

# **How emerging technologies will dramatically change the working environment of tomorrow and how individuals can cope with the knowledge economy.**

*by Christoph Renk*

In 30 years the average workplace will look completely different compared to today. Thanks to the technological changes and shifts in our economy more power and more responsibility than ever before will go to individuals and their ability to perform as a knowledge worker.

With the emerging technologies that we see on the horizon more and more industrialized, standardized manual labor will continue to be substituted to automated machines. Mass-customization will replace the typical mass goods. We will see smaller more specialized providers making niche products for fragmented markets. The Pro-Amateur (a term created by the famous marketing guru Seth Godin) will take market share away from big corporations and build his own smaller organization.

So what we need in the workforce are people that continuously develop their thinking and learning skills. For people with a good education and a profound understanding of the emerging knowledge economy it will become easier than ever before to create things and market them. Economics of scale are available to almost everyone in western society for a price way under its value. For example the computer I use to create this document is based on billions of dollars worth of research in the past 100 years. Because this has already been paid for I can buy a computer for a ridiculously cheap price. The same is true for infrastructure like the railway-system or the world wide air travel. Access to tools and resources that give individuals and small teams leverage to create and distribute a product is ever increasing. When a product is truly remarkable it will spread virally on the internet - eliminating all traditional push marketing costs.

These factors will be a death sentence for inflexible big and old organizations that do not adapt to the changes. Holding on to traditional models of work and organization is a dead-end path that will ultimately lead to massive problems. Individuals and small teams of committed people will compete with big organizations and because of their flexibility ultimately win over them. Systems theory shows us that the most flexible part of the system controls the system and individuals and small teams are far more flexible than big organizations. The only reason why individuals today lose out against the big corporations is a lack of resources that big organizations can provide.

But the technologies that shape our century will lower the entry barriers for individuals and small organizations to challenge the big and established organizations further and further. This means

that total quality management and a customer centered approach to doing business has to be ingrained in every workplace of tomorrow. Every part of the organization becomes responsible for giving the customer the highest value for his money. Employees are shifting from an employee to an intrapreneur.

What technologies drive this? Let's start with the obvious: the internet and cloud computing. The internet makes access to information easier and cheaper than ever before. The once scarce resource of knowledge has become abundant thanks to search engines.

Cloud computing enables individuals to leverage economics of scale for their project. Renting a few hours of a supercomputer for research? Possible. Collaborating cost efficient from around the world? No problem. Replacing the work of a filing assistant with a web app is reality today<sup>1</sup>. More and more of these apps will come of the market and replace non creative factory-like work.

Another very important thing to notice is that the internet eliminates boundaries in collaboration and connects the before separated poor to the global economy.

Before we go on to discover technologies that might change the game of manufacturing forever let me emphasize, why collaboration with people around the world especially in third world countries is profound for the future of our workplaces.

We are seeing a rapid increase in cell phone and internet access in third world countries<sup>2</sup>. We are talking about people that live off less than three dollars a day. These people are starting to get on the internet and will probably revolutionize the global economy. The "rising billion" as Peter Diamandis calls these people will bring billions of dollars in the global economy and profit immensely from the abundant education sources online. Even without going to a formal school it is now possible to learn subjects at the comfort of your own home. This opportunity can ultimately help the poor create more value for the economy and rise their living standard.

For freelance work, like coding or web design. These people will compete on price with A-level providers in the richer economies. This means that every person in the workforce has basically two choices. The first is being a commodity and competing worldwide by price. The second is becoming a highly specialized and skilled knowledge worker that provides more than what is requested. Taking on an expert or even an artist mindset that leads to a signature style of work that can not be found anywhere else. These people will make themselves irreplaceable by not being standardized. The worldwide competition is ultimately the best thing that can happen for the global economy. But outsourcing tasks to cheap-labour-providers the knowledge workers of tomorrow can found companies with less capital and provide cheaper services. In the cheap-labour-states the

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<sup>1</sup> <https://www.shoebboxed.com/sbx-home/>

<sup>2</sup> Bob Tortora and Magali Rheault,

wages will improve and so will the living conditions. In the first world countries we will see a loss of jobs that has to be compensated by giving people the opportunity to become a knowledge worker and get into a business for themselves. It will be up to individuals to create a job for themselves. They can not expect standardized paths anymore since industrial-mindset jobs will become rarer and won't be well paid.

We have to realize that the industrial economy is gone and will never come back. The rat race to the bottom can only get you so far. Industrial processes will get so cost efficient and automatized that an industrial economy can't ever possibly provide jobs for all people.

Rather people need to be encouraged to take on leadership and create their own job. To solve problems and build small tribes of committed individuals to do work that matters to the society.

Social Entrepreneurs are one form of that. They are far from the only form. Because every entrepreneur should start out with a value creation mindset. That means that she is social by creating value for the economy.

Creating your own job gets easier and easier, since the barriers to creating a product or service are getting lower with increasing technological help. The competition for good jobs in the old system gets tougher and tougher because the industrial economy fades away in reality but not in the minds of people. The educational system has in part picked on this. But the majority of schools still put finding a job as a goal for students. Under logical aspects you have to ask yourself WHY?

We see 100\$-startups making millions of dollars in profit after a few years of existence, we see online businesses by college kids that are worth billions of dollars and we see individuals making a solid personal income providing a niche of clients with specialized products. We see artists publishing their work without labels on the internet and profiting directly from every download. That is the kind of economy that is growing. And it is driven by knowledge workers. You don't have to be an entrepreneur or manager to prosper in this economy but you have to think like one and position yourself strategically in line with the trends that are described in this essay.

