Innovation in the private sector in Switzerland

Summary version of the report commissioned by the State Secretariat for Education, Research and Innovation (SERI) from KOF Swiss Economic Institute (ETH Zurich) entitled "Innovation in the business enterprise sector. Results of the Innovation Survey 2017".

Bern, October 2018

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Confederation

Federal Department of Economic Affairs,
Education and Research EAER
State Secretariat for Education,
Research and Innovation SERI

In its "SERI dossiers" collection, SERI, the State Secretariat for Education, Research and Innovation, publishes prospective studies, research results and reports on topical issues affecting education, research and innovation. Since these publications are available to a large audience, they contribute to the debate surrounding these issues. They must not be deemed binding on the State Secretariat for Education, Research and Innovation.

ISSN 2296-3847

Client:
State Secretariat for Education, Research and Innovation, SERI

KOF project manager:
Prof. Martin Wörter, T +41 44 632 51 51, woerter@kof.ethz.ch

Editor:
Aline Yazgi, aycom sàrl

Dear reader

Research and innovation are highly valued in Switzerland. Both large international corporations and small and medium-sized businesses are constantly coming forward with new products, services and processes. In 2015, they invested about CHF 16 billion in research and development – two thirds of all the money spent in this area in Switzerland. Such investment leads to the creation of jobs, promotes careers and generates prosperity.

Innovative spirit and entrepreneurialism cannot be decreed from on high. They require favourable conditions and the right environment. This includes a well-developed education system, excellent universities, the targeted use of funding instruments for research and innovation, and networking and partnerships between public and private players, both at home and abroad.

And these favourable conditions can only be established if a good basis is available on which to make decisions. This is provided by the Swiss Economic Institute KOF at the ETH Zurich, the only institute in Switzerland to produce a survey into the innovation activities of Swiss businesses. First conducted in the mid-1990s, their survey also provides data on knowledge and technology transfer between academia and the private sector and describes the current state of digitalisation in the Swiss economy.

These figures show that Switzerland continues to maintain its position as one of the most innovative countries in the world. However, the gap is closing. SMEs in particular need to invest more in research and development. They are supported in this by the universities of applied sciences, the recently reformed Swiss Innovation Promotion Agency Innosuisse, and international research and innovation funding programmes such as EUREKA and Horizon 2020.

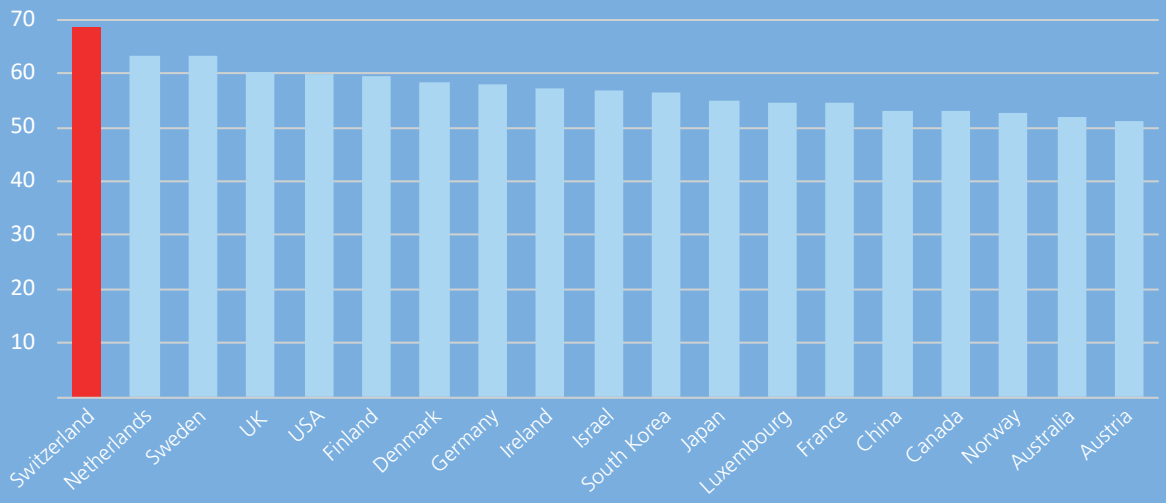
I would like to extend my thanks to all those who are working to make Switzerland an innovative country, now and in the future.

Federal Councillor Johann N. Schneider-Ammann
Head of the Federal Department of Economic Affairs, Education and Research

OVERVIEW

The graphics below supplement the data from the KOF Innovation Survey by providing a global overview of innovation in the Swiss business enterprise sector.

With a total score of 68.4, Switzerland once again tops the rankings in the United Nations' Global Innovation Index (GII) for 2018.

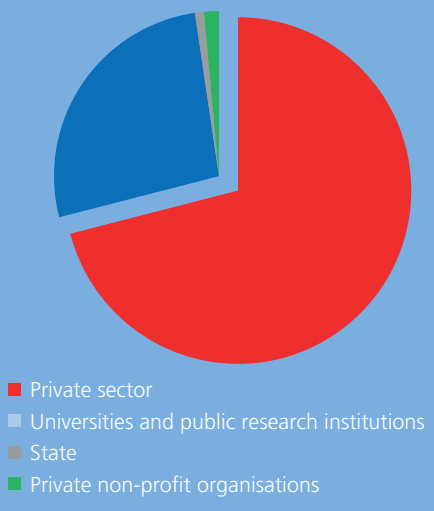


7,5%

of companies in Switzerland made use of public innovation funding in 2016 (4.2% in 2010, 9% in 2014).

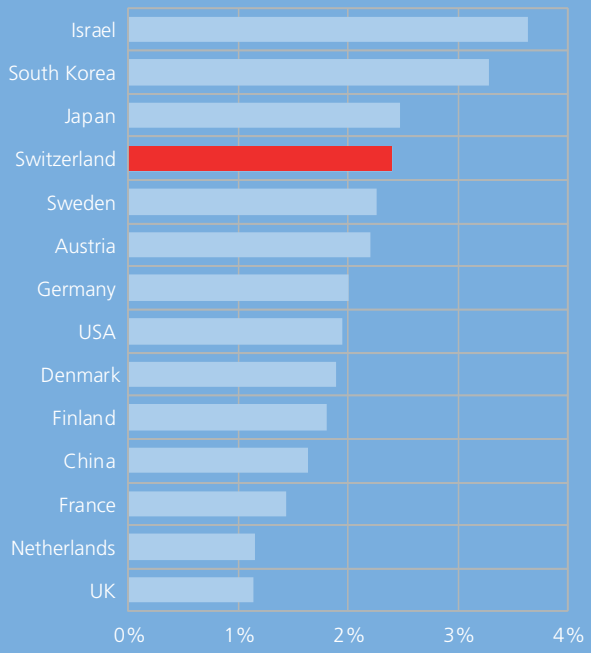
Source: KOF Innovation Survey 2016

Private companies account for 71% of R&D expenditure in Switzerland



Source: OECD MSTI

Compared with companies in other countries, Swiss enterprises invest heavily in R&D (2.4% of GDP in 2016).



