **connective tissue** to integrate disparate data and sense disruption and opportunity in real time to support various applications, analytics and provide intelligent prescriptive insights.



# InterSystems **IRIS** Smart Data Fabric

The only platform for supply chain with **smart data fabric** architecture

## MULTI-MODEL DBMS

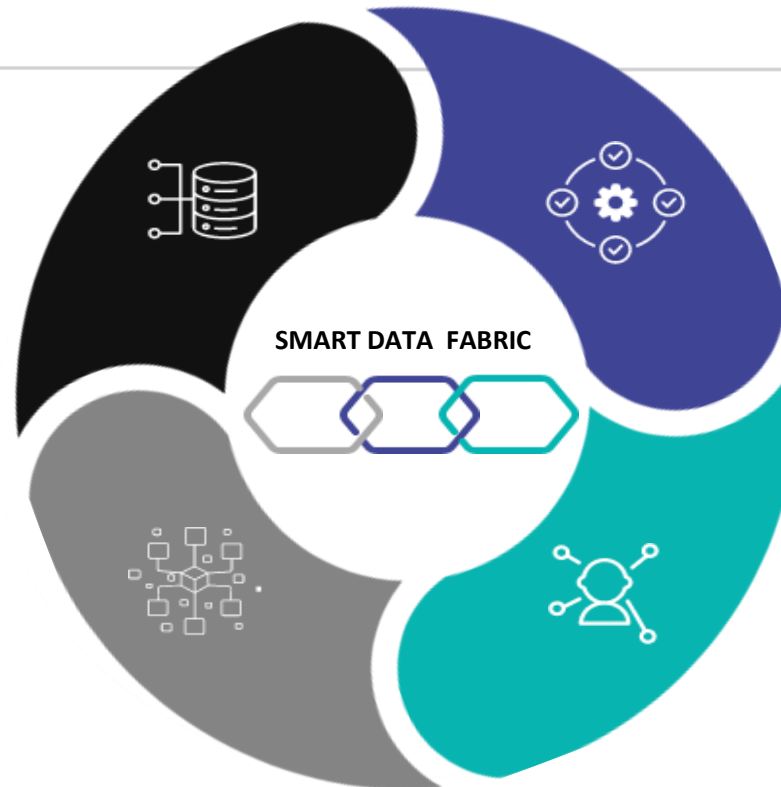
### Data Integration

Harmonize and normalize disparate sources and formats for consistent data representation.

## MULTI-WORKLOAD DBMS

### Data Ingestion

Utilize any type of data, including real-time event and transactional data as well as data at rest.



## INTELLIGENT PROCESSES

### Interoperability

Enable seamless, accurate real-time SC orchestration and optimized, intelligent business processes.

## ADVANCED ANALYTICS

### Insights

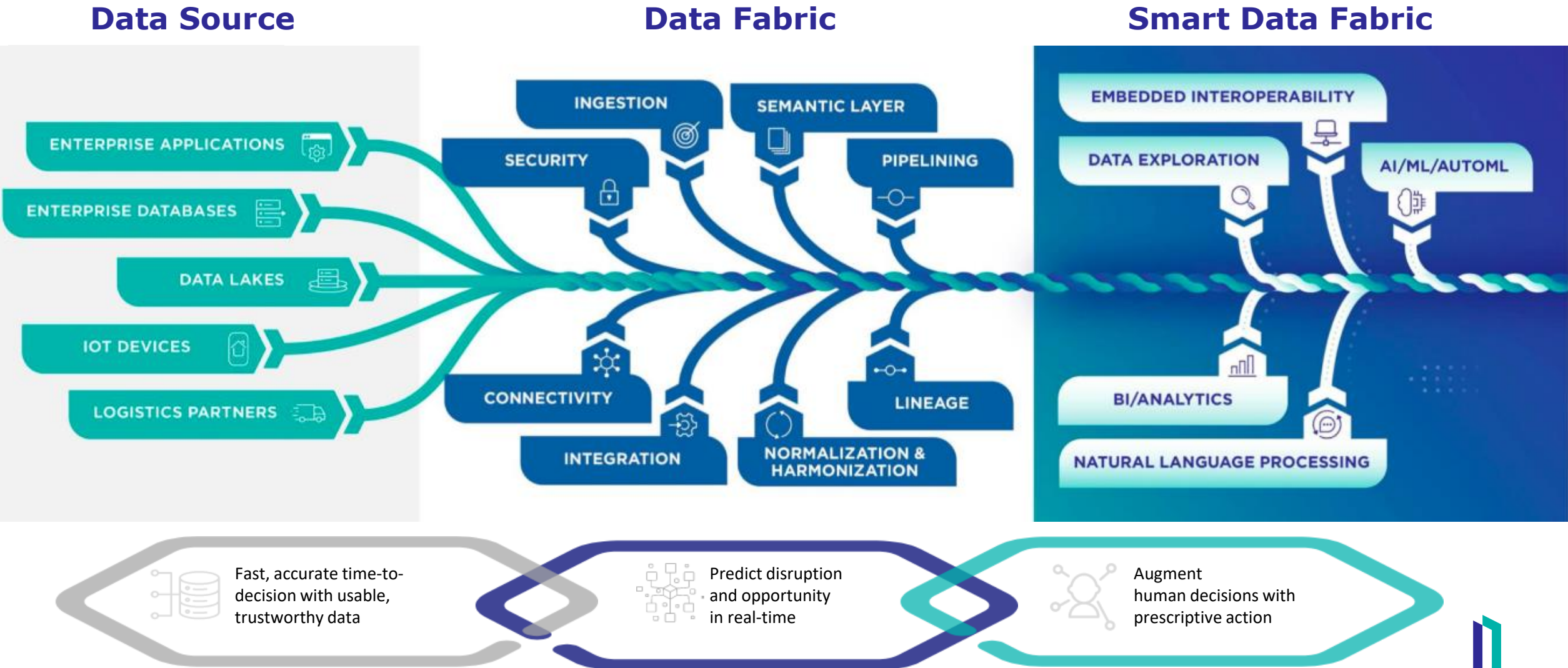
Real-time processing—BI, ML, AI, NLP—for descriptive, predictive and prescriptive insights.





