

**Deloitte.**

Building Supply Chain  
Resilience beyond COVID-19



Global supply chains were clearly impacted as a result of COVID-19 and the ensuing consequences of the pandemic in markets around the world. Collectively, these events served as a true litmus test for supply chain resilience. Along with their global counterparts, industrial products (IP) companies in Switzerland found themselves quickly needing to address critical dependencies in their supply chains. In addition to close supplier relationships, increased digitalisation and advanced technologies—such as predictive analytics, machine learning and AI—will play an increasingly important role in managing potential supply chain disruptions in the future.

# Introduction

Our recent [SwissVR Monitor II/2020](#), a survey of 457 Board members of Swiss based companies, considered the Board of Directors' perspective on COVID-19 and lessons to be learned for the next crisis. The study also delivered some specific insights on the topic of supply chains for IP companies in Switzerland. Building on these findings, Deloitte Switzerland reached out to key players in the Swiss manufacturing industry to share their thoughts on how supply chains had been impacted, how they had adapted and what they consider to be the most important ways to build supply chain resilience, beyond COVID-19 and into the future. Our research identified 5 key considerations in building supply chain resilience:

01. Supply Chain Configuration and Control
02. Visibility
03. Digitalisation (Digital Supply Networks)
04. Collaboration
05. Flexibility

# Supply Chain Configuration and Control—Know your critical dependencies

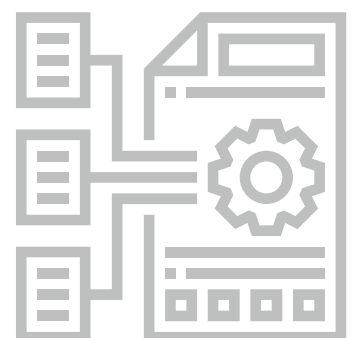
SwissVR Monitor II/2020 indicated that, as a result of the crisis, 85% of respondents in Swiss IP companies ranked analysing critical dependencies in supply chains as important for their business. In speaking to industry players this finding was confirmed. While most companies had conducted relatively regular analyses of critical dependencies prior to COVID-19, learnings from both the current and past crises emphasized the importance of analysing dependencies more consistently and frequently. There was also agreement on the need for Swiss IP companies to adopt a more holistic view of potential disruptions to the supply chain. [Andrea Lai, Group Chief Procurement Officer & Real Estate, OC Oerlikon](#) makes the point that ‘We cannot afford to apply a narrow mindset and think that risk assessment is only about financial stability. We need to have a 360-degree view to take the right actions.’

Taking into account additional

risk factors also influences how different criteria are weighted. According to [Thomas Schwab, Senior Vice President Operations EMEA, dormakaba](#), ‘Some of the criteria and topics that are now weighted and focused on more strongly than before COVID-19 include—dual sourcing, geographic location, make-or-buy, resilience of production, design and technology, automation and digitalisation, stock and early warning systems.’ In the context of analysing critical dependencies, another important lesson has been that the biggest suppliers are often the less critical ones. ‘The real risk can originate from a “Mom-and-Pop” shop that provides a single critical screw and it can fall off the supplier radar due to its small spend. Taking a broader view helps to keep everything in sight,’ says OC Oerlikon’s Andrea Lai.

Our findings also showed a significantly higher openness (31%) to overhauling international supply chains in the medium to long term

and moving to more local procurement, amongst Swiss manufacturing companies, as compared to an average of 17% across all other sectors. However, the interplay between cost, timing and logistics needs to be carefully considered. Ideally, companies should be aiming for flexibility in the supply chain through a mix of both local and offshore procurement. Even then, according to [Mario Fürst, Head of Digital Enterprise, Siemens Switzerland](#), ‘Some components within the supply chain do not offer much choice because there might be only two or three suppliers of such parts globally. Building up alternative sourcing concepts will be important to achieve flexibility.’



