Deloitte.

Digital Supply Network

How can companies fuel growth with digital supply networks?

Contents

About this Point of View

This Point of View refers to findings from two of Deloitte's latest global surveys, *The Industry 4.0 paradox: Overcoming disconnects on the path to digital transformation* and *Global Chief Procurement Officer Survey 2018*, on the topic of Digital Supply Network (DSN). Deloitte surveyed 361 executives from 11 countries in the Deloitte Industry 4.0 survey, with a special focus on the supply chain paradox, and 504 procurement leaders from 39 countries took part in the Deloitte Global Chief Procurement Officer survey.

In addition, face-to-face interviews were conducted with supply chain experts from Burckhardt Compression, COOP, Emmi, GS1 Switzerland, Mondelez and other Swiss companies to validate the global survey findings for Switzerland. Statements made by representatives of Swiss companies who did not wish to be named or have statements attributed to them have been anonymised.

Foreword

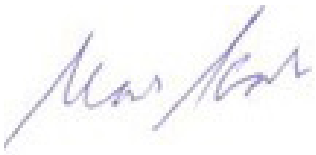
Welcome to *Digital Supply Network as a growth enabler*, which examines the growth prospects for Swiss consumer business and industrial companies as they digitally transform their supply chains. This Point of View builds on the results of our 2015 study, *Growth opportunities – Strategies for Swiss manufacturing companies*, which identified a range of growth strategies.

In that initial study, we identified customer engagement, going global, new services, innovation, M&A and operational excellence as key strategies for growth. Growth enablers such as DSN for example, are key to their success, not only because they are linked directly to these strategies, but also because they enhance and accelerate them.

By transitioning their traditional, linear supply chains into an always-on and holistic DSN, companies can fuel growth across their whole business, instead of just supporting company growth with incremental improvements within their supply chain functions.

Through the findings from Deloitte's latest global surveys on supply chain topics and face-to-face interviews with Swiss supply chain experts, we have analysed the characteristics, opportunities and growth potential of DSN for Swiss companies. To reap the benefits of DSN, which include increased revenue, improved margins and greater asset efficiency, Swiss companies need to invest in digital technologies, develop new skills and reassess their supply chain approach.

We would like to thank everyone who agreed to be interviewed for their invaluable contributions. We hope this Point of View will stimulate discussion within your company and welcome your feedback.



Konstantin von Radowitz
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Key findings

62%

of C-suite executives say that the supply chain is a top priority for future digital investment.

Supply chain top priority for digital investment

Findings from the Deloitte Industry 4.0 survey show that the supply chain plays a key role in digital organisations. 62% of global C-suite executives see the supply chain as a top priority for digital investment. In Switzerland, many supply chains still consist of different and independent functions such as research, procurement, manufacturing and logistics with low interconnectedness. An end-to-end supply chain view often does not exist, despite some progress in recent years. Increased digital investment is required to create a digital network and keep pace with the global trend.

35%

of C-suite executives see the supply chain as a driver of digital innovation.

Room for digital innovation

The supply chain is not perceived as a centre of innovation, despite planned digital investments. Only 35% of global C-suite executives see digital innovation in their organisation driven by the supply chain function. IT (60% of respondents) and operations/production (57%) are seen as the main drivers. These findings correspond with insights from Swiss supply chain experts, who say that digital innovation is more likely to happen in other areas of the organisation. However, considering the close functional relationship that exists between the supply chain and operations/production within the manufacturing value chain, many opportunities for increased digital innovation exist.

65%

of procurement leaders have limited or no visibility beyond their tier 1 suppliers.

Poor overall supply chain transparency

Findings from the Deloitte Global Chief Procurement Officer survey show that many organisations are leaving themselves exposed to potential disruptions by having limited visibility of their supply chains beyond the first tier (65% of respondents). Poor visibility is also cited as an issue by many Swiss supply chain experts, with the main reason often being fragmented supply chain functions. In addition, many Swiss companies still need to achieve Industry 3.0 levels in all functions to grasp fully the opportunities for more transparency that Industry 4.0 technologies offer.

45%

of procurement leaders believe lack of data integration and poor quality data are greatest barriers in adopting digital technology.

Data integration and quality main barriers

Over 45% of global procurement leaders think that lack of data integration and poor data quality are the main barriers to the effective application of digital technology in procurement. Swiss supply chain experts agree that a lack of common data standards, poor data quality and siloed data that is underused remain the key challenges for effective implementation of digital technologies across the whole supply chain/network. Many Swiss companies are lagging behind and are not fully equipped yet to safely store, easily access and dynamically analyse their data to gain new insights and make the right decisions.

35%

of C-suite executives say that finding, training and retaining the right talent to support digital transformation in their organisation is a challenge.

Talent challenge

Although 85% of global C-suite executives think they have exactly the workforce with the skillset needed to support digital transformation, 35% say that finding, training and retaining the right talent remains a challenge. Skills development and retraining is key to help staff keep pace and evolve with new technologies. For many Swiss companies the shortage of skilled supply chain professionals relates particularly to the interface between the business and IT, e.g. people who can translate complex issues for both sides and are able to analyse current supply chain situations, identify challenges and provide connected solutions with the help of digital technologies.

54%

of procurement leaders predict that analytics will have the greatest impact on their business over the next two years.