# InterSystems IRIS Smart Data Fabric Architecture

*A connective thread to enable supply chain operational excellence*



# Challenges We Solve

**ACCELERATE  
TIME TO VALUE  
with Integrated  
Decision  
Intelligence**



## Optimized fulfillment

Intelligent fulfillment optimization maximizes order fulfillment for delivery of products based on business constraints and business objectives while minimizing costs



## Demand sensing and forecasting

Picking up on short-term trends immediately so you can better predict what consumers will want, when and where



## Supply Chain orchestration

The ability to attain a truly agile and resilient end-to-end supply chain model, from sourcing to delivery. InterSystems Ultimate Control Tower enables optimized supply chain orchestration by providing end-to-end visibility (“see”), data-driven insights (“understand”), end-to-end prediction and orchestration (“optimize”) and ultimately, end-to-end aligned decision making (“act”).





# Benefits in Action

Paul Martin, Operations Director  
M-Tech



# M-Tech Computers Ltd

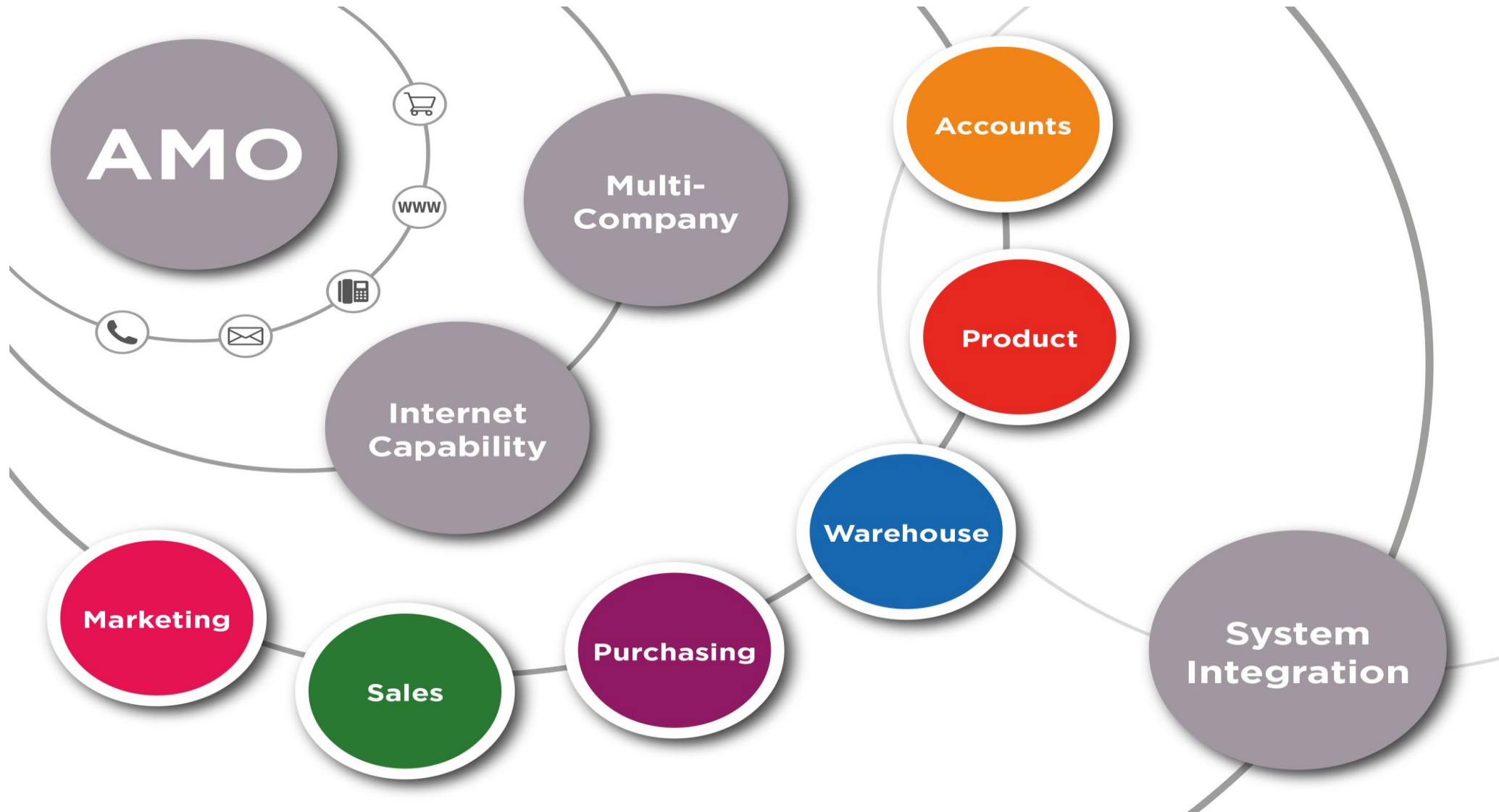


## Lifetime Multi-Channel Software Solutions

- 27+ years of multi channel experience with InterSystems technology
- We have used InterSystems technologies to provide ERP solutions to a wide range of market sectors including:
  - Pharmaceutical
  - Fashion Industry
  - Mobility and Accessibility
  - Home and Gardening
  - Consumer Goods
  - 3PL and Fulfilment



# Integration Capabilities



# Websites Seamlessly Integrated





# OmniChannel



**Click & Collect**



**Click & Try**



**Home Delivery**



# Shipping Integration

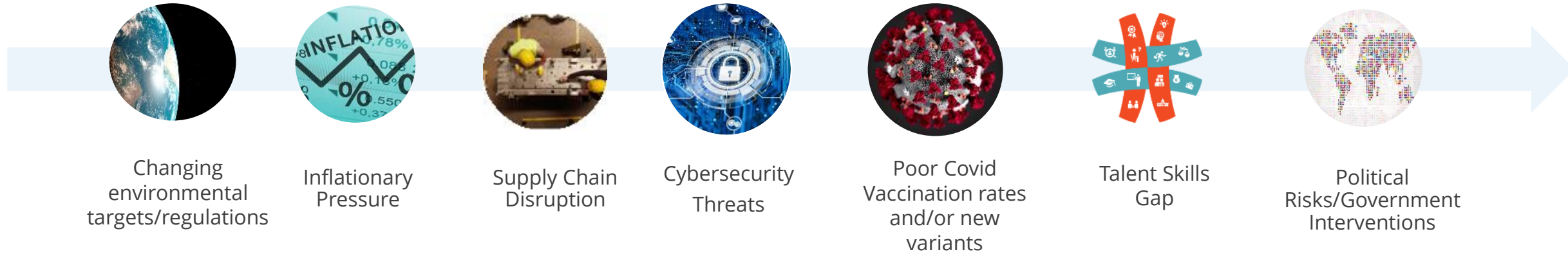


# Multichannel & Payment Integration





# Working Through the Storms



**Gonçalo Caseiro**

*Chair, INCM  
(Portuguese Mint and Official Printing Office)*

