Creating Competitive Advantage Through a Digital Supply Chain

A view into maturity levels of UK and German companies in their efforts to digitalize their ecosystem.

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≫ An Infosys Consulting research report

Enter the Era of the Digital Supply Chain

The rapid rise of innovations and operational evolutions such as Industry 4.0 are ushering in a profound new era of the digital supply chain. A well-architected supply chain model is anchored in four key pillars – namely predictability, agility, traceability and sustainability – which serve as critical enablers that more and more organizations are striving for as they reinvent their ecosystems.

These pillars can enable better visibility of data, which in turn provide supply chain transparency across the entire value chain of an organization when implemented effectively. With transparency comes a host of benefits – including the ability to achieve medium- and long-term sustainability goals.

In our expert view, the firms that get this right will be well-positioned for lasting competitive advantage and a market-leadership role in the future.

This exclusive report analyzes the varying maturity levels of large UK and German companies (with 5,000+ employees) in their ongoing efforts to digitize their supply chains – with a focus on sustainability and transparency drivers. We will also explore some key technology implications and approaches for your organization to consider in its journey forward.

Pillars of the Digital Supply Chain

PREDICTABILITY

of customer buying patterns through analytics, and of system downtimes through smart energy management.

AGILITY

of an organization and peoples' roles; and of manufacturing through distributed semi-finished goods enabling mass customization.

SUSTAINABILITY

of raw material reduction in production; energy monitoring and management; ethical sourcing and responsible distribution and recycling.

TRACEABILITY

of provenance of product or ingredients throughout the value chain; of data and of ownership through the ecosystem.

DIGITAL SUPPLY CHAIN

Source: Infosys Consulting

The Emergence of Industry 4.0

Technology has infiltrated every aspect of our consumer lives, so it follows that it is also causing a major shift in manufacturing and the supply chain. From the 'smart factory' or digital twin to the 'smart home', cyber-physical systems are interacting seamlessly through the Internet of Things. Accelerated digital transformation is at the heart of crystalizing the fourth industrial revolution, or as popularly known, Industry 4.0, and the manufacturing sector is poised to benefit significantly from it.

Previous industrial revolutions have brought huge opportunities to businesses, but also a number of challenges. Regardless, these past developments have shown that organizations which don't embrace change early will risk becoming irrelevant and will simply struggle to remain competitive as others leapfrog ahead.

According to our recent survey, UK and German businesses recognize the importance of embracing Industry 4.0 principles, with 79% claiming to be partly digitized. Further, one-quarter of German companies claim to be fully digitized, compared to only 5% of UK companies. This shows organizations have a long undertaking ahead in their journeys to have a strong, end-to-end digitalized ecosystem throughout their supply chains.

When do leaders expect to have their supply chains fully digitized?

1-2 YEARS — **23%**

2-5 YEARS — **39%**

5-10 YEARS — **24%**
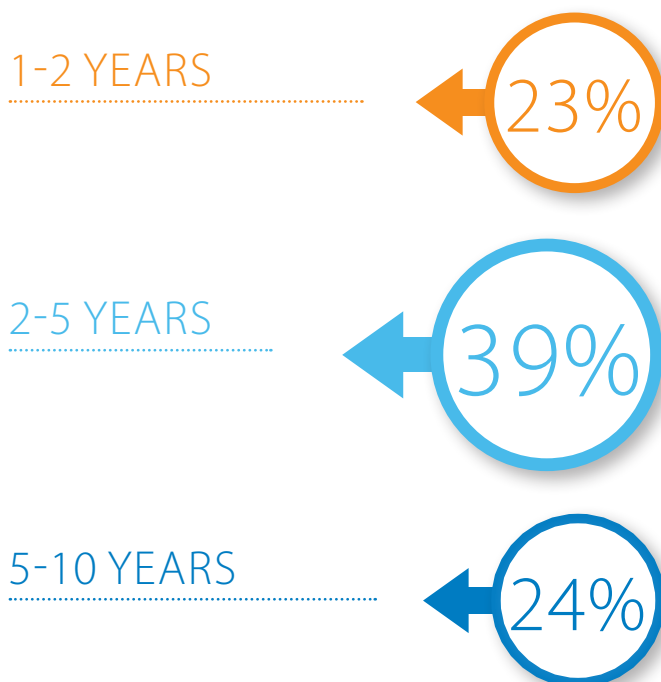
The Increasing Importance of a Sustainable Supply Chain

