

Digital future readiness

How do companies prepare for the opportunities and challenges of digitalisation?

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About the study

Between September and November 2016, 50 Swiss consumer business and industrial companies participated in a survey about their transformation for a digital future and which digital approaches and strategies they were successfully adopting. By February 2017, eighteen face-to-face interviews were also conducted with CEOs, CFOs and presidents of boards of directors. These individuals were asked about key attributes of organisational structure, changes and adaptations in corporate culture, as well as company management and employee training measures that they had identified as crucial to maintaining their future competitiveness in the new digital environment.

Interviews were conducted with senior management from ALUWAG, AMAG, Archroma, Caterpillar, Comet Group, Conzetta, Eaton, Georg Fischer, Givaudan, Loeb, Migros-Genossenschafts-Bund, OC Oerlikon, Panalpina, Plaston, Schmolz+Bickenbach, Siemens Schweiz, SIHL and Sulzer.

The study also refers to some of the findings of the Deloitte survey on growth challenges and opportunities for Swiss manufacturing companies, conducted in 2015 among 393 companies in the Swiss mechanical engineering, electrical engineering and metalworking industry.

Foreword

Dear reader

This *Digital future readiness* study illustrates the challenges and opportunities presented by digitalisation and outlines options for company management. The analysis on which it is based reflects the current level of **readiness of Swiss consumer business and industrial companies, for the digital future**. This study follows on from our last year's study *Growth opportunities – Strategies for Swiss manufacturing companies*, which defined a range of growth strategies including customer engagement, going global, new services, innovation, M&A and operational excellence. This year's study focuses on the extent to which the Swiss manufacturing location is fit for the digital age, the key skills that digitalisation requires and the transformations that will be essential for companies wishing to position themselves as future-ready.

Through face-to-face interviews with members of boards of directors and senior management in Swiss manufacturing companies, we have identified the best organisational structures, corporate cultures, employee dimensions and digital environments to enable companies to succeed in the digital age.

The *Digital future readiness* study sets out how successful companies tackle a range of topics including:

- new areas of business, corporate venturing and new business models
- innovation beyond the product and continuous experimentation
- employee motivation and scalable learning
- the ideal employee mix and redesign of the workplace
- the right digital infrastructure and use of exponential technologies.

We hope that this study will stimulate discussion within your company and help to equip you for the digital age.

We would like to thank all those who participated in interviews and the companies that responded to the survey request, for their invaluable contributions.

We hope you enjoy reading the study and look forward to your feedback.

Dr Ralf C. Schlaepfer
 Managing Partner
 Member, Global Consumer & Industrial
 Products Executive Council
 Deloitte AG

Konstantin von Radowitz
 Partner
 Head, Consumer & Industrial Products
 Switzerland
 Deloitte AG

Executive Summary

Swiss manufacturing companies need to remain competitive and future-ready, be able to tackle current economic, technological, political/regulatory and social challenges and make use of new opportunities for growth and optimise the scope for digitalisation. To achieve all this, transformational change needs to happen in the four dimensions of organisation, culture, people and digital environment illustrated below (see Chart 1).

Chart 1. The transformation model



- Scaling the edge of business/corporate venturing:** New business areas and new ideas meet with the least resistance and the greatest success when they are developed and tested on the edge of the existing organisational structure. Company management needs to create the space and freedom required, and promote an appetite for risk. Small units, separate management, modest budgets, continuous performance monitoring and agile management are the keys to success. A mix of existing and new employees with a start-up mentality helps achieve this. Targeted scaling on the edge of the business enables organisations to model and embed their future. Likewise, corporate venturing requires new thinking and a willingness to abandon conventional processes and move forward with a new mindset. Research and development also need new start-up environments on the edge of the business. Success in both areas will be achieved only where companies allow rapid failure on a small scale, learn from these processes and quickly draw conclusions.

- **Maintaining partnerships and ecosystem:** Ecosystems are dynamic and jointly developed facilitative ‘communities’ of diverse parties. They enable new value creation through flexible models for collaboration. Many companies can no longer – indeed, should no longer – produce everything themselves: in a period when time to market is decreasing and complexity is increasing they may not have the best knowhow or be the most cost effective. Successful companies are close to their end customers and work with all stakeholders to develop new solutions through crowdsourcing and open innovation. The degree to which a company’s boundaries can be opened up to suppliers, customers and partners will have a substantial influence on its future success.
- **Innovating beyond products and leveraging open business models:** Where organisational change is permitted and the ecosystem is used collaboratively with partners, new types of innovation beyond the product are facilitated. Product innovation and incremental improvement of existing products will be complemented by process innovation, development of new services and entirely new business models. In this way, companies can preserve their technological edge and remain trendsetters. Added value for the customer remains the yardstick. Customised additional services, status monitoring/predictive maintenance, innovative operator models and innovations in the area of the Internet of Things/industry 4.0 are examples of key differentiating factors.
- **Dealing with immune system:** Change and organisational upheaval also create resistance. Routine is disrupted, and individuals feel they have lost the ability to plan. Senior management will need to lead the transformation process for the benefit of all employees, taking them on the journey but also handling resistance. Companies need managers who are able and willing to manage the entire process of change. They need to communicate transformation initiatives consistently and passionately so that they explain and facilitate understanding and acceptance, even of unpopular measures. Managers should make it clear to employees at an early stage where and how they can make a contribution to the transformation and to the new organisation. While it is important to support those who want to help the company move forward, it is also critical to support and win over those who have not yet accepted the need for change.
- **Envisioning future environment:** Companies are continually facing new questions, trends and challenges, but change has never been as multidimensional and large-scale as it is now. To remain competitive in the digital age of exponentially growing technologies (e.g. sensors, robots, drones, 3D printing, advanced analytics and artificial intelligence), companies need to recognise, assess and take appropriate action on upcoming disruptors at an early stage. They also need to understand the nature of the competition from within their own sector, as well as other sectors. The key is to discover what their competitors are doing better and what they can learn from them. Understanding customers’ future requirements is crucial. Companies who will succeed in the future are characterised by openness, curiosity and taking ownership.
- **Experimenting continuously – Failing forward:** It is important that corporate culture allows room for creativity, freedom to experiment, continual try-outs and learning from mistakes. Allowing mistakes to happen rapidly and learning from them is known as ‘fail forward’ and is a core component of a future-ready corporate culture. Less structure and more creative chaos are essential if mistakes and failure are to generate innovation.
- **Creating passionate pioneer culture:** Autonomy, the provision of platforms, social technologies and new employee skills are essential components of establishing a ‘passionate pioneer culture’ and enabling people to work creatively within such a culture. Pioneers must be allowed to organise their own activities and to pursue new ideas in a decentralised and interdisciplinary way. A passion for innovation and the brand/lifestyle have also become key attributes for manufacturing companies seeking to recruit and retain talent, i.e. individuals who identify with the company and are willing to embark on its journey, helping to reinvent its products and services.
- **Getting right mindset:** The right mindset is central to a future-oriented and passionate pioneer culture. Companies often need to rethink their approach completely, jettisoning old thought patterns and processes. This new mindset includes the curiosity needed to look beyond the status quo (e.g. current products, distribution structures and growth objectives) and the ability to handle continuous change in a global environment.
- **Motivating employees and building passion:** In many companies, millennials will form the largest single employee group within a few years. Money does not drive this group: they take appropriate remuneration for granted. Instead, they seek meaningful work, a company with a vision and opportunities for further training and development, as the conditions for joining and remaining with a company. All employees want their company to appeal to their heart (through emotional and social value), their head (through a challenging occupation that enables them to develop) and their hands (through further skills development). In addition to depth of expertise in their specialist area, employees also want responsibility. Being ready for the digital future requires companies not only to identify the right employee mix, but also to equip their employees with the workplace of the future, the right conditions and the right tools.

- **Introducing scalable learning:** Education, training and development of entirely new skills, including digital skills, as part of lifelong learning is vital for both employees and companies. This includes systematic employee training and targeted management training. In future, employees will be increasingly going back to 'learning on the job' and learning from each other, in both the physical and the virtual workplace. Knowledge transfer needs to be stimulated through the creation of knowledge platforms and, increasingly will build on existing knowledge (competency-based learning). This means that employee training will be based on what employees already know, like pilots who only learn the differences from one type of plane to the other rather than learning to fly all over again. Cross-departmental training courses that dismantle department- and role-based silos will be required. Training will need to be geared to individual needs and skills.
- **Establishing right employee mix:** The demographic change already alluded to is a challenge, but many companies should also create greater gender and cultural diversity in their workforce. In an age of globalisation, having the right employee mix is increasingly a competitive advantage. Use of highly diverse teams is now one of the key factors underpinning the successful management of demanding large-scale projects.
- **Redesigning workplace:** Workplace trends point clearly towards greater flexibility, autonomy, mobility and digitalisation. Companies are still not making full use of flexible workplace models, including home office models, desk sharing, mobile working and digital/interactive workspaces. An optimum mix of home office and physical presence at the workplace needs to be defined for individual roles. The workplace of the future will make use of trendsetting technological and physical infrastructure. Future-oriented working environments enhance motivation as well as reduce space costs.
- **Ensuring right digital infrastructure:** Companies need to adapt their existing IT infrastructure now, introduce new, exponential technologies and establish infrastructure, including robots in both white-collar and blue-collar roles, if they are to make comprehensive use of the opportunities represented by digitalisation. Different processes and systems need to be networked for the future and will have to be taught to communicate with each other to fulfil their tasks rapidly and with the necessary analytical capabilities in factory and back-office areas. Analysis of the current processes and systems can reveal that it may be better to develop entire new communications networks than to tinker with existing systems. In many cases, new smart solutions and technologies cannot meaningfully be superimposed on to existing structures.
- **Leveraging exponential technologies/digital interaction models:** In future, the extent to which companies use exponentially growing technologies, such as sensors, robots, drones, 3D printing, advanced analytics and artificial intelligence, and technology-based interaction models will be crucial. Digital technologies operate outside traditional business models by requiring all participants in the value chain to rethink their roles. Crowdsourcing and open innovation enable greater collaboration with suppliers and customers. Customer preferences and needs are incorporated into development and production processes, facilitating customised solutions and individualised mass production. New, cooperative ecosystems are emerging and the sharing economy – a trend that is rapidly growing in the service sector – will characterise future customer interaction in manufacturing, too. New forms of factory ownership and new services based on shared use rather than on individual purchase are emerging. A deep understanding of a customer's business is important in designing the services of the future. Companies face the challenge of developing new business models if they are to remain competitive.

1. Background

Over recent years, the Swiss manufacturing location has faced a range of risk-based challenges. These challenges are ongoing and are having an impact on growth. If Swiss manufacturing companies are to navigate current **challenges** successfully and make the best use of **growth opportunities** and the scope offered by **digitalisation** to maintain and develop their competitiveness and future readiness, they must reorient themselves and drive forward **transformation** in a number of operating areas.

1.1. Challenges and opportunities for growth

The strong Swiss Franc has been the major risk factor facing companies over recent years, followed by growing global competition and volatile economic conditions around the world (see Chart 2). And while many companies have found ways over the past few years to cope with the strong Franc, currency risks will continue to impact negatively on company growth over the next few years, alongside intensified competition from emerging markets and higher levels of economic volatility.

Chart 2. Risk factors¹



“Companies have no time to lose, they have to move forward. The competition is strong and if you do not go fast and innovate, you go home.”

Frank Campbell
President – Electrical Sector and Corporate, Eaton

“In many sectors, China represents the greatest global potential. In this rapidly expanding market, any current global sector leader needs to rapidly secure a market share of ten per cent. If not, it will see its leading position fade away within a decade.”

Ernst Bärtschi
President of the Board of Directors, Conzetta

“Greater investment is needed to boost speed of reaction in a rapidly evolving environment. This is particularly true of employee skills, IT infrastructure capacity and the use of new technologies.”

