



The Era of Linear Supply Chains May Soon Be Over

As supply chains are increasingly digitised, the most successful ones will evolve into platform-enabled ecosystems.

Mickey Drexler, the man behind brands such as the Gap, Old Navy and Banana Republic, is an American retail legend. J. Crew's CEO since 2003, Drexler caught the online retail wave early on. And yet, as he admitted **last month**, he didn't realise the speed at which technology would disrupt his industry.

The high-street fashion industry used to have a production cycle of about a year. Now, aggressive competition using high-tech, data-driven supply chains can bring runway styles to the consumer within weeks. Online retailers such as Amazon can dynamically **tweak prices** by the hour. The market doesn't walk anymore; it runs, tweeting its stats in real-time. Supply chains need to evolve to keep up.

As Drexler told *The Wall Street Journal*, "If I could go back 10 years, I might have done some things earlier." After two and a half years of declining sales, J. Crew is now facing significant financial pressure.

A brief history of modern supply chains

The last several decades have seen the rise of complex global supply chains. It started with a favourable cross-border trade climate that eased the coordination of multi-country supply chains. A dramatic fall in associated costs, aided by the

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Internet, enabled manufacturing functions to move to the most efficient geographical locations. The corresponding rise of enterprise resource planning (ERP) software helped manage physical flows across these supply chains.

Over the last ten years, increasing digitisation of consumer interactions has provided manufacturers with greater insights, allowing them to be more responsive to fluctuations in demand. This has further driven the rise of lean manufacturing, characterised by lower inventory and increasingly complex coordination with other suppliers across the supply chain.

Supply chains are now poised for their greatest transformation yet – their reorganisation as platform-mediated ecosystems. Platform refers to the technology that enables market stakeholders, such as producers and consumers, to interact openly.

How supply chains will abandon their linear logic

The supply chain, as the name suggests, was the creation of a world of linear thinking. Even today, its logic – from the upstream sourcing of components to the distribution of final products – remains very linear. In my books *Platform Revolution* and

Platform Scale, I describe this as the pipeline model of business, where value flows linearly from producers to consumers.

However, a combination of forces is now beginning to emerge that is fundamentally shifting the supply chain from a linear logic to a more networked and systemic logic.

First, physical flows and digital flows are rapidly converging as real-world objects are embedded with sensors. In the world of monolithic ERP systems, these flows were decoupled, but increasingly products (and the components that lead to their creation) can be tracked in real-time. When aggregated and analysed, real-time data can inform and restructure the logic that determines stock movement. For example, the retailer Macy's was able to better assess the inventory performance by digitising all its stock. It then restructured processes to better liquidate slow-moving inventory.

Second, machines and processes are merging through digitisation. Data captured from the performance of machines can restructure their processes. In turn, the output of processes can be used to inform the future behaviour of the machines involved. Machines showing signs of wear and tear can be prioritised for repair while work is shifted to other machines. Companies like Bosch are investing heavily to enable their clients to digitise their factory operations in such a way.

New business and revenue models will emerge

Beyond the restructuring of processes, a digitised supply chain also creates opportunities for entirely new revenue models. Specifically, the ability to track a product beyond the handover to the customer, and on to actual use, lends itself to a whole range of new business models. A digitised supply chain allows the shift from product-centric to service-centric business models. For example, with a constant flow of data about product usage, the customer could be charged based on outcomes.

In any product category, the players moving towards an outcome-based revenue model are likely to pull customers in their direction, away from the more traditional players. Rolls-Royce, for example, has shifted from selling engines to charging for outcomes. Customers, including Boeing and Airbus, pay for the actual flying hours during which engines are used. Rolls-Royce now has a competitive edge over other company still selling engines as products.

New revenue models could also take the shape of value-added services. Logistics companies, for example, are digitising the actual state of shipments. They actively track perishable produce, recording

its current temperature and other state variables as it moves through their network. Based on this data, the logistics network can inform customers if the perishables need additional packaging, superior containers or temperature maintenance, and they can offer these services to customers at an additional price. In this way, digitisation does not just create visibility across the supply chain – it translates this visibility into new forms of revenue.

Supply chains as living, fluid ecosystems

As the final frontier, today's supply chains are being re-architected as ecosystems coordinated by central platforms. These platforms constantly ingest data from the interactions of people, processes and objects across the ecosystem. In turn, they inform and often restructure the logic of ecosystem flows. Firm boundaries become less important and coordination across the value chain becomes much more fluid.

A platform gathering data from a whole range of suppliers could, for example, effectively determine the reputation of various suppliers based on their past performance. This, in turn, can inform future business development and contracting. The supply chain could be restructured to prioritise inputs from highly reputed suppliers.

As supply chains move to platform-enabled ecosystems, we will start seeing demand-side economies of scale – the rise of network effects – as better coordination across an ecosystem and better reputation management will attract even better suppliers, leading to a more robust supplier ecosystem.

Until today, supply chains have worked as tightly linked, contractually organised entities. But as most of the supply chain becomes digitised, we will see the rise of more fluid processes, entirely new revenue models, and eventually, the creation of supplier ecosystems that benefit from network effects.

As for Drexler, he decided to strengthen the J.Crew's digital marketing and create an analytics team to optimise garment prices. He will also expand the company's supply chain to get better deals and bring products into stores faster. Will this be enough to turn the company around? With the speed of changes today, we may know the answer fast.

Sangeet Paul Choudary is an INSEAD Entrepreneur-in-Residence and the founder and CEO of **Platformation Labs**. He is also a co-author of **Platform Revolution** and is on the **2016 Thinkers50 Radar**, a global ranking of management thinkers.

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