Source: OECD MSTI

CHF 15.7bn

Companies in Switzerland invested a total of in research and development (R&D) in 2015 – almost twice as much as in 2000 (CHF 7.9bn).

Source: FSO: Research and Development (R&D) in the Business Enterprise Sector

CHAPTER 1

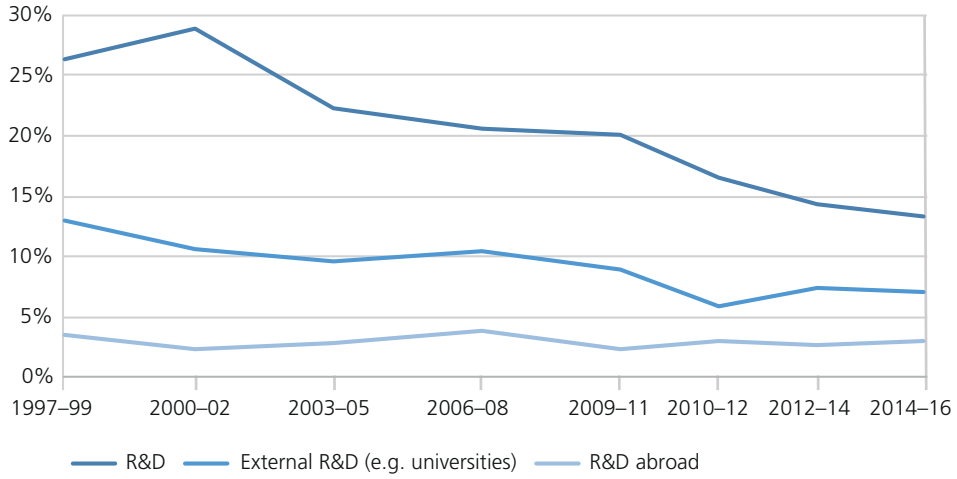
Several indicators point to a deterioration in innovativeness

Switzerland remains one of the world's most innovative countries. This is significant because a region's prosperity is closely linked to its ability to innovate. However, certain signs must not be ignored if Switzerland is to continue as an innovation leader and retain its competitiveness. The KOF survey[1] summarised below shows that several indicators have deteriorated in recent years, particularly when compared with other countries. This trend brings with it the inherent risk of future weakness.

Generally speaking, Swiss companies seem to be finding it harder to innovate than they used to because fewer of them are allowing themselves the resources they need to be innovative. Two groups of indicators bear this out.

The Share of companies investing in R&D is declining

Share of companies investing in R&D, 1998 to 2016; economy as a whole



R&D activity in Switzerland has declined; the proportion of R&D carried out abroad has remained stable.

An examination of the input indicators – in other words those that attempt to ascertain what resources are expended on innovation – reveals a fall in the number of companies investing in research and development (R&D). Yet R&D is vital to the innovation process. Whereas more than one company in four was investing in R&D in the early 2000s, just over one in ten (13.3%) is doing so now. The number that is willing to spend on R&D has therefore halved.

The biggest decline has been in the number of companies that carry out research and development in Switzerland since the proportion of Swiss companies that have R&D activities abroad has remained stable. This drop is significant enough to reduce Switzerland's standing as a centre of innovation. Nevertheless, it should be emphasised that after many years of decline, contract research undertaken by universities, higher education establishments and other research centres has been bouncing back again since 2012.

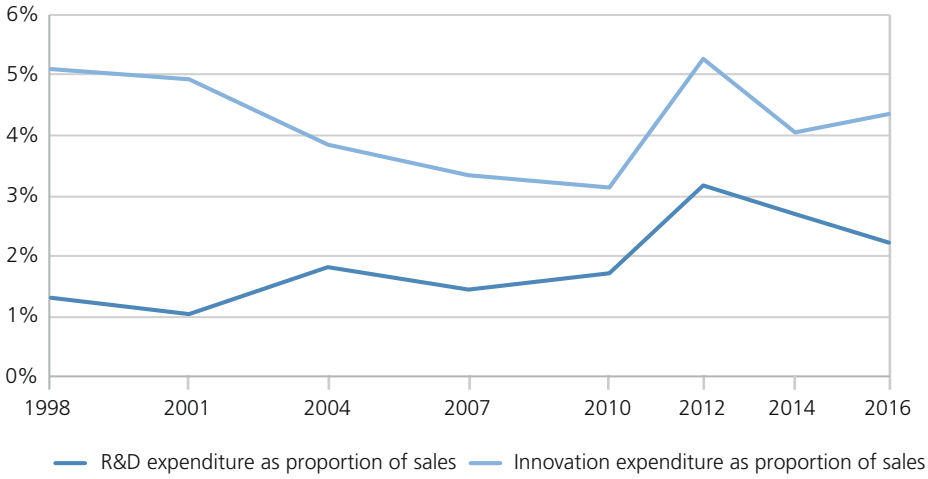
[1] Based on a written survey covering the 2014–16 period and distributed in the three linguistic regions to 5,605 companies with more than five employees in the industrial, services and construction sectors. 1,505 returned completed questionnaires, equivalent to a response rate of 26.9%. Since a survey of this type has been held regularly since 1998, it is possible to compare a substantial number of indicators.

Even the high-tech industries – chemicals, pharmaceuticals engineering, electronics, medical technology, etc. – are reporting a downturn in the number of companies investing in R&D. While nearly half (47.7%) still carry out R&D, this is still less than the 60% that did so during the 2009–2011 period. The particularly pronounced decrease in the "modern services" sector (banking, insurance, IT, telecoms, etc.) is noteworthy, with only 15.4% of companies still active in R&D today compared with 36.1% in 2001.