## Visibility—Have a clear line of sight

The importance of having a high level of visibility and transparency of end-to-end supply chain performance has been highlighted during the COVID-19 crisis. More than ever, the ability to track and monitor supply chain events, identify patterns and proactively turn these insights into actions, will be critical to build resilience. However, there appears to be broad agreement that achieving full visibility across multiple tiers of suppliers is difficult to achieve. A quick poll in our recent EMEA supply chain webinar showed that 85% of participants were only partially satisfied with the level of visibility they have up to their tier 1 suppliers, never mind tier 2 and beyond.

While new technologies and automation can help to improve visibility, additional investments in time and resource will be required to optimize the value of the data that is collected. Until then, a strong and well-established supplier function with a clear view on critical dependencies such as supplier quality,

continues to be the best way to achieve visibility. For Andrea Lai at OC Oerlikon the best early warning systems are close supplier relationships. 'Having our people on the ground helps us to gauge the environment more accurately and timeously and flag issues early enough,' he says. [Michael Fürst, Supply Chain Manager at ABB Schweiz, Industrial Automation—Energy Industries](#), agrees and makes the point that 'Close relationships between category managers and suppliers are key to spot and manage deviations.'



# Digitalisation—Integrate technology early and extensively

The increasingly important role of digital tools and technologies in building supply chain resilience becomes even more apparent in light of only 5.4% of respondents in our recent EMEA supply chain webinar indicating that they have harmonised processes, on their journey to an autonomous supply network. The majority (62%) see themselves as ‘between siloed and harmonised’ and 24% see themselves as ‘siloed’. Real-time connectivity, predictive capabilities, machine learning and AI in the supply chain will go a long way to support greater harmonisation, transparency and more informed decision making. ‘Tracking is still happening more in a reactive rather than proactive or predictive way,’ says ABB Schweiz’s Michael Fürst. ‘Predictive capabilities will allow us to always be one step ahead.’ Integrating technology earlier and more widely in digital supply networks will significantly strengthen efforts not only to deal with disruptive situations and manage

business continuity, but also to learn from it and emerge more resilient than before.



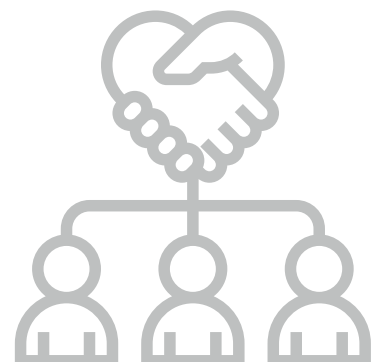


## Collaboration—Maintain close relationships

According to dormakaba's Thomas Schwab, 'Whereas digital technologies are already fully integrated in production, the digital integration of suppliers is lagging behind.' He observes that much more collaboration and automation will be required to fully integrate digital technologies in different parts of the supply chain. The stage at which technology is integrated is also important. Mario Fürst of Siemens makes the point that 'The earlier you integrate new technologies, the better the impact on your supply chain. For example, already integrating technology at the product development stage means data and tools can be shared with potential new suppliers and valuable time can be saved.'

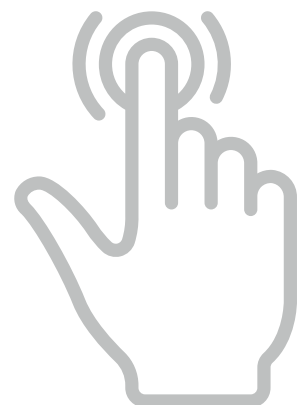
The quality of data will determine the effectiveness of digital technologies in helping to build supply chain resilience. It will be important that digital tools are able to monitor a broad supplier base for risks—including both big global

suppliers with available data, as well as smaller suppliers with data of a different quality. Even with the right technology, OC Oerlikon's Andrea Lai is convinced that 'Maintaining close supplier relationships and an active presence on the ground still remains the best way to build supply chain resilience, especially for the early warning system and quick, clear and transparent communication that it facilitates.'



# Flexibility—Stay flexible and adapt

In an increasingly complex and interconnected world, remaining adaptable and flexible will be important to build supply chain resilience. The wide scope of risk—from geopolitical tensions and protectionist tariffs to unavailability of key components and challenges with supplier compliance—means that building a reliable and flexible supplier network will be a key source of competitive advantage. Digital tools and advanced technologies will continue to play an increasingly important role for their ability to transparently track, monitor and provide early warnings. Combining the best technology with a strong network will significantly boost supply chain resilience by enabling companies to make informed and timely decisions to limit the impact of potential disruptions.