The next big leap could happen everyone can print out physical parts with 3d-printers. These devices enable a decentralized production of products in small quantities. Making low budget manufacturing available to anyone with a computer and a CAD-Software. This technology is just on the doorstep of a broad distribution and will put even more power in the hand of individuals.

The processing power and communication capabilities every college student has today weren't even available to the President of the United States a few decades ago. Realising how profound technology will impact our lives and our organizations is the first step to understanding the workplace of tomorrow.

The second step is adapting to the inevitable changes as soon as possible. Here is my vision for the workplace of tomorrow: In an automatized economy manual labor that has few responsibilities will vanish. We don't need you to put a box from A to B 100 times / day. That kind of work is not very human anyway so few people will miss it. Rather we will see that people are encouraged to build their strengths to let their personal light shine for the society. Taking responsibility for your area of expertise is what you as a successful employee in the new economy have to do. You have to become either an entrepreneur and build a business around your strengths or you have to be an intrapreneur in a cooperation.

Large cooperation won't disappear. Sure - some will. But most of them will adapt and survive the shift. What will definitely die for knowledge workers is the traditional pay by the hour work. The new workplace will pay you on the results you provide and on the impact you make.

*“Executives owe it to the organization and to their fellow workers not to tolerate non performing individuals in important jobs.”<sup>3</sup>*

That shift is bad news for people wanting to be mediocre and for people that want to separate their job and private life completely. While in low level jobs places where this is possible might exist, the knowledge worker surely can not afford to separate his job from his life. It has to integrate and fit to his personality.

That means that money won't be her primary driver. Employees will be on the search for meaning in what they do. Making the necessary efforts for staying on the edge worthwhile. Competing in a global economy is tough. Lifelong learning and constant practice are necessary components of mastery that can only be attained by committed knowledge workers that find meaning in their job. People that integrate their life's mission with their career will become the most valued knowledge workers. They will profit immensely from the death of the industrial economy that wanted to keep these overachievers average and in standardized processes.

Can a life really be planned by curricula and do standardized academic grades really assess a person's ability to create value for the society? I do not think so. They have their eligibility but are not the only answer to the complex challenges we face in the change from the industrial age to a new knowledge economy. As evidence I would suggest you look at the US-Labour statistics 2012 where for the first time in history more people with college experience were unemployed than people without it<sup>4</sup>. So even universities should ask themselves if they prepare their students for a thriving existence in the new knowledge economy or if they hang on to old beliefs of education that don't pass the reality test.

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<sup>3</sup> Peter Drucker on making decisions. Online: <http://hbswk.hbs.edu/archive/4208.html>

<sup>4</sup> Jed Graham in Investors Business Daily 5.7.2012; “New normal: Majority Of Unemployed Attended College”

A question that is of critical importance is if all workers will become knowledge workers. My answer is: of course. In the knowledge age you expect that your cleaning personnel knows the foundations of the chemistry behind the products they use. So even in jobs that are considered low level there is an ever increasing demand on more knowledge and on people that master their subject. The market transparency will force mediocre providers of services to raise to the top, be the cheapest or vanish. These hard economics are a consequence of the internet which connects almost everything these days. Comparing prices of business cards was not worth your time in 1980 now it is just a 10 second Google search.

Since a working individual of tomorrow is typically not paid by the hour but by results it is generally not required that she works in an office where her employer can control her. She will be able to work from anywhere in the world thanks to affordable collaboration tools. In the war for talents cooperations have to enable their employees to work at least for a few months from abroad - so they can travel and work at the same time. Her work will bring her into the flow where working gets effortless. Since she aligned her talent with her job she will produce better results for the company, for herself and for the society than ever before.

What I just described was a vision that outlines where our society is going. Away from seeking a safe job as an employee to creating your own job as an entrepreneur or intrapreneur. This requires our whole education system to change. Right now schools are set up in a way that prepares students for getting a job. But this skill will get less and less important. Creating a business plan, formulating ideas and executing on them will be the more important skills to cope with the changes ahead, than plainly following a curriculum. A lot of entrepreneurs are successful because they challenge traditional thinking and ask uncomfortable questions. An ideal business school would teach just that.

If there's one thing you should take away from this essay it is this: huge changes in our organizations and workforce are going to occur. The pace of change gets faster with accelerating technology. Learning to cope quickly with change is one of the most important skills in our day and age. When you learn to anticipate change and see it as a challenge rather than a hassle you will be able to build great organizations and a great career. A more entrepreneurial culture is going to emerge because the industrial age kind of jobs will disappear and never come back leaving people the options of creating their own job or dropping their living standard. Driven leaders with a clear vision can use the current environment to help design the knowledge economy and recruit top talents. Right now new concepts for the workplace of tomorrow are not well executed leaving billion dollar opportunities for people willing to take full responsibility for innovating in this environment. As Professor Faltin puts it capital is no longer the limiting factor to founding a business - a good idea concept is<sup>5</sup>. So everybody has the power to start something and shape the workplace of tomorrow as an intrapreneur in an existing organization or as an entrepreneur. This approach to working will be normal in the new economy. It's up to everyone of us now to start something and push the knowledge economy further.

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<sup>5</sup> Faltin, Günter: *Kopfschlägt Kapital*, Carl Hanser Verlag, München 2008, S. 2 f.