This broad-based decline deserves scrutiny given that the vast majority of R&D investment in Switzerland comes from private enterprise (over 70% or CHF 15.7bn in 2015[2]).

Upwards trend in innovation spending

Share of sales revenue invested in R&D, 1998 to 2016; companies investing in R&D across all sectors



Fewer companies are investing in R&D (see previous figure), but those that are spend more than they used to. Note: innovation spending includes R&D expenditure as well as all other costs of innovation (trial production runs, market testing, launch costs, patents, staff training, etc.)

Innovation levels also represent an important input indicator. Forming a U-shaped curve, the ratio of innovation spending to sales revenue fell sharply from 1998 to 2010, then recovered strongly, with current spending levels almost equal to what they were 20 years ago.

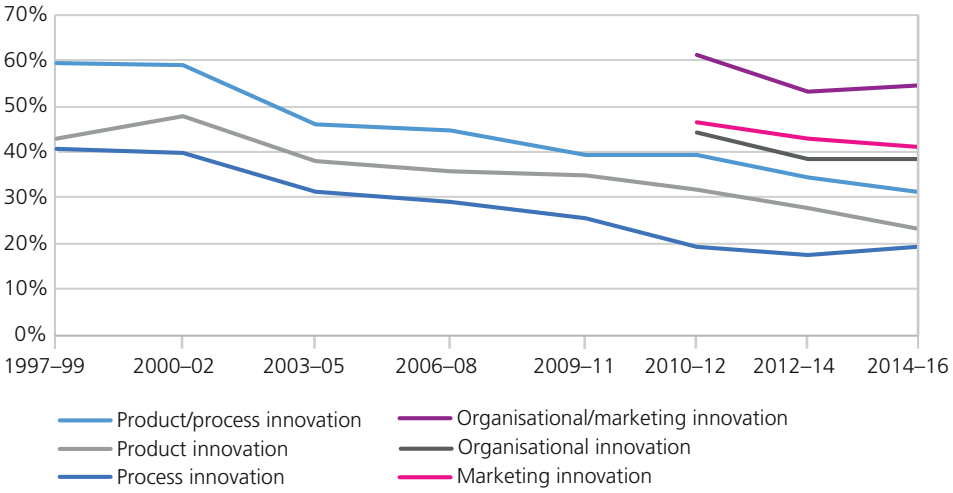
Put differently, fewer companies have a dedicated innovation budget (as the first input indicator shows), but those that are investing in innovation are doing so with greater energy. This means that R&D resources are being clustered in a constantly dwindling number of companies, with the attendant danger of the champions of innovation splitting off from the rest of the economy. This development threatens to reduce the capacity for innovation throughout Switzerland, and with it the potential for growth. Moreover, the possibility of more companies going out of business cannot be excluded, since failing to innovate entails the risk of ceasing to be competitive.

Although providing resources for innovation is essential, it is only part of the story. It is thus appropriate to review the indicators (output indicators) that measure the success of these efforts. Here again, the results are not particularly reassuring.

[2] Federal Statistical Office, 2017.

Strong decline in product innovation

Different types of innovation, 1998 to 2016, economy as a whole



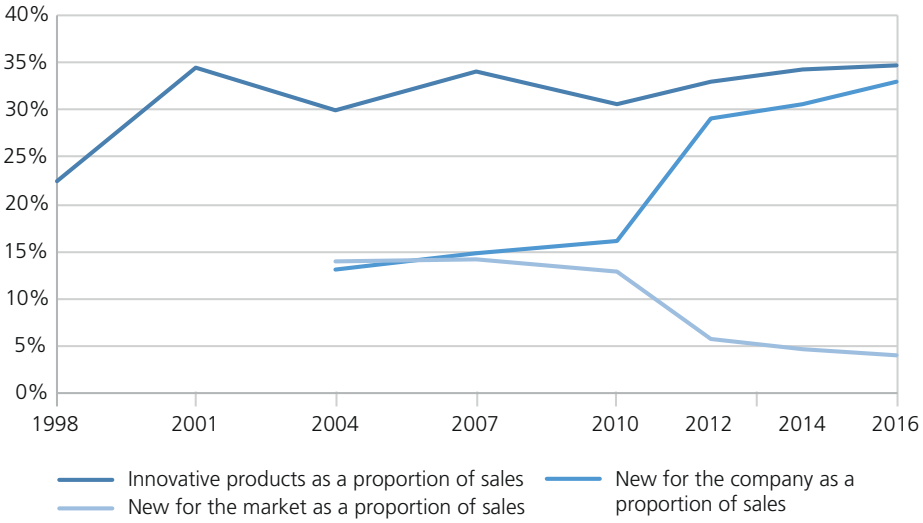
While product innovation is in decline, organisational and process innovation has increased over recent years.

The proportion of companies unveiling product innovations fell by almost half between 2001 and 2016, from 58.9% to 31.2%. The same trend is apparent in the high-tech sector, although it is less pronounced (76% to 60.7%).

Moreover, few of the companies engaged in innovation have launched products and services that did not exist before. In contrast to improvements to products and services (incremental innovation for the purpose of optimisation), this type of innovation has been in a strong decline since 2010.

Decline in innovations that are new to the market

Share of sales revenue of companies that invest in R&D generated by product innovations, 1998 to 2016; all sectors



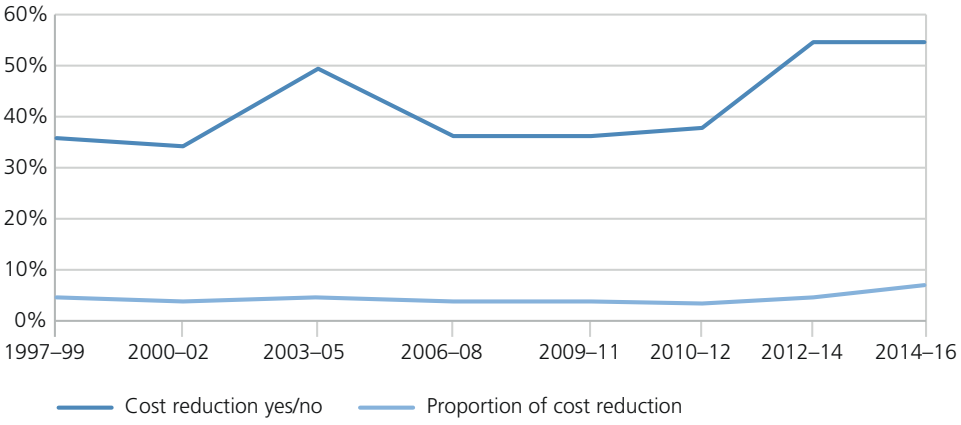
However, incremental innovation (improved products) and products that are new to the company have risen.