Morten Hannesbo
CEO, AMAG

“The skills shortage is a real problem for manufacturing companies. More people are leaving the sector than are being recruited.”

Siegfried Gerlach
CEO, Siemens Schweiz

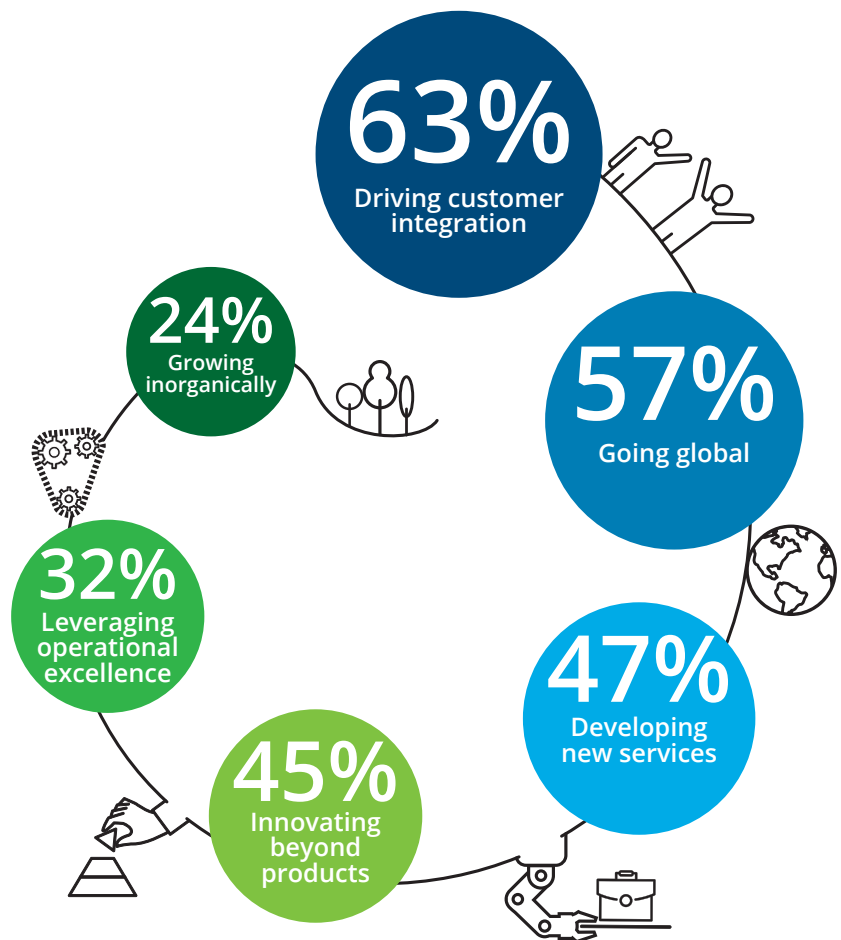
“Greater global competition doesn’t have to be all bad. If Chinese suppliers bring their products to Europe, this can open up new solution segments and incentivise our own manufacturing sector. It’s not uncommon for Swiss companies to have to reinvent themselves.”

Ernst Bärtschi
President of the Board of Directors,
Conzetta

Additional external factors hampering growth include talent shortages, increased geopolitical risk in sales markets, greater business regulation within Switzerland and higher trade barriers, along with the global trend towards more protectionism. The major internal risk factors are the lack of an adequate supplier structure, inadequate IT infrastructure within companies and the lack of future-oriented business models for the digital future.

Nevertheless, Swiss manufacturing companies identify clear opportunities for growth over the coming years, particularly regarding greater customer integration and customisation of products and services (see Chart 3).

Chart 3. New growth opportunities²



Customisation creates clear competitive advantages and helps companies improve their margins. Customers increasingly want to create products according to their specifications and feed their own ideas into development and production processes at an early stage. Companies need to adapt their structures and processes to allow for this and use digitalisation to their own advantage, without substantially increasing product costs.

1.2. Digitalisation as a key factor

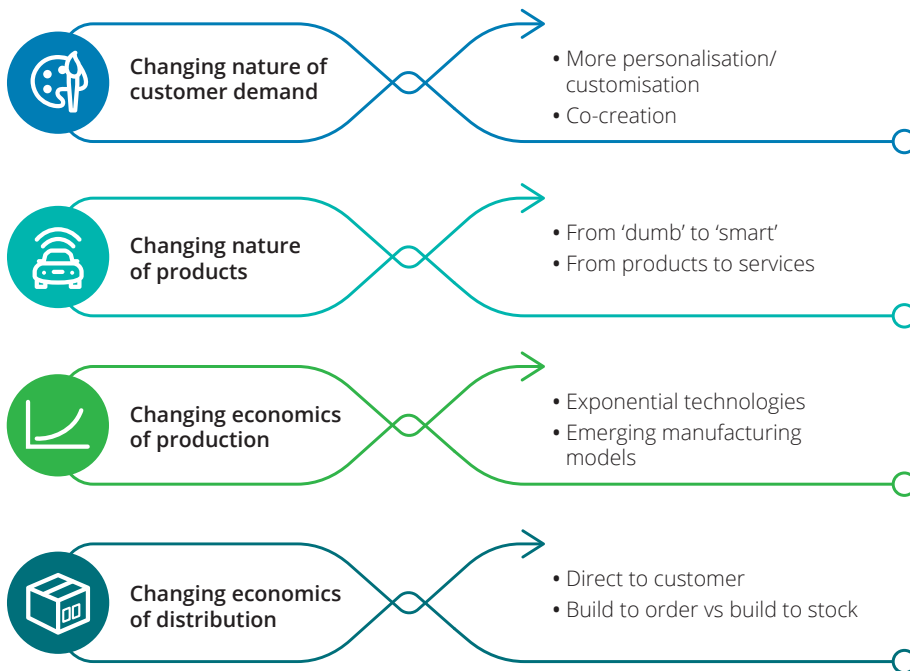
The core components of change facilitated by digitalisation include adaptation to customers' needs, individualisation and joint creation with customers of new products (see Chart 4).

Digitalisation also enables new smart products and a greater range of services, such as products linked to the internet or remote maintenance of machinery. Almost half the companies surveyed intend to develop new services or to innovate beyond the product. To do this, they will need the right models and culture for innovation. For example, an understanding of exponential technologies and their capacity to remodel production and supply chains is central: warehousing can be further reduced and customer demands met directly and in close coordination with them.

"A company's greatest potential and most important factor in successful innovation is its workforce. Strong collaboration and conscious lateral thinking pave the way for unique solutions for customers."

Alexander Gapp
CEO, Plaston

Chart 4. Changes triggered by digitalisation



"The most successful developments over recent years have been achieved in close collaboration with our customers."

Hans Hess
President of the Board of Directors, Comet

A cultural shift within the company is the key to giving young employees the future-oriented jobs they want and engaging them in shaping that future. While companies need their employees' acceptance of their future strategy, they also need their commitment to putting this strategy into action.

“Transformation and efficiency programmes are essential at times of recurrent economic crises. Only those manufacturing companies that implement such initiatives promptly, on an appropriate scale and with a focus on results, will remain adaptable and competitive in the future.”

Thomas Dittrich
CFO, Sulzer

Sustainable improvements in operational excellence and efficiency, and defining opportunities for digital change are essential too. Chart 5 illustrates a number of areas that underpin growth and greater efficiency.

Chart 5. Opportunities represented by digital transformation

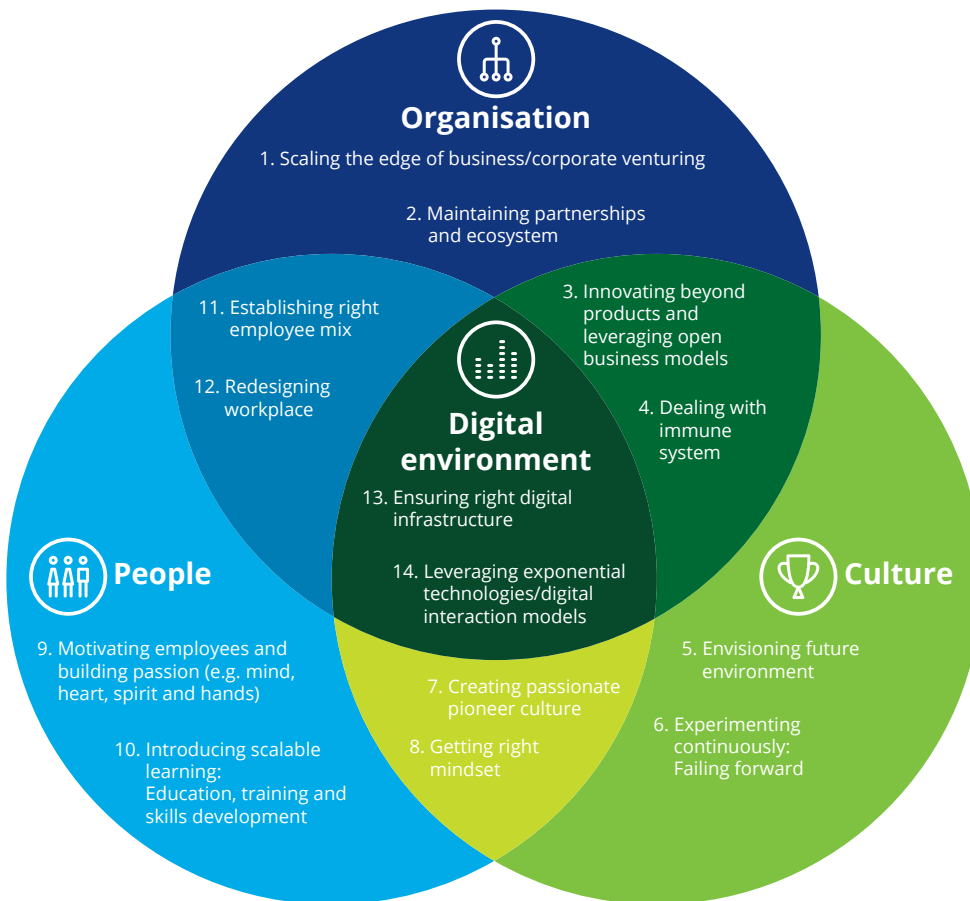


1.3. Digital future readiness through transformation

Companies' future readiness can be defined on the basis of four dimensions: **organisation, culture, employees** and **digital environment**.

To remain competitive and future-ready and able to manage the current economic, technological, political/regulatory and social challenges, as well as seize new growth opportunities, it is important that companies consider all four of these dimensions (see Chart 6).

Chart 6. The transformation model



New **organisational structures** can best be developed and tested on the edge of existing companies. Scaling of changes on the edge of a business is a requirement for modelling and embedding the successful organisation of the future. Using open business models, new kinds of partnerships and the full range of future-oriented DNA of exponential organisations, enable rapid trialling and scaling and success beyond a company's core business. Opening up the company's boundaries to suppliers, customers and partners will be a major factor in a company's future success.

“Swiss companies cannot afford to sit back on their laurels. Companies that do not develop in organisational terms and regularly transform themselves will not remain competitive.”

Jürg Fedier
Group CFO, OC Oerlikon

“Many traditional Swiss companies find it difficult to make the necessary organisational changes. They frequently ask why everything has to change when the old, established ways of doing things have been successful.”

Roland Abt
CFO, Georg Fischer

“Successful corporate cultures have high levels of training and motivation, a senior management that is close to the operational level and complete digital transparency.”

Edwin Eichler
President of the Board of Directors,
Schmolz+Bickenbach

“Good training and personality are equally important for the employee profile of the future. Skills demands are increasing and companies want new skills, such as the ability to manage continuous change.”

Peter Studer
CEO, Sihl

“Digitalisation is a major challenge and, in the top quality segment, offers the best opportunities for European manufacturing companies to develop new solutions. European companies need to manage and learn from changes rapidly.”