# Foundation and key pillars of a resilient supply chain

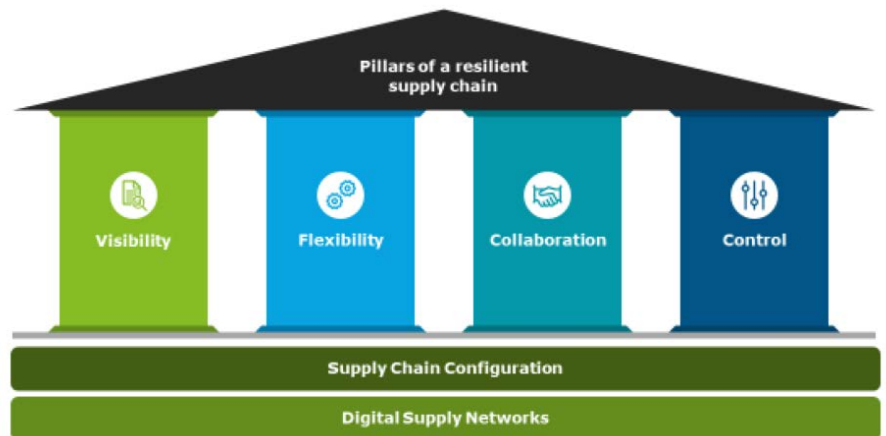
**Visibility**—Track and monitor supply chain events to identify patterns, make informed and timely decisions and take proactive actions to limit the impact of potential disruptions.

- Leverage I4.0 technologies such as Control Tower to establish E2E visibility from suppliers' suppliers to customers' customers
- Adopt data analytics augmented with AI and ML to be able to run different scenarios and make informed decisions

**Flexibility**—Remain agile and adapt quickly to disruptions across a diverse range of risks without significantly increasing operational costs. Restructure the supply chain network to build in resilience, for example:

- Supply base—second source options, geographical diversity
- Inventory—build more buffer at high risk supply nodes
- Manufacturing—reduce network complexity, build in redundancy

**Collaboration**—Develop and nurture symbiotic and trust-based relationships with supply chain partners and other key strategic networks.



- Revisit your partner panels to decide where you need to collaborate closer to establish better visibility into the extended supplier network
- Revisit your make or buy and vertical integration strategies to develop a more accurate M&A outlook
- Focus on digital integration of your suppliers by sharing data and tools

### **Configuration & Control**—

Analyse critical dependencies in your supply chain by adopting a holistic view of risk and implement policies and processes to better manage disruptions.

- Revisit and reinforce your supply chain risk framework by re-assessing your risk profile

- Define mitigation actions
- Establish controls across the critical echelons of your end-to-end supply chain

**Digital Supply Networks**—Integrate digital technologies within different parts of the supply chain to achieve greater harmonization and transparency and better manage business continuity in the event of disruptions.

- Introduce real-time connectivity
- Enhance predictive capabilities
- Investigate how machine learning and AI could strengthen your supply chain

# Interview with Michael Fürst, Supply Chain Manager at ABB Schweiz, Industrial Automation— Energy Industries



**Deloitte:** How often do you analyse critical dependencies in your supply chain and what are your main findings?

**Michael Fürst:** Once a year we analyse the entire supplier base, including suppliers, materials and single source, dual source and multi-source—amongst others. We then create a matrix together with category managers to identify what is working well and where there are improvement opportunities. During this challenging period, we've managed to remain on course by tracking our key suppliers on a frequent basis to detect any issues or potential risks. Regular communication with suppliers is critically important and helps to spot risks sooner rather than later.

In the past, when we had supply issues, we did a critical analysis of products, components and materials down to tier 2 and tier 3 suppliers—this included assessing inventory levels of suppliers but stopped short of analysing raw materials. This approach enabled us to keep our supply chain under control. As a result of that experience we now also keep a safety stock in the warehouse for some key components and materials.