In summary, an innovative Swiss company is today more likely to improve existing products and respond to third-party developments than to market genuinely new products and services. Even in the high-tech sector, genuine innovations do not account for more than 7.3% of sales revenue (3.9% for the economy as a whole).

New products account for a growing share of the sales revenues of innovative groups (approximately 22% in 1998 and 35% in 2016), thanks primarily to the momentum provided by services (particularly traditional services, i.e. wholesaling, retailing, real estate, logistics, hotels and restaurants, household services, etc.)

More companies are using innovation to reduce costs

Share of companies using innovation to reduce costs, 1998 to 2016; economy as a whole



Reducing costs through innovation has gained in importance in recent years

During the last two periods under review, innovation was driven primarily by efforts to optimise production processes and improve organisation (quality management, lean management, etc.). The outcomes of these efforts have resulted in cost savings at more than one business in two (54.4%, the figure is even higher for high-tech companies, at 62.7%).

This trend highlights Swiss companies' ability to adapt in the face of economic uncertainty, the rising value of the Swiss franc and international competition. While this responsiveness may be beneficial in the short term, it is not sufficient for the long term, where companies will have to bring out innovations that are new to the market to maintain – to say nothing of increase – their market shares.

It is worthwhile noting once more that all the output indicators reveal downturns in the modern services sector, whereas traditional services are either stable or growing – paradoxically, given that they channel very few financial resources into innovation.

The growing importance of collaboration to innovation (open innovation)

Knowing whether innovation processes are open or closed is becoming an important economic policy issue. Scientific literature shows a positive correlation between open innovation processes and company innovation performance. Furthermore, as the economy becomes more digitalised, research collaborations have become indispensable since companies find it increasingly difficult to do everything internally. It is therefore essential to think of ways of improving the environment surrounding research collaborations so that it stimulates such partnerships while safeguarding intellectual property rights.

Research cooperation for innovation purposes has grown strongly from 20% in 2001 to 35% today. The trend towards cooperation with partners abroad is particularly pronounced, having doubled since the turn of the century.

Which external knowledge sources do companies prefer to partner with? The reply is "customers", regardless of company size or sector. However, approval is still particularly marked among large corporations or industrial enterprises (30% compared with 15% for services). Preferences vary depending on size and sector, but loosely speaking they include material suppliers, visits to trade fairs and exhibitions, specialist literature, universities (more important for large companies than small ones), secure computerised information networks, other companies in the same corporate group and competitors.

"Successful innovation depends on having the right conditions: education system, research, international networks and infrastructure. Switzerland is a leader in all these aspects!"

Robert Rudolph
Head of Digitalisation and Innovation, management board member, Swissmem

"Switzerland has always been strong on innovation. Inventing new products, improving processes and defining new models are all as important today as ever to ensure the famous Swiss economic miracle continues."

Dr. Mario EL-Khoury
CEO of CSEM

CHAPTER 2

Innovation activity is primarily clustered in large companies

Significant differences between SMEs and large companies

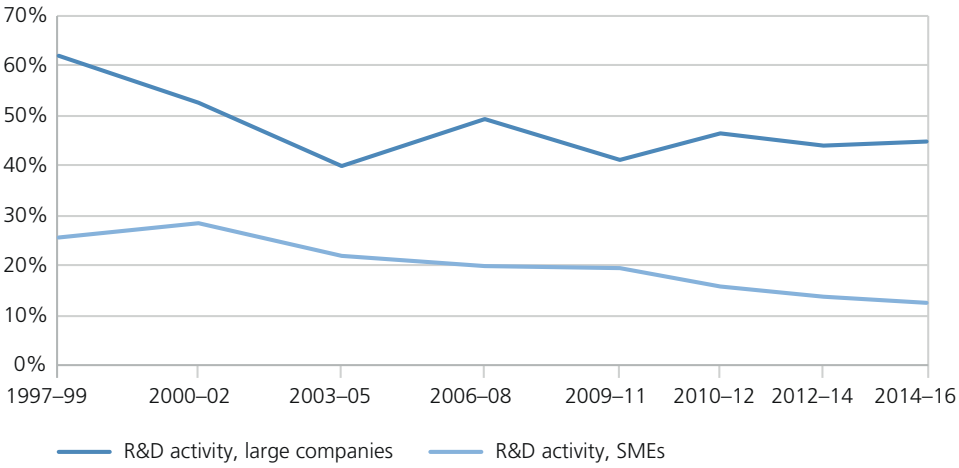
Six criteria by company size, all sectors

2017 survey	Large companies	Economy as a whole
R&D yes/no	45.0%	13.3%
Level of R&D	4.5%	2.2%
Innovations yes/no	73.7%	31.2%
Patents yes/no	18.8%	3.7%
Sales from innovations	36.1%	34.7%
Cost savings yes/no	49.7%	54.4%

On five criteria, large companies score significantly better

Constant fall in innovation in SMEs

Share of companies with R&D activities by size, all sectors



R&D activity has stabilised in large companies

An innovation gap is currently opening up between SMEs and large companies, to the disadvantage of the SMEs. It is a fact that although large companies' R&D activities have definitely shrunk compared with the 1997–99 period, they have been on an upturn since 2009, whereas the R&D activities of SMEs, which account for 99% of companies in Switzerland[3], have been in constant decline since the beginning of the century.

