What if employment as we know it today disappears tomorrow?

A perspective on the working world in Germany, Switzerland and Austria

Executive summary | 2018
Foreword

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The world is undergoing a fourth industrial revolution, which brings with it the process of digitalization and a reshaping of manufacturing and logistics, known colloquially as Industry 4.0. The power and capabilities of new technologies are changing the nature and shape of our economy and lives. The possibilities are endless, from cars that drive and park themselves, to products produced on location through 3D printing and wearable technology that is controlled by our thoughts to name a few.

However, while there is consensus that drastic changes are happening in economies and societies, there is considerable debate over their impacts on labor markets.

Digitalization, automation and artificial intelligence - in short, factors that enable tasks traditionally performed by humans to be profitably replaced by machines - are accelerating technical development and business adoption. All these are contributing to a change in how work is done by reducing the need for labor in traditional economic sectors.

In our new study *What if employment as we know it today disappears tomorrow?* we identify the challenges facing our workplace in Germany, Switzerland and Austria (GSA) today and explore ways in which we can address them, amplify what we are hearing in the market and share our views on how to address those challenges.

The following pages provide an overview of our key takeaways and recommendations for each country. Feel free to explore the report in detail, specifically the plausible scenarios for GSA and the traits that each displays.

Of course, none of the suggestions incorporated in the study are necessarily quick or simple fixes to the scaling challenges that our workplace faces. However, they may be a good starting point to creating the transition to a brighter future for GSA, so that we can together leave a lasting legacy.

With our study, we would like to start a conversation focused on shaping a long-term sustainable future, human values and the value of purpose in business and government and I invite you to participate in it.

Join the conversation #FutureWorkNow
Executive Summary

In our study *What if employment as we know it today disappears tomorrow?*, we examine the prospects for Germany, Switzerland and Austria to 2030 in relation to the adoption and economic consequences of Industry 4.0 and digitalization.

To clarify and quantify the economic changes likely to occur within the region, our scenario planning methodology, combines the macro drivers listed below and interviews with business and academic leaders to distill key findings about how each country may respond to the Fourth Industrial Revolution by 2030.

### Germany

**Where are the professionals?**
The German labor force is expected to decline by approximately 3.5 million professionals between 2015 and 2030, and questions of unemployment may be forgotten in a search to fill empty jobs.

**Decline of the auto sector**
Across all scenarios, the automotive manufacturing sector sees dramatic declines, recording a drop of at least 50% in employment in every instance.

**Support for hidden champions**
(Small and medium-sized enterprises)
However, in a country with an expected tight labor market, SMEs that do not adopt new technologies will find themselves severely constrained to meet customer demand.

### Switzerland

**Bright future for Swiss chemicals**
Even using the most conservative estimates, the chemicals industry, which includes the Swiss life science and pharmaceutical sectors, will experience 30% growth in GDP between now and 2030.

**Banks continue to grow**
While there are concerns that some jobs will fall away or be replaced by machine learning, our econometric scenarios show that the finance industry is set to grow as a result of digitalization.

**Governments cannot remain idle**
Currently, the Swiss Government is providing funding streams for Industry 4.0 technologies, but has not yet brought together public and private sector executives to discuss appropriate policy responses. This could slow development of the country’s technological infrastructure.

### Austria

**The Germany effect**
Germany is the country’s largest trading partner, accounting for more than 35% of imports and less than 30% of exports; this will tie Austria’s performance to Germany’s future digital infrastructure.

**Clustering outweighs access to talent**
Chemicals and life sciences sectors respond positively to a clustering effect, even in a scenario where the right skillsets are assumed to be scarce.

**To Vienna go the spoils**
Vienna and the surrounding regions in Lower Austria will undoubtedly be the biggest beneficiaries of Industry 4.0. The capital is poised to become an even larger economic region within the country.

### A glimpse of the countries’ key findings

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Dystopia or utopia?

Finding our way to the Future of Work

Individuals

The Future of Work is often portrayed as a choice between two extremes: a dystopia of unemployable, incorrectly-skilled citizens unable to find a job, or a utopia of universal basic income built on a foundation of artificial intelligence doing all necessary work. This study is not based on the premise that there will be such a stark shift between now and 2030.

However, it does outline rapid changes. In Germany, we expect employment in automotive manufacturing to shrink by up to two-thirds, in Switzerland we expect there will be at least 30% growth in the GDP share contributed by the life sciences and chemicals industries.

The idea of work needs to be reimagined. Professionals can no longer regard education as a phase of life that occurs before entering the workforce. Continuous education and the ability to adapt to new tasks and processes will be crucial.

Individuals should also expect that a job on the market today may no longer exist tomorrow; preparing for a new work path should be a constant quest. Millennials and people entering the workforce should explore different careers, in order to gain exposure to diverse fields of work.

Perhaps most importantly, employees and employers should not see themselves solely as someone who just does a job, or performs a task – tasks can be automated. Individuals must focus on human competencies that cannot be replaced, such as empathy, creativity, interlaced thinking and the ability to inspire.

Companies

Technology allows skills to be linked to jobs. This creates a more diverse workforce that can work wherever and whenever it is convenient in order to drive a project forward. At the same time it facilitates the unlocking of silos, empowering employees to input into a broader range of projects that become correspondingly dynamic and consultative with the introduction of new and diverse perspectives. It will be crucial for companies to shift to a culture of permanent learning to ensure that professionals are able to make best use of the latest technology in their work.