Ernst Bärtschi
President of the Board of Directors,
Conzetta

Corporate culture and its focus on the future is the key to organisational development and the recruitment and retention of the best employees. Maintaining partnerships and contact with the economic ecosystem of the company will support this and form an integral part of its culture. It is important to have space for creativity and for ongoing experimentation and learning from mistakes. ‘Fail forward’ – that is moving forward on the basis of failure and allowing mistakes to happen rapidly and learning from them – is a core element of a future-ready corporate culture. It enables a passionate, entrepreneurial and research culture to be embedded that will facilitate the development of new and innovative solutions and business models. An important prerequisite for such a culture is a pioneer mentality on the part of all employees, from senior management down to staff on the factory floor or in the back office.

Future corporate success requires not only the right attitude, but also motivation and passion on the part of **employees**. Strategy needs to speak holistically to an employee’s mind, heart, spirit and hands. The constantly evolving corporate environment, digitalisation, and rapid and radical change in company organisation are increasing the need for continuing training and skills development for employees. The workplace of the future must keep pace with the demands and aspirations of millennials and the evolving DNA of the employee mix.

Digitalisation is the key to industry 4.0 and exponential growth. Incorporating the **digital environment** will be crucial to the future competitiveness of manufacturing companies. Employees and customers are being more closely networked, while human and artificial intelligence and the use of robots across the entire value chain are becoming a reality. Such networking and collaboration requires a digital infrastructure right across a company – from research and development, procurement/purchasing and production, to warehousing and logistics, marketing, sales and services. By using exponential and intelligent technologies, including advanced sensors, smart machines, artificial intelligence and advanced robotics, companies can create a clear competitive advantage. New technology-based interaction models with suppliers, customers and partners are becoming the key criteria by which companies differentiate themselves from their competitors.

2. Have Swiss companies transformed themselves for the future?

2.1. Organisation

Exponential organisations are rooted within business models and organisational DNA that relies on willingness to make large-scale adaptations. The Swiss manufacturing companies surveyed see the key characteristics of a successful future-ready organisational structure as **agility and flexibility** (see Chart 7).

Chart 7. Key characteristics of a successful organisation³



“The pace of change has accelerated markedly in recent years, and companies will have to become more agile and flexible in future in order to respond more rapidly.”

Siegfried Gerlach
CEO, Siemens Schweiz

“Agile companies understand where the market is going, have processes in place that are quicker than the competition’s and will carry through their plan to the end.”

Alexander Wessels
CEO, Archroma

The pace of change in competitor businesses, new markets, corporate environments and in customers’ demands is constantly accelerating, and deadlines are becoming increasingly tight. Most companies can no longer afford simply to sit back and rest on their laurels; they need to learn to react more rapidly and to demonstrate that they are capable of adaptation.

Many Swiss companies in the manufacturing sector have not yet adjusted to the new pace, rapid tempo and new magnitudes. Swiss companies are lagging behind their competitors in Asia and North America in this respect. The strength of Switzerland’s manufacturing sector – its attention to detail and perfection – also increases the risk of inertia. Companies need more than just shorter paths and flatter hierarchies to overcome this inertia and achieve agility and flexibility in a rapidly changing environment. They need to find new solutions in the areas of ideas and economies of scale.

“Flat hierarchies, continuing training and close collaboration are the most important characteristics of a successful, future-ready organisation.”

François Manach
CFO, Loeb Holding

The second most important characteristic of a successful future-ready organisation, as identified by the companies surveyed, are **learning ability and skilled workforce**. Companies need to re-gear their resources to the future and identify and recruit employees with the right education, new talents and the necessary skills (e.g. DevOps programming) to keep pace with accelerating change and new trends in learning. They must also facilitate continuing training and lifelong learning and promote employee engagement.

“High levels of flexibility and project-style organisation, a non-silo mentality, and close collaboration with customers, partners and universities are the key characteristics of a successful, future-ready manufacturing company.”

Hans Hess
President of the Board of Directors,
Comet

“In a world that is changing fast, companies need to have great flexibility, good digital capabilities and the right people that can deal with the new challenges.”

Frank Campbell
President – Electrical Sector and
Corporate, Eaton

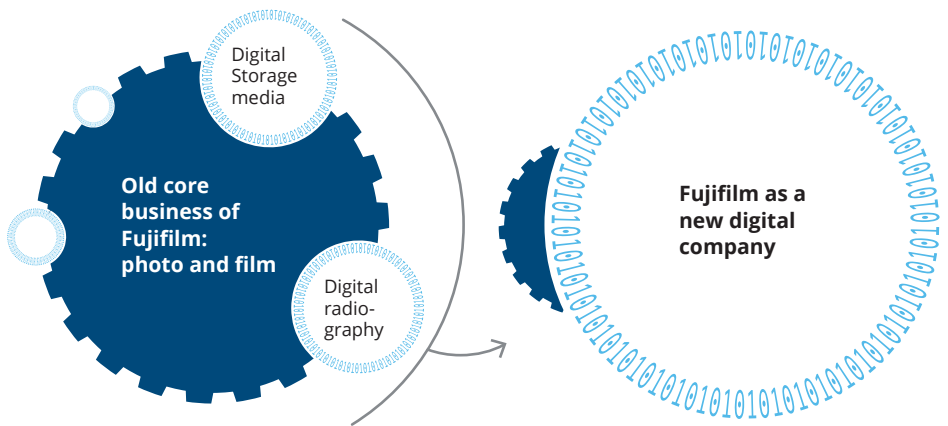
“The quality of its workforce is the key to a company’s success. Companies need more people who don’t see problems but offer solutions.”

Siegfried Gerlach
CEO, Siemens Schweiz

Respondents identify **closer collaboration and interdisciplinary working** as the third most important characteristic of a successful future-ready organisation. Partnership, cooperation and closer networking, both within and outside the company, need to be developed or strengthened to create synergies. Organisations need to stop thinking solely in departmental terms and rather establish a non-silo mentality that encourages teambuilding across departments and does more to promote entrepreneurial thinking by their employees.

Scaling new ideas and business areas on the edge of the business requires openness to suggestions from all sides – suppliers, customers, employees and the wider environment. Companies need to allow freedom and promote a willingness to take risks in developing new business areas on the edge of the business. Making mistakes must be just as much a part of the new normal as the requirement to learn rapidly from these mistakes. For most of the companies surveyed, experimentation is happening in the context of their existing business. This creates a risk that selected employees are given a special ‘innovation status’, which activates the company’s own defence mechanisms – its ‘antibodies’ – and ‘kills off’ innovators. For this reason, small new business units should initially be set up on the edge of a company’s existing business. However, they should not be given unlimited funds like a start-up, which can also lead to rejection, but instead, their funding should be limited to what is needed to develop new models. Fujifilm achieved this with its transformation from a traditional photo and film company to a diversified, new digital company. Expertise was created in-house, new technologies were developed on the edge and applied to existing and new business areas (storage media, medical systems) (see Chart 8).

Chart 8. Example: Fujifilm and scaling on the edge of the business



In the past, such scaling was often highly structured, but in future, it must become more informal, which requires people with the right skills and expertise and the right attitudes (start-up mentality). Organisations do not always have all the necessary talent already on the payroll and often find it useful to import entrepreneurial thinking or recruit from the outside.

For innovations to be successful on the edge of the existing business, small, innovative units, separate budgets and a short-term perspective are needed. This reduces the time to market and makes it less likely that competitors will act quicker. Many of the companies surveyed emphasise the importance of beginning with a pilot project and applying a rigorous stage-gate process. Companies sometimes wait too long to see signs of success. If a project does not show initial results after a certain period, or if clear milestones have not been achieved within that period, the project should be terminated. It is important to bear in mind from the outset that three out of every four attempts fail. However, there is also a risk of companies not being patient enough. What is important is that organisations/employees learn how to tackle both negative decisions (terminated experiments) and positive ones (continuation/implementation) and learn from them.

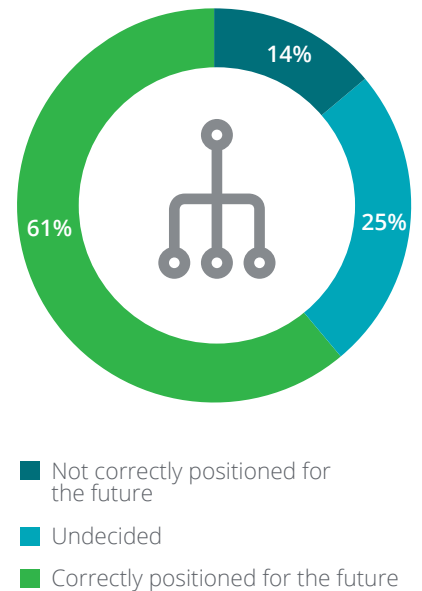
Much the same applies in the case of **corporate venturing**, along with consciously jettisoning old processes and mentalities. Relatively few companies are currently taking this approach. While corporate venturing is on the 'radar' of many Swiss companies, they lack the basic willingness to attempt it, in contrast with companies in the US, for example. The entrepreneurial focus on research and development and promoting a start-up environment within the organisation is stronger. Scaling the edge and corporate venturing do, however, share a number of similarities. These include clear decision-making, resource allocation, separate management, non-traditional staff and different performance indicators from those applying to the company's core business. Success in both scaling and corporate venturing requires companies to learn rapidly from small-scale failure and draw conclusions from that failure equally rapidly.

It is generally important to **maintain partnerships and the ecosystem**. Ecosystems are dynamic, jointly created 'communities', based on a range of participants that pave the way for new value creation, through increasingly sophisticated models for collaboration and competition. Many companies can no longer produce everything themselves because they lack the best knowhow, time is short and complexity has grown. Successful companies are very close to their end customers and work with them to develop new solutions or practise open innovations, making use of swarm intelligence and crowdsourcing. Research and development should collaborate much more closely with sales and service, carrying out joint visits to understand customers better. Customers should be able to feed their ideas actively into development phases. What may sometimes sound trivial can, in fact, often create entirely new opportunities for innovation and growth. The companies surveyed feel that much greater use should be made of options to open up company boundaries to suppliers, customers and partners in this way. Successful organisations have already recognised the benefit and are systematically driving forward such openness.

New kinds of innovation can emerge when organisational change is permitted and comprehensive use is made of the ecosystem with partners. Companies are able to take the lead in the field of technology and become trendsetters. **Innovating beyond products and leveraging open business models** is the key (see Chart 9). Traditional product innovation and incremental improvement of existing products should go hand in hand with process innovation, development of new services and entirely new business models. Added value for the customer is always the driving force. New customised services, new monitoring and predictive maintenance solutions, innovative operator models, and innovations in the area of the Internet of Things/industry 4.0 are the focus.

Survey: Transformation status of Swiss companies

Organisation⁴



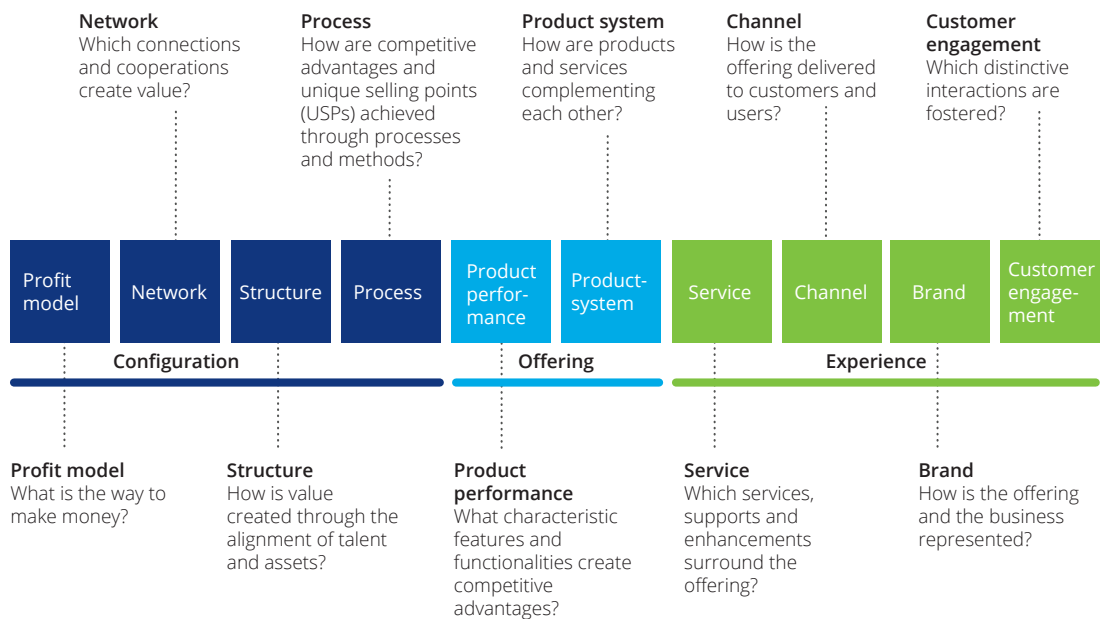
“A successful organisational structure has to be adaptable to business, industry and an evolving clientele. This is particularly important in an age of digital Darwinism.”