**Deloitte:** Would you consider increasing local procurement and how would you go about it?

**Michael Fürst:** Developing a broad local supply base should align with growth strategies in those markets, i.e. in case of low lead times or if local content is required. As a result of COVID-19, we did experience some bottlenecks with logistics, specifically in the area of airfreight and shipments. We were, however, able to successfully address these challenges. Generally, supply chain strategies for local or global sourcing should be developed with a medium and long-term perspective in mind. While

certain tactical changes can be made, reactive and short-term changes are not usually helpful.

**Deloitte:** What are currently the biggest supply chain risks in your company?

**Michael Fürst:** Life cycle management and planning for political changes are key to manage supply chain risk. We maintain a strong focus on life cycle management. Managing obsolescence of materials and sub-components is also essential to contain costs. The changing geopolitical situation, such as US restrictions on China, remains a key risk and has resulted in increased consideration of appropriate sourcing and geographic diversification. The supply chain is an important enabler of improved company performance and competitiveness. It is therefore important that risk is appropriately and proactively managed where possible.

**Deloitte:** What early-warning systems do you have in place to monitor potential risks and disruptions?

**Michael Fürst:** We track monthly KPIs for on-time delivery and quality. Our supplier qualification tool also helps us to monitor potential risks. Financial ratings of suppliers, share of wallet and competitor indicators are also considered. We manage dependencies by regularly analysing the share of ABB and its business units at suppliers, so that it does not reach a certain threshold of their sales. These early warning systems are supported by close relationships between category managers and suppliers which are key to spot and manage deviations.

**Deloitte:** What advanced digital tools and new technologies do you see as best to build supply chain resilience?

**Michael Fürst:** Any digital tool that helps to connect and integrate suppliers, as well as customers, and make the supply chain more efficient needs to be considered. All processes that are repetitive and can be automated should be automated. While we are already doing quite a bit in the area of category strategies, supplier integration, KPI tracking and automatic visualization, tracking is still happening more in a reactive rather than proactive or predictive way. Predictive capabilities will allow us to always be one step ahead. The digitalisation of supply chains holds tremendous potential to boost competitiveness into the future. For this reason, strong integration and connection of suppliers through new technologies needs to be a top priority.

# Interview with Thomas Schwab, Senior Vice President Operations EMEA, dormakaba



**Deloitte:** How often do you analyse critical dependencies in your supply chain and what are your main findings?

**Thomas Schwab:** Before COVID-19 we analysed our strategic suppliers and critical dependencies every 4 months according to criteria that we had defined about 2 years ago—for example—single source, second source, country factors etc. However, COVID-19 was a real wake-up call and forced us to review this process and to do it more frequently and in a more focused way. The fact that risk factors and evaluation are different now also meant we had to change the weighting of our criteria. Some of the criteria and topics that are now weighted and focused on more strongly include—dual sourcing, geographic location, make-or-buy, resilience of production, design and technology, automation and digitalisation and stock and early warning systems.

Based on previous experience with Sars and Mers, we did not expect COVID-19 to become such a disruption. For example, regarding the sourcing of mechanical parts—while we had taken some measures with regard to our China sourcing, similar steps for suppliers in Italy or Spain had not been taken. Looking back, we could have done certain things better but we have learnt some important lessons along the way and we are now applying those learnings.

**Deloitte:** Would you consider increasing local procurement and how would you go about it?

**Thomas Schwab:** COVID-19 also made us review our landed cost. While sourcing in China is generally very inexpensive, this advantage is offset by the long delivery times until the container arrives. Countries closer to home might be more expensive, but the logistics is

cheaper. A mix of both local and offshore procurement will allow us to keep flexibility in the supply chain.

