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Introduction

In the past few years, the City of Philadelphia has managed to downsize its team of garbage collectors from 33 employees to 17. How did they pull that off? Did its citizens put out less trash? Did people start to illegally burn their waste in the backyard? Far from it. In 2009, the BigBelly Solar Company installed 'intelligent trash compaction units' equipped with software that enabled the company to see which bin needed to be emptied when. By using this information, it was possible to reduce the number of times that waste was collected from seventeen times a week to just three.¹

The city of Barcelona uses similar technology and is hoping to find clever solutions in a variety of other fields too. Sensors are already being installed all over the conurbation to measure traffic intensity and inform drivers of their expected travel time. Forty percent of the municipal parks have automatic sprinklers and 50,000 households – mainly the elderly and less mobile – have access to an online helpdesk. In order to facilitate these developments, the city council has provided a large proportion of the data collected by the city to its citizens and businesses. They are then invited to think up new technological solutions.² Barcelona has the ambition to save 3 billion euros over the next decade, mainly on salaries.³

Barcelona and Philadelphia have proven to be examples for other cities too. The Finnish capital Helsinki is using sensors and GPS to allow snow trucks to drive the most efficient route possible. "Most importantly, these services are aimed at making life easier for citizens. A subsequent benefit for us is that it helps us reduce physical labor," says Kari Miskala, head of the ICT Development Team.⁴

Obsolete

There are more examples of similar kinds of digitization: back in 2011, McDonalds announced its resolve to replace part of the workforce with touch screens.⁵ Personal assistants will become partly or completely obsolete if you can use your tablet or smartphone to easily manage your calendar yourself. Should you have any difficulty in doing so, there are always digital assistants, like Google Now or Siri.^{6, 7} If you prefer some degree of human contact, there are thousands of 'virtual' English speaking assistants to wait on you, in countries like India, Kenya and Tanzania, at a fraction of the cost of a personal assistant. Jeff Bezos, founder of e-commerce company Amazon, fired all his reviewers when he discovered software was far better at doing the job, and that automatically-generated reviews led to higher sales besides.8 Amazon is by no means a loner in this: in time, highly-sophisticated algorithms are expected to take over 140 million full time jobs of knowledge workers.9

What are the implications of such change for motoring clubs – the Dutch ANWB is as good an example as any – when in the foreseeable future our cars will be able to give advance warning of a potential defect, long before it happens, so that we can just drive into the workshop long before we end up with a break-down at the roadside? What would we then need our traditional subscription to their roadside assistance?¹⁰ How many ANWB employees – some 5,000 in all, including more than 800 patrol staff – will become surplus to requirements?

What about taxi drivers? Pioneer Uber is not only shaking up the business model of the taxi industry, but may well undermine the very raison d'être of the profession. What if it were to start using self-driving cars in the future?^{11, 12}

The digital era

New developments occurring in quick succession surely are a sign of the times. Google's Chief Economist Hal Varian labels this 'combinatorial innovation'. He states there have been times like these throughout the course of history, each with their own characteristics. The age of industry saw the mechanization of production and parts becoming interchangeable for the first time ever; easily replaceable too. In the IT/internet era computers took over calculations and we all became interconnected through our PCs.

Now we have come to the digital era, where we are able to develop new products and services courtesy of mobile technology. Digital ingredients – bits and bytes – cost next to nothing, are in infinite supply and enable a myriad of product/market combinations. Virtually everyone can access these bits and bytes, and they are invariably easy to copy and distribute.

Organizations are noticeably being affected by this digital revolution. Technological innovation in the 21st century is no longer the special reserve of larger organizations, due to almost ubiquitous access to these digital building blocks. The market for innovation is open to small and mid-sized businesses, and even to individuals. Large and often cumbersome organizations now have to deal with strong competition from start-ups.

Oil tankers and speedboats

Prior to the age of internet, innovation had a relative predictability. It was accomplished by the R&D department within the organization, according to a set pattern.¹³ Nowadays people – be they individuals or their networks – adopt new technology faster than organizations can keep up with them. This is giving birth to new and agile businesses, which like speedboats are able to use any angle to zip past the large established organizations-or the oil tankers.