Thomas Dittrich
CFO, Sulzer

“Open-mindedness and exchange of ideas across business units and geographies are essential for company success. Everybody has a few things to teach and a lot to learn from each other.”

Gerard Vittecoq
Former Group President
– Power Systems, Caterpillar

Chart 9. The ten types of innovation⁵



“A successful corporate organisation and culture is permanently ready to innovate. It can tackle change and adapt rapidly to new markets.”

Peter Studer
CEO, Sihl

“In terms of corporate success, a good culture is almost more important than the company’s organisational structure. Openness, tolerance and interdisciplinarity – especially between research, development and sales – are the key factors.”

Roland Abt
CFO, Georg Fischer

Digitalisation is seen as a major opportunity in this context: the meaningful use of data will be a key factor in success. However, this involves more than just the random aggregation of data; instead what is needed is a differentiated analysis of data on the basis of clearly defined questions.

Transformation and organisational change of this kind trigger resistance, because routine is disrupted and people assume that they have lost their ability to plan. Silent or passive resistance is an enormous challenge for companies. **Handling resistance** is the role of senior management and requires managers who are both willing and able to manage change. They need to be able to communicate information about transformation consistently and accurately, as well as explain and facilitate understanding and acknowledgement of unpopular measures. Organisational transformation requires iterative processes. Regular workshops may reduce the need for ongoing explanation and help secure acceptance. It is important to show employees at an early stage how and where they can make a contribution to transformation and new organisational forms. It is often more sensible to give support to the individuals who wish to take the company forward rather than those who wish to impede the transformation process, and to scale activities on the edge of the business where change is not imperative. Good organisational transformation is no simple matter – it is a craft that needs to be learned. The companies surveyed estimate that on average, only two in every ten organisational transformation projects are very successful, while four proceed acceptably and the remaining four fail to meet their goals.

The success of organisational change/transformation, scaling on the edge of the business, new partnerships, innovation beyond the product and the use of new business models are all strongly linked to a healthy corporate culture.

2.2. Culture

The Swiss manufacturing companies surveyed see the key characteristics of a successful future-ready corporate culture primarily as **openness and curiosity, trust and accountability, cohesion and communication** (see Chart 10).

Clarity and transparency within the company are vital prerequisites for an open and vibrant corporate culture. Active example-setting by senior management of corporate value systems, flat structures, direct routes and open door policies help to achieve this. Honesty and openness, along with curiosity and commitment, will involve employees and form the basis for mutual trust.

Chart 10. Characteristics of successful corporate cultures⁶



A strong basis of trust makes it possible to delegate responsibility successfully. In times of rapid change, companies need their employees to show initiative, a strong performance orientation and greater entrepreneurial thinking, or the ability to think ‘outside the box’ in areas such as development of new profit models and alternative uses for existing data. This creates cohesion and boosts commonality. Regular two-way communication across all hierarchical levels and departments is the glue that holds a successful corporate culture together.

Many of the companies surveyed see culture as one of the most important factors in securing innovation and success. It has always been true that companies are lost without basic values and culture – and that will remain true in the future.

“The biggest challenges to company cultures are a fear of change and an inability to recognise failures and to learn from them. You need to fail from time to time to be able to succeed.”

Gerard Vittecoq
Former Group President – Power Systems, Caterpillar

“Openness and curiosity, delegation of responsibility, and a diverse workforce form the basis for a robust corporate culture.”

Hans Hess
President of the Board of Directors, Comet

“The strength of a corporate culture can be compared with the culture of a family that runs into difficulties. Both families and companies need to stand together and to jointly seek solutions.”

Morten Hannesbo
CEO, AMAG

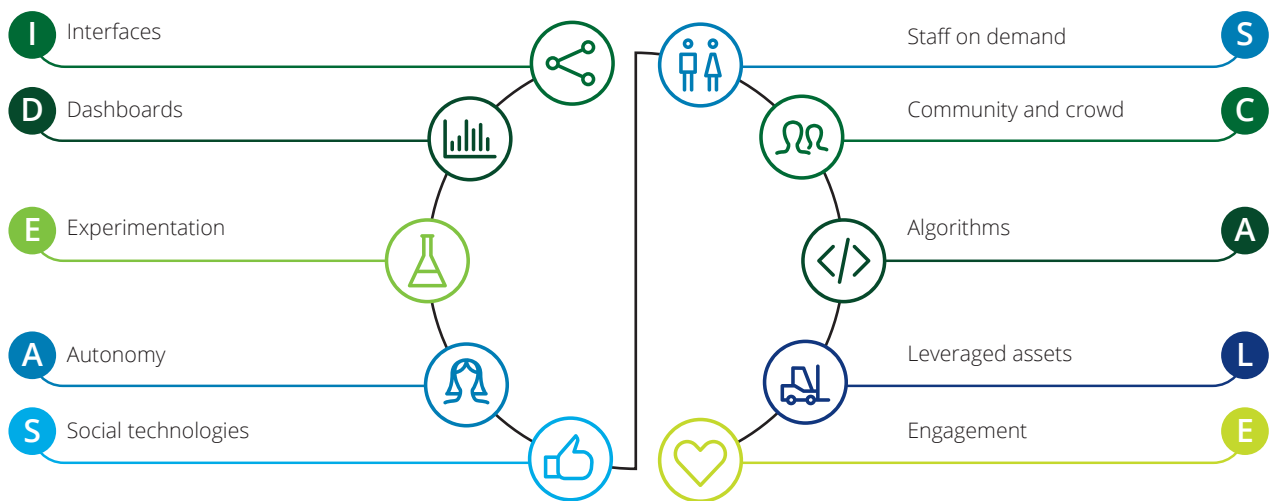
“Performance orientation is a key component of corporate culture. If a culture is only a feel-good culture, the company will rapidly become less competitive.”

Thomas Dittrich
CFO, Sulzer

Envisioning the future environment is essential to remaining competitive at times of exponentially growing technologies (including sensors, robots, drones, 3D printing, advanced analytics and artificial intelligence). Companies are constantly confronted with new questions, trends and challenges. They need to spot where the next disruption will be coming from, learn to understand the competition from their own and other sectors and to discover what they themselves could be doing better. Their understanding of what their customers’ future will look like underpins this. Openness, curiosity, trust and taking ownership are just some of the elements that will mark out the successful companies of the future – ‘exponential companies’.

The DNA of an exponential company comprises ten elements that enable it to adapt to change on a massive scale (see Chart 11). Exponential companies have developed these core elements as part of a cultural shift that enables them to react flexibly to change with ‘new ideas’ and ‘scaling’.

Chart 11. The DNA of exponential organisations



“People and culture are the keys that make a company sustainable and successful. The quality of staff and the company environment are key differentiators which drive creativity.”

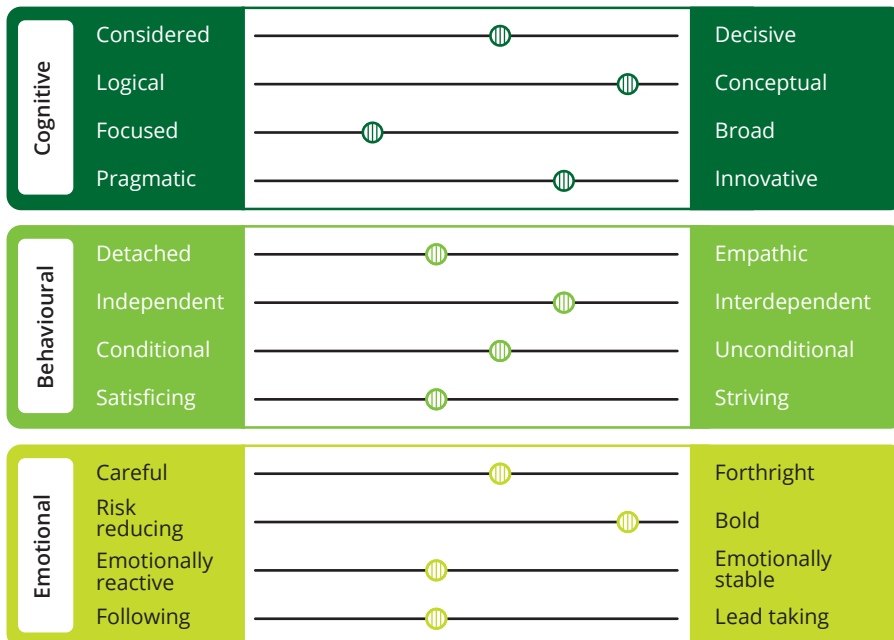
Gilles Andrier
CEO, Givaudan

A core element here is **continuous experimentation and learning from mistakes** (often referred to as ‘fail forward’). Exponential companies encourage risks in this area and give their staff the freedom to get things wrong and to try out new solutions through experimentation. This means less structure and more creative chaos, as well as a corporate culture that not only tolerates mistakes but actually builds on them. Vision and objectives should, however, come from the company’s management. Scope for experimentation is rather greater in owner-managed companies than in listed companies. Employees must be allowed to experiment with their innovative ideas and to fail. If a company is to improve, it must be able to test an idea rapidly in a market setting. Reducing development times enables new hypotheses to be formed and lessons to be learned from the process. Some of the companies surveyed point to examples of key innovations that arose out of initial mistakes or failure. However, mistakes attributed to negligence or to a lack of information are fatal errors that companies should avoid. Companies need the right ‘dashboards’, so that they can immediately access all relevant information, and a good ‘interface’ with all relevant organisational units.

Two further elements of implementing 'new ideas' are 'autonomy' and the use of 'social technologies'. Autonomy and the creation of social technology platforms enabling individuals to work creatively (e.g. instant messaging, SharePoint and content management systems) are the key to creating a **passionate pioneer culture** within a company. Creating space of this kind takes time. Pioneers must be allowed to organise themselves and to take a decentralised and interdisciplinary approach to following up 'new ideas'. Companies in more traditional industries are frequently unable to compete with leading tech companies in terms of granting their employees the autonomy that will attract creative talent. The passion for innovation and the brand and lifestyle with which companies in the manufacturing sector identify are key to attracting and retaining talent, i.e. those who identify with the company, share its journey and help to reinvent the company, its products and its services. Autonomy is a particularly powerful way of creating great loyalty, dedication, passion and obligation to a company.

A high level of commitment and the **right mindset** among the workforce and within company management is central to such a new research or innovation culture. This often requires a fundamental shift in thinking, abandoning the patterns and the processes of the past. This new mindset also encompasses greater curiosity, enabling the company to think beyond the status quo (e.g. current products, distribution structures and growth objectives), and the ability to handle ongoing change within a global environment. Committed pioneers of successful transformation, for example, tend to think conceptually rather than logically, are networked rather than working in isolation, fundamentally bolder in their actions and willing to take certain risks (see Chart 12).