Analytics as the most impactful technology area

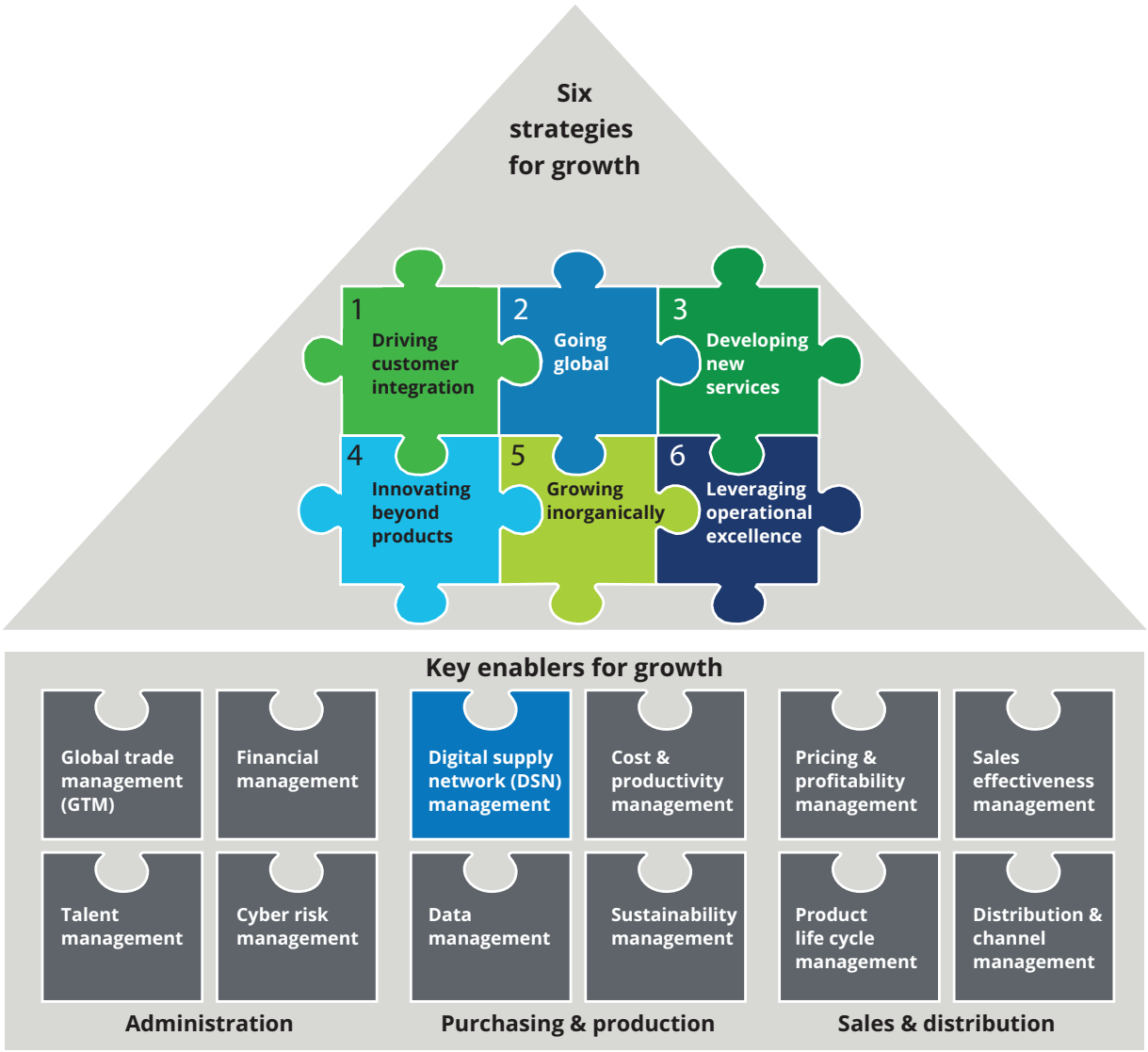
Over 50% of global procurement leaders cite the use of analytics in cost optimisation, process improvement and management reporting as having the greatest impact on their business in the next two years. Many Swiss supply chain experts see strong potential for analytics in the areas of intelligent forecasting, condition monitoring and predictive maintenance. However, general knowledge of Industry 4.0 technologies is lagging the global trend, and trust in the value-adding capabilities of Artificial Intelligence, advanced analytics and intelligent automation has to be built further.

1. Strategies and enablers for growth

Driving customer integration, going global, developing new services, innovating beyond products, growing inorganically and leveraging operational excellence have been identified in the Deloitte study *Growth opportunities – Strategies for Swiss manufacturing companies* as key **strategies for growth** for Swiss companies (see Chart 1).

In addition to these six strategies that can help companies increase growth, there are additional **key enablers for growth** that are equally important. These enablers complement and enhance the six growth strategies and can be found and applied across the entire value chain, for example in the administrative, purchasing and production functions, as well as in sales and distribution.

Chart 1. Strategies and enablers for growth



Source: Deloitte analysis

Focusing on **Digital Supply Networks (DSN) as a growth enabler** is essential for companies that want to grow further by driving customer integration, developing new services, innovating beyond products or leveraging operational excellence. By building a DSN, companies can fuel growth across their whole business, instead of just supporting growth with incremental improvements within their supply chain functions.