**Deloitte:** What are currently the biggest supply chain risks in your company?

**Thomas Schwab:** Our biggest supply chain risk remains that if we cannot source key components the whole production comes to a standstill. A small, single part that suddenly becomes unavailable can cause great disruptions. For this reason, it is important that we remain flexible to cover such a worst-case scenario. However, it is an illusion to think that simply increasing the stock of critical parts will avoid a production shutdown. Stock increases are only short-term measures. Better and more reliable counter measures would be to increase flexibility within our production networks to either compensate or to switch suppliers within one order. A regular audit of suppliers is also necessary to mitigate risk. Such audits should have a broad scope, also taking into account specific geographic and other risks like political stability and natural catastrophes, apart from only focusing on financial health and just-in-time delivery. Early warning systems are also extremely important and automation and new technologies like AI can help to better detect patterns and potential risks.

**Deloitte:** Can you comment on how visible end-to-end supply chain performance is in your own company?

**Thomas Schwab:** Full visibility is tricky to achieve. Ideally, everyone wants to have visibility up to their tier 2 and tier 3 suppliers, but it is not always possible. To have full visibility of the most important tier 1 suppliers is already great. For some electronic parts we have good visibility

of tier 2 suppliers i.e. a good sense of what is going on or even a direct contact in place. While new technologies and automation can help to increase visibility, you would need more investment in resources and time to incorporate and process additional data to get the best value out of it.

**Deloitte:** What advanced digital tools and new technologies do you see as best to build supply chain resilience?

**Thomas Schwab:** Currently, the degree of usage of digital tools differs in each part of the supply chain i.e. from our customers to ourselves, from the suppliers to the factory, during production and from the factory to the customers. Whereas digital technologies are already fully integrated in production, the digital integration of suppliers is lagging behind. In this respect much more collaboration and automation are required. Digital maturity from the customer to the factory is also already high – customers can route their orders directly through to the factory using our e-commerce online tool and can make changes on the way. Such digital maturity of the order process should also be achievable in procurement. We could increase efficiency, quality and resilience by using digital technologies more often and better in our supply chain. However, we should remember that achieving resilience is dependent on the depth of value creation and can also differ from region to region. With this in mind, regular exchange and collaboration within the industry is key, as well as us in Europe learning from our colleagues in Asia and the US, where despite the challenges being different, depending on what and how you produce, the lessons can be applied across geographies.

# Interview with Andrea Lai, Group Chief Procurement Officer & Real Estate, OC Oerlikon



**Deloitte:** How often do you analyse critical dependencies in your supply chain and what are your main findings?

**Andrea Lai:** We perform a complete risk assessment of our supply chain twice a year. Every six months all our suppliers are assessed from both a financial and operational stability point of view. Segmenting suppliers according to critical dependencies as well as financial impact and volumes, is important.

We realised the importance of using learnings from past crises, for example—the financial crisis of 2008/09 and natural catastrophes such as earthquakes—to inform future risk mitigation. We cannot afford to apply a narrow mindset and think that risk assessment is only about financial stability. Once a risk is identified there are usually quite limited measures available to mitigate that risk, such as developing a second source, increasing stocks or re-engineering products to reduce dependency on single source. We need to have a 360-degree view to take the right actions.

We've also realised that the biggest suppliers are often the less critical ones. The real risk can originate from a "Mom-and-Pop" shop that provides a single critical screw and it can fall off the supplier radar due to its small spend. Taking a broader view helps to keep everything in sight.

**Deloitte:** What are currently the biggest supply chain risks in your company?

**Andrea Lai:** Ongoing geopolitical tensions, and the global trade wars that result from that, are currently the greatest risks for global supply chains. It is more likely that factors such as anti-dumping duties and other protectionist tariffs could force localisation of supply chains, rather than COVID-19. Actually, the pandemic did not cause any major

supply or production interruptions for us. The main issue was the increased cost of logistics.

**Deloitte:** What early-warning systems do you have in place to monitor potential risks and disruptions?

**Andrea Lai:** Our experience has shown that the best early warning systems are close supplier relationships which help to flag issues early enough. Advanced digital technologies and automated tools are often hindered by delays in data and reporting, whereas having our people on the ground enables us to gauge the environment more accurately and timeously.