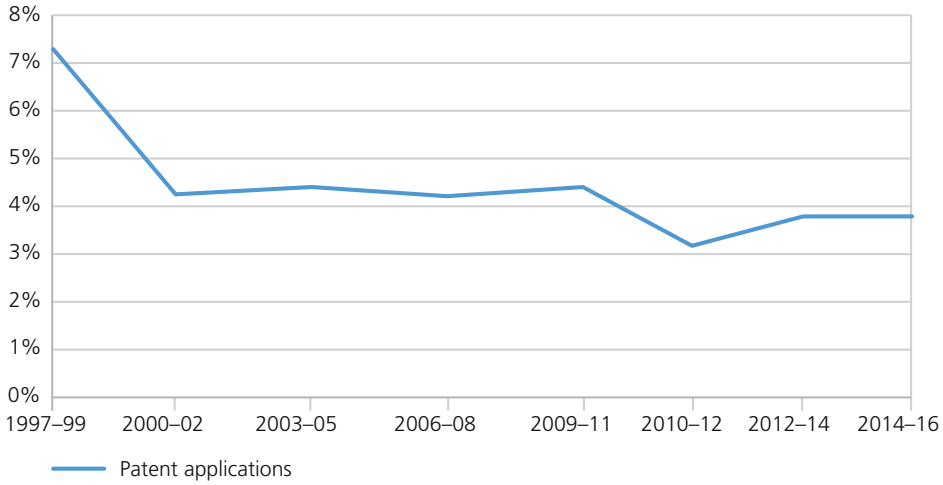
Furthermore, the proportion of sales revenue invested in R&D ranges from single to double figures. Research levels average 4.5% in large companies compared with 2.2% for the economy as a whole and 2.05% in SMEs. Likewise, the proportion of innovative products relative to sales revenue has increased significantly over recent years in large companies and is consistently at a higher level than the rest of the economy (36.1% compared with 34.7%).

[3] https://www.kmu.admin.ch/kmu/de/home/kmu-politik/kmu-politik-zahlen-und-fakten/kmu-in-zahlen/firmen-und-beschaeftigte.html

Finally, the number of companies applying for patents fell at the end of the last century, then once again in 2012. After that, the figure recovered and stabilised at 3.7%, which is still below its pre-decline level. This development indicates that patents are held by a more congruent group of companies than before or, to put it differently, they are held primarily by large corporate groups. However, it is important to emphasise that a similar phenomenon is apparent in other countries.

Fewer companies are applying for patents

Share of companies applying for patents, 1998 to 2016; economy as a whole



There is a downwards trend in all sectors except traditional services. However, several sectors – high-tech, modern and traditional services – have been on an upwards trend since 2012.

Obstacles vary depending on company size

Costs represent the primary obstacle

Obstacles according to company size; all sectors

For small companies, a lack of their own funding and the difficulties associated with obtaining third-party finance represent a greater disincentive than for large companies.

The costs involved in developing an innovation are the primary impediment to doing so for companies of all sizes and in all sectors. This problem has several causes, depending on sector and business type, and it does not stem solely from salaries. For small companies, for example, the inability to buy or share a machine for an innovation project can play an important role. In the pharmaceutical industry, the long development and testing periods tend to generate extremely high costs.

Moreover, the long periods needed to amortise innovations are an obstacle frequently cited by all companies (18.2%). These reflect the fact that earnings from an innovation are always future income, whereas the costs involved in developing them are billed straight away. This discrepancy plays a role when innovations are exposed to strong market risks (in other words, the uncertainty surrounding their sales potential is significant; 12.7% of respondents), with the attendant lack of certainty about revenue in an increasingly competitive environment. If the long amortisation periods are also accompanied by insufficiently long patent protection, the disincentive becomes even greater. The ease with which other companies can imitate innovations is also cited relatively often as an obstacle (11.4%), with companies possibly feeling that mechanisms for protecting intellectual property (patents, copyrights, trademarks, etc.) and the way they are applied are not as effective as they might be.

As regards the obstacles to innovation, companies' responses vary according to their size. SMEs cite costs followed by financing problems. A lack of financial resources of their own and difficulties in obtaining third-party funding are doubtless a handicap in a country where innovation projects are primarily financed from cash flow. They also have greater difficulty accessing the Swiss and European markets.

All obstacles seem to decline in importance over time, judging by the replies given by companies – ever fewer of which are nevertheless willing to innovate. The one may explain the other: companies that do not innovate generally see significantly fewer obstacles than the others, probably because the obstacles only become apparent when companies start to innovate.

We should not, however, make do with this explanation, but try to understand which obstacles – either inside or outside companies – are dissuading ever more of them (particularly among SMEs) from taking the risk of spending money today so that they can innovate tomorrow.

"Switzerland provides unique conditions for medical research and innovation at the highest level. It has a large pool of highly qualified specialists in all areas and an efficient system of public innovation promotion, allowing for fruitful cooperation between the private sector and academia in research and development."

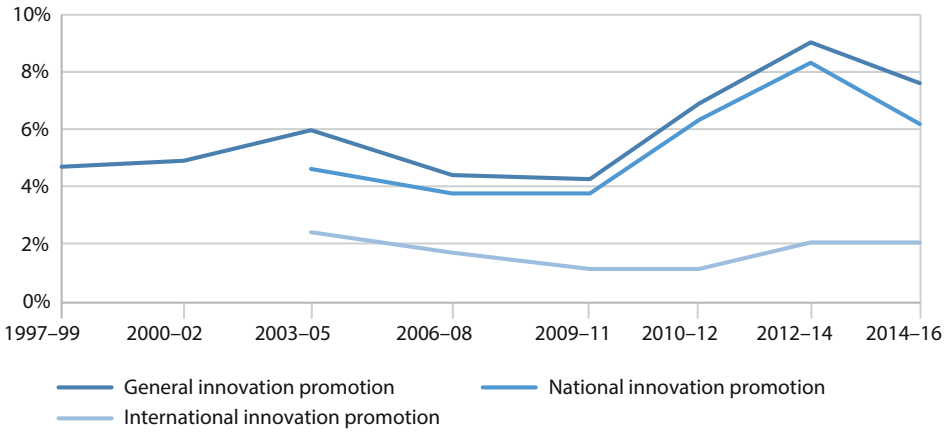
Prof. Dr. med. em. Felix Frey,
CEO of sitem-insel AG

"We are convinced that the excellent levels of education, the reigning work ethic and the ready availability of risk capital create a positive climate for innovation in high-tech in Switzerland over the long term."

