

CEMS MAGAZINE

THE MAGAZINE OF THE GLOBAL ALLIANCE IN MANAGEMENT EDUCATION

THE DISRUPTION ISSUE

MANAGING IN AN AGE OF INSTABILITY

The digital revolution is opening up new visions for the future

HOW TO SURVIVE IN AN ERA OF CHAOS

Insights into how disruptive technology shapes and re-invents business, management and entrepreneurship

THE 4TH INDUSTRIAL REVOLUTION

The innovative CEMS-HSG course 'Disruption and Innovation in International Business' explores how disruptive technologies can make the world a better place.

WORK AND THE 'HUMAN TOUCH'

Drawing on his research Leslie Willcocks demonstrates a balanced view of the future human-machine relationship

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THE GLOBAL ALLIANCE IN MANAGEMENT EDUCATION

THE DISRUPTION ISSUE

CEMS MAGAZINE 2017

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THE DISRUPTION ISSUE

CEMS MAGAZINE / 2017 ISSUE

The thing about disruption is that it's not new. It's been happening for centuries. Just think of the steam engine and the radical impact it had on the transportation and energy sectors, giving rise to mechanized production during the first Industrial Revolution.

What is different is the rate and scope of disruptive change that is taking place in today's economy, what many consider to be the 4th Industrial Revolution. In last years' Recent Graduate Survey, the biggest challenges CEMS graduates felt they will face as global business leaders in the 21st century is the rate of technological or digital advancement. The reality is that disruption has become the new normal.

In this new age of instability, traditional management models developed as a consequence of the 1st Industrial Revolution are being challenged. In this new economy, the skill sets that worked well in the past to optimize processes are giving way to a new order of needs around creativity and emotional intelligence. According to the World Economic Forum, "with the avalanche of new products, new technologies and new ways of working, workers are going to have to become more creative in order to benefit from these changes." In many ways, not only will people need to learn how to adapt to these new technologies, but also *unlearn* previous ways of operating and thinking. The good news is that CEMS partner institutions are working together to prepare themselves and CEMS graduates to be ready for the future.



Confined within these pages are stories that explore the benefits and challenges of the 4th Industrial Revolution and how we, within the CEMS community can harness this revolution to make the world a better place. We will explore the interactions between humans and robots at one of Japan's largest investment bank and brokerage firms. We will unearth a deeper understanding of why data has become the new oil and how blockchain has the potential to become as powerful as the internet. We will also examine how managers and companies can adapt to not only survive, but thrive in an ever-changing world that is impacted rapid changes in industry and regulations.

It is through the collective sharing of ideas that members of the CEMS community will be the force of positive change in such an unpredictable world.

"According to the World Economic Forum, 'with the avalanche of new products, new technologies and new ways of working, workers are going to have to become more creative in order to benefit from these changes' "



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★ FEATURE ARTICLE

DISRUPTIVE TECHNOLOGY: MANAGING IN AN AGE OF INSTABILITY

 BY **Stephen Hoare** Freelance Journalist

It is often said that technology transforms lives. The digital revolution is opening up new visions for the future from intelligent homes and appliances to driverless cars and genetic modelling which can create new drugs that target diseases previously thought incurable.

Innovations like these are exciting but are also considered "disruptive" because they create a market and demand for products and services which did not exist before. Established business models are overturned, forcing organisations to adapt to new technology or risk losing market share or in extreme cases going bust.

Disruptive change is nothing new. Innovation has been a constant factor in the evolution of capitalist economies from the birth of the industrial revolution to the rise of e-commerce and social media. The reason it has recently become such an emotive issue is the speed of change.

The impact of disruptive technology is now an integral part of the teaching of business strategy, entrepreneurship, and project management, which many CEMS partner schools have adopted. "It's of critical importance to train future decision-makers to recognise the potential of converging technologies and how they paved the way for new products and services like Google Maps or Uber Cars," says Lars Strannegard, president of Stockholm School of Economics.

Strannegard observes that young people's ambitions have been fired up by the many examples they see of transformational technology changing people's lives all over the world. "Digital technology has the potential to go global very quickly. Whereas in the past an entrepreneur might launch a product for the home market, and slowly expand, these days it's possible to set up a company and immediately go global. We call it 'Born Global,'" says Strannegard.

When the Swedish business school hosted last year's annual CEMS conference and graduation, the surprise guest of honour was a programmable robot designed and built by engineering company ABB. The robot's carefully choreographed movements could have been a foretaste of technological disruption to come. Says Strannegard, "Robotisation is something that is going to impact on all of our lives. If you combine robotics with machine learning and artificial intelligence, the opportunities are enormous."