'This is not about managing one crisis. It's about being **prepared for anything** – and being able to **adapt** to any disruption to the business.  
And **technology is critical** to make this a reality'





**100,000+**  
**outstanding**  
**orders that**  
**could not be**  
**completely**  
**fulfilled**

# The Challenge – Supply Shortages

**Increased demand for products combined with shipping delays caused immediate and unforeseen supply shortages.**

- International shipments delayed and/or suspended leading to product shortages
- National shortages due to increased demand which could not fulfil the increased demand
- Larger average order volumes and values as customers purchase more and different products.



# The Solution – Actionable Insight

Using the InterSystems IRIS Platform we were able to analyse patterns in the data to identify the most effective options to split and pick orders economically to alleviate the backlog.

- Dashboards to display scenarios and their respective results
- Actions to re-allocate products from orders that could not be shipped to help other orders.

25% of customers receiving previously held up orders

Warehouse - Produce Picking List - PCK1

Warehouse: [M] [Man] Val From: 1 Val To: 50.00 ETA From: 100.00 ETA To: 2 LD Date From: 5 LD Date To: 66 Stk Per: 66 MaxMtn Rem: 66

Allow Split Deliveries: [N] Max Orders: 9999 Max List Size: 9999

Comments: [ ]

Available Orders: 114 Pickface Shortages: [ ] Selected Orders: 0

Include Warehouses: [ ]

Check Picking Selection: [ ] Check Orders: [ ] Print Shortages: [ ]

Category Based Splitting: [N]

Stock Category Description Min Allocated Value Selected

1 [ ] [ ] [ ] [ ]

Outstanding Orders in TST for 1 - YouGarden - MTJAKE

Template: CAT30 Category: 30 Sales - Outstanding Orders - SO15

Filter: Order Date From: 11APR22 To: 11MAY22 Order Value From: [ ] To: [ ] Product: [ ]

Courier: [ ] All Selected Status: [ ] All Selected Show

Order Number Search: [ ]