Dr. Markus Geiser
Member of the Board of Directors, IRsweep AG

CHAPTER 3
The importance of public innovation promotion

Recent decline in the share of companies receiving funding
Share of companies that received public assistance, 1997 to 2016



However, the overall trend for the 20-year period is upwards

Let us begin by reminding ourselves that at national level, public innovation promotion in Switzerland very rarely translates into direct financial assistance for a company, in contrast to situation in other countries. At national level, public funding only comes into play when a research project is being carried out jointly by a company and a university, in which case it finances the work done by the latter. By contrast, a number of regional or cantonal programmes provide direct financial grants.

Despite the recent decline, the number of companies that benefit from public innovation funding remains higher than 20 years ago. Between 2010 and 2014, increased funding came primarily from national programmes (such as Innosuisse, the new body that replaced the CTI in 2018), cantonal promotion units and other organisations in the country.

Industrial companies benefit most from this kind of funding (58.6% in 2016), particularly those that employ more than 50 people (62.1% of companies that received funding from cantonal, regional or national sources in 2015). However, as noted above, the companies experiencing the greatest problems in financing innovation projects are those with less than 50 employees. The recipients of public funding are therefore primarily corporate groups of a certain size who are thus able to benefit from additional support.

Only 2.1% of companies were eligible for funding from international programmes (such as EU programmes) in 2016. Here again, the majority of beneficiaries are large companies (6.5% as opposed to 1.8% of SMEs). One avenue open to national programmes would be to increase their efforts to target small companies, which are unable to benefit significantly from international programmes and to enable them to combine forces more easily so that they can submit joint projects.

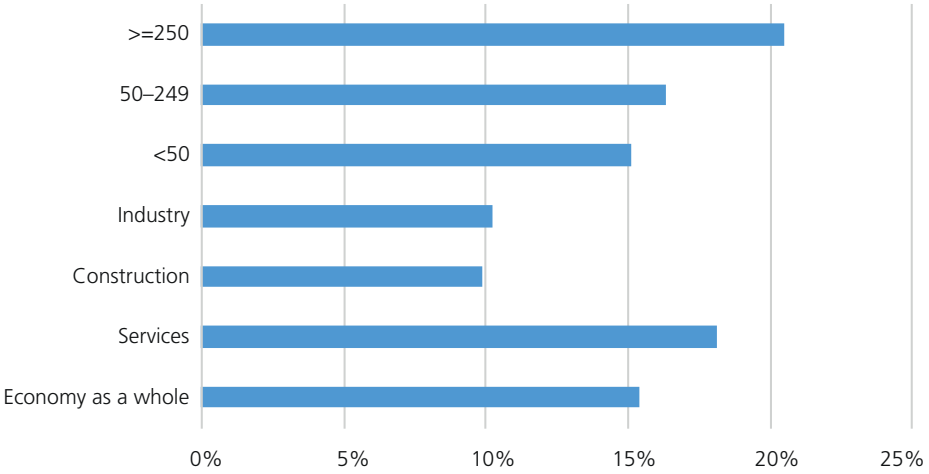
What are companies looking for from public assistance? Looking at the economy as a whole, expertise, financial resources and human resources in roughly equal proportions. But there are marked differences between sectors and sizes. Industrial companies are generally interested in knowledge, financial resources for construction and the services of staffing resources.

CHAPTER 4

Digitalisation: advantages for innovation – but risks as well

Large companies are investing more in ICT

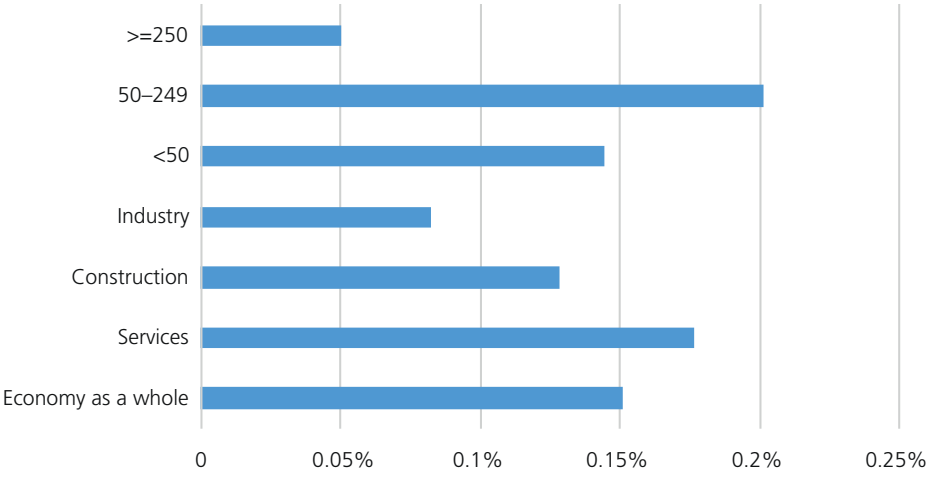
ICT investment as share of total investment, 2014–2016



Around 16% of gross investment spending goes on Information and Communications Technology (ICT).

SMEs are strengthening their cyber security

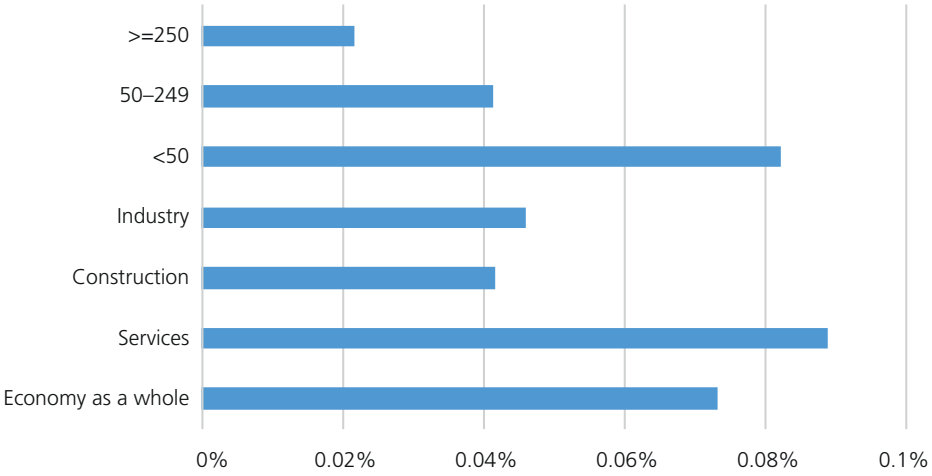
Investment in cyber security as share of total investment, 2014–2016