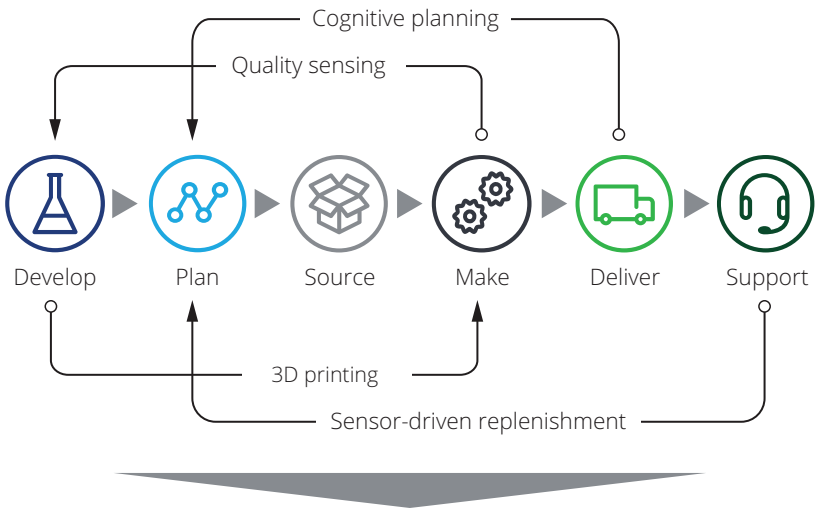
2. Supply chain developments

2.1 From traditional supply chains to digital supply networks

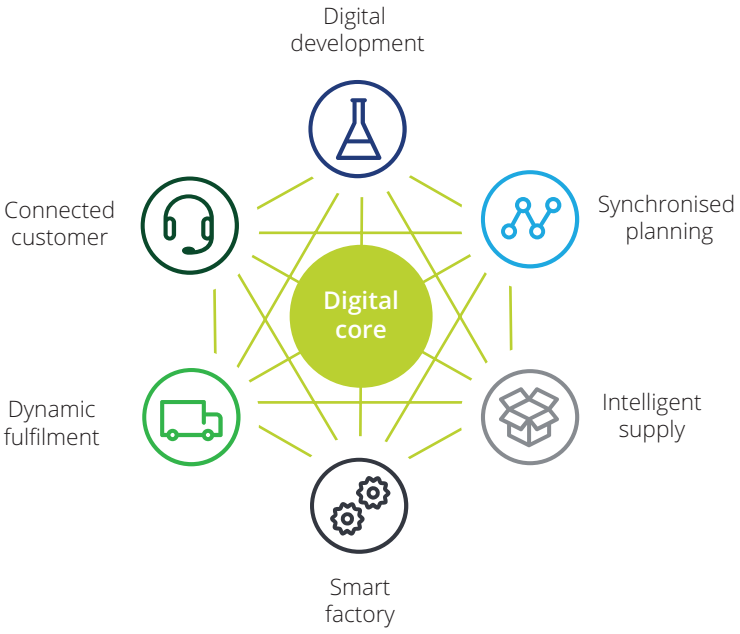
Networking has always been a key element of supply chains, also for companies in Switzerland. However, supply chains in the digital age are becoming shorter, faster and smarter. Linear supply chain 'nodes' – such as **develop, plan, source, make, deliver** or **support** – are increasingly being transformed into a set of dynamic networks around a digital core, also known as **DSNs** or digital supply networks. These DSNs allow more interconnectedness, differentiation and responsiveness to change (see Chart 2).

Chart 2. Shift from traditional supply chain to DSN

Traditional supply chain



DSN



Source: Deloitte analysis

62%

of C-suite executives say that the supply chain is a top priority for future digital investment.

"Digital supply networks should streamline fragmented supply chains to single customers, digitise the flow of goods and focus on connections with the physical world."

Dr. Raphael Pfarrer
Director GS1 Consulting, GS1 Switzerland

"If you are serious about supply chain management, you always work within a network and supply several customers from multiple warehouses."

Max Peter
Member of Extended Group Management, Head of Supply Chain Management and Trade Switzerland, Emmi

In the digital age, companies can shift their focus away from simply managing functions (for example, sourcing or manufacturing) to how their supply chain can drive real value, achieve business objectives and fuel growth. For example, quality sensing in production can feedback into **digital development**, and tracking of goods and end-to-end visibility through sensors allows **synchronised planning. Intelligent supply** and **smart manufacturing** can be achieved with the help of many Industry 4.0 technologies, such as analytics-driven sourcing or 3D printing. Cognitive planning and/or smart product sensors can be used for **dynamic fulfilment** by automatically suggesting replenishment orders. In addition, real-time input from **connected customers** creates end-to-end transparency across the whole digital supply network.

Findings from the Deloitte Industry 4.0 survey suggest that the supply chain generally plays a key role in digital organisations. 62% of global C-suite executives see the supply chain as a top priority for digital investment. However, despite these planned investments, the supply chain is still not perceived as a centre of innovation. Only 35% of global C-suite executives see digital innovation in their organisation driven by the supply chain function, considerably lower than those who view the main drivers as IT (60% of respondents) and operations/production (57%).

In Switzerland, many supply chains still consist of different and independent functions such as research, procurement, manufacturing and logistics with little interconnectedness. An end-to-end supply chain view does not often exist, despite some progress in recent years. Digital innovation is also more likely to happen in other areas such as IT or operations/production. There is also a lack of knowledge about new technologies and investment reservations among Swiss companies, with several taking the view that many supply chains can still be improved more through traditional optimisation measures rather than digitisation.

More investment is required to create a truly digital network which draws on the key DSN characteristics (see Chart 3).

With the **always on** capability of DSN, sensors and location-based tools can continuously transmit data and provide an integrated view of multiple aspects of the network with little or no delay. The supply chain then becomes far more agile and can respond rapidly to new conditions and unforseen situations.

The **connected community** that is created through DSN allows suppliers, partners and customers to communicate and share data and information in real time, seamlessly and directly. Such connectivity enables greater data synchronicity and ensures that everybody is working with the same data when making decisions. In addition, DSN enables **intelligent optimisation**, for example the ability for machines and humans to work together and share data that can be analysed to optimise decision-making.

In addition, the **end-to-end transparency** of DSN can provide instant visibility across multiple aspects of the supply chain all at once, providing insights into critical areas. Findings from the Deloitte Global Chief Procurement Officer survey show that many organisations are leaving themselves exposed to potential disruptions by having limited visibility beyond the first tier of their suppliers (65% of respondents). Poor visibility is also cited as an issue by many Swiss supply chain experts, with the main reason often being fragmented supply chain functions. In addition, many Swiss companies still need to achieve Industry 3.0 levels in all functions to grasp fully the opportunities for more transparency that Industry 4.0 technologies offer.

"The biggest inhibitor of digitalisation, especially for medium-sized Swiss companies, is the lack of knowledge about new technologies and investment reservations."

Dr. Raphael Pfarrer
Director GS1 Consulting, GS1 Switzerland

35%

of C-suite executives see the supply chain as a driver of digital innovation.

