Innovation is driven by knowledge workers: people who are able to come up with original solutions to familiar problems, address unresolved issues, or revolutionize entire areas of business by radically reshaping the DNA of an old approach to make something better or even completely new. In a highly developed but resource-poor country like Switzerland, we need to treat knowledge as a key factor in innovation, and harness it skillfully. It is innovation and knowledge that will ensure healthy growth for business in this country, and thus create prosperity for the whole of Switzerland. To compete internationally and win on innovation, we have to be able to cultivate and retain knowledge workers. It’s up to business leaders, politicians and researchers to create the necessary structures.

Knowledge work has become firmly established in the management literature. Different sources agree on three main characteristics that distinguish knowledge workers from other members of the workforce: they have a good, standardized education, and are willing to train permanently to keep up to speed. They work creatively, and are constantly reflecting on what they do. Not satisfied with tried-and-tested ways, they’re systematically looking for new approaches. Added to these three qualities, these people also have a high degree of intrinsic motivation. Work is fun for them, and aligned with their personal interests. Knowledge workers love new challenges, and are highly driven to perform. And they’re keen to apply their knowledge in their job. All this poses new challenges for organizations and the people who manage them.

4. Boosting Switzerland as an Innovation Hub
Peter Waser, Microsoft Switzerland Ltd Liab. Co

Transforming Information into Knowledge

Information and communications technology (ICT) is the bedrock of organized knowledge work. Knowledge is based on information, and this information is distributed over hundreds or even thousands of employees, and just as many work and storage media. ICT is the only tool able to aggregate information usefully and rapidly extract the right information from networked resources so that it can be shaped into value-adding form by knowledge workers. In Switzerland, the value creation of ICT as a professional field is CHF 25 billion more than the chemical industry. Despite its economic significance, since 2006 Switzerland has been steadily slipping down the international rankings. Currently in nineteenth place, it’s a long way behind the world’s elite. If this country wants to grow and continue developing as an attractive location, it has to use knowledge skillfully to promote innovation. And to do this it needs ICT. Switzerland has recognized this basic principle, but until now far too little has been done to make it an everyday reality in the worlds of work and research. There are various reasons for this:

Encouraging experimentation

We live in complex systems, and real achievements that benefit society or the environment are no longer made in isolated laboratories. This type of innovation – especially in ICT – requires an interdisciplinary approach to research and development. One example is HighDim, a start-up which has created a mobile device that uses a new type of ultrasound sensor to permanently monitor carotid artery constriction. This innovation was only possible because different researchers – in this case an electronic engineer, a mathematician, a medical researcher, and a software engineer – were able to collaborate. If we want to give innovation a chance, we have to be prepared to take risks and try things out, especially if the prospects of success are not yet guaranteed. To encourage this spirit of experimentation, Microsoft Switzerland, ETH Zurich and EPFL Lausanne have created the Innovation Cluster for Embedded Software (ICES), a new form of collaboration that deliberately sets out to promote interdisciplinary research. HighDim is one of many examples showing how ICT can help promising ideas make the breakthrough.

Cultivating Risk-Taking

Thinking beyond areas of competence is a huge challenge, for business people and politicians as well as for researchers. It means having respect for other skills and abilities, and trusting in people rather than in familiar career paths. It’s human nature to reject things you don’t understand. But this is precisely where the danger lies. Many good ideas are nipped in the bud because of a lack of imagination and willingness to take risks. To encourage people to think beyond their own boundaries, Microsoft is involved in the eEconomy Board. The initiative, which works with the authorities and researchers under one roof, is designed to promote exchange across industries. The role of the eEconomy Board is to inject new
impetus, set priorities, initiate projects, ensure the exchange of knowledge between the research, business and political worlds, and – last but not least – to foster a culture of risk-taking. One thing that marks out knowledge workers in particular is their ability to think outside the box, rapidly grasp the big picture, and recognize connections with other areas of expertise. This will make them even more valuable in a future of increasingly complex markets.