Investment in cyber security accounts for about 0.15% of total investment

Small companies are relying on training

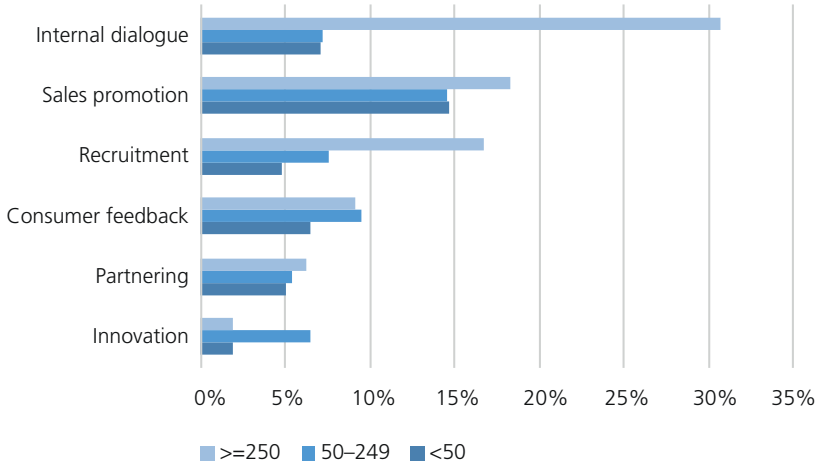
ICT training expenditure as share of total investment



Training accounts for less than 0.075% of total investment

Large companies are using social media primarily for their internal needs

Share of companies that make use of social media



SMEs use them mainly for sales promotion

Companies' investment in ICT averages CHF 340,000

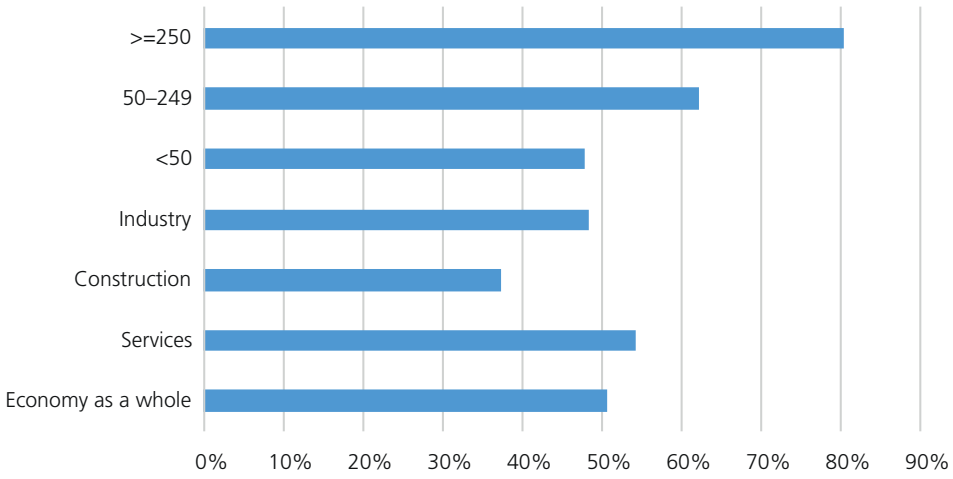
Investment in ICT (in CHF) for the economy as a whole, 2014–2016

	Median	Average
Total investment in ICT (hardware + software)	34,339	294,120
Investment in cyber security	9,000	36,314
Investment in training in ICT	2,000	10,737

A small number of companies is spending a large amount of money, which is pushing the average upwards, as the medians show.

One company in two uses social media

Proportion of companies that make use of social media



Four out of five large companies have a social media presence

When attempting to determine companies' capacity for innovation, it is important to examine their level of digitalisation as the two are closely linked. Digitalisation definitely impacts on all aspects of a company's life (the way it approaches marketing, sales, team management, production and innovation too; these new approaches open the doors to process, organisational and other innovations) and enables new business models to emerge. Moreover, digitalisation is opening up completely avenues for production, the hallmarks of Industry 4.0 having been machines with autodiagnostic capabilities, predictive maintenance, increased product personalisation stemming from additive manufacturing techniques (3D printing) or ways of generating flawless previews of new parts using immersive technology.

One way of quantifying this level of digitalisation is to consider investments in ICT.

In the 2014–2016 period, Swiss companies spent an average of almost CHF 300,000 on hardware and software for ICT. However, comparing this average with the median reveals significant differences between companies (around CHF 34,000), as does comparing the upper (investments of between CHF 670,000 and CHF 870,000) and lower (close to zero) deciles. Furthermore, not only do large groups invest more in absolute terms, they also assign a larger percentage to ITC than other companies (more than 20% as opposed to 16% for companies employing between 50 and 259 people and 15% for small companies). The same applies to services.

Somewhat surprisingly in an era when everyone is talking about digitalisation, percentage expenditure on ITC has decreased over time, from around 30% of total investments to its current level of around 16% for the economy as a whole. This decline needs to be put into context and can be explained by at least two factors. Firstly, companies may have invested heavily at the turn of the century, then once again around 2010 (the two periods when spending shot up), and between these two periods they may have focused on supplementary investment. Secondly, overall prices for IT resources have halved during the last two decades[4], which could have impacted companies' ICT spending and skewed time-based comparisons. Nevertheless, it is difficult to draw accurate conclusions, because price trends across all IT hardware categories and services have not been uniform.

[4] For example, the import price index calculated by the Federal Statistical Office shows a figure of 190 in May 2003 and 97.8 in August 2018.

Comparing different company categories produces striking results, however. Whereas trends were roughly similar until 2012, large groups' investments in ITC have shot up since then, while they have continued to fall in small and medium-sized enterprises. This would indicate that large companies have undertaken large-scale technological upgrades, probably in connection with the new resources provided by digitalisation, whereas smaller companies have not been willing to spend the same amounts. If this is the case, it could be a worrying indication of a digital divide opening up between the champions of digitalisation and the rest of the pack.

Strong increase in Internet, cloud and social media usage

Efficient information sharing between government and companies is essential to a competitive economy. The Internet plays an important role in this area as a tool for finding information and downloading forms, and virtually all companies now use it for this purpose.