A list of the fifty most innovative companies worldwide has very few multinationals on it.¹⁴ In fact, the bulk of them are small, though their innovative product does have a global impact. Dropbox, for instance, has a very small team that provides cloud services. Just picture GitHub, with its platform where programmers can work on projects together, or Netflix, head-butting established media with streaming video. The list is endless.

A focus on innovation does pay off, that much is crystal clear. On the stock market, innovative companies are outperforming their less innovative industry counterparts by up to 200 percent.¹⁵ Besides, of all the companies on the Fortune 500 in the year 2000, over 40 percent no longer exist.¹⁶

WhatsApp, Snapchat and the like have used their chat services to bring the huge telecom companies tumbling down. There are masses of stories about 'traditional businesses' being struck down by new business models. A Dutch case in point: the Free Record Shop chain went belly up through a fierce digital storm of illegal downloads and alternative suppliers like iTunes, Spotify and Google Music.¹⁷ Their classical overheads for retail shops and staff were just too expensive for them to compete with online alternatives. At their demise, their turnover was still an impressive 300 million euros, but their profits were only a scant 1.5 million euros; a mere 7 euro cents per customer. No way could that cover their overhead. *"The business failed to respond quickly enough to changes in the marketplace,"* observed one of the receivers. *"They could clearly see it happening, but their responses were just inadequate."*

Similarly, bookshop chains are having to close down or otherwise morph into speedboats in order to serve their customers properly, moving away from the anonymity of the huge oil tanker.¹⁹ Travel agents are increasingly irrelevant, and the same is true for any sort of intermediary, be it advisory bodies, lawyers or training agencies. The consultancy business has plummeted by some 20 percent since 2008.²⁰ The internet has given customers quicker and easier access to new tools, concepts and models.²¹

The annual CEO Survey conducted by IBM shows CEOs rightly citing technology as the key external influence on their organizations.²² Consumers uniting online and rapidly taking their share of the power formerly belonging to the oil tankers

are but one example. Then there are the start-ups that serve consumers with ICT tools, faster and better than before, often by providing another added value or even by meeting a different need entirely. All this may well sound self-evident, but until quite recently the impact of digital technology was not taken into account seriously in most board rooms. Consequently, employees were not given an adequate understanding of how this technology would set the world in rapid turmoil, nor of how it would affect the organization and their individual jobs.

A whole new set of rules

The world is changing: old laws and models are proving to be useless, new ones are being devised on the go. On the one hand, the world seems to be getting smaller through all the digital communication, even though all these connections also make life more complicated. The mere demise of a few companies is just the tip of the iceberg; in actual fact one era is being ushered out, as the new one comes in and takes center stage. We are gradually moving from the age of industry into the digital era, and ultimately this will affect every one of us. This inbound dynamic necessitates a new way of structuring organizations: less overhead, a real minimum of unnecessary hierarchy, more autonomy for professionals and consequently fewer managers.

Responsiveness

A staggering 87% of employees worldwide are not engaged at work. The world has a crisis of engagement, having serious and potentially long-lasting repercussions for the global economy.²³

I witnessed an interesting example of this when I was visiting Dubai, in the United Arab Emirates. "As policy makers we are constantly looking ahead. The world is changing so rapidly, that we cannot afford even the briefest lapse in attention. We need to keep adapting," says Mohammad Al Hawi, Head of Innovation in the Executive Office of the President. Until the 1960s, the Arab states, which were still separate, reaped most of their earnings from the sales of dates and pearls. Then they struck oil. An unparalleled wealth was tapped into. As it soon became clear that the oil supplies were to run out after roughly a century, a substantial chunk of the money earned in the oil industry was used to build an impressive infrastructure and a highly professional finance and tourism industry. Today oil makes up a mere 5 percent of total revenues. "In spite of our success, we are already working hard on our next move," Al Hawi continues while I am being served with tea and dates. The next move will be an openarmed embrace of the technological and digital revolution: "In a few years, we would like to have a business atmosphere conducive to building companies like Facebook, Samsung, Google and Spotify ourselves. Currently we are investing billions to upgrade our level of education, concerning new digital technology, thus drawing creative talent the world over to us, and realizing a climate of experiment."