Chart 12. Characteristics of pioneers of transformation



“A successful corporate culture is like a football team. Cohesion and team spirit are essential, as is an absolute determination to be playing in the Champions League rather than in a local league.”

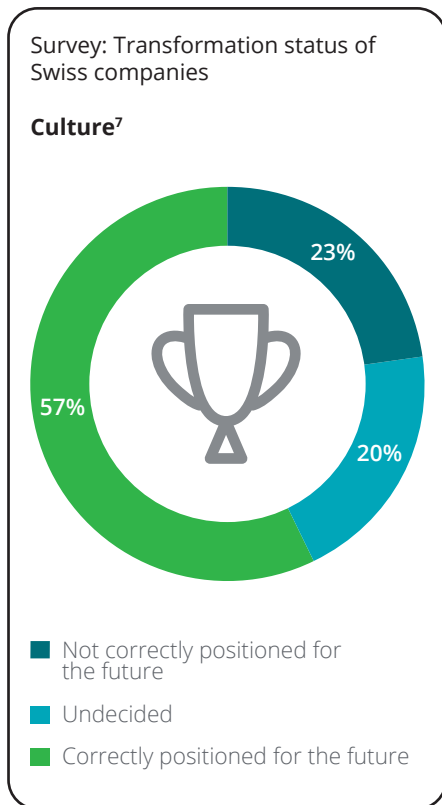
Markus Wagner
Owner, ALUWAG

“It’s much easier for family businesses to create a strong corporate culture. That culture begins with the owner family itself, centres on the individual and enables employees to feel as if they are a family.”

Alexander Gapp
CEO, Plaston

“It’s important to be bold and to tell line managers, as well as colleagues, when something isn’t working or mistakes are being made.”

François Manach
CFO, Loeb Holding



“Self-motivation of employees is a critical ingredient. The role of management is to prevent demotivation, by eliminating obstacles and addressing resource deficits, so that targets can be achieved.”

Markus Wagner
Owner, ALUWAG

Some companies are investing in training to make fundamental changes to their employees’ behaviour and mindset. Those who make good recruitment decisions can steer this process naturally in the future.

In a global age, thinking and acting differently – moving away from a traditional Swiss or European approach and adopting a more radical and cosmopolitan approach – is something that can be learned at the workplace itself. Some of the companies surveyed complain, however, that their Swiss employees (and particularly younger employees) are less open than they were in the past to international assignments where they can share their experiences, continue their training and engage in shared learning. This is the downside of the quality of life and high level of prosperity that they enjoy in Switzerland, which is creating complacency and inertia among many. Attitudinal aspects also play a part: it is difficult enough to get employees from other parts of Switzerland to transfer to Zurich, let alone to the US, China or any emerging economy. In this respect, foreign employees working in Switzerland are more flexible and more open. Foreign postings of this kind are essential at many levels of the career ladder and are crucial for globally oriented companies if they are to survive in the current internationally competitive climate.

A company’s workforce is its greatest competitive advantage and a tool for future success. Failure to document, make use of or regularly invest in employees’ existing knowhow is the largest waste of resources for any company. Many companies need to make fundamental changes to their corporate culture and open it up. Exponential companies have recognised that using external knowledge, such as ‘communities or crowdsourcing’, or ad hoc placements for ‘staff on demand’ enables ‘new ideas’ to be scaled more effectively than doing everything in-house, as has traditionally been the case (see also Chart 11).

Broader cultural change is also needed in the use of new digital technologies, such as artificial intelligence and advanced analytics (‘algorithms’) for scaling or deploying new business models, such as leasing or sharing (‘leveraged assets’). For example, new ecosystems are emerging in which IP (patents for diverse products or entire solutions) is shared freely and a wide range of small and micro-businesses join forces under a system integrator to produce products that could previously be made only by large companies.

Within any industry, this sharing of technology and knowhow within the sharing economy can challenge the current market leaders on the basis of economies of scale and, in some cases, even displace them. Companies can be more agile in this way, and skills can become more important than inventories of equipment. Innovation is owned by networks, and the pace of change and adaptation increases massively in this context: these agile and robust networks are able to manage systemic complexity by breaking it down into small, independent units.

2.3. People

The best way for companies to generate **motivation and passion among their employees** is often not by rewarding them financially but by creating meaningful work and opening up opportunities. Employees want to be challenged intellectually, emotionally, spiritually and physically. A meaningful job is an important motivating factor: people want to be given responsibility. To create a sustainable, future-ready employee environment, companies need to identify employees with potential for the digital future but also provide them with the right set-up and resources, and to offer them interesting opportunities. Self-motivation, taking ownership and a hunger to tackle new challenges are key success factors and recurrent themes that companies have to tackle for each new generation of employees.

Demographic trends, including the changing employee mix (age, gender, culture, etc.) and the resultant changing aspirations and motivations of generation X, millennials and (in the near future) generation Z, are major challenges facing companies (see Chart 13). Central motivating factors alongside the meaning of work are (alternative) career perspectives, flexibility and autonomy, including job-sharing.

“The ideal employee of the future needs not only good training and specialist skills, but also the willingness to change with the company.”

Morten Hannesbo
CEO, AMAG

Chart 13. Employee trends⁸



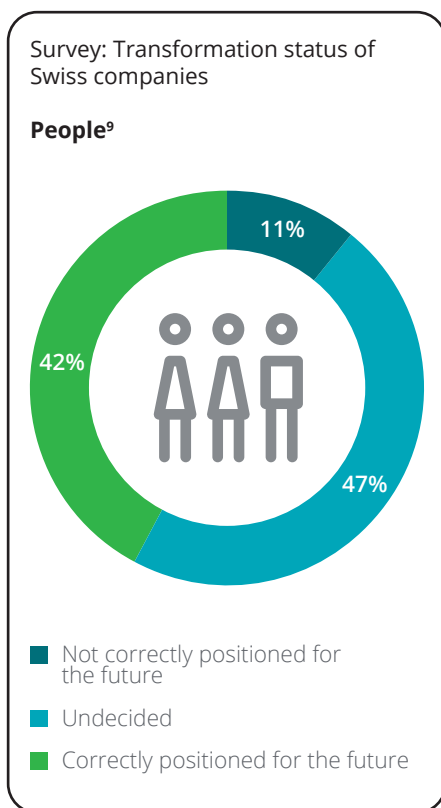
Companies seeking to remain competitive need **scalable learning** or ongoing education, continuing training and development of entirely new skills for their employees. ‘Lifelong learning’ is the watchword for many companies and their staff. It involves systematic and continually updated training for employees, targeted management training, and employees increasingly reverting to learning from each other and ‘on the job’. Knowledge transfer must be stimulated by establishing knowledge platforms and content management systems, and will increasingly be based on existing knowledge. This is competency-based learning of the type that is common among pilots who, when they switch to a different type of plane, need only to learn what is different rather than having to learn to fly all over again. Cross-departmental training courses that get people out of their ‘silos’ are essential, and sharing and joint project work are key in this area.

“To be successful in the future, companies need to recruit people for their potential and not for their current capabilities.”

Frank Campbell
President – Electrical Sector and Corporate, Eaton

“Further training and continuous learning are the major means by which companies keep employees fit for the labour market and maintain their own competitiveness.”

Christoph Merle
 Head of M-Industrie eXcellence Team,
 Migros-Genossenschafts-Bund (MGB)



“In the competition for talent, where everybody wants to attract the best people, companies need to invest significantly in training and development to remain the most attractive employer.”

Gilles Andrier
 CEO, Givaudan

Frequently, continuing training is still not a differentiating factor between companies. The meaning and purpose of scalable learning must be explained clearly, and companies also need to focus on employees' individual needs and differences. 'Reverse mentoring' enables older workers, for example, to learn new technological skills from IT-savvy younger colleagues, while younger employees can learn from the business experience of their older colleagues. The focus in recruitment will be on those who have the skills to achieve the right balance between traditional education and practice – who have, for example, studied engineering but don't mind 'getting their hands dirty' with practical work. The traditional MBA as training for senior management will become less important as additional skills gain in importance, such as those that can be developed in computer games such as the 'World of Warcraft'. These games teach players how to collaborate within a virtual environment with others from different parts of the world and with different educational backgrounds and cultures.

The right mindset is also important for scalable learning and continuing training. Motivated or demotivated employees with a positive or negative mindset can be found in all employee generations. Younger employees in terms of years may, in fact, be old in their attitudes, while older employees may have a young mentality and be open to change. The most successful employee of the future not only has the necessary skills, experience, knowhow and character, but also a contemporary personality and demonstrates great vitality in dealing with constant change as well as a high level of digital skills. The job profile in traditional manufacturing increasingly reflects that of a start-up, so the shortage of such employees is a challenge for a number of Swiss companies, with many only managing to find the right talent abroad. The alternative is to provide ongoing development for existing employees and both internal and external digital skills training on a targeted basis. These are core responsibilities for management in the digital transformation.

The **right employee mix** is increasingly a competitive advantage. Demographic change is a challenge, and many of the Swiss manufacturing companies surveyed are struggling with an ageing workforce and could demonstrate greater employee diversity. For example, some companies have found that increasing the proportion of women in their teams has had a positive impact on team dynamics, problem-solving and project outcomes. The same is true of integrating and supporting millennials in specific roles. Diverse teams are seen as the key to successful implementation of demanding major projects and as a clear advantage in a globalised competitive environment.

The surveyed companies have followed very different paths in terms of the **redesigning of the workplace** and the use of flexible workplace models, including home office models, desk sharing, mobile working, and digital/interactive workspaces (see also Chart 13). Virtually all survey respondents acknowledge that workplace trends now point towards greater flexibility, autonomy, mobility and digitalisation. Both employers and employees accept this major trend to a greater or lesser extent. However, companies emphasise that although home office models will be appropriate to the same extent for all hierarchical levels, departments or functions, personal contact and physical presence remain important. Companies are already making substantial use of interactive IT platforms for networked collaboration.

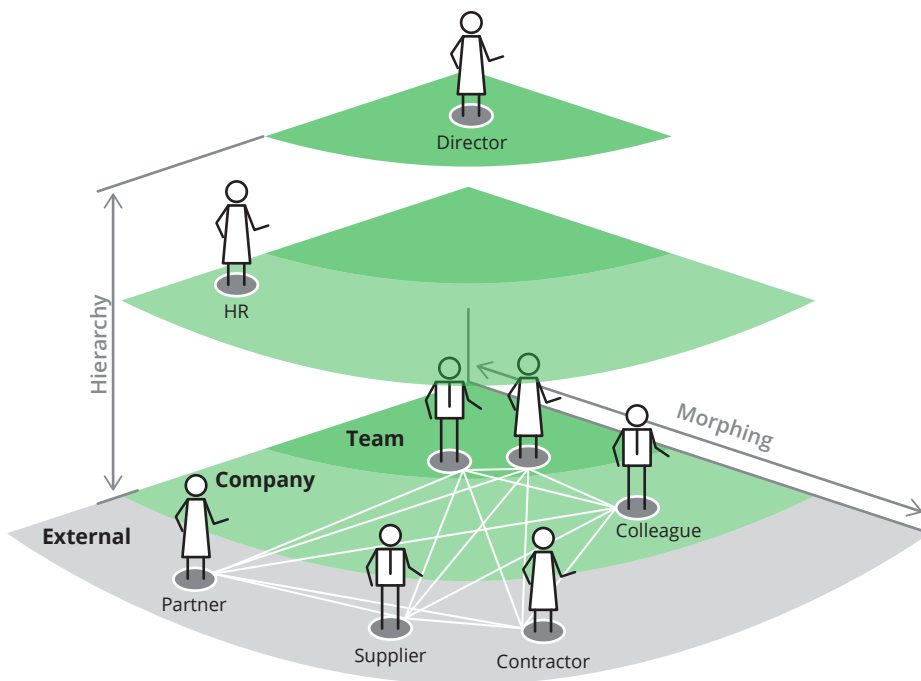
However, even if many companies are facilitating such innovations, the extent to which employees are making use of them varies widely. Not all employees want to see their workplace digitally transformed. They often recognise the advantages of digitalisation – such as not having to commute and being able to work more efficiently and without interruption from home – but they are questioning the disadvantages, including the need to be online and available all the time, the blurring of the boundaries between work and private life, and the lack of face-to-face contacts at work. The Swiss manufacturing sector still has a strong culture of physical presence at the workplace, and employees appreciate and cultivate office culture and their ability to share breaks and meals with their colleagues. Companies face a challenge here in creating new or different physical spaces for employees to socialise. They need, in fact, to define the workplace of the future, which will be characterised by the most up to date technical but also physical infrastructure. The positive factor is that such future-oriented working environments have the capacity to increase motivation while also cutting space costs. Ultimately, the right mix of home office models and physical presence at the workplace needs to be defined on an individual basis for each role, company and industry.