OrderID	Order Date	Order Value	Product Qty	Line Qty	Pickable Product Qty	Pickable Line Qty	Total Splittable Order Value	Courier	Hierarchy No	Status
1 OR7716367	12 Apr 2022	26.99	3	3	2	2	0.00	5	5	
2 OR7716368	12 Apr 2022	26.99	3	3	2	2	0.00	5	5	
3 OR7716370	19 Apr 2022	3.99	3	3	2	2	0.00	5	5	
4 OR7716371	19 Apr 2022	3.99	3	3	2	2	0.00	5	5	
5 OR7716373	19 Apr 2022	3.99	3	3	2	2	0.00	5	5	
6 OR7716374	19 Apr 2022	3.99	3	3	2	2	0.00	5	5	
7 OR7716378	28 Apr 2022	26.99	3	3	2	2	0.00	5	5	
8 OR7716390	04 May 2022	256.49	3	52	2	2	0.00	5	5	
9 OR7716391	10 May 2022	26.99	3	3	2	2	0.00	5	5	
10 OR7716394	10 May 2022	26.99	3	3	2	2	0.00	5	5	

Total orders to be picked: [ ]

Details for Order: OR7716390

ProductID	Description	Qty	Alloc Qty	BO Qty	PO Date	Value	Courier
1 650075	Lily 'Triumphator' x 10 bulbs 14/16	50	43	7	Unknown	249.50	NONE
2 200503-001-100053	Professional Compost 40L handy bag	1	1	0		0.00	1728PQ
3 200503-002-100084	Professional Compost 20L handy bag	1	1	0		0.00	1728PQ

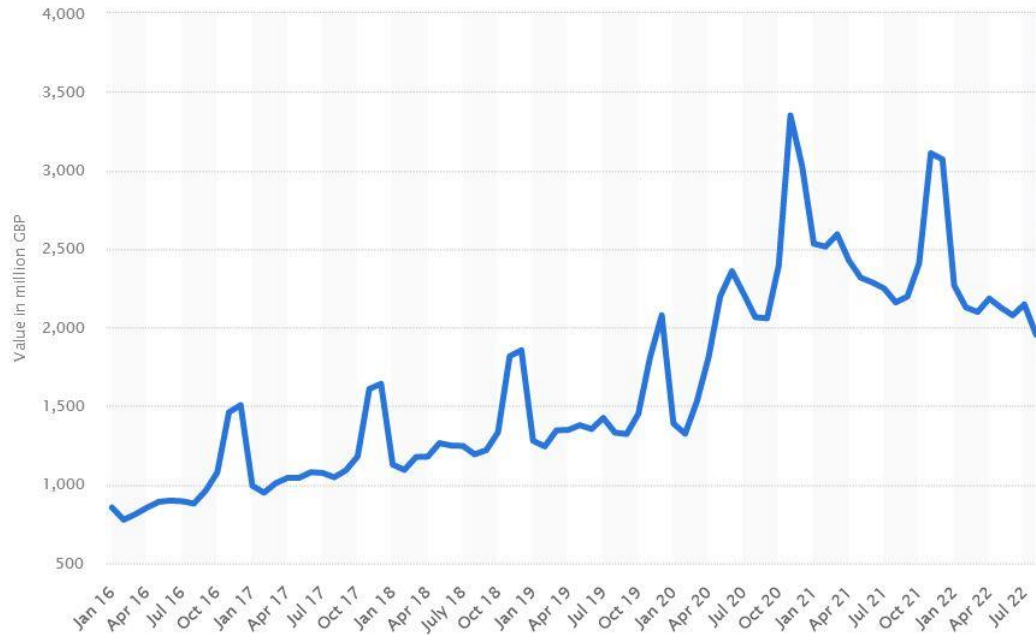
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# The Challenge – Changing Consumer Behaviour

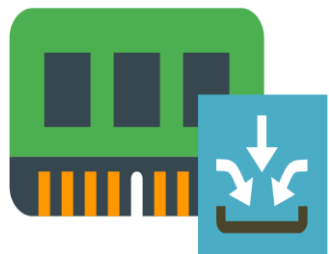
**With consumers forced to stay at home, on-line demand increased significantly across many market sectors.**



Average weekly value of internet retail sales in Great Britain from January 2016 to August 2022. Source: Office for National Statistics (UK)

- Traffic on eCommerce Web grew significantly
- Performance, agility & scalability of websites tested to the max
- One client faced **100% increase in demand** in just weeks.





**65% more**

records ingested with  
simultaneous querying than  
in-memory DB



**15x more**

records ingested with  
simultaneous querying than  
cloud RDBMS



**5.6x more**

records ingested with  
simultaneous querying  
than traditional RDBMS

# The Solution – Unrivalled Performance

- The InterSystems IRIS Web Add On enabled our websites to cope with the high peaks in customers whilst some of our clients competitors struggled.
- The inherent efficiency of InterSystems IRIS due to it's post relational structure provides the speed and scalability required to meet the consistent demand experienced

