WHITE PAPER

SUPPLY CHAIN RESILIENCY TO MEET OBJECTIVES AND BEAT CHALLENGES

Global supply chains, which got disrupted in the pandemic, continue to be fragile, threatening the continuity of business operations. With supply chain resiliency becoming the key to business resiliency, supply chain management has moved from the back-office to the forefront of manufacturing operations.

Manufacturers who source and sell around the world are de-risking their supply chains by adding a "plus one" to their primary sourcing location. They are also ramping up technology to manage the increase in supply chain complexity.

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Lack of visibility

One of the biggest challenges in supply chain management is lack of visibility. Most global manufacturers have sprawling supply chains with multiple tiers, with progressively worsening visibility. An end-to-end supply chain view is essential for proactive planning, with real-time information enabling manufacturers to respond quickly to shifts in demand, track shipments, and manage returns. Finally, manufacturers need visibility to comply with expanding ESG regulations and scope 3 emissions reporting.

The solution to the visibility challenge is a supply chain control tower, which integrates planning, ordering, transportation, and inventory management to facilitate free flow of information across the supply chain. Enabling real-time insights, and even automated decision-making, the control tower improves supply chain control and resilience.

Uncertainty and flux

Every day, uncertain events test supply chain resilience – a supplier misses a shipment because of a quality issue, a transport vehicle breaks down, a production line halts because a spare part isn't available, and so on. Manufacturers must be able to anticipate such events, and take quick action, such as procuring from another vendor or suggesting an alternative to the customer. This calls for changing the traditional supply chain, built for "one-time strategy and long-term implementation" to a "live" model that can sense, reason, and respond to internal and external triggers in real-time. This model is built on advanced architecture that harnesses cloud-native ecosystems, and is powered by insights from Artificial Intelligence, Machine Learning, and Deep Learning technologies. A live supply chain solution empowers manufacturers to make more accurate demand projections. By analyzing data such as seasonality, economic trends, and promotional activities, it can effectively predict the demand for aftermarket spare parts.

Long-term strategic play

Supply chain resiliency is not just about tactical maneuvers. For truly resilient operations, manufacturers must have a long-term view of sourcing, pricing, and fulfilment strategies. Apart from deploying technology, organizations should consider working with a partner with the entire range of capabilities – strategic consulting and advisory, domain knowledge, supply chain network design & optimization, and solution implementation.

Go layer by layer

Given the proliferation of digital solutions, how can manufacturers ensure they are making the right choices? Our view is that instead of adding applications ad-hoc, organizations should take a systematic approach to technology intervention as briefly described below:

Improve the foundational layer: This is the layer of systems of transaction, such as ERP, or order/ warehouse/ transport management solutions. Organizations, whose existing systems may be outdated, patchily implemented should strengthen their transaction foundation by modernizing and standardizing the solutions and applying best practices. Infosys offers a wide range of solutions, expertise and ecosystem partnerships to help clients in this objective: our intelligent supply chain planning solutions leveraging SAP Integrated Business Planning (IBP). We also offer an Industry 4.0 ecosystem for smart supply chain operations to help clients track inventory from suppliers to customers, and build a network of global and local suppliers.

Here is an example of how we helped a global, multinational renewable energy leader. After a complex merger, the company was saddled with two sets of diverse business processes, 12 legacy ERP applications, 1,300 other peripheral applications, and 22 manufacturing plants, none of it standardized. Seeking to re-architect its IT landscape, it approached Infosys with a mandate to standardize its processes, and lower both operational complexity and cost. A Greenfield implementation approach, with SAP S/4HANA as the product platform was chosen. We also leveraged Infosys Cobalt, a set of tools, solutions, and platforms for cloud transformation to standardize the implementations across multiple rollouts.