ABB has been at the forefront of robotics and industry automation since the late 70s. A spokesman for ABB said: "The pursuit of digitalization helps to better serve our customers and generate more value for both them and for our company." The combination of an advanced technology base and a clear corporate drive are the basic ingredients of ABB's business strategy.

In a globalised inter-connected world, change is the only constant. A future generation of leaders must be taught to apply creative solutions to the markets in which they operate. "Part of the narrative behind disruptive technology is the realisation that the future isn't an extrapolation of the past. Problems arise when companies discover established methods no longer yield expected results," explains Kai Riemer, professor of information technology and organisation at the University of Sydney Business School.

Students from the millennial generation completely embrace this way of thinking.



"It's of critical importance to train future decision-makers to recognise the potential of converging technologies and how they paved the way for new products and services like Google Maps or Uber Cars"



Completing her Global Masters' in Management (CEMS) at the London School of Economics following an undergraduate degree in economics, Emma Gavala has first-hand experience of just how exciting innovation can be. Having completed a three-month internship at Google London last summer, she considers herself lucky to have had the opportunity to work with "DoubleClick", Google's programmatic advertising platform.

The experience gave Gavala (24) an insight into how disruptive technologies create value for businesses and consumers. Google's leading innovation in this field is to use real-time signals and sophisticated audience insights to develop "smart" and relevant digital advertising. "Programmatic marketing is based on a sophisticated technology, enabling brands to connect with the right user, at the right time and with the right message."

The benefits are two-fold. Advertisers want their messages to be creative, engaging and shown in the right context, while consumers do not want to be distracted by irritating or insistent marketing messages. This is a practical application of technology designed and inspired by a forward-thinking organisation which wants to cater for users of any age. Says Gavala: "Google is able in this way to create ads that are relevant not just to me but to my mother's and my grandmother's generation."

Programmatic marketing is clearly an example of disruptive technology. And although it is still in its infancy, the indications are that it will revolutionise internet advertising. The experience has already influenced Gavala's career ambitions. "It was very rewarding to work with young creative people committed to their job and prepared to go the extra mile. As a first step, I'd like to re-join such a creative, open-minded technology organisation," says Gavala.

Not every innovation leads to an improvement in consumer experience, however. The most problematic disruptive innovations for companies are the ones that introduce new customer preferences and underperform on the old preferences. "I use the example of budget airlines to introduce business disruption," says Professor Jan van den Ende of the Rotterdam School of Management, Erasmus University. "When they were launched, budget airlines made air travel accessible for the first time to people on low income. They had the advantage of being cheaper, you could buy tickets on the internet and fly from local airports, which was more convenient for many people. But they underperformed on the old customer preference for service quality. You had to pay for



"The secret of survival is to engage with emerging technologies early and to be responsive to potential challenges that might come from the fringes of the industry – agile management, whereby companies must be responsive to external disruption and fast paced change"





food on board, you couldn't book seats in advance and the service in general was very low," says Van den Ende. The case study proves two important points, that radical innovation changes the way markets behave and that consumers are prepared to pay for a worse service if the price is right.

Today, virtually every national carrier has introduced its own low-cost airline. In a more price sensitive age, airlines realise they can pare back the customer experience by reducing, for example, the space between seats and cutting luxuries like cooked meals without losing significant market share.

But where there is innovation there is also risk. Not all disruptive technologies succeed. One example cited by professor van den Ende is the US grocery home delivery company Webvan. Backed by over \$1 billion of venture capital, the company made the mistake of setting an over-ambitious target - a two-hour time slot for deliveries. Unable to keep pace with demand the company founded in 1996 failed after three years of falling far short of customer expectations.

Technology start-ups are highly vulnerable to competitors who either copy the original idea, but execute it better or who invest more heavily in promotion. What case studies like Webvan tell us is that smart technology is no guarantee of success and that management always needs to be testing the market and looking for new technologies that can add value to their business.

In this age of fast moving technological change, competition can come from nowhere and challenge your business model. University of Sydney's Professor Kai Riemer explains the secret of survival is to engage with emerging technologies early and to be responsive to potential challenges that might come from the fringes of the industry. "We call it agile management. Companies must be responsive to external disruption and fast paced change," he says.

Riemer gives the example of BlackBerry whose manufacturer was unable to see the significance of the newly launched Apple iPhone – with disastrous consequences. He explains: "The iPhone put the entire industry on a new trajectory. But BlackBerry just couldn't see it coming. They dismissed Apple's touch screen as a gimmick useful for playing games and taking snapshots but little else. They stuck to the idea that serious business executives needed a miniature keyboard to type reports and send texts. Of course, the touch screen could do all of this, and more. What BlackBerry failed to realise was that its unique selling point could have been a server based e-mail system and server architecture. They could have redesigned their offering to become an infrastructure for secure business e-mail independent of any particular device."