<https://gettingstarted.intersystems.com/speed-overview/speed-test/>





# Digital Transformation

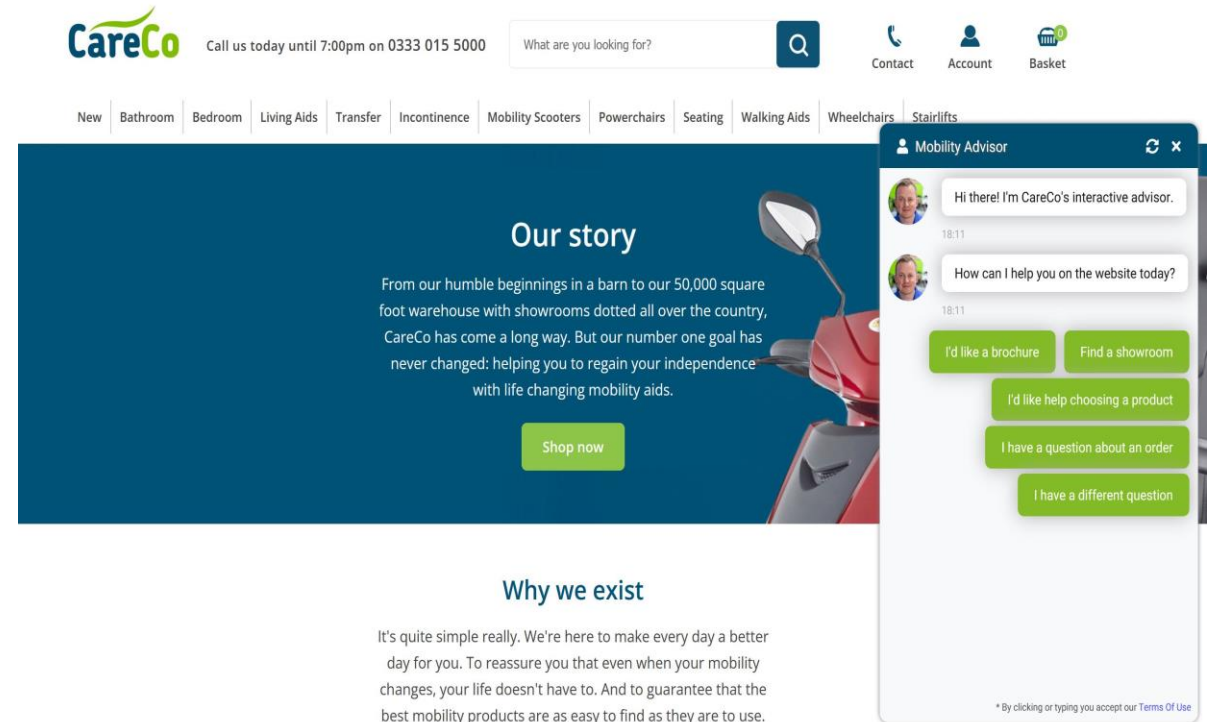
## User Experience Use Case

**Due to the inability to travel to stores and showrooms during the pandemic, clients focused on providing new & improved online solutions**

A mobility client had to shut all their showrooms countrywide.

They switched the focus on providing a rich online experience including

- online mobility advisors
- full view reviews of products



**Leading to an increase of 25% of online orders**



# What for the Future?

**Clients are having to be more responsive and flexible with regards to the supply chain; being prepared for any unforeseen events.**

- We are working on more tools to provide insights via custom dashboards to enable our clients to analyse the impact of supply issues rather just report on them.
- With additional developments to be able to perform actions on those insights, changing parameters for order picking, selection, re- allocation providing more flexibility.





