The impact of COVID-19 on supply chains:

How it took a global pandemic to highlight their shortcomings

E-Book

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Creative data technology

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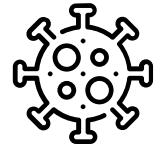
Introduction

The COVID-19 pandemic has had a profound impact on businesses globally. Overnight, organisations were forced to adapt the way they operate to respond to evolving demand and supply requirements. For many enterprises within the retail, consumer packaged goods (CPG), and manufacturing sectors, this meant needing to quickly adjust their supply chains to cater to changes in the types and quantity of products being bought by consumers, and actually ensuring they were available, as well as changes in overall purchasing habits with a huge shift to online retailing.

News reports from around the world highlighted a surge in demand for products such as pasta, tinned goods, and cleaning products while demand for toilet paper spiked by 845% in the United States and sales of flour increased by 92% in the United Kingdom in March. However, as demonstrated by the photographs of empty shelves that flooded the media, for many retail, CPG, and manufacturing businesses, quickly adapting and scaling to this demand proved difficult and at times impossible due to a lack of visibility and flexibility in their supply chains.

To gain a better understanding of the supply chain challenges facing these organisations and how COVID-19 worsened existing problems, InterSystems commissioned data analysts Vitreous World to survey more than 700 business leaders within retail, CPG, and manufacturing organisations globally. This insight will help to provide a way forward to ensure these enterprises are better able to cope with day-to-day operations in the 'new normal', as well as a giving them the ability to futureproof their business to respond to a rapidly changing landscape.

COVID-19's impact puts spotlight on existing technology issues

The COVID-19 pandemic has presented one of the biggest commercial disruptions in recent history. However, issues in global supply chains already existed. The disruption caused by the pandemic only highlighted these, making businesses around the world address the problem far more quickly than ever anticipated. For more than three-quarters (76%) of retail, CPG, and manufacturing organisations, they even stated that the pandemic worsened their technology-specific supply chain challenges. Among these problems, respondents identified a lack of flexibility in existing processes as the most significant (44%), with this inflexibility hindering their ability to adapt to evolving situations and changing demand.

Additional challenges include:

- Difficulty performing analytics to support the business (40%)

- A lack of accurate end-to-end visibility and reporting (40%), and manual processes (40%) which require data manipulation and corrections

- 36% said data silos and difficulty integrating and normalising disparate data, and 35% cited the lack of access to current data as among their top challenges.

76% of retail, CPG, and manufacturing organisations, stated that the COVID-19 pandemic worsened their technology-specific supply chain challenges
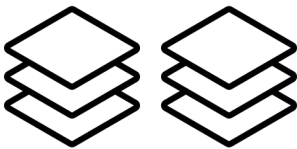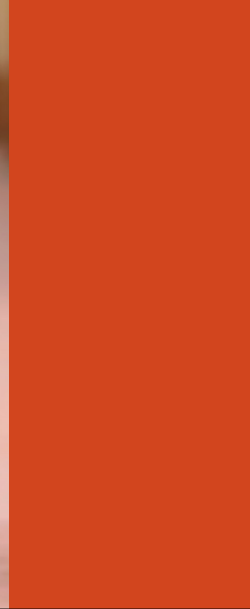
**45% using 6 or more supply chain software products**

26% use 3 to 5 different software products

The global pandemic and these existing data-specific issues would still inhibit retailers to make business-critical decisions that could elevate their offerings to customers.

These difficulties surrounding data and its usage are likely to have significant consequences if not addressed. One reason as to why the data can't be looked at holistically, and in real-time, could stem from the wide range of different technologies being used by businesses as currently:

- A third (36%) of organisations currently use 6 or 7 software products for their entire end-to end-supply chain through distribution processes
- Nearly half (45%) are using 6 or more supply chain software products.

With so many disparate systems in place, any problems they have with sharing or integrating data are all likely being compounded by silos, making it difficult to gain a real-time and consistent view of business data. It is also preventing these companies from achieving the flexibility they require to adapt on demand as conditions change.
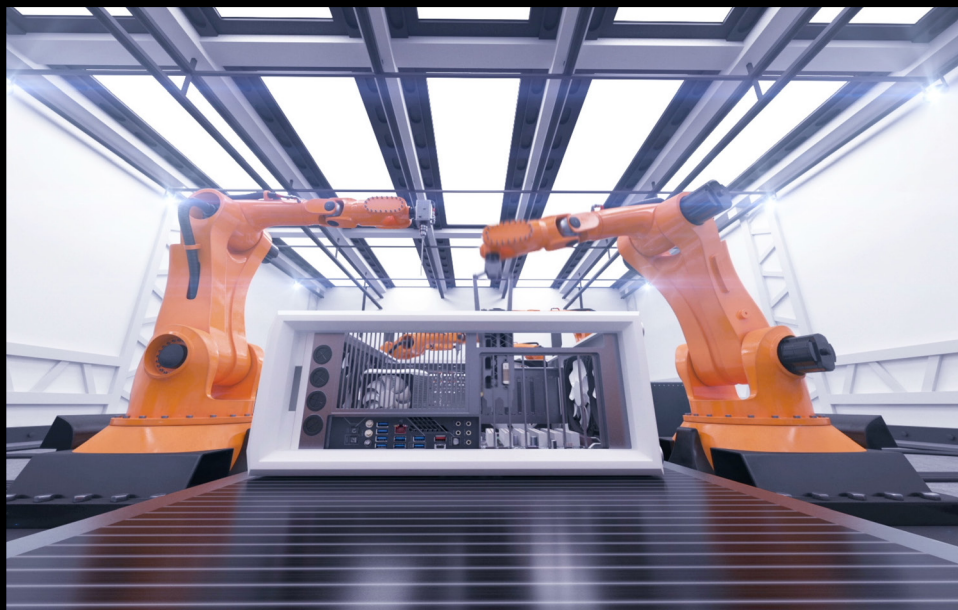
Putting data at the heart of increasing supply chain resilience