The majority of UK and German senior business decision makers (71%) believe that the ability to respond to changing consumer demands is a lot more important today than it was five years ago, and will continue to increase in importance. This can be attributed to this new era of mass-customization, where technology is enabling consumers to tailor and order products to their exact specification in real-time.

This is creating a significant acceleration of new trends taking flight, and thus opening major new markets for organizations to capitalize on.

Consumer Demand

71%
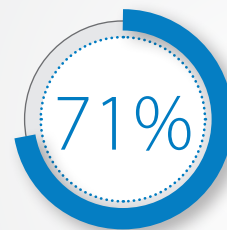
believe the ability to respond to changing consumer demands is a critical driver

Ethical Business Practice Plays a Role

It is clear we no longer operate in an era where ethical business practices are a "nice to have" and are viewed by the CFO as a cost center. But rather, it's become a core tenet of business strategy today, and one that can add economic value for organizations that embed it in their culture.

However, according to our research, 38% of UK and German senior business decision makers still do not see ethical consumption as having increased in importance over the past five years, and the same number do not see it increasing in importance over the next five years.

While it is promising that more than half (62%) consider this a priority, there is still a significant number of decision makers that are not putting ethical business practices at the heart of what they do. This is surprising, considering that, according to Ipsos MORI, 38% of consumers say they will spend more on a product if a company acts in an ethical way. In addition, a 2016 MIT Sloan report indicates that "60% of investment firm

Ethical Consumption

38%
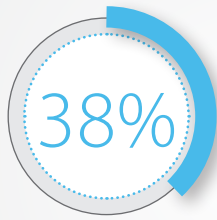
supply chain leaders do not see ethical consumption as having increased in importance

Ethics and Digitization

72%

believe that ethics has increased in importance due to the digitization of wider society

Digitized Supply Chain

25%

GERMANY

5%

UK

of German companies claim to be fully digitized compared to 5% of UK companies

Digitization Impact on Profits

50%

say that digitization of the supply chain has had a positive impact on profitability

board members say they are willing to divest from companies with a poor sustainability footprint."

This is further supported by a World Economic Forum report, which states companies pursuing ethical policies could increase revenue by up to 20%, decrease supply chain costs by up to 16%, strengthen their brand value by as much as 30% and reduce their carbon footprint by some 22%.

In order to remain competitive today, implementing sustainability practices is not optional, but an imperative.

How Does Industry 4.0 Advance Traceability and Sustainability in Supply Chains?

Almost a quarter of respondents cited transparency as the least important aspect in their supply chain. This is surprising considering that consumers are demanding more end-to-end transparency in the products they buy, which means that supply chain managers have to ensure that there is more visibility and traceability practices implemented into each step of their logistics operation. This can have a direct impact on image and value for brands.

Likewise, manufacturers are seeking deeper and better-connected visibility into parts and supplies they procure, as this enables supply chain officers to achieve better predictability in their planning efforts. Additionally, business leaders are striving more and more to reduce their carbon footprint and costs – this can be achieved by clear per-unit production spend through accurate energy monitoring and management.

Traceability Throughout the Supply Chain Becomes a Critical Component

Companies need to know who their suppliers are beyond the first tier. Further, there are elements relating to environmental standards, product safety and the treatment of workers where businesses need to be fully transparent across the entire supply chain. This is a complex task and one that is near impossible to achieve without a highly-digitalized supply chain.

In an increasingly competitive world, integrating sustainability pillars – and therefore traceability practices – into the fabric of a digital supply chain, businesses can create competitive advantage and perhaps strong economic ROI when done successfully.