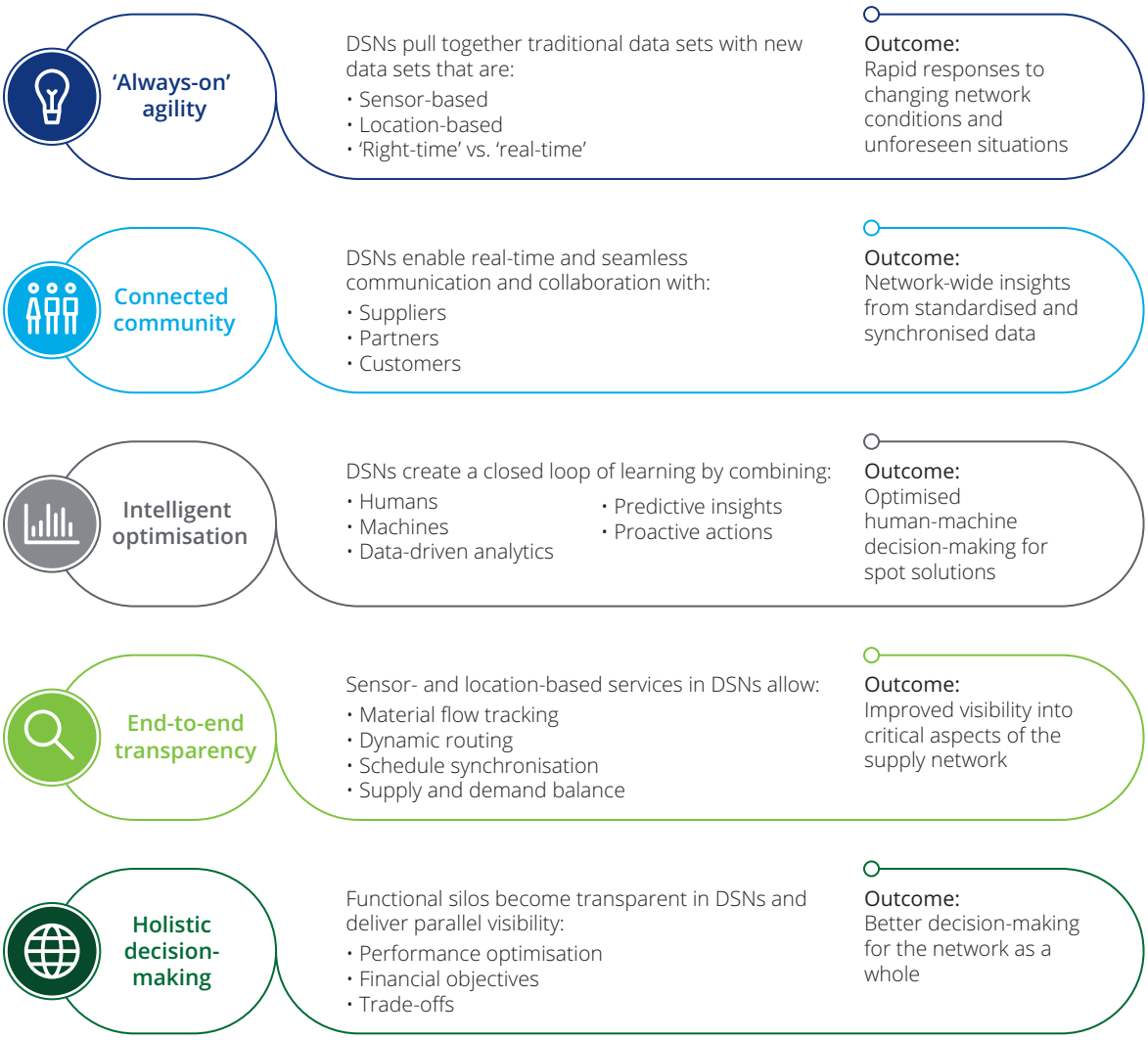
"Demand forecasts that are based solely on historical data are blind forecasts. Predictive analytics that includes additional market and customer data allows far more intelligent forecasting."

Daniel Meier
Head of Global Supply Chain D&M, Burckhardt Compression

65%

of procurement leaders have limited or no visibility beyond their tier 1 suppliers.

Chart 3. Key characteristics of DSN



Source: Deloitte analysis

Rather than simply viewing siloed data and information from multiple sources and attempting to piece them together manually or via other systems, the DSN enables companies to track material flow, synchronise schedules, balance supply and demand, and have an integrated financial view all at the same time. This allows **holistic decision-making**, with transparency of information across all areas of the supply network and across all functions, which in turn can enable better supply and demand balancing as well as decision-making.

Many companies still have a long way to go to reap the benefits DSNs can offer. Over 45% of global procurement leaders think that lack of data integration and poor data quality are the main barriers to the effective application of digital technology in procurement. Our interviewee agree that a lack of common data standards, poor data quality and siloed data that is underused remain the key challenges for effective implementation of digital technologies across the whole supply chain/network. Many Swiss companies are lagging behind and are not fully equipped yet to safely store, easily access and dynamically analyse their data to gain new insights and make the right decisions.

45%

of procurement leaders believe lack of data integration and poor quality data are greatest barriers in adopting digital technology.

2.2 DSN challenges and disruptions

Swiss companies will face different challenges and disruption within certain areas of their organisation when establishing their digital supply network capabilities (see Chart 4).

To achieve more agility, connectivity, efficiency and transparency, and be able to make decisions holistically, companies first need to develop their overall **data analytics capabilities** to manage the enormous amounts of data that is created by the digital 'mirror' within the DSN. Many of our interviewees agree that the simplification of processes is often first required, before further digital transformation can happen.

The interconnectedness of a DSN creates potential exposure to data breaches and heightens the overall **cyber-security risk**. Swiss companies need to safeguard their data from cyber-attacks that can be detrimental (possibly catastrophic) to operations and have a negative impact on the brand. However, with many Swiss companies still having fragmented supply chain functions with their own and proprietary IT systems, the risk remains low – for now.