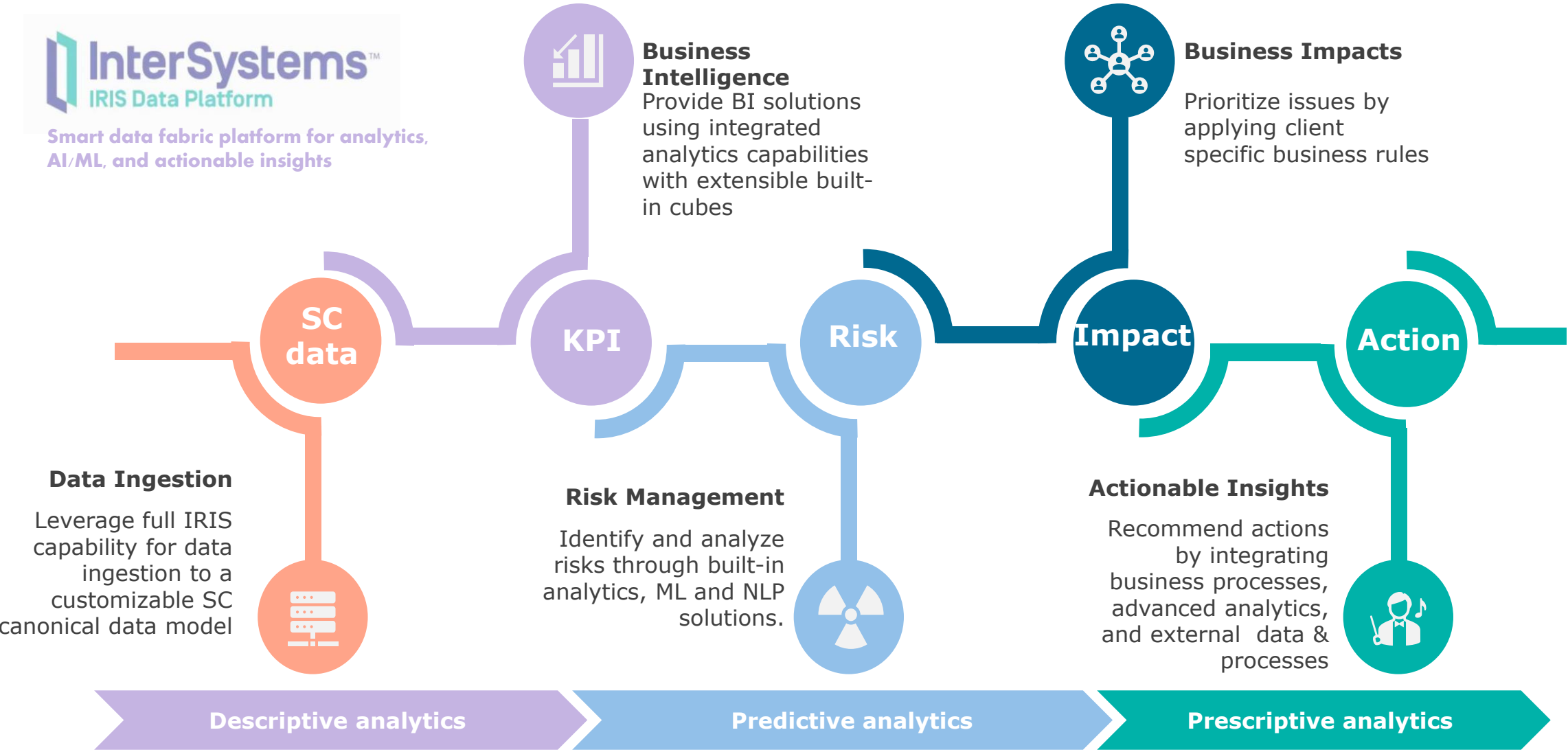


# InterSystems IRIS Supply Chain

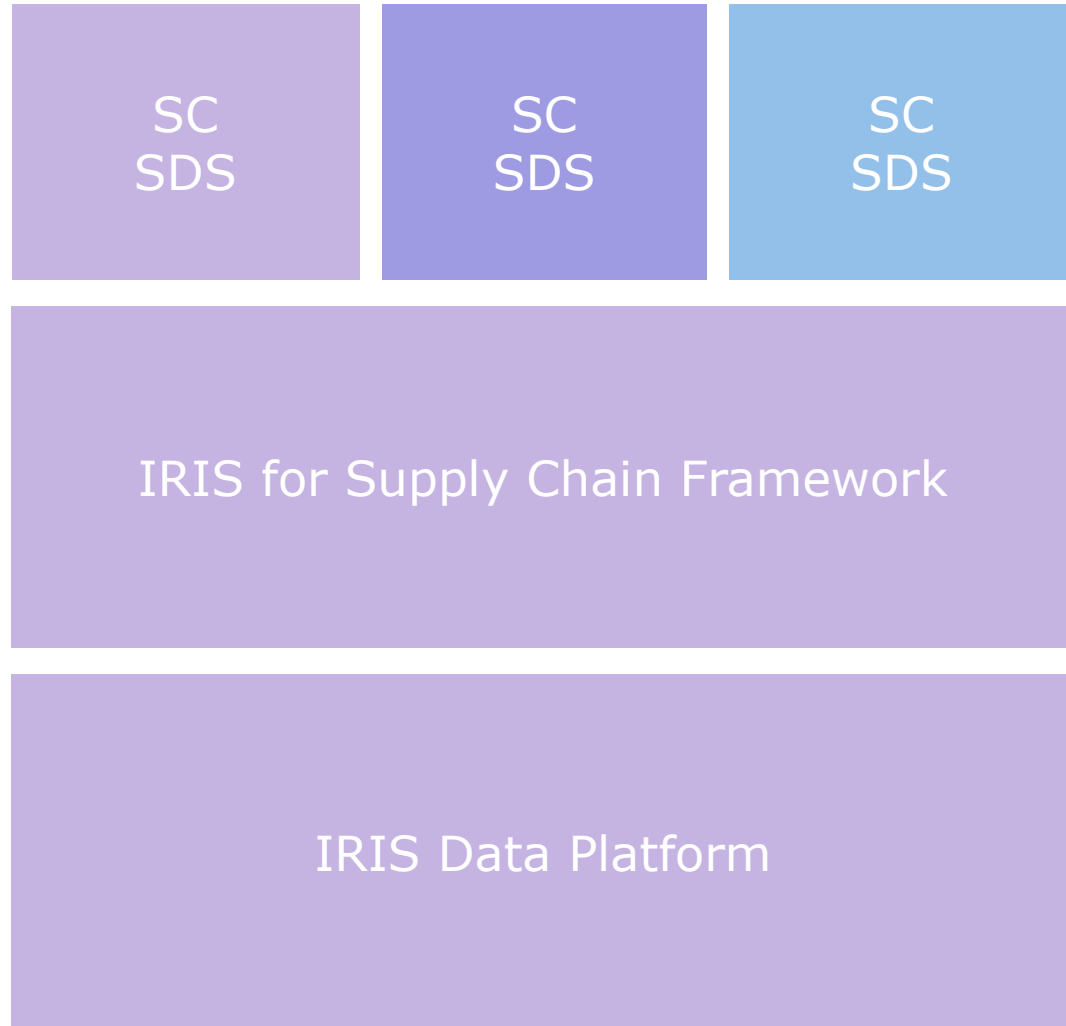
**Product Roadmap**



# Our Approach



# InterSystems IRIS Supply Chain Capabilities



Configurable cloud service for specific supply chain functions by InterSystems, our partners, and our clients