**Deloitte:** Can you comment on how visible end-to-end supply chain performance is in your own company?

**Andrea Lai:** In our company achieving 100% visibility of end-to-end supply chain performance with just the tier 1 suppliers is a near impossible challenge. The size of the pool is critical, the smaller the pool—for example twenty suppliers—the better the likelihood of achieving full visibility. As the supplier pool becomes bigger, full visibility of performance becomes harder to achieve. Good visibility should rather mean having a clear view on critical dependencies, such as supplier quality. This is possible to achieve, even in large pools of suppliers. It is also important to have a strong supplier function in place.

**Deloitte:** What advanced digital tools and new technologies do you see as best to build supply chain resilience?

**Andrea Lai:** While there is an abundant market for smart supply chain digital technologies like the cloud, AI or predictive analytics, the devil often lies in

the detail. Digital tools need to be reliable and able to monitor a broad supplier base for risks—including both big global suppliers with available data, as well as smaller suppliers with data of a different quality. While digital tools have come a long way, harvesting their full potential invariably depends on the quality of the data that is mined. Maintaining close supplier relationships and an active presence on the ground still remains the best way to build supply chain resilience, especially for the early warning system and quick, clear and transparent communication that it facilitates. As COVID-19 has shown, the most important lessons we are learning are not necessarily about new technologies but a return to the basics like focusing on people and relationships.

# Interview with Mario Fürst, Head of Digital Enterprise, Siemens Switzerland



**Deloitte:** How often do you analyse critical dependencies in your supply chain and what are your main findings?

**Mario Fürst:** Our supply chain is based on a holistic approach that comprises the steps 'Prevent—Detect—Respond' and concentrates on minimizing risks. The Code of Conduct for Siemens Suppliers and Business Partners is primarily based on the principles of the UN Global Compact and the International Labor Organization, but it is also reflected in our Business Conduct Guidelines, which are binding for all employees. We constantly analyse critical dependencies; especially and faster during COVID-19. Thanks to our own supply chain software solution we still remain flexible and efficient across our global shop floors during this period. Many industries, for example automotive or food and beverages, experienced more strategic challenges such as finding new partners and additional suppliers etc.

**Deloitte:** Would you consider increasing local procurement and how would you go about it?

**Mario Fürst:** Localising procurement across the board is not easy. While industry and trade promotion agencies would like to strengthen certain production locations, some areas or components within the supply chain do not offer much choice because there might be only two or three suppliers of such parts globally. Nevertheless, some industries and global players have been able to fine-tune their procurement by building up second and third sourcing concepts to achieve better production flexibility. Whatever the procurement model is, it will have to factor in sustainability which is increasingly becoming a driver in decision making.

**Deloitte:** What are currently the biggest supply chain risks in your company?

**Mario Fürst:** Siemens has more than 90 000 suppliers in 150 countries and manages a procurement spend of CHF 40bn (2017). The ability to deliver and maintain an efficient supply capability globally across the whole portfolio remains the biggest supply chain risk. We prioritise the integration of our values and integrity into the supply chain to both build resilience and drive sustainability. Any collaboration with suppliers requires them to adhere to our code of conduct. Non-adherence remains a key risk. To counter this, we have an early warning system that monitors supplier adherence, tracks deviations and defines the consequences of wrongdoing.

**Deloitte:** Can you comment on how visible end-to-end supply chain performance is in your own company?

**Mario Fürst:** The IT connectivity in our supply chain is very deep and supports good visibility. We have our own software to integrate our suppliers and communication is kept as simple as possible—including from factories to suppliers, especially regarding quality and product liability. Tracking is also possible for customers back to single suppliers. With 250 factories worldwide, great harmonisation is required to ensure visibility. Technology and collaboration are especially key when managing supply chain performance during crisis situations or catastrophes.

**Deloitte:** What advanced digital tools and new technologies do you see as best to build supply chain resilience?

**Mario Fürst:** Digital tools such as automation, cloud or predictive analytics

can definitely help companies to build supply chain resilience and remain competitive. The earlier you integrate these new technologies, the better the impact on your supply chain. For example, already integrating technology at the product development stage means data and tools can be shared with potential new suppliers and valuable time can be saved. Ideally, advanced digital tools should be used from ideation through to implementation and should support both innovation and recycling across the whole product lifecycle

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