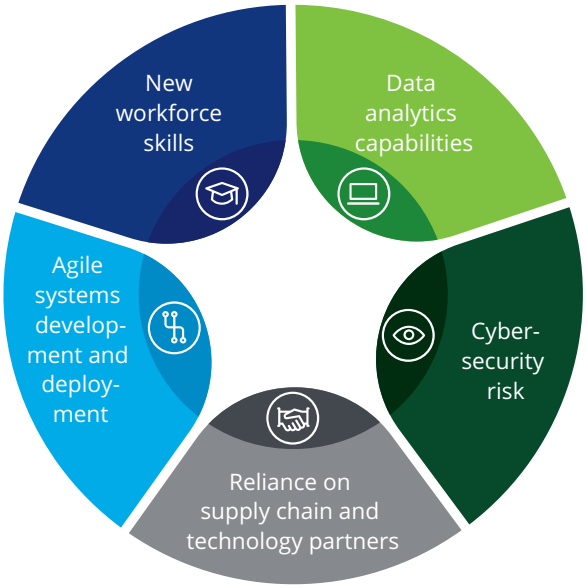
"Often companies that have yet to achieve Industry 3.0 levels are already facing the demands of Industry 4.0."

Dr. Raphael Pfarrer
Director GS1 Consulting, GS1 Switzerland

Chart 4. DSN challenges and disruptions

New workforce skills
- Upskilling workforce to understand and engage all DSN aspects
- Beating competition in war for talent

Agile systems development & deployment
- Utilising existing processes and organisations to implement new systems
- Focusing on designing, testing and building onsite solutions



Data analytics capabilities
- Developing capabilities to safely store and easily access data
- Analysing data dynamically to gain new insights and drive right decisions

Cyber security risk
- Preventing security breaches in interconnectedness of DSN
- Safeguarding data from cyber-attacks to minimise negative impact on operations and brand

Reliance on supply chain and technology partners
- Maximising value opportunities with collaborators and technology partners
- Reducing complexity within supply ecosystem

Source: Deloitte analysis

"Automation can deliver great results, if enough time is spent developing the predictive capability of a system."

Domenico Repetto
Head of Logistics Region Northwestern Switzerland/Central Switzerland, Zurich, COOP

Creating a DSN also requires a **reliance on a broader set of collaborators and technologies**, which increases value opportunities but also complexity within the supply ecosystems. Companies need to be open and willing to share information and data with collaborators and technology partners while building their DSN.

Many companies already have structures and processes in place for **developing and deploying technology** systems. These processes are often robust, as they include a long timeline of designing, testing and building onsite solutions. Prototyped and piloted via an agile and 'failing fast' approach however, DSN solutions are often more successfully implemented.

New **workforce skills** are required to understand and engage with all aspects of a DSN. Unfortunately, such skills are scarce and companies have to invest in skills development and retrain their internal staff. Although 85% of global C-suite executives in the Deloitte Industry 4.0 survey think they have exactly the workforce with the skillset needed to support digital transformation, still 35% say that finding, training and retaining the right talent remains a challenge. According to our interviewees, the shortage of skilled professionals relates particularly to the interface between the business and IT. People who can translate complex issues for both sides and are able to analyse current supply chain situations, identify challenges and provide connected solutions with the help of digital technologies are scarce. Equally important, according to our interviewees, are people who are willing to take risks and not afraid to fail.

While setting up a DSN can often be challenging and potentially disruptive, it also presents an opportunity to transform traditional supply chains into more interconnected and holistic supply networks.

"Leaner processes with more standardisation and better documentation are often required first, before broader digitisation can be introduced."

Daniel Meier
Head of Global Supply Chain D&M, Burckhardt Compression

35%

of C-suite executives say that finding, training and retaining the right talent to support digital transformation in their organisation is a challenge.

"To work successfully in a digital supply chain network requires much deeper digital knowledge and an open attitude to technology than to operate a smartphone or ticket machine."

Domenico Repetto
Head of Logistics Region Northwestern Switzerland/Central Switzerland, Zurich, COOP

"The shortage of skilled professionals particularly relates to the interface between the business and IT. People who can translate complex issues for both sides are scarce."

Daniel Meier
Head of Global Supply Chain D&M, Burckhardt Compression

3. DSN: Growth potential, best practices and benefits

3.1 DSN growth potential

DSNs offer many growth opportunities for companies and with the digital **transformation** of supply chain areas, new Industry 4.0 technologies and **tactics** can help to fuel growth across the whole business (see Chart 5).

"Digital supply networks should ideally anticipate customer requests with predictive analytics."

Dr. Raphael Pfarrer
Director GS1 Consulting, GS1 Switzerland

Chart 5. Supply chain transformation areas and tactics

Source: Deloitte analysis

DSN growth opportunities in **digital development** focus mainly on the supply chain transformation area **design process optimisation**. Design can be optimised not only by analysing past performance data to inform future design, but also by constantly using real-time data from current operations, for example customer feedback and Industry 4.0 applications in the supply chain. Open innovation/crowdsourcing can be used to co-create products and services with consumers, inform demand forecasting and match talent to the task. Rapid prototyping/3D printing helps to accelerate design processes and quality testing, enabling quicker responsiveness, flexibility, management of demand uncertainty and a reduction in inventory. Virtual design simulation helps to improve product development and testing, and reduces time and cost.

In **synchronised planning** there are DSN growth opportunities in transforming the area of **planning and inventory efficiency**. Analytics-driven demand sensing should not only include the analysis of existing internal data (e.g. sales and usage data), but also predictive analytics and external sources (e.g. social media chatter) to forecast future demand scenarios more accurately. Track-and-trace solutions such as RFID can help to gain unit-level inventory visibility and improve fulfilment speed. Inventory and replenishment needs can be better managed by analysing real-time POS data. Real-time inventory optimisation can be achieved by using innovative methods such as crowdsourcing to identify out-of-stocks or smart shelves to price inventory dynamically. Using sensors to track goods throughout the supply chain provides another opportunity to help shape demand planning.