One could say that things happen more quickly in an authoritarian state, but the ambition in itself is certainly one to inspire. A similar attitude could well help us take giant steps in the West, too. There does not seem to be any high level awareness of the need for change, neither in politics nor in business.

Fewer jobs

Anytime countries and regions are in trouble, businesses fold, and that means job losses. The same can be said for jobs disappearing when technology replaces people. Research has made clear that approximately half the current jobs in the United States are expected to disappear in the near future, as a result of digitization and ongoing automation.²⁴ Whether or not Europe and the Netherlands will be similarly affected, still remains to be seen.

Technology has now brought us to the eve of an era in which robots will be used for any number of tasks, and not just for routine, heavy or filthy factory labor.²⁵ According to Neil Jacobstein, Co-chair of the Robotics Faculty at Singularity University in the Silicon Valley, robots will relieve us of a lot of work: standard production work, to be sure, but also routine knowledge work such as checking tax returns. Physicians will have digital assistants, who are able to process far larger chunks of information than the human counterpart.²⁶

New opportunities

However, jobs and business models are not simply disappearing into thin air, as the digital revolution is providing opportunities of its own. Plenty of them, in fact. It remains to be seen whether they will create sufficient added value to give credence to the existing structures. To put it differently, it is quite possible that we will, generally speaking, need fewer people, buildings, company cars, and so on, to reach the same or greater added value than before. At the same time, the question arises as to whether everyone will be able to seamlessly exchange one job or one business model for another. Jaron Lanier is correct in pointing out that the current middle class is very much at risk of ending up in serious trouble, if we do nothing and decide not to go with the flow.²⁷

These are relevant developments for all of us, executives and employees alike. No longer are business models set in stone, nor is social relevance or decades of working for the same company. Oil tankers that have been charting the same steady course for years, and which deem it less than desirable

"We do not 'simply' experience another alteration of the business cycles, rather a restructuring of our economic order." - IAN DAVIS, MCKINSEY²⁸

and possibly even dangerous to change course, need to give the wheel a hefty tug. Now, the course must be altered constantly, and the very structure of organizations is characterized by change. We need to adapt to a new reality, in which our lives and work are deeply involved with technology.

Intuitive leadership

This book is intended to be read by managers, professionals and business people, who are curious as to what their roles will be in the future: people who are keen to discover what their added value will be in a more loosely-structured organization, where employees are increasingly well-equipped to organize their own work. This may sound like a paradox but such organizations certainly do need unison and direction. In other words, strong leadership. To be sure, it will have different contours than those we are accustomed to; frequently leadership will be shared, and temporary at that. This digital era, in which we reach an unsurpassed level of connecting with each other on shared topics, has in fact acquired the best ever conditions for leadership with the greatest common ground. Never before have there been so many leaders, despite not regarding themselves as such, who have started a movement of some kind. Leadership has many different faces. A person who leaves an organization and takes a gang of people with him is just as much a leader of that company as the CEO is. Leadership is a prerequisite for the steps we collectively need to take.

Why is it so hard to transition from the age of industry to the digital era? As I was writing this book, I have constantly kept this question in mind. The answer is probably that we have been taught to listen to our rational mind, instead of our intuition. Within organizations, our measure is often taken based on where we went to school or university, how many hours a week we work, what our boss thinks about a certain topic, whether or not we will have finished the quarterly report on time, our attendance at all meetings, etcetera.

The potential of the mind is infinite, and yet rather prone to limiting itself at the same time— or so neuroscience has taught us. In general, and particularly in the workplace, we are inclined to focus on our mind over anything else. We have learnt to ignore our instinct and to listen to 'the boss'.

Being influenced by their experiences of all the possibilities of the internet, people are rapidly letting go of the habit of listening to their boss. Everywhere they look, alternatives are readily available. It is omnipresent in politics, in media and most importantly in the relationship between consumers and businesses, and citizens and government. More than ever before, people will chart their own course, without taking too much notice of now obsolete structures, or of debilitating hierarchies. Managers, professionals and business people quickly need to find a way to get swept up in this movement.