Companies are also making increasing use of social media, with half of them having a presence there, a figure that rises to four out of five for large companies. They use them for both internal (information sharing, especially in large corporations) and external (sales promotion, recruitment, customer communications, etc.) purposes.
There has also been an upsurge in cloud-based solutions, with 25% of companies – and 40% of large companies – making use of these remote, off-site servers.

E-commerce is now firmly established in Switzerland, with 60% of companies using it for purchasing and more than 70% making their payments online. However, fewer of them sell online, largely by virtue of the nature of their products and services, which become harder to sell on the Internet as complexity increases. About 20% of Swiss companies currently sell at least part of their range online, a figure that is much higher for large companies and the service sector.

Online sales account for about 11% of total sales revenue, but here again the percentage is higher in services than in the industrial or construction sectors.

Finally, it should be noted that the potential for using new technology also hinges on the availability of quality infrastructure. The substantial growth in available bandwidth in recent years is a particularly important factor for large companies. 25% of them have high-speed connections, while 20% have superfast (+500Mbit/s) broadband.

The challenge of cyber security

Although digitalisation and ITC represent huge opportunities for companies that are willing to innovate, they also pose the significant challenges of reliability, availability and security. IT resources need to be immune to technical disruption and cyber attacks. As the economy becomes more digitalised and infrastructure is increasingly interconnected, so the range and number of potential attacks increase, as is highlighted in the reports issued by MELANI, the Reporting and Analysis Centre for Information Assurance set up by the Swiss Confederation.

Faced with such new vulnerabilities, companies have no choice but to invest significantly in data security and raising staff awareness.

They invested an average of CHF 36,000 on cyber security and CHF 107,000 on ICT training during the 2014–2016 period, but once again there are marked differences between companies. Proportionally speaking, medium-sized enterprises spend more than the others on cyber security, while small companies focus more on training. Generally speaking, though, these two items account for a modest share of total investments (0.15% and 0.07% respectively). By contrast, the trend is clear: security technology has become significantly more widespread in the past ten years.

To protect their data, more than 60% of Swiss companies employing more than five staff use off-site data back-up, while 50% have secure servers. There are significant, size-driven differences between companies, with large businesses protecting their data substantially more effectively, primarily because they have authentication systems. Security strategies are every bit as essential as security technology. However, only a quarter of companies have a security strategy for ICT (primarily large companies: 70%) and even fewer (20%) have a cyber security officer (50% of large companies).

Despite the precautions put in place, security problems have occurred, as 40% of companies (70% of large companies) admit. These include viruses, Trojan horses, hacking of IT systems, etc. Such problems can prevent work being delivered on time, cause data loss or even put IT systems out of action for a period of time. More than 10% of companies claim to have suffered losses due to security vulnerabilities, most notably SMEs (around 13%, compared with 5% of large companies). The extent of the damage caused is on a par with the frequency with which it occurs. Around 16% of companies – no less than one in six – say they have had to expend moderate to significant amounts to make good the damage caused by attacks. The figure is even higher for large companies at 20%.

CHAPTER 5

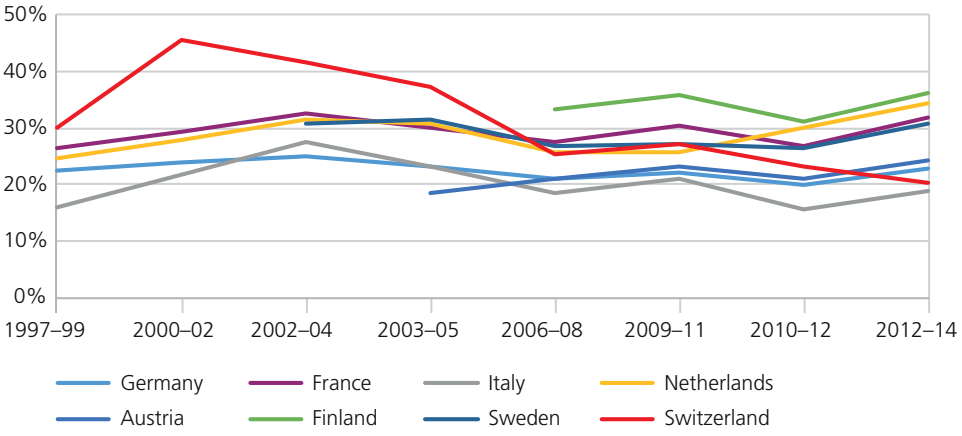
Other countries are progressing as Switzerland slows down

Switzerland has been one of the most innovative countries in international rankings for several years, and has often been the leader, notably in the United Nations' Global Innovation Index 2018 and the European Innovation Scoreboard 2018. However, this produces a misleading image because it disguises the shortcomings highlighted above and detracts from the need for serious scrutiny.

The difference in perceptions is partly due to the fact that international rankings focus on the environment in which innovation can take place rather than on companies' actual capacity for innovation. They also take account of aggregate figures only (e.g. the number of patent applications submitted by Swiss companies without taking account of the fact that large corporations apply for the vast majority of patents) and lump together input and output indicators.

A more careful comparison shows that although Switzerland's position is still strong, it has been eroded as much by developments within the country as by the progress made by certain other countries. Thus, after a lengthy period as the nation with the largest number of companies involved in R&D activities, by 2012–2014 (most recent available figures) it had fallen behind Finland, the Netherlands, France, Austria, Sweden and Germany[5] due to the scissor effect of R&D declining heavily in Switzerland and increasing in the other countries. By contrast, it has regained first place in the rankings for R&D activities in innovative companies.

Percentage of companies with internal R&D activities, 1998–2014



There has also been a decline in outputs, even if Switzerland retains its leadership. Precautions are still necessary, though. The proportion of companies with innovative products is falling in Switzerland, whereas it is rising in a substantial number of other countries. This is particularly true of the number of SMEs that are launching innovations, which has been in decline for 10 years, as the European Innovation Scoreboard 2018 shows.

We should be paying more attention to this deterioration in innovativeness in Swiss companies and the accompanying improvements observed in other countries than to good international rankings, because this downturn is ultimately likely to have severe repercussions not only on the economic climate in Switzerland but also on the economic structure of the country as a whole.

[5] Spyros Arvanitis, Florian Seliger, Andrin Spescha, Tobias Stucki, Martin Wörter, 2017. "Innovation is declining in Swiss companies" La Vie économique. November 2017. https://dievolkswirtschaft.ch/fr/2017/10/arvanitis-11-2017fr/