Established firms may struggle to overcome the hurdles of legacy systems and those who tackle the problem early on are most likely to succeed. In Central Europe, a fragmented landscape of technology architectures and IT systems makes it very difficult to adapt and transform with agility. This landscape lends itself to short-term optimization, rather than more fundamental transformation, and has allowed disruptors to gain market share at the expense of slow incumbents.

Existing businesses must give employees the space to simulate the start-up environment in order to prevent them from being trapped in legacy business models. This must include the ability to fail in a safe, repercussion-free, way in order to support the spirit of innovation.

However, SMEs will also face hurdles in more broadly adjusting to the impacts of the Fourth Industrial Revolution. Access to either technology itself or the capital to invest in technology is crucial to enable to adoption of new systems. SMEs with tight margins will have little room for error in picking which technological wave is the one to ride but an overly risk-averse perspective will lead to companies missing out on the opportunities that these technologies bring. Firms must invest in creating a process for scaling new technologies, in order to maximize the value from their investment and protect productivity gains.
At the sector level, the Future of Work will create winners and losers. The automotive manufacturing, through the introduction of self-driving cars, may lose as much as 70% of total automotive demand by 2030. Retail and manufacturing are also likely to see disruption and job losses. Health, finance and IT are sectors that are likely to expand.

Even if businesses fully and proactively embrace technology, there are still considerable perils to future operations. Algorithmic discrimination and data leaks, for example, have already caused embarrassing situations requiring both apology and testimony to governments. Nevertheless, businesses must tackle these consequences and be willing to grapple with fundamental challenges internally before a malfunction, leak or scandal requires a far more costly reconsideration. Where organizations and their workforce engage with technology head-on, ownership will belong to everyone involved, leading to a more committed and responsive workforce.

In all three countries, the technology facilitating the Future of Work will require the active participation of civil society and government executives. While there is an understandable tendency to look for new solutions to the challenges posed by today’s market environment, a more effective strategy is to adjust existing processes and institutions, such as unemployment and social security, to equip professionals with additional skills and direct them where their skills are most needed.

Education at all levels, too, must be brought into the digital age, right through to continuous professional education. Regulations must be enacted to address new problems - data privacy being one of the most important. Access to large data sets is critical for the application of current digital technologies to create and commercialize new products. Being unable to capture this data could prevent the emergence of a self-driving car sector or hold back the development of artificial intelligence-enabled medical diagnostic programs. Yet not protecting this data adequately could expose citizens’ most sensitive information to hackers and criminals.

As each country responds to the challenges of the Future of Work and balances all that it must consider in its decision-making processes, its economy will be developing in reaction to those changes, with sectoral shifts likely to develop in each of the three national economies. The IT industry is set to become an important economic sector and a driver of future growth. This brings with it new demands, particularly in terms of infrastructure and skills. The total number of medium-skilled jobs will drop as the total number of highly skilled jobs rise. This means that there will be an essential transformation of society, creating new demands. Countries able to meet those demands in the fastest and most efficient manner, will be able to leverage the industry's benefits for more growth in other sectors.
Action items

Society as a whole needs to act

Individuals

- Enter the workforce with an open mindset
  The Future of Work is more flexible and less permanent. Employees must be willing to ask questions about how each job might contribute to their work journeys. The key for employers is to understand that they will need to appreciate the employee experience and what individuals can gain from having a relationship with the firm.

- Think beyond current business competencies
  It is important for business leaders to be able to think about big questions that may intersect with mobile workplaces, and explore how new technologies may lead to negative consequences. Philosophy, history and psychology should be considered essential in completing a business education.

- Think about portfolio careers
  Obtaining skills during the first 10 years in the workforce is a critical component of job flexibility. Switching jobs and careers frequently and adapting to changing work environments allows an individual to become more agile.

Companies

- Focus on mindset and purpose
  Research by the EY Beacon Institute indicates that a well-articulated and integrated organizational purpose drives innovation and helps individuals and teams work across silos in order to pursue a single compelling aim.

- Shift to permanent learning
  As technology develops at an increasing rate, employee knowledge becomes outdated at a corresponding pace. Firms must shorten the time between the intervals when employees receive training on the latest technology to ensure that their employees - their human capital - is collectively taking full advantage of the possibilities of physical capital.

- Create a process for scaling technology
  Industry 4.0 will arrive in phases, in ‘real-time’, as technology is invented and brought to market. Properly testing that technology and formulating a process for wider implementation will help firms maximize the value from their investment and help protect productivity gains.

Employees have to ask themselves how each job contributes to their work journey.
There is a need to have a society-wide conversation about how to distribute value created by artificial intelligence.

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Organizations and governments

- **Regulatory frameworks**
  In the short term, firms and governments should focus on creating formal processes by which new automation technologies can be tested and brought to market. It is important to have a regulatory process for this and not have it done in a vacuum.

- **Foster a society-wide conversation**
  There needs to be a conversation throughout society about how to distribute value created by artificial means. Should this be seen as a resource for the country (as we treat mineral deposits) or as the profits of private owners (as we generally treat factory equipment)? This will be especially important as value creation shifts from individuals to technology.

- **Update unemployment insurance and social security**
  While Finland and Canada are currently testing forms of universal income, they are not likely to be widely adopted in the near future. Instead, existing social programs such as unemployment insurance, should be updated to focus on retooling professionals with additional skills and directing them into areas where the jobs are located.

If you have enjoyed reading our overview, we would invite you to follow the conversation on our microsite http://www.de.ey.com/FutureWork. Additional research material will be published and a number of roundtable events are planned, so please join the conversation.
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