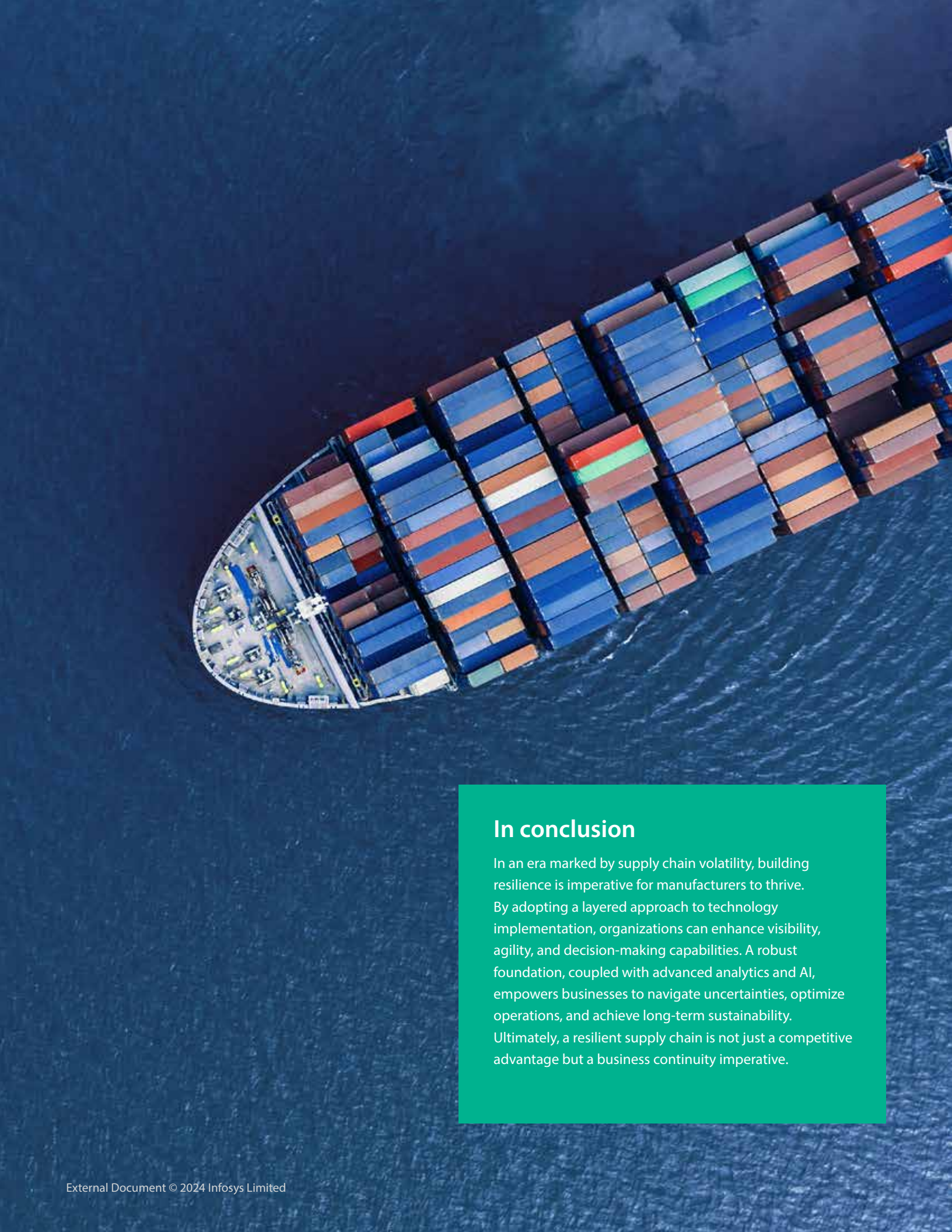
Build the information layer: The data generated by the systems in the foundation layer is stored in systems of information, namely data lakes and warehouses, residing in the middle layer. In the supply chain context, a key system of information is the supply chain control tower which captures data from across the supply chain – about shipment, supplier inventory, order status etc. – on a dashboard to improve visibility and control.

When one of the most famous automakers in North America began to lag its data processing needs, to leverage Infosys Cobalt to transform the VDW into a modern data lake on Amazon Web Services (AWS). The outcome was a reduction in complexity, elimination of data duplication, improvement in data quality, and readiness for further analytics (performed by the systems in the topmost layer).

Transform the analytical layer: Information in data lakes and warehouses (in the middle layer) is harvested by the analytical systems in the top layer. Because it houses AI, ML, and generative AI solutions, this layer attracts the maximum interest at present. This is where insights driving supply chain decisions (for example, demand forecasting), and next steps (which supplier to retain or drop because of sustainability considerations), are generated. For example, one of our clients is using generative AI to read through supplier product documentation and spec sheets to identify dangerous goods based on mercury and lead content. We are working on AI-based solutions that not only predict the problem (say, a supply disruption in a particular location), but also suggest what to do about it (recommending an alternative supplier) to help organizations maintain supply chain operations even in challenging circumstances.

Our list of offerings includes the Infosys Smart Manufacturing solution (on Snowflake Data and AI Cloud) which provides manufacturers, among other things, the ability to sense, predict and respond quickly to shop floor issues. Manufacturers can optimize production strategies to maximize output with a high degree of precision.

Our reusable frameworks for supply chain forecasting, solutions for inbound and outbound visibility, and generative AI solutions that supply chain managers can query in natural language for answers rendered as text or even graphs, are enhancing clients' ability to manage supply chain operations with efficiency, with confidence, and without disruption.



In conclusion

In an era marked by supply chain volatility, building resilience is imperative for manufacturers to thrive. By adopting a layered approach to technology implementation, organizations can enhance visibility, agility, and decision-making capabilities. A robust foundation, coupled with advanced analytics and AI, empowers businesses to navigate uncertainties, optimize operations, and achieve long-term sustainability. Ultimately, a resilient supply chain is not just a competitive advantage but a business continuity imperative.

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