Legislation Driving Change at Scale

Supply chain legislation and business reforms present a challenge to Industry 4.0, and therefore to ethical consumption – all of which cannot be overlooked. As consumers ask tougher questions about where their goods come from and who made them, governments are responding with more stringent regulations forcing disclosure of product and supplier information. The same is true on the B2B side.

In recent years, laws such as the Modern Slavery Act in the UK have forced brands to take responsibility for working conditions throughout their entire manufacturing supply chain. Similarly, the introduction of the EU Directive on the Disclosure on Non-Financial and Diversity Information (Directive 2014/95/EU) means that some 6,000 large companies across the EU are now required to report on their environmental and social impacts.

For many organizations, legislation is merely a reinforcement of established voluntary reporting standards, such as the Global Reporting Initiative (GRI). As far back as 2011, a report from KPMG showed that 95% of the 250 biggest companies in the world disclosed sustainability performance information.

A Strategy Rooted in Compliance

Codifying these standards into law has raised the stakes however, necessitating a comprehensive and strategic approach by companies to ensure compliance and shield themselves from potential legal, financial and reputational exposure.

Accordingly, our research shows that 84% of senior decision makers say new legislation has become an increasingly important factor influencing their strategy for ethical sourcing in the supply chain over the past five years. The same is true for transparency, where 83% of respondents cite new legislation as an increasing driver for change.

Legislation Driving Ethical Sourcing

84%
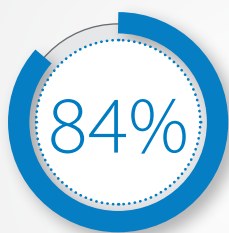
cite new legislation as an important factor for ethical sourcing

Balancing Transparency with Security

Key stakeholders overwhelmingly agree digitization provides a clear pathway to achieving the goals of transparency and traceability across the supply chain. But digital transformation to industry 4.0 also opens up avenues for data theft, industrial espionage, and attacks by hackers.

If businesses are to fully reap the benefits, they will need to balance openness and transparency with robust and consistent information security right across the supply chain.

Given the careful balancing act businesses must strike, it is not surprising then that 25% of respondents identify digital security as the most significant barrier to achieving their future operational goals.

Digital Security Challenge

25%

cite digital security as most significant barrier to achieve operational goals

Respondents in both Germany and the UK rank digital security as the second biggest hurdle they must overcome, just behind the need for investment in skills and expertise. It is easy to see why this is the case when hardly a day goes by without reports of another high-profile cyber-attack hitting the headlines.

Awareness of the risks may be high, but problems persist, with hackers frequently exploiting vulnerabilities in the supply chain to access personal data. Governments have taken action, and our research reveals some telling insights into the role that legislation is playing in driving digital security up the corporate agenda.

Legislative Compliance Top-of-Mind

In Germany, where stringent laws on data protection have been in place for some time, it is notable that nearly a quarter (23%) of senior decision makers regard legislative compliance as one of the three main challenges they have needed to address when digitizing their supply chains.

The introduction of the General Data Protection Regulation (GDPR) in 2018 requires a similar level of due diligence and reporting from companies across the globe. So it is surprising that just 11% of UK respondents see legislation as one of the challenges they have faced in trying to digitize the supply chain they manage.

Failure to Deliver Supply Chain Transparency has Consequences

Businesses today face significant external pressure to do the right thing, and in most cases, additional legislation is merely a rubber stamp for the best practice they have long shown through voluntary certification.

Legislation performs an important role, however, in clarifying where the responsibility lies for ensuring best practice. It also ensures there is recourse for action if a company is shown to be negligent. For businesses operating complex digital supply chains, failure to deliver transparency and consistency at every level of the supply chain now has consequences beyond reputational damage.

Whether we're talking about GDPR or the Modern Slavery Act, throughout these regulations and initiatives are two common threads: disclosure and due diligence, both of which require increased knowledge about the supply chain and the origin of products and services. Companies' procurement strategies need to fully embed these new expectations and requirements by integrating due diligence measures at the core of the procurement process.