Outsourcing models and a needs-oriented workforce (which includes freelancing and contracting) are gaining in importance as the 'gig economy' grows, that is employees being paid on a job or 'gig' basis (see Chart 14).

“In a simplified view, successful companies need two types of employees: entrepreneurial minded mavericks that ‘move boundaries’ and can move the business forward (let’s call them ‘smugglers’) and controllers (or ‘customs officers’) that ensure compliance, ‘maintain boundaries’ and keep the business structure intact. The ideal ratio for success depends on size and phase of the company.”

Alexander Wessels
CEO, Archroma

Chart 14. The gig economy



“Clear goals, genuine incentives and decentralised responsibility are clear features of employee motivation and support.”

Edwin Eichler
President of the Board of Directors,
Schmolz+Bickenbach

“Contracting can be very beneficial for less complex business activities and for industries operating in highly volatile markets that need to be flexible.”

Rafic Mecattaf
Head of Strategy & Corporate Development, Panalpina

These models promote cost-cutting, flexibility and agility, and are therefore central to competitiveness as they encourage cross-company cooperation and greater decentralisation.

In the gig economy, experts are drafted in (in some cases virtually) to collaborate on a business issue for a limited period and then leave again. This enables organisations to build, change ('morph') and then dismantle teams of employees, partners, freelancers/contractors and suppliers. Top-down hierarchies are shifting in favour of networked teams, which helps to achieve results more rapidly. For many companies, the question will be what remains a core activity in future and what can be done more effectively in such networks with contracted partners. This poses challenges in terms of recruitment, onboarding processes, regulatory requirements, IT security, risk management, invoicing and tax.

Most of the manufacturing companies surveyed remain rather traditional in these respects and will have a lot of catching up to do over the next few years. Although the number of part-time employees and freelancers/contractors is increasing, companies still need full-time permanent employees. To achieve digital transformation, it is important to define a comprehensive 'digital change approach' for the company.

“Recruitment of staff should not only reflect experience but also pay greater attention to qualities such as curiosity, openness to new challenges and entrepreneurial thinking, along with an evident interest in changing things.”

Jürg Fedier
Group CFO, OC Oerlikon

2.4. Digital environment

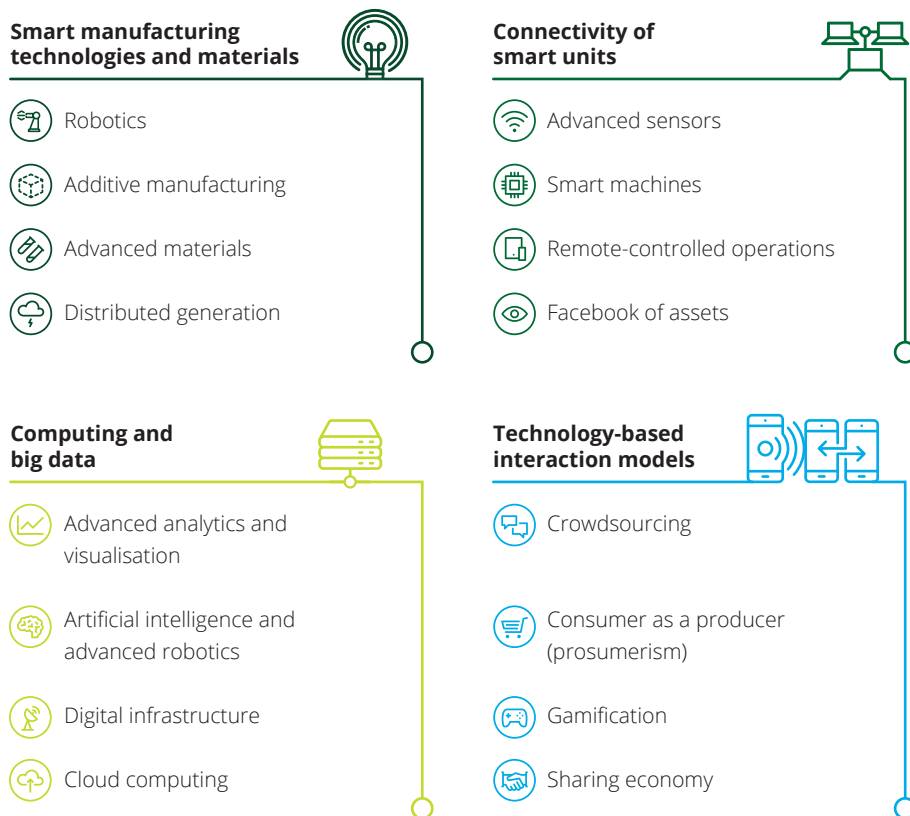
The digital environment is a core aspect of a future-oriented transformation and underpins organisational structure, corporate culture and the employee dimension of a company in equal measure. Digitalisation turns manufacturing on its head. It is the key to industry 4.0 and to exponential growth of companies. Factoring in the digital environment and using digitalisation is the key to remaining competitive.

A majority of companies in the manufacturing sector are, at least in part, still at late 20th century levels of automation and have not yet gone through the fourth industrial revolution of the Internet of Things, services, data and people. Manufacturing is substantially more digitalised in theory than it is in practice. The most important digital trends – those that will significantly differentiate competitor companies in future – include smart manufacturing technologies and materials, the connectivity of smart units, advanced use of computing and big data, and new technology-based interaction models (see Chart 15).

“Digitalisation enables entirely new forms of supplier integration and customised production. However, as far as digitalisation within manufacturing is concerned, there is a gulf between theory and practice.”

Christoph Merle
 Head of M-Industrie eXcellence Team,
 Migros-Genossenschafts-Bund (MGB)

Chart 15. Digital trends¹⁰



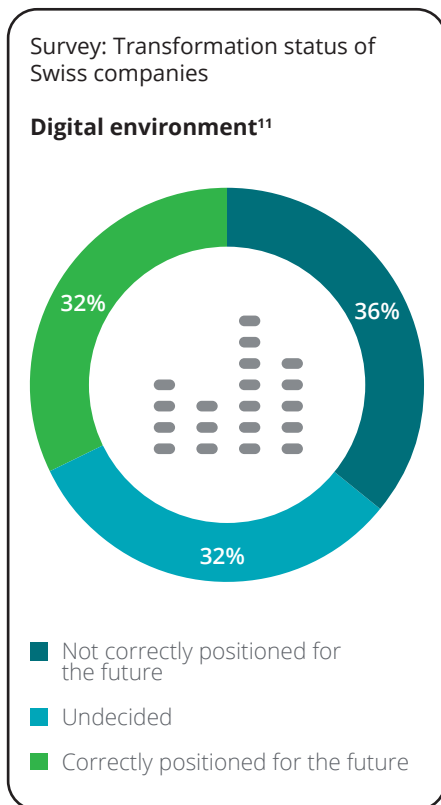
“Everybody needs a digital strategy. Digital has the potential to revolutionise everything from how products are developed and produced to how they are sold.”

Gilles Andrier
 CEO, Givaudan

Many companies do not have a solid basis or the **right digital infrastructure** for this new digital age. To network smart technologies and make meaningful use of new technology-based models of interaction, companies have to adapt their existing IT infrastructure substantially or, in some cases, implement entirely new infrastructure solutions. Many of the companies surveyed note that they are still lagging behind in terms of optimising processes and harmonising systems for the Internet of Things, services, data and people. A variety of processes and systems need to be networked differently for the future and will

“Traditional companies are still very sceptical about digitalisation. They are worried about investing in the wrong places and often have a twin strategy, developing their physical business in tandem with their digital business.”

François Manach
 CFO, Loeb Holding



“Companies need to be agile and adaptable these days. Digital networking of staff (knowhow sharing) enables greater agility and flexibility.”

Rafic Mecattaf
Head of Strategy & Corporate Development, Panalpina

have to be ‘taught’ how to communicate with each other. New communications networks within value chains will also have to be built from scratch. The first stage is to analyse the current situation with regard to processes and systems. The aim is not to superimpose new smart solutions and technologies on top of the existing structure, but to carefully evaluate what needs to be created from scratch as a greenfield project and where change can build on existing systems and networks.

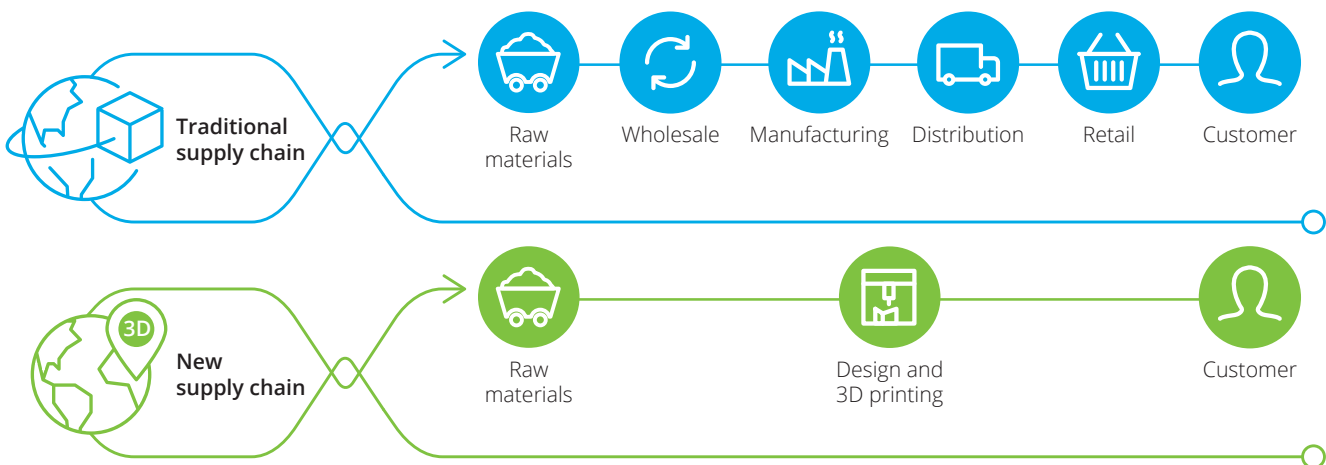
Small and medium-sized companies may well be able to react more rapidly than large companies when it comes to setting up a new digital infrastructure that can be accessed from anywhere. Large companies often need to recalibrate extensive existing IT infrastructures or consolidate and network them. However, cost is a deciding factor for all companies, regardless of size. In the case of large, multinational companies, the frequently fragmented ERP landscape is often a major challenge. Exponential technologies could help here, too, to optimise existing ERP systems at manageable expense and acceptable risk.