Common supply chain services & infrastructure which simplify the implementations of client specific use cases

Smart data fabric platform with data persistence, data ingestion & integration, built-in analytics & interoperability





# IRIS for Supply Chain Framework

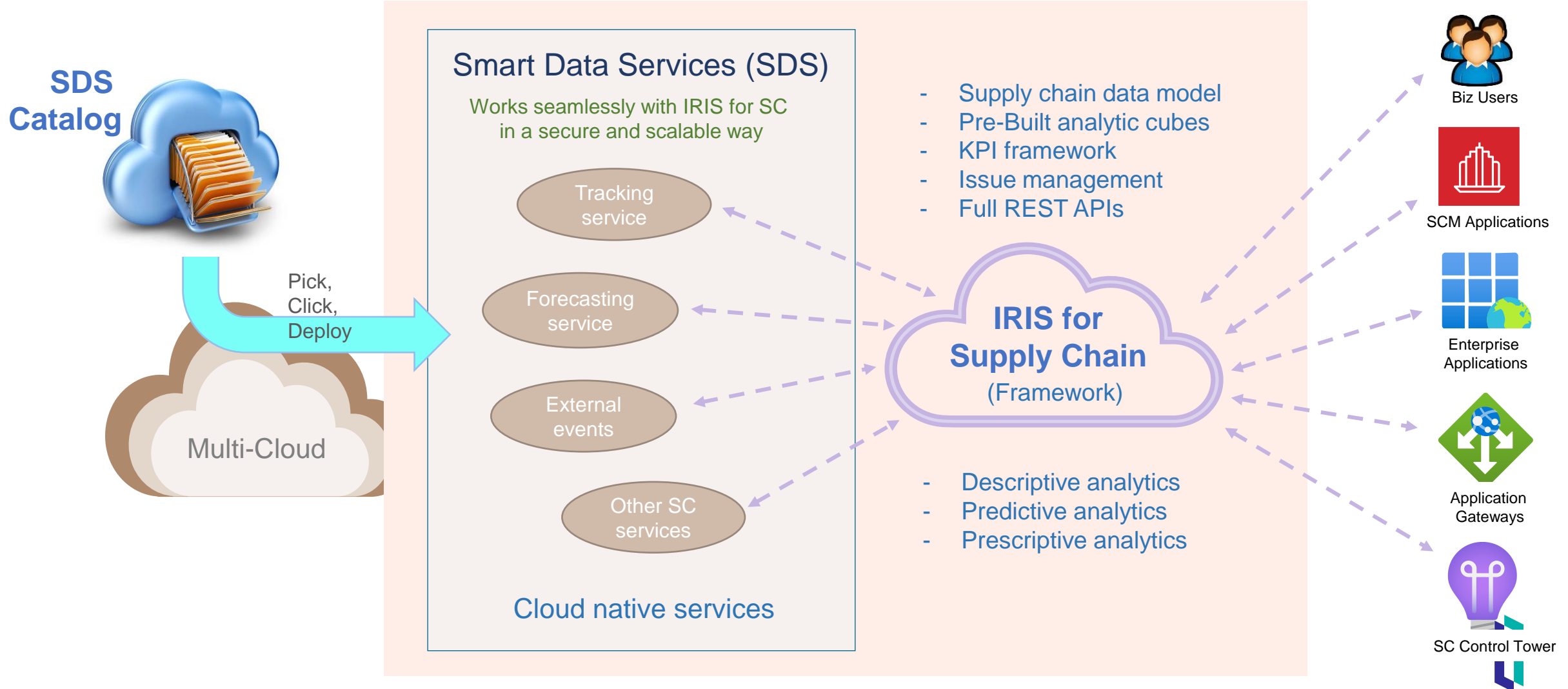


IRIS data  
platform speaks  
supply chain  
language

Allows users  
focus on business  
use cases rather  
than technology

- Canonical data model for Supply Chain
  - Easily customizable
  - API for model discovery and customization
- Pre-built analytics cubes based on the data model
- KPI framework
  - Custom KPI definitions
  - APIs for KPI values and listings
- Issue lifecycle management
  - Issue/risk identification/creation
  - Issue analysis and resolutions
  - Issue stats and reporting
- Full REST API support
- Common utilities for supply chain use cases