Most DSN growth opportunities in **intelligent supply** are about the transformation area **supplier collaboration**. Analytics, real-time data from various sources (e.g. crowdsourced data on geopolitical risk factors) and machine-learning scenario analysis can be applied to make better informed sourcing and pricing decisions. Asset sharing with value chain partners is another growth opportunity as is using blockchain technology to increase transparency. Cloud-based platforms can make it easier to collaborate with suppliers, and control towers can be used to increase real-time, end-to-end supply chain visibility and insights into activities across partners to identify areas of concern before they become a problem. Having integrated systems (e.g. purchasing, logistics, quality management) with supply chain partners provides an opportunity for more real-time monitoring, data sharing, collaboration and pre-emptive issue resolution.

In the **smart factory**, many DSN opportunities exist in the transformation areas **operations efficiency** and **product optimisation**. Augmented reality-enabled wearables can support worker operations and enable remote communication. Autonomous, advanced robotics can operate independently alongside humans, and machine learning can adapt to situations. With predictive analytics, past performance and usage data can be modelled and future issues and failures can be predicted. Optimising assignments and scheduling can be done with wearables and/or sensors that monitor worker movements and task duration. Optimising products can be better achieved with sensors that generate additional data and insights as an added service for customers. 3D printing or on-demand manufacturing for customers is another transformation opportunity.

In **dynamic fulfilment**, the DSN opportunities focus on the transformation area **logistics optimisation**. Just as in the smart factory, augmented reality-enabled wearables and autonomous and advanced robotics can support logistics operations. Other optimisation tactics include alternative shipping modes (e.g. drone delivery) and/or ship-to-locations (e.g. drop boxes) to get products to customers quicker. Driverless trucks and the usage of real-time GPS, sensors and traffic information can reduce workforce cost, eliminate road accidents and help manage fleet performance.

"There are great digitisation opportunities in repair and maintenance, however some contradictions prevail. Customers increasingly demand quick delivery of spare parts, but condition monitoring and predictive maintenance that would facilitate this are not the preferred choice because of privacy and security concerns."

Daniel Meier
Head of Global Supply Chain D&M, Burckhardt Compression

"Often production-relevant data are not collected continuously, and even when collection takes place, crucial information such as humidity, temperature or dosages are not regularly analysed. This is a huge opportunity."

John Walker
Global Manufacturing, Supply Chain and Infrastructure Investments, Mondelez International

DSN opportunities regarding the **connected customer** rely on the transformation areas **sales optimisation** and **aftermarket sales and services**. Developing intelligent pricing strategies by using cognitive algorithms based on inventory and customer data can optimise sales. Analytics and sensors can help to gain visibility into customer usage patterns to predict and suggest replenishment orders. Customers can be analysed for segmentation purposes to optimise pricing and marketing decisions, and augmented reality can be used for customer support. The new transparency of the supply chain can be used as a way to market and engage with customers, for example scanning a QR code and viewing sourcing and manufacturing information and labour laws. 3D printing can also play a key role in the aftermarket by helping to create discontinued replacement parts or simplify the development, manufacturing and delivery of spare parts at remote locations. Predictive aftermarket maintenance capabilities, such as using analytics to predict issues or failures and automatically schedule maintenance, are other opportunities that DSNs can offer.

Findings from the Deloitte Global Chief Procurement Officer survey show that the use of analytics in cost optimisation, process improvement and management reporting is ranked by procurement leaders as the technology area that will have the greatest impact on their business in the next two years (54% of respondents). Many of our interviewees see especially high potential for analytics in the areas of intelligent forecasting, condition monitoring and predictive maintenance. However, general knowledge of Industry 4.0 technologies in Switzerland is lagging the global trend, and trust in the value-adding capabilities of Artificial Intelligence, advanced analytics and intelligent automation could be higher.

"When data exchange is possible, the lack of a common data standard remains a challenge. Different customers can have a different use of a single standard and a reliable cost/benefit analysis of investing in individual data harmonisation is often difficult."

Max Peter
Member of Extended Group Management, Head of Supply Chain Management and Trade Switzerland, Emmi

54%

of procurement leaders predict that analytics will have the greatest impact on their business over the next two years.

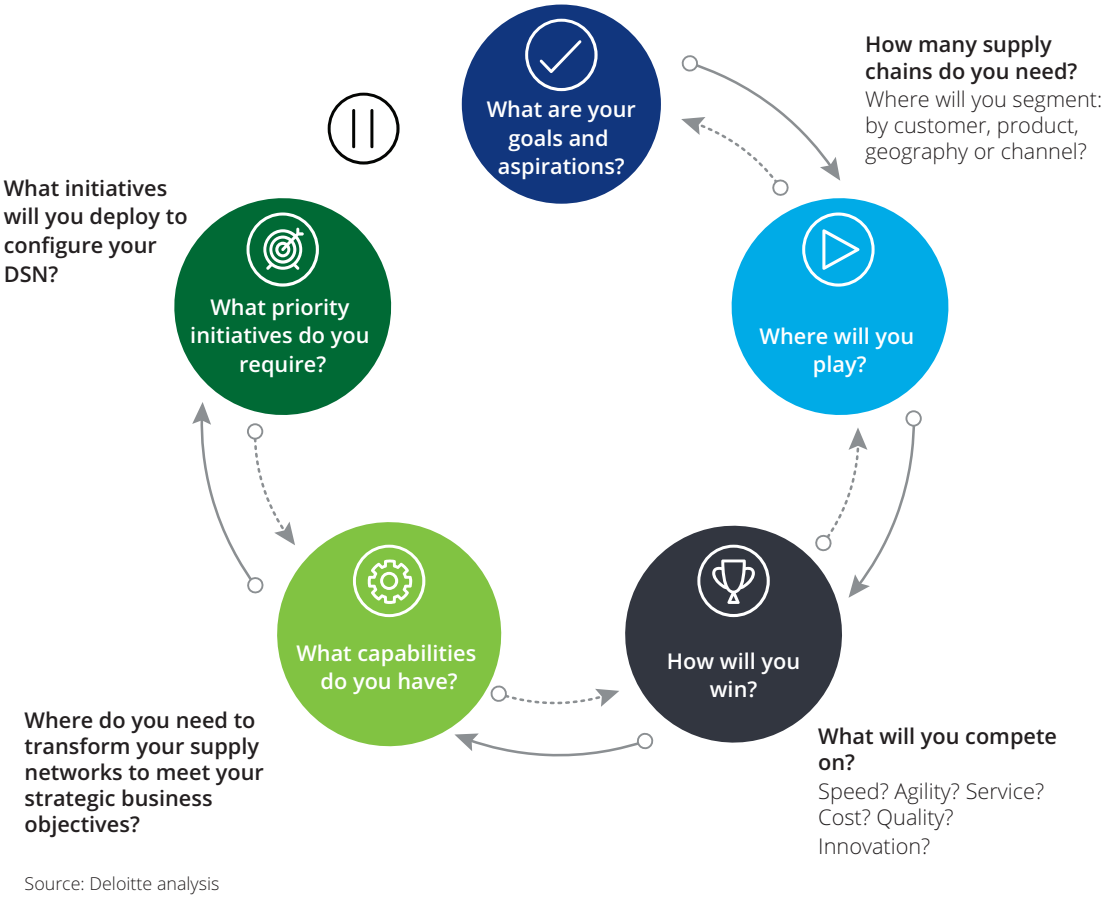
"There is often higher tolerance for mistakes committed by people than digital systems."