Many of the supply chain challenges now facing retail, CPG, and manufacturing organisations appear to originate from a lack of visibility of and access to accurate and current data due to them having a fragmented IT infrastructure, which creates data silos and delays access to data. For instance:

- Only 11% have access to data that's less an hour old
- The overwhelming majority of global retail, CPG, and manufacturing businesses are therefore experiencing delays in accessing data, with 23% having to wait 7 to 24 hours for data and 15% even wait up to 3 days.

This significant lag is delaying their ability to make timely and informed business decisions based on current data, impeding them to respond quickly to changes in demand– a key requirement during times of crises and upheaval.

Only **11%** of retail, CPG, and manufacturing businesses have access to data that's less than an hour old

Price optimisation (46%)

Route optimisation (45%)

Staffing optimisation (43%)

Access to data can also help businesses to make major improvements to their processes and operations and allow them to offer value back to their customers. This is highlighted by the fact that 60% of respondents want to use data to improve inventory management and over half (57%) are trying to use it improve demand prediction and supplier management (57%). Additional use cases of data include:

- price optimisation (46%)
- route optimisation (45%)
- staffing optimisation (43%).

However, the data-related challenges being experienced by retail, CPG, and manufacturing organisations are currently preventing them from achieving these goals.

Consequently, with data critical to helping organisations attain their business goals, it is vital that they begin to look at their existing supply chain IT infrastructure to identify where they are facing data silos and an inability to integrate data. After all, integrating, transforming, normalising, and harmonising data in real-time is a vital capability for businesses as they aim to become more flexible and responsive.

Using intelligent data management solutions to help take stock of the supply chain

As retail, CPG, and manufacturing organisations explore ways to improve their supply chain processes, better data management is the key – as echoed by 89% of respondents who believe that their end-to-end supply chain challenges require the use of data management software. This tells us that while the use of commercial off the shelf software (COTS) and siloed supply chain applications may be necessary, they are not sufficient.

The needed solution? An additional data management layer that helps these organisations overcome the current issues they are facing. By integrating and normalising data, they will be enabled to remove data silos to provide a single, accurate, and current view of all of their data to gain better visibility internally, and across their supply chains.

Processes such as demand forecasting and inventory optimisation can be further enhanced with the use of the latest artificial intelligence (AI) and machine learning (ML) technologies. Currently, adoption levels of AI and ML differ from organisation to organisation with 41% of respondents saying their adoption level is high, while 20% consider it to be low.

However, implementation of AI and ML technologies is likely to grow rapidly over the course of the next year as more than three-quarters (77%) of respondents revealed they are highly likely to increase adoption of these technologies in the next 12 months. As they do this, data management solutions become increasingly critical, since accurate AI and ML requires exact and consistent data, and lots of it. According to Forrester Research, 98% of organisations experience challenges gaining insights from the data they collect, primarily due to the lack of internal expertise.

Data management technologies that also provide AI and ML capabilities can support businesses to make use of these technologies without requiring additional resources and expertise.

While the use of COTS and siloed supply chain applications may be necessary, they are not sufficient

This is likely to be welcome news to organisations that do not have data scientists on staff devoted to supply chain processes and customisation.

With the addition of large numbers of skilled data scientists unlikely to be a realistic option organisations should consider how they can get the most from AI and ML without having to dramatically increase budget and resource. As such, they must begin to consider the alternatives solutions available to them that allow them to capitalise on AI and ML without needed expert knowledge.

New technologies, such as **InterSystems IntegratedML™**, solve this issue by allowing organisations to easily add advanced analytics to applications without needing to have expertise in reading data. This simplifies the process of building, testing, and deploying machine learning models and automates the process of integrating them seamlessly into production applications. InterSystems IntegratedML™ can help businesses develop accurate machine learning algorithms directly within existing data management infrastructure, without requiring a team of skilled data scientists, and to embed the models directly into supply chain applications to take programmatic actions in response to real-time events.

With this technology at their disposal, retail, CPG, and manufacturing organisations will not only benefit from improved data management but they will also be able to move ever closer to achieving their goals of optimising processes and improving inventory management and demand prediction.

Preparing for the future supply chain

The COVID-19 pandemic brought to the forefront many of the pressing technology-related supply chain issues retail, CPG, and manufacturing organisations have been experiencing for some months and even years. While previous issues such as data silos, a lack of visibility and flexibility in processes may have been troublesome, during the pandemic they were a major cause for some organisations being unable to adjust to meet changing demand.

However, by exacerbating these long-term problems, COVID-19 could be the catalyst for change within the industry. With so much riding on gaining the ability to optimise processes, increase efficiencies, and accurately forecast demand, retail, CPG, and manufacturing organisations need to put the data strategy and solutions in place that enable them to eliminate data silos, streamline their existing infrastructure, and change and adapt processes as required. This will ensure they have the infrastructure to cope with any future fluctuations in supply and demand, improve customer satisfaction, and retain a competitive advantage.