For many companies in the manufacturing sector, **leveraging exponential technologies** will be a key feature that distinguishes them from competitors. Exponential technologies are, by definition, technologies that follow an exponential growth pattern. Moore’s Law, which predicts that the performance of microchips, bandwidth and computers doubles every 18 months and is therefore based on exponential growth, also applies to many other areas of technological development. Sensor technology, additive manufacturing/3D printing, artificial intelligence, robotics, drones and nanotechnology are just a few examples of such exponentially growing technologies. These can accelerate, decentralise and introduce flexibility to industrial processes across value chains in a variety of ways. Many of these technologies are not new – in fact, many were invented 20 or 30 years ago – and it is only the massive increase in computing performance (Moore’s law), the reduction in cost and miniaturisation (particularly of sensors) that has enabled their broader roll-out across the manufacturing sector. Because of their slow development curve, new technologies are often initially over-estimated and can cause concern. However, once exponential development takes off, the influence of these technologies tends to be underestimated, with companies missing out on disruptive changes in the market. Over the next few years, many exponential technologies will be leaving their initial linear growth paths and will grow exponentially.

3D printing will revolutionise the spare parts market in future. Moreover, complexity and customisation cost nothing. This enables new business models to be developed that have so far not been conceivable. Other sectors will also make use of this trend – for example the transport industry – and will offer new service models. Collaborative robots and advanced sensors can be used to increase efficiency, agility and quality control in production, for example by using scanners to replace traditional measuring methods, and to facilitate remote monitoring and service diagnoses. Using advanced analytics to analyse big data creates transparent product pricing, opens up new areas of use and predictive customer acceptance, and increases sales. A higher quality of data and better interpretation facilitates entirely new forecasting capacity. In addition, artificial intelligence enables simulations in the development phase and advanced robotics enable production methods and processes that were previously inconceivable. In administrative areas, meanwhile, software robots and artificial intelligence help to simplify processes.

Digital technologies sit outside traditional business models, forcing all those involved in the value chain to rethink their role. Traditional players, such as raw materials suppliers, wholesalers, manufacturers, logistics companies and retailers become obsolete or else their role changes radically. Value chains are being reconfigured and will follow new rules in future. In the example of 3D printing, design and printing can happen either in the same location or separately (e.g. printing of spare parts at the customer). If 3D printing is outsourced, only a logistics provider for the last mile will be necessary (see Chart 16).

Chart 16. Example: 3D printing and the new supply chain



In traditional industries, there is both interest in and scepticism towards wide-ranging digitalisation. Many companies are uncertain how to proceed because they do not yet know where the digitalisation journey will take their organisation, their employees and their customers. Some sectors will come under attack from digitalised competitors outside the sector more rapidly than others, meaning that existing market mechanisms are being undermined. This requires a rethink in business management and business development. In future, successful companies will need to continuously monitor their environment for changes of this kind and test existing business practices, assumptions and systematic cognitive distortions; they must be ready for surprises and willing to rapidly change.

Companies will have to pay particular attention to one threat represented by digitalisation – cyber risk. Cyber risk includes not only industrial espionage, confidentiality of customer data and ethical concerns about using data collection, but also more concrete issues, such as cyber-security monitoring, vulnerability testing and potential hacking or preventive analysis of the likelihood that monitoring systems will fail. This is not just about protecting individual companies, it is also about protecting all those involved in a company's ecosystem.

Alongside the use of exponential technologies, **new digital interaction models** are a further key component of future competitive success. Greater collaboration with suppliers and customers, for example with regard to innovation, is facilitated by crowdsourcing – input from a potentially unlimited number of specialists who may be based anywhere in the world. Global customer preferences and requirements become more tangible and can be incorporated into development and production processes. At the same time, customised solutions and mass customisation become possible. Electronic processes and smart connections mean that customers can be integrated right across the value chain and consumers become producers in their own right. Many of the companies surveyed have recognised this and want to promote customer integration as part of their digitalisation strategy by using customers as sources of ideas and co-developers.

“Digitalisation will have different impacts on every industry. Some industries will become completely digitalised and forego their traditional business models, whereas others will benefit from digital change of specific areas, for example in supply chain or sales.”

Alexander Wessels
CEO, Archroma

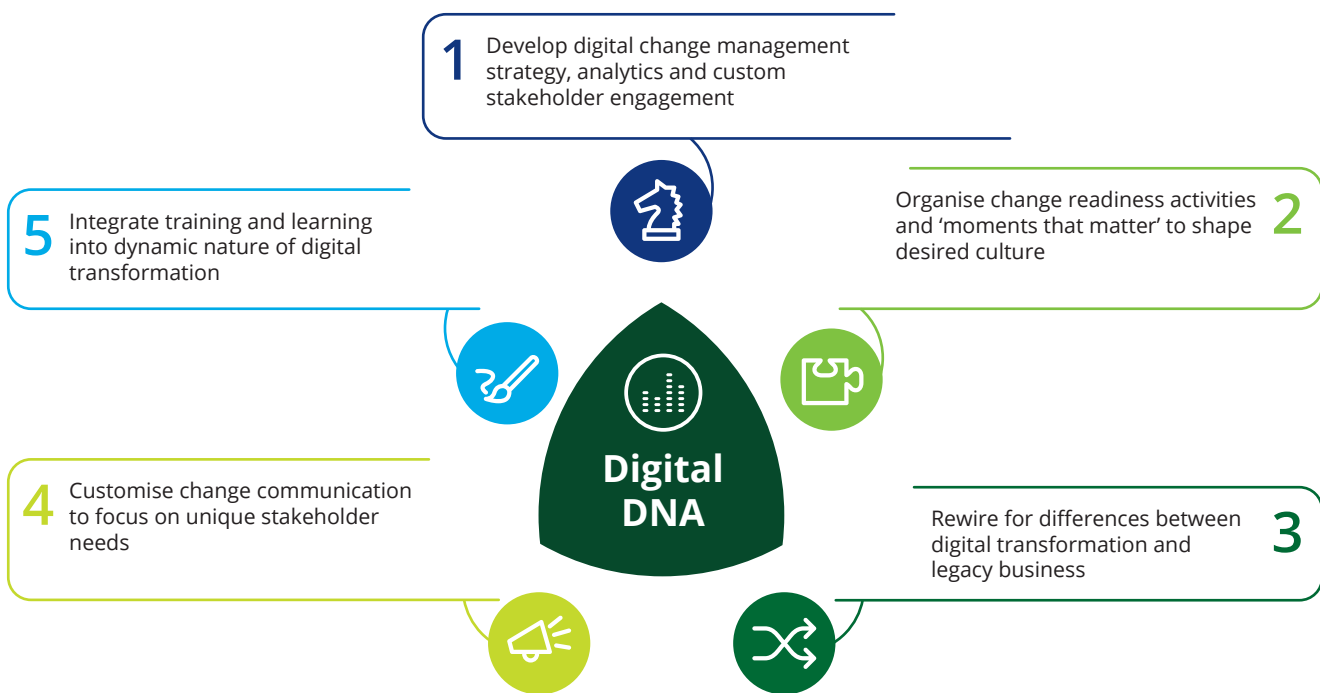
“Just as Airbnb and Uber are challenging the service sector, manufacturing is going to have to compete with entirely new, technology-based business models in future. Many traditional manufacturing companies aren’t even aware of that yet.”

Jürg Fedier
Group CFO, OC Oerlikon

Both customers and suppliers will be much better informed in the digital age, so in many industries the traditional roles of buyer and seller are changing. Gamification – the integration of design elements and principles of gaming into the supplier, customer and employee experience – is one option that offers interesting opportunities. Such applications enable innovation in marketing, customer loyalty and employee motivation. However, the majority of companies surveyed still have some catching up to do in this area. Moreover, the growing popularity of the sharing economy in the service industry is transforming customer interactions in manufacturing, too. New forms of ownership, use, trade and leasing of products and services are gaining prominence. For companies who want to remain competitive, this represents a challenge to develop new business models that are technology-based or technology-enabled.

Successful digital transformation requires a wide-ranging digital change approach that encompasses organisational, cultural, personal and technological aspects (see Chart 17).

Chart 17. Digital transformation approach



Companies need to fulfill three requirements to achieve digital leadership. First, **change must be driven from the top of the company** to create the necessary credibility and momentum for a successful change process. Senior management, under the leadership of the CEO and supported by the board must take sole responsibility for this; it is not a responsibility that can be delegated. Second, **digitalisation must be viewed as a core objective right across business and functional areas**; this is the only way to achieve transformation within a two- to three-year time horizon. Finally, the **relationship between digital transformation and concrete business goals must be protected**; it is essential that freedom to develop the business is not confused with a lack of responsibility for profit and loss.

3. Checklists for the transformation of Swiss companies

The checklists below are intended as a collection of ideas, and completing them is intended to give your company an initial impetus for transformation and provide some guidance for implementation. If you are unable to give a clear positive answer to a question, you will find some initial approaches in the tables.

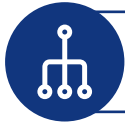
Organisational structure checklist



Does your organisation promote the search for new and innovative solutions?

If not, consider the following approaches.

<input type="checkbox"/>	Scaling on the edge of business activity	Putting processes in place for scaling on the edge of current business activity; creating small, self-led units or teams and providing separate budgets with adapted performance indicators for the development of new, innovative solutions/business models
<input type="checkbox"/>	Engaging in corporate venturing	Evaluating the areas within the company where corporate venturing is meaningful and complements existing business; deciding how corporate venturing should be organised (e.g. investment, joint ventures); using new approaches to evaluate the progress and potential for success of corporate ventures
<input type="checkbox"/>	Using open business models	Opening up company boundaries; cooperating more closely with suppliers, customers, other companies, universities and further partners; using swarm intelligence/crowdsourcing and open innovation; rolling out open business models to all parts of the value chain
<input type="checkbox"/>	Embarking on new partnerships	Defining partnership types (e.g. cooperation arrangements, alliances, joint ventures); defining the scope of information exchange; creating trust and commonality
<input type="checkbox"/>	Engaging in innovation beyond the product	Evaluating scope for innovation across the value chain (including the profit model, networks, structures, processes, services, channels, brands and customer engagement); defining a clear innovation strategy; creating a culture of innovation
<input type="checkbox"/>	Promoting entrepreneurial thinking	Identifying/promoting internal talent; training all employees to think and act entrepreneurially; greater use of mixed teams/departments and networks; where appropriate, importing entrepreneurial talent (this point also applies to the areas of corporate culture, employees and digital environment)
<input type="checkbox"/>	Making use of employee diversity	Sending clear signals and raising awareness when advertising for and recruiting new employees; identifying hidden potential (e.g. older workers and women); using the full range of employee diversity for the benefit of the company
<input type="checkbox"/>	Breaking up 'silos' and boosting interdisciplinarity	Breaking up organisational and organically developing 'silos' and instigating interdisciplinarity to promote sharing of ideas and more rapid decision-making; close collaboration beyond business areas (e.g. having R&D staff accompany sales staff on customer visits or trade fairs)



Is your organisation able to react rapidly to changing market conditions (agility and flexibility)?

If not, consider the following approaches.

<input type="checkbox"/>	Introducing flat hierarchies	Evaluating existing hierarchical levels; reducing levels and introducing flat hierarchies but with clear responsibilities; enhancing responsiveness by introducing cross-functional teams
<input type="checkbox"/>	Reducing complexity	Reducing complexity by means of streamlining processes and reducing drivers of complexity (e.g. number of SKUs, processes exceptions); putting structures in place that allow latitude; learning to manage complexity instead of trying to control it
<input type="checkbox"/>	Making use of flexible infrastructure	Evaluating existing corporate processes and services with regard to their potential for outsourcing, joint ventures, partnerships, cooperation agreements and alliances; closer cooperation with suppliers, customers and partners
<input type="checkbox"/>	Developing anticipatory planning systems	Close interaction with relevant stakeholders (including customers, suppliers and internal cross-departmental coordination)



Do you have the right approaches to measuring and promoting your organisation's efficiency?

If not, consider the following approaches.