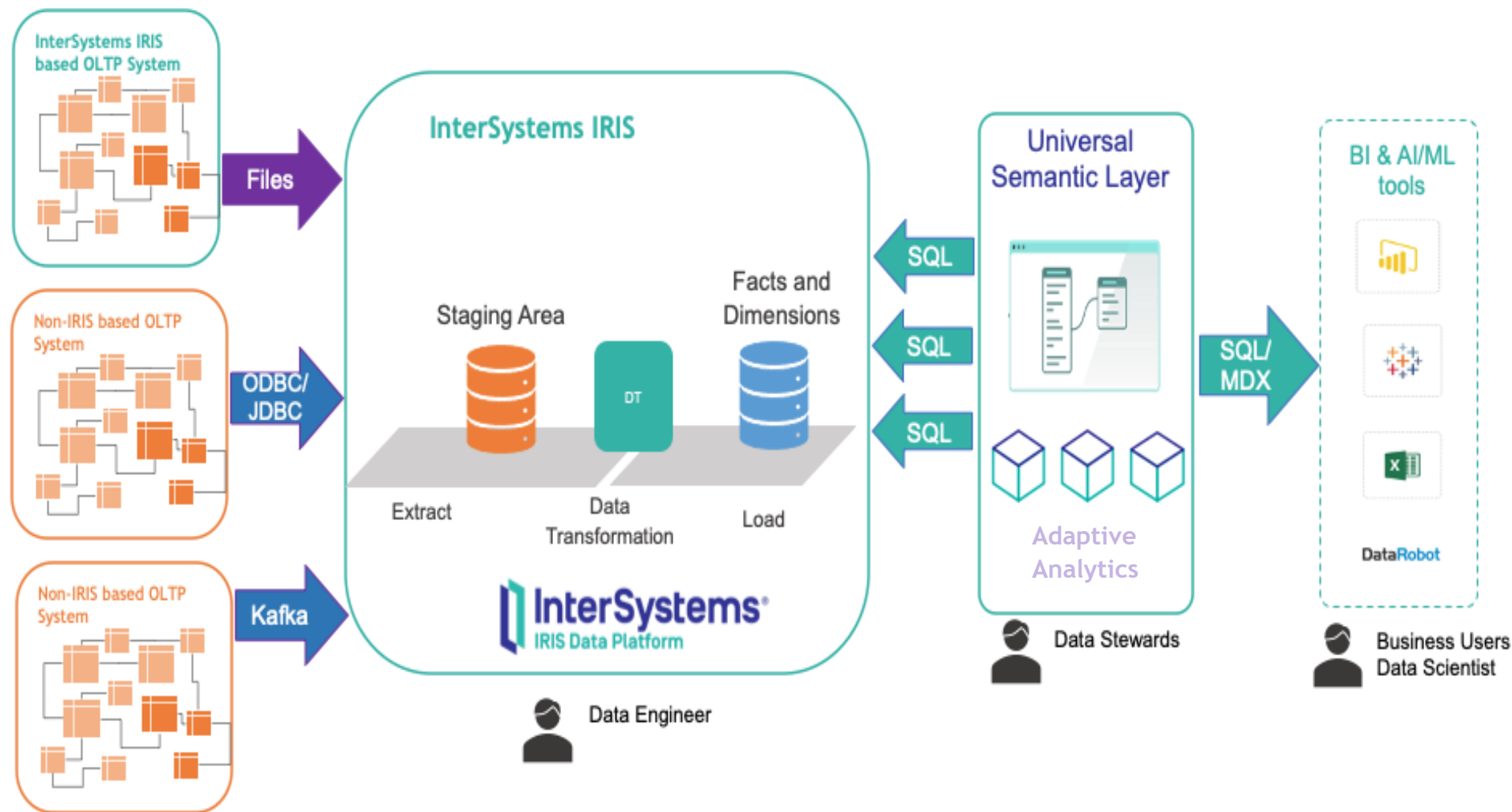
# IRIS For Supply Chain with SDS



# Adaptive Analytics



- **Cloud first infrastructure**
- **Analytics on live cloud data**
- **Bridging AI & BI**
- **Single source of truth**
- **Open platform**





# Demo: Actionable Insights



InterSystems IRIS for Supply Chain

demouser

Home > Order Dashboard > Issues > Order Details

Sales Order: c960646f-4421-4d0e-9483-320a75d9e8a2

Customer

Oi

Ship to

LOC-CUST-9  
Rua Humberto de Campos 425  
Rio de Janeiro, Rio de Janeiro 20000-000  
BRA

Order Value

\$328,000

Order Status

Open

Order Placed Date

8/6/2022, 12:00:00 AM

Requested Ship Date

8/7/2022, 12:00:00 AM

Requested Delivery Date

8/12/2022, 12:00:00 AM

Committed Ship Date

8/9/2022, 12:00:00 AM

Committed Delivery Date

8/14/2022, 12:00:00 AM

Issue

Order impacted by predicted supply shipment delay

Analysis | 8/15/2022, 12:39:00 PM [Update Analysis](#)

Severity: 3 Urgency: 3

Root Causes

Late supply shipment

Impact Analysis

Unable to meet top client SLA. Potential loss of \$378,000 in revenue.

Recommendations

☐ Option A

Use parts reserved for other client's orders.

Impact: \$192,750 of deferred revenue at risk. Order delivery will still be 36 hours late.

☐ Option B **RECOMMENDED**

Fulfill the order by a different plant.

Impact: \$52,000 in extra shipping cost. On time order delivery.

☐ Option C

Use alternative parts.

Impact: Negative margin of \$120,000 on the order. On time order delivery.

Accept

37

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# Demo Session

*Please join us to see a  
live IRIS for Supply Chain  
demo in the next session*





# Key Takeaways



InterSystems IRIS for Supply Chain is a next generation data platform. It's built for implementing **real-time, intelligent, architectures** that drive **predictive and prescriptive actionable insights** throughout the supply chain.

The “**connective tissue**” for **integrating disparate data sources**.

Managing disruptions and constraints across the entire enterprise and global eco-system, is the key to **accelerating time-to-value**





# QUESTIONS?





# Connect with Us

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# Thank you