An Approach for Your Organization

How can an organization provide transparency for provenance or ethical sourcing for consumers, and add 5% to profits? How can one produce and deliver sustainably for stakeholders and save 2% annually on energy and consumption costs?

Questions like these are at the heart of what is driving our clients, and many of our survey respondents, to consider a radical new approach to their supply chain efforts.

Start with the Business Drivers

For supply chain and operational leaders of the past, the biggest technology decision was which ERP solution to implement and how much to customize it. Today, the array of technology available to address business challenges as outlined in our research is vast and overwhelming.

A great starting point is to focus on a few basic questions:

- What business challenge am I trying to solve?

- Where can my organization generate the best return on investment (either through cost reduction or increased profit)?
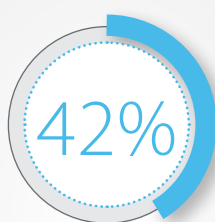
Focusing on these over-arching drivers will first lead more naturally into the technology selections. Then, an exploration journey of proofs-of-concept will help create a future-state view of the possibilities and applications to your organization.

Current AI Adoption

31%
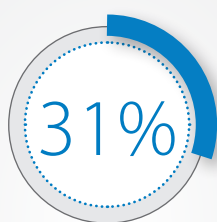
of business leaders are already using AI in the supply chain

Future AI Adoption

42%

in the next 5 years, 42% plan to incorporate AI into the supply chain

New Technology

24%

consider the cost of purchasing and installing new technology as the biggest challenges in trying to digitize the supply chain

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People, Process and Technology Can Drive a Sound Agenda

In our view, the next key to digitalization of the supply chain is a comprehensive understanding of available technologies and applying them effectively throughout the value chain. For example:

Robotic Process Automation >> can enable and power better flexibility.

**AI and Analytics >>** can aid in predictability and energy efficiency efforts.

Blockchain >> can power traceability through the supply chain.

With blockchain, proofs-of-concept are helping some early-adopter companies to reduce costs, power faster trans-actions, lower risk levels and improve collaboration efforts across their partner ecosystem. Our 2018 3rd Party Logistics Study confirmed that blockchain is gaining significant attention across the logistics space, which is a key component of any organization's supply chain. In the end, however, the human element of trust is as much part of this new economy as is the technology.

Understanding the ever-evolving technology landscape – and applying the right combination of people, process and data to it – will allow an organization to answer the much larger challenge of how to drive financial return and achieve lasting competitive advantage.

Finally, consider a partner to help you prepare and plan in a smart way. Whether an industry consultant, supply chain strategy firm, or a technology partner, having the right team and expertise to advise you on your journey can offer great impact before you make bigger investment decisions.