Domenico Repetto
Head of Logistics Region Northwestern Switzerland/Central Switzerland, Zurich, COOP

3.2 DSN best practices

To 'turn-on' DSN capabilities, companies can follow up the strategic decision-making process with their traditional considerations (also known as the strategic choice cascade), enrich it with more transformational questions relating to DSN and apply the process in a more circular than cascading way. The presumed endpoint will now become a reset opportunity for the next technological cycle (see Chart 6).

Chart 6. Best practice to 'turn-on' your DSN



Source: Deloitte analysis

Answering simple strategic questions – such as where to play and how to win – will help companies understand their needs and make choices more specifically geared towards their goals and aspirations, for example their purpose, financial objectives and/or non-financial objectives.

Digital supply networks open up new choices. With an integrated and more interconnected network, companies can decide **how many supply chains** they need. As companies make decisions around the customers they want to serve and the products they wish to offer, they can customise supply networks to address different customer goals. Products, geography or channel are other means of segmentation that can be considered.

"The biggest challenge for logistics in the future will be the on-time delivery of the goods from online businesses."

Domenico Repetto
Head of Logistics Region Northwestern Switzerland/Central Switzerland, Zurich, COOP

Moving towards a DSN, companies can also choose to **compete on differentiating factors** – such as speed, agility, service, cost, quality or innovation – and apply this differentiator across all traditional 'nodes' of their supply chain/network. Increasing speed helps to get products out quickly to customers. Agility helps to meet changing business or customer needs and allows companies to adapt to shifting demand signals. Competitive services can better meet customer needs in terms of product quality, specifications and customisation. Reducing supply chain costs allows companies to offer lower cost products, materials or services. Focusing on quality and 'best-in-class' products and services can command a premium and can be offered with cutting-edge innovation.

Once companies have determined how they want to win, they should consider how to effectively **transform their supply networks** to meet their strategic business objectives. The supply chain transformation areas in Chart 5 are just some examples of how companies can transition their traditional, linear supply chains into an always-on, holistic DSN.

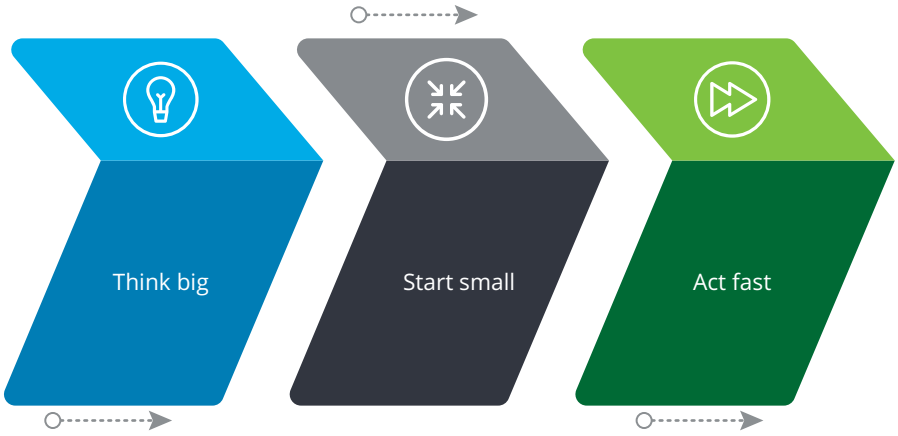
Companies also need to decide on their **priority initiatives** (e.g. tactics, investments, M&A/partnerships, change programmes), when configuring their DSN to realise their DSN-driven company strategy completely.

When transforming their traditional supply chains into a DSN and to build momentum, companies should follow an agile **think big, start small and act fast** approach (see Chart 7).

"Food manufacturers without their own capable processing R&D know how seem to be more willing to share data with machinery and equipment suppliers, because they are more open to suggestions to improve their products."

John Walker
Global Manufacturing, Supply Chain and Infrastructure Investments, Mondelez Internationali

Chart 7. Where and how to start



Source: Deloitte analysis

Initially, companies should think big and focus on innovation by exploring the possibility of their organisations to understand new technologies and their potential impact on the business. They need to assess the broader digital environment to determine the capabilities required for a functional DSN. The strategic choice cascade/circle can serve as a starting point.

In a second phase, companies should start with small transformation projects on the 'edges' of their organisations. The projects should be prioritised based on impact, cost and speed of implementation. Fostering a culture of experimenting and 'failing fast' will lead to greater innovation.

Rolling out the projects should then happen quickly with no delay or waiting for perfection. New growth technologies are rapidly evolving and will require constant iterations. Small successes can be used as proof points to build momentum and gain acceptance for further DSN investments.