<input type="checkbox"/>	Defining cash flow-oriented KPIs	Taking stock of existing key performance indicators (KPIs) and evaluating new KPIs; phasing in a reorientation to cash flow drivers; considering KPIs and metrics across company boundaries using big data tools and platforms
<input type="checkbox"/>	Incentivising business partners	Making a clear analysis of the benefit generated for business partners and of what the company wants from business partners; creating a climate of trust through open, proactive and consistent communication; promoting cooperation as a holistic end-to-end supply chain beyond company boundaries
<input type="checkbox"/>	Incentivising employees	Challenging existing motivational factors (e.g. money, career prospects, training) and complementing these with new incentives (e.g. meaningful activities, further opportunities for development, recognising the crowd, the working environment, a workplace that fosters creativity, work-life balance)

Corporate culture checklist



Have you defined the cultural values that determine your company's identity?

If not, consider the following approaches.

<input type="checkbox"/>	Defining the company's raison d'être	Creating a clear understanding of the benefit created for the environment and the customers (rather than what products the company is selling its customers); defining core goals for the company; identifying partners and stakeholders who will help achieve those goals
<input type="checkbox"/>	Defining clear basic values	Identifying and determining the company's basic values, such as principles, patterns of behaviour, internal values (including trust, openness, sincerity, motivation and responsibility) and external values (including customer orientation, quality, reliability and innovation); integrating these values into the company's vision and internal mission statement
<input type="checkbox"/>	Creating trust	Coordinating the company's culture of leadership and management strategy with trust-building; deploying measures to increase trust (including removing fear of penalties, long-term incentives, self-organisation and self-responsibility); having open communication with and involving all employees; redefining the relationship between measures to build trust and monitoring systems; ensuring understanding of cultural differences
<input type="checkbox"/>	Creating a mindset of change	Promoting a mindset that welcomes/encourages change and supports agility; instigating processes for identifying and analysing new economic, technological and social trends; embedding the basis of decision-making so that it facilitates responses to such trends
<input type="checkbox"/>	Encouraging lifelong learning	Creating a mindset or a climate of continuous self-improvement; training for employees (continuing training, workplace training, reverse mentoring); focusing on development of new skills, particularly in the area of technology



Are these cultural values actually enacted and cultivated in your company?

If not, consider the following approaches.

<input type="checkbox"/>	Promoting management as role models	Training of management in corporate values, and in how managers should work with each other, with employees and with customers; ensuring that management puts the company's values into action
<input type="checkbox"/>	Raising employees' awareness	Training employees in corporate values and in how they should work with each other and with customers (e.g. through a combination of attractive events, short workshops and regular reminders of the company's cultural values)
<input type="checkbox"/>	Creating awareness	Creating awareness of wrong cultural developments and developing systems that help identify and eliminate them



Do these cultural values support you in making use of your employees' creative and entrepreneurial skills?

If not, consider the following approaches.

<input type="checkbox"/>	Promoting ownership and autonomy	Active promotion of and training in entrepreneurial thinking/action for all employees by creating space for entrepreneurial activity and flat hierarchies; using external coaches; where appropriate, importing entrepreneurial talent
<input type="checkbox"/>	Creating spaces for creativity and experimentation	Embedding a culture of innovation in corporate culture; defining innovation guidelines; actively promoting creativity by defining space as part of the job profile; systematic promotion/training for all employees in 'thinking outside the box'; learning from start-ups and visits to other companies, research institutes, etc.
<input type="checkbox"/>	Facilitating continuous experimentation / 'fail forward'	Fostering continuous experimentation and learning from mistakes in a passionate pioneer culture; promoting a culture of failure (including living by example of management and failure as a quality criterion); using flat hierarchies and constant communication

Employee dimension checklist



Is your company an attractive employer?
If not, consider the following approaches.

<input type="checkbox"/>	Facilitating meaningful work	Calculating the benefit to the company, sustainability, social responsibility etc.; communicating these both internally and externally
<input type="checkbox"/>	Consistently promoting employees	Facilitating scalable learning (training/continuing training and developing new skills); facilitating ownership and self-responsibility; taking part in hackathons, business incubators and university funding programmes
<input type="checkbox"/>	Providing individualised working models	Facilitating part-time working, flexitime working, and annual or lifetime working time models; making use of new employment models based not on time but on output, for example ROWE (results-only working environment); training for employees in new employment models
<input type="checkbox"/>	Making use of the company's brand/branding	Consistent external communication of the company's basic values and product and service quality through social and professional networks, the media, universities, etc.
<input type="checkbox"/>	Facilitating situational workplace design	Assessing mobility solutions, interactive workspaces and other digital technologies; providing flexible workplace models, such as home office models, desk sharing, shared office/co-working; defining the levels, departments and roles suited to particular workplace design solutions



Do your employees have the skills to meet customers' needs efficiently and effectively?
If not, consider the following approaches.

<input type="checkbox"/>	Recruiting in a customer-oriented way	Setting up specific systems, processes and priorities for recruiting staff with a customer orientation
<input type="checkbox"/>	Mentoring	Informal and formal mentoring; reverse mentoring; setting up specific mentor/mentee programmes aimed at customer orientation
<input type="checkbox"/>	Increasing employee diversity	Defining the ideal future employee mix with regard to age, gender, culture and skills; identifying hidden potential (e.g. older workers and women); making use of overall diversity as an advantage for the company
<input type="checkbox"/>	Combining experience with potential	Establishing teams comprising experienced employees and staff with only limited experience
<input type="checkbox"/>	Coordinating skills development and experience with soft skills	Balancing skills and experience (digital and functional expertise) with soft skills (social skills and creativity)



Are your employees' skills developing as rapidly as market needs?
If not, consider the following approaches.

<input type="checkbox"/>	Making use of talent management	Establishing a clear talent agenda; using new digital technologies to implement this talent agenda; identifying talent and recruitment for potential, rather than current skills levels
<input type="checkbox"/>	Developing new approaches to initial and continuing training	Expanding provision for scalable learning to equip employees for the future (e.g. competency-based learning, establishing knowledge platforms, making use of external coaches and learning from start-ups/company visits)
<input type="checkbox"/>	Creating a mindset of curiosity	Promoting the right mindset for change that supports agility; promoting the skills needed to try out new things, in particular against the backdrop of the digital revolution

Digital environment checklist

Do you have a digital environment that promotes growth within your company?

If not, consider the following approaches.

- | | | |
|--------------------------|--|--|
| <input type="checkbox"/> | Identifying complementary digital partners | Developing a strategy for identifying complementary digital partners; segmenting types of partners and partnerships; creating clarity with regard to both internal benefits (e.g. improved efficiency and productivity) and external benefits to partners (e.g. new products, the customer experience, closeness to customers, etc.) |
| <input type="checkbox"/> | Integrating digital partners into the value chain to create added value | Assessing the coordination/coverage of digital partners (suppliers, customers, universities, technology partners) with regard to end-to-end value chains |
| <input type="checkbox"/> | Systematically checking the overall benefit to the company | Regularly assessing the overall benefit of the digital environment to the company; defining KPIs to measure this benefit |
| <input type="checkbox"/> | Ensuring continuing digital development | Ensuring that the company/digital environment keeps pace with the market; putting in place processes to identify and analyse new technological trends |

Does your company recognise and make use of the scope of its digital environment?

If not, consider the following approaches.

- | | | |
|--------------------------|--|--|
| <input type="checkbox"/> | Establishing a digital infrastructure | Evaluating existing digital infrastructure with regard to future potential; expanding and/or creating digital infrastructure and relevant processes for comprehensive use of the digital environment |
| <input type="checkbox"/> | Driving forward digital networking | Evaluating existing networking with regard to future potential; ensuring wide-ranging networking of physical and digital infrastructure (including greater use of online and offline platforms, using customer data for new offers/pricing models, greater data sharing across the value chain); concerted networking of employees across hierarchical levels, departments and roles |
| <input type="checkbox"/> | Increasing automation to improve quality and efficiency | Evaluating advanced sensors, particularly as a means of monitoring efficiency and quality; introducing collaborative robots in production systems; using software robots in administrative areas and deploying remote monitoring and service diagnostic tools |
| <input type="checkbox"/> | Creating awareness of digital potential | Raising awareness of the scope and potential of the workforce; identifying exponential technologies beyond the immediately obvious ones (e.g. entering new sectors and customer segments and making scaling simpler) |

Can your company control the risks posed by close networking with the digital environment?

If not, consider the following approaches.

- | | | |
|--------------------------|--|--|
| <input type="checkbox"/> | Preventing cyber-crime | Protecting infrastructure and processes against cyber-crime; putting cyber-security monitoring measures in place; testing vulnerability and potential digital attacks (hacking); preventive analysis of the likelihood that monitoring systems will fail |
| <input type="checkbox"/> | Protecting IP and customers' data | Putting security solutions in place to protect intellectual property and customer data |
| <input type="checkbox"/> | Reducing counterparty risk | Taking protective measures against insolvency or changes in partners' strategy (e.g. early warning systems, having multiple partners and contractual safeguards) |

Endnotes

- ¹ Question: In your view, how strongly will the following risk factors negatively influence your company's growth over the next three years? Deloitte survey of 393 companies, 2015. See also: Growth opportunities. Strategies for Swiss manufacturing companies, Deloitte, 2015. White Paper on Swiss Manufacturing Industry. Challenges and prospects in global competition, Deloitte, 2012.
- ² Question: In your view, how strongly will the following strategies help your company to grow over the next three years? Deloitte survey of 393 companies, 2015. See also: Growth opportunities. Strategies for Swiss manufacturing companies, Deloitte, 2015.
- ³ Question: What do you think are the three most important characteristics of a successful future-ready organisational structure? Deloitte survey of 50 companies, 2016.
- ⁴ Question: Do you think that in terms of your organisational structure, your company is correctly positioned for the future and able to cope with the current challenges, make use of new opportunities for growth and remain competitive? Deloitte survey of 50 companies, 2016.
- ⁵ Innovation reinvented. Challenges and solutions for Switzerland's manufacturing industry, Deloitte, 2013. See also Larry Keeley: Ten Types of Innovation. The Discipline of Building Breakthroughs, Wiley, 2013. <http://www.doblin.com/tentypes>.
- ⁶ Question: What do you think are the three most important characteristics of a successful future-ready corporate culture? Deloitte survey of 50 companies, 2016.
- ⁷ Question: Do you think that in terms of your corporate culture, your company is correctly positioned for the future and able to cope with the current challenges, make use of new opportunities for growth and remain competitive? Deloitte survey of 50 companies, 2016.
- ⁸ The workplace of the future. How digital technology and the sharing economy are changing the Swiss workforce, Deloitte, 2016.
- ⁹ Question: Do you think that in terms of people, your company is correctly positioned for the future and able to cope with the current challenges, make use of new opportunities for growth and remain competitive? Deloitte survey of 50 companies, 2016.
- ¹⁰ Industry 4.0. Challenges and solutions for the digital transformation and use of exponential technologies, Deloitte, 2014. See also: The sharing economy: Share and make money! How does Switzerland compare? Deloitte, 2015. Man and machine: Robots on the rise? The impact of automation on the Swiss job market, Deloitte, 2015. Structural change creates jobs. How automation will impact employment in Switzerland, Deloitte, 2016.
- ¹¹ Question: Do you think that in terms of your digital environment, your company is correctly positioned for the future and able to cope with the current challenges, make use of new opportunities for growth and remain competitive? Deloitte survey of 50 companies, 2016.

Contacts



Dr Ralf C. Schlaepfer
Managing Partner
Member Global Consumer &
Industrial Products Executive Council
+41 (0) 79 402 20 30
rschlaepfer@deloitte.ch



Konstantin von Radowitz
Partner
Head Consumer & Industrial
Products Switzerland
+41 (0) 79 773 48 14
kvonradowitz@deloitte.ch



Markus Koch
Partner
Head Strategic Development
Consumer & Industrial Products
+41 (0) 79 773 48 14
markkoch@deloitte.ch



Dr Philipp Merkofer
**Consumer & Industrial
Products Research**
+41 (0) 58 279 60 46
pmerkofer@deloitte.ch

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