Blockchain

Robotic Process Automation

AI & Analytics
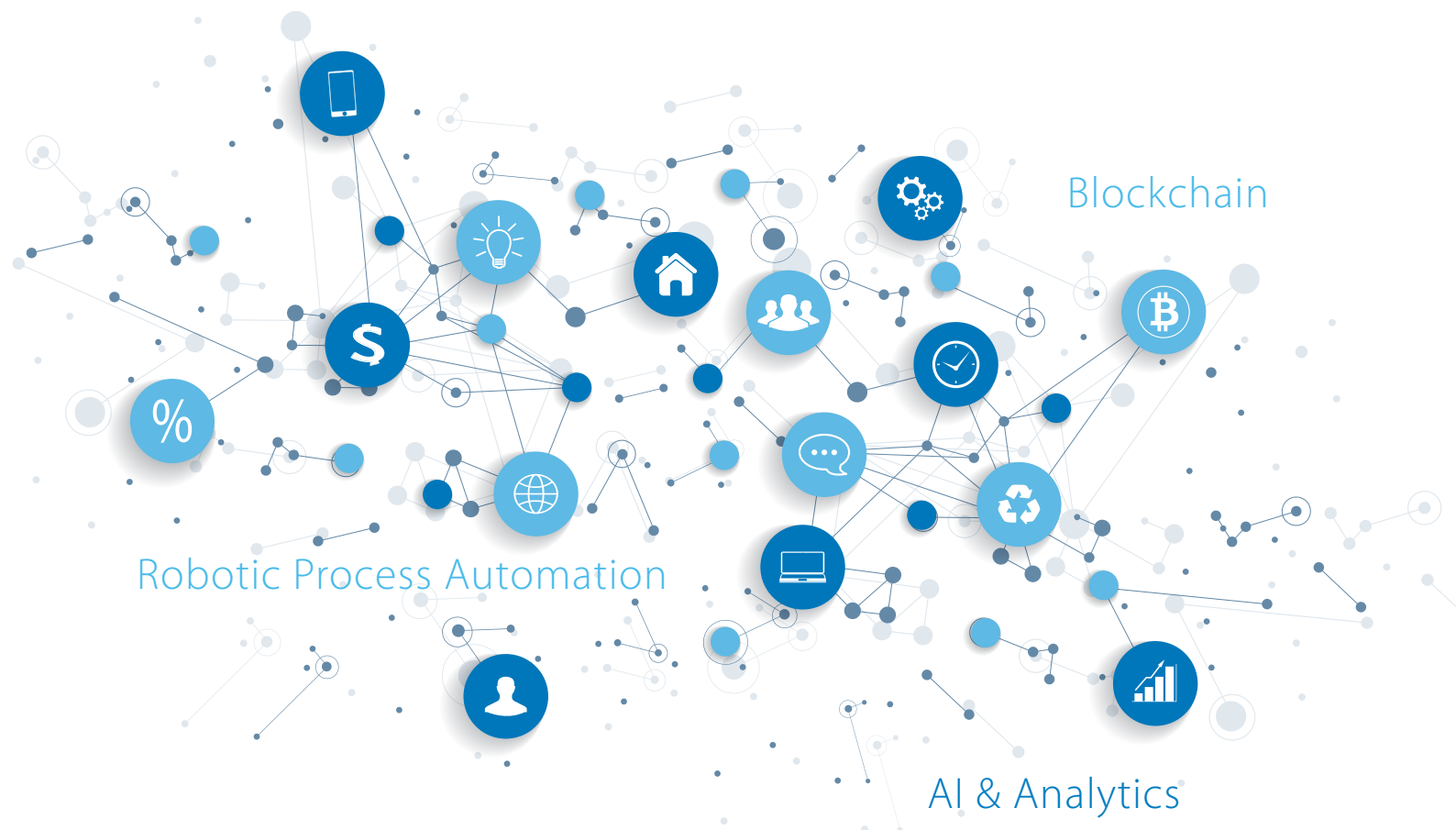
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About this Study

Research overview

This report is based upon insights unearthed from a targeted regional survey, including senior business decision makers in the UK and in Germany. The research was conducted by Northstar Research Partners Ltd on behalf of Infosys Consulting. Northstar is an independent research agency working out of London, Toronto and New York with experience in global, B2B and new technologies research.

The research consisted of a 15-minute online survey of supply chain decision makers in companies larger than 5,000 employees and sought to understand their views on the current role and future impact of Industry 4.0 on the supply chain, with a specific focus on sustainability.

How many people were spoken to?

The total sample consisted of 150 people split evenly between the UK and Germany (75 people per country). The respondents were recruited using online panels, through the survey host and any irrelevant respondents were screened out in the first section of the survey. The survey was conducted during November and December of 2017.

The survey group

As part of the survey design several screening questions were included to ensure that the correct sample was identified. The target sample was supply chain decision makers in companies with more than 5,000 employees. Questions were also added to identify the frequency of interaction with supply chain decision making, their level of decision making, and the position of the employer in the supply chain (from raw materials supplier to retailer).

As such the sample consisted of regular supply chain decision makers that held senior business positions in companies with more than 5,000 employees. Finally those that worked in sensitive industries, such as market research, were screened out, leaving an optimized survey group.

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