"Generally the digitisation of the supply chain started in the 1980s with the technology available at the time. Today technologies such as the cloud provide more and better opportunities."

Max Peter
Member of Extended Group Management, Head of Supply Chain Management and Trade Switzerland, Emmi

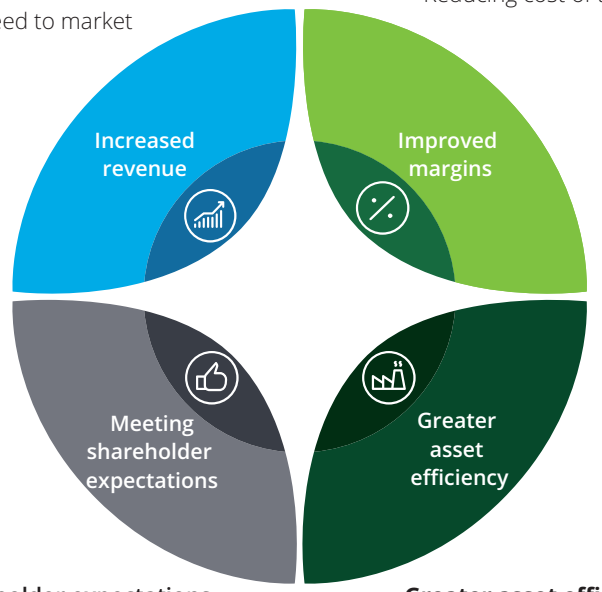
3.3 DSN benefits

The main benefits of a DSN are **increased revenue, improved margins, greater asset efficiency** and **meeting shareholder expectations** (see Chart 8).

Chart 8. Benefits of DSN

Increased revenue
- Pushing reorders and refills
- Improving marketing effectiveness
- Applying direct connection to customers
- Utilising value of data
- Increasing speed to market

Improved margins
- Lowering cost of R&D
- Reducing cost of raw materials
- Decreasing cost of quality
- Decreasing cost of service
- Reducing cost of transport



Meeting shareholder expectations
- Enabling rapid crises responses
- Increasing brand protectiveness
- Allowing proactive risk mitigation

Greater asset efficiency
- Avoiding idle assets
- Reducing error propagation
- Minimising supply chain downtime
- Cutting 'click-to-ship' time
- Reducing idle workforce

Source: Deloitte analysis

Increased revenue can be achieved by combining smart packaging, applications and data (either automatically or with minimal intervention) to push **reorders and refills**. Revenue can also be inreased by dynamic discounting, facilitated by targeted **marketing** based on data from inventory and competitive pricing. Increased **access to customers** can further drive sales at the precise point of consumption, for example ordering groceries directly from the refrigerator. Gathering, packaging and selling **valuable data** from existing customer bases also opens up new revenue channels. Effective use of product lifecycle management **accelerates** every step from product development to delivery and enables innovative products to reach customers more quickly.

"Fully transparent data is critical when catering for the marketplace, which is driving ever-smaller batch sizes and an increasing number of SKUs (stock keeping units)."

John Walker
Global Manufacturing, Supply Chain and Infrastructure Investments, Mondelez International

"An ideal supply chain allows data exchange, risk sharing and the elimination of inefficiencies across all the participant companies."

Max Peter
Member of Extended Group Management, Head of Supply Chain Management and Trade Switzerland, Emmi

Digital supply networks can also help in improving margins. Rapid prototyping with 3D printing allows companies to lower the **cost of R&D**, while digital advances help to identify substitute **materials** or connect buyers to alternate lower cost sources. The cost of **quality** can be reduced with increased visibility and monitoring. For example, sensors identify root errors and drive process improvements that dramatically increase first pass yields. Digitally gathering data from products and/or users and sending it to remotely located, skilled technicians can help to decrease the cost of **service** and the cost of **transportation** of service technicians. Automated warehousing robots and driverless trucks that utilise analytics and dynamic routing can improve efficiency and reduce accidents and errors.

Greater asset efficiency is another benefit of a DSN. The sharing economy can be used to avoid the costs associated with **idle assets**. For example, a company that only operates two shifts per day could sell its third shift to another company. Augmented Reality can assist in maintenance and reduces **error propagation** and rework costs, while predictive maintenance can maximise performance and reliability of manufacturing devices and reduce the **supply chain downtime**. Automated inventory management can dramatically increase supply chain efficiency and cut **'click-to-ship' time**. With sensor-enabled labour monitoring, **workforce** assignments and scheduling can be further optimised.

A DSN can also help to meet shareholder expectations. For example, increased connectivity enables rapid **responses to crises** such as natural disasters or supplier shutdowns. Better insight into customer concerns or issues enables faster responses to events like food contamination outbreaks and can also help to **protect the brand**. And the increased transparency a DSN offers **proactive** assessment of risks and a fast response to customer demands.

"The exchange of transactional data at Swiss companies is largely automated, whereas shortfalls exist with master data and event data. The greatest potential for development exists with track and trace data that is typically stuck in data silos within companies."

Dr. Raphael Pfarrer
Director GS1 Consulting, GS1 Switzerland

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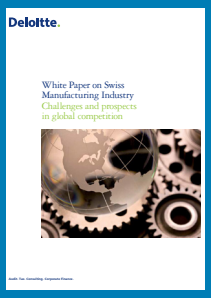
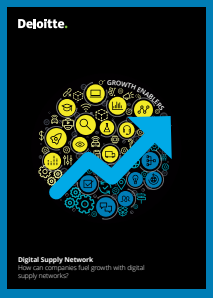


White paper on Swiss manufacturing industry

Growth enablers Switzerland



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Global Trade Management

Digital supply networks

The rise of the digital supply network

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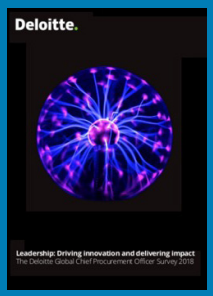

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From siloed to distributed

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