The Net Generation and Invisible Computers

The next generation of knowledge workers call themselves Digital Natives or Net Generations. They grew up with communications technology. Unlike their parents, they automatically see ICT as an integral part of their daily lives, using it to listen to music, network and make contacts, find out what's going on, plan travel, and do their studies – wherever they are, and in most cases simultaneously. So it comes as little surprise that when people of this generation embark on a career, they also want to be able to decide when and where they work. For them, technology is a means to the end of breaking out of the traditional office environment. In online polls, half of Net Generations in the United States say they want to work outside the office. Their social and professional lives run simultaneously – not because employers require it, but because Net Generations don’t know any other way.

Flexible Workplace Models boost Motivation

The result is that companies are under increasing pressure to respond to this need to work anywhere. Knowledge workers already account for 50% of the working population in Switzerland. Researchers expect the number of people who work from home or a mobile office to increase tenfold in the space of only 15 years. In Switzerland, on the basis of their field of work, 20% of the workforce – that’s 450,000 working people – could be working one day a week from homes. If we succeed in harnessing this potential, both employers and employees will benefit. One Home Office Day can boost a knowledge worker’s productivity by between 10% and 30%, meaning a productivity gain of 2% to 5% for Switzerland as a whole. The figure is already well above 20% at technology and service-oriented companies like Swisscom and Microsoft. At Swisscom alone, 15,000 people work flexibly and independently of location on the basis of state-of-the-art technology. Microsoft, where the whole workforce can already work from a home or mobile office, is convinced that Swiss businesses have long been ready to enable people to work independently of their location. The technology is available. These days working people are used to communicating via a variety of media. A conversation will start via e-mail, continue in the Messenger system, and end in the evening with a text message or Facebook entry. What’s required is a change in thinking, in the mentality of managers and employees. We have to systematically overcome barriers in leadership mentality and concerns about the separation of work and private life – not least because these concerns are unfounded.

Positive Positioning with Work-Life Balance

Employees also report positive experience with working from home in an online survey of 10,000 people conducted in connection with the first national Home Office Day. With no commuting required, these people gained a total of 606 days. Of those polled, 22% said they were able to spend the time they gained with family and friends. Already now, in 75% of families both parents work to contribute to the family finances. A home office helps people balance private and professional needs, which will be an important factor when it comes to attracting talent in the future. Every year the Swedish consulting firm Universum Communications conducts a worldwide student survey called My Future Career. The results of recent years show that students are increasingly emphasizing criteria such as work-life balance. The Schweizer Absolventenbarometer survey in Switzerland underscores this trend. Rather than looking on a job as a way to make quick money, students are valuing factors such as working environment, training opportunities, and work-life balance more highly. At the same time, however, they’re also prepared to work longer than average; around 47 hours a week for business and economics graduates.

These are only some of the examples. There are many other approaches to forcing the pace of change from a service into a knowledge society, and thus boosting this country’s innovative strength. They all revolve around knowledge workers. Good leadership, training opportunities and flexible work arrangements are all ways of motivating and engaging them. But to enable them to work productively, they need information and communication technology. ICT serves as an enabling technology with the ability to make information available in knowledge work – in all sectors of the economy. The eEconomy Board has been involved in putting together the “Digital Agenda 2020”, a roadmap for restoring Switzerland to its place among the world’s digital elite. The agenda outlines seven areas where action can be taken to give information and communications technology the status it deserves on the strength of its overall economic importance. It’s down to us business people to lead by example. For this to happen, however, business, politics, science and society will have to work hand in hand. We can only meet the challenges of an increasingly complex and global economy if we do it together.

Digital Agenda 2020:

Seven fields of action for restoring Switzerland to the head of the world rankings:

1. Digital identity: Introduce a seamless digital identity system for individuals and corporations.
2. Network bandwidth: Periodically review and adjust minimum bandwidth.
5. Energy and transport: Systematically deploy ICT to harness optimization potential.
6. Specialized personnel and training: Create an appropriate framework for training foreign specialists and optimizing their availability.
7. Combat internet crime: Boost efficiency by standardizing national and cantonal IT platforms.

About the author:

Peter Waser is Country General Manager with Microsoft Switzerland Ltd. Co in Wallisellen, Zurich and President eEconomy Board. He is also Chairman of the Trend & Review Board of the Swiss-American Chamber of Commerce.