Disruptive technology like the Apple iPhone reaches a global market and its impact is felt everywhere. Global companies like Google and Amazon are now masters of developing and exploiting "disruptive" technologies, breaking down the concept of national or local markets. "Global companies used to be the underdogs in local markets, whereas local companies were able to operate more efficiently at home. In the digital era, companies like Google and Amazon have shown that this is no longer the case," says Professor Henri Schildt of Aalto University School of Business, Finland.

The relentless rise of internet shopping giant Amazon has not just impacted on small countries; it has revolutionised shopping in the USA threatening the viability of shopping malls and large retailers like Sears. According to CNN Money, between 2010 and 2016, Amazon's sales in North America quintupled from \$16 billion to \$80 billion while Sears' revenue remained constant at around \$22 billion. The success of internet shopping platforms like Bonobos or the clothes retailer Asos has forced physical-store retailers to offer similar deals and convenience online.

These shopping channels have been made possible by digitalisation, firstly by setting up web-based platforms which act as an efficient online marketplace and secondly by analysing vast amounts of sales and customer data generated and responding to it with new products and services. "Digitalization used to merely support companies' operational activities, but it now lies at the core of their strategies. Research indicates that 90 percent of strategic initiatives taken by American companies are based on software of one kind or another," comments Schildt who prefers to talk about data-driven, rather than digital business.

"Global companies used to be the underdogs in local markets, whereas local companies were able to operate more efficiently at home. In the digital era, companies like Google and Amazon have shown that this is no longer the case"



This assessment is supported by management consultants. International multidisciplinary firm, Capgemini, runs innovation centres to assist small business start-ups in both the private and the public sectors. Based in London, Adele Every, Capgemini innovation and portfolio director offers some useful advice. "I've seen a lot of companies embrace innovation, and some are better at it than others. The ones who succeed are the ones who understand that there is no point in simply developing apps. You need to start with a clear vision that has buy in from across the organisation; then you can look at what place technology has in helping bring that to life." she says.

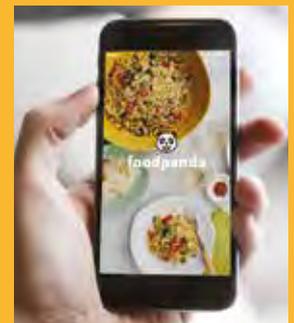
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CASE STUDY / FOODPANDA



The emergence of collaborative consumption, which has given rise to the sharing economy, is just one example of a new way companies are being challenged to rethink their strategy. Over recent years, platforms like Airbnb and Uber have harnessed digital technology to revolutionize their industries, and now food delivery services have joined in the movement.

Former CEMS student Iacopo Rovere (29) graduated from the University of Sydney in 2013 and is now CEO of the home delivery company foodpanda in the Philippines. Rovere began his career with foodpanda's parent company, Rocket Internet, in Berlin before joining the new business spin out two years ago. "We see emerging markets like the Philippines as our niche. We operate in a city of 12 million people in a country where GDP is growing above 6 per cent per annum," says Rovere. The company employs 500 people, most of them full-time, who carry out all of the in-house functions including logistics and transporting cooked meals.

The market for internet based home delivery is a young upwardly mobile demographic who enjoy the convenience of eating restaurant quality food at home. foodpanda's platform enables local restaurants to expand beyond their immediate locality. Rather than being restricted by the number of available seats, foodpanda can deliver a restaurant's meals to a much larger clientele within a 3-4 km radius.

"Digitisation is the focus of our strategy," says Rovere. "We scan menus and provide restaurants with feedback on customer behaviour and preferences. Our system provides restaurants with a clear profile of their customers – the ones who return regularly with repeat orders. This provides a quick way for restaurants to expand their market, to benchmark themselves against the competition and to improve their offer."

foodpanda's business model may be disruptive in the short term but in the long term it will need to stick to its vision while responding to changes in the marketplace. As with all successful companies, vision and agile project management are the key.

CAN THE 4TH INDUSTRIAL REVOLUTION MAKE THE WORLD A BETTER PLACE?

BY Professor Tomas Casas i Klett University of St.Gallen and Dr. Lee Howell member of the Managing Board of the World Economic Forum

"In the context of the 4th Industrial Revolution, digital technology is enabling a range of emerging technologies from the physical and biological worlds to combine, creating innovations at a speed and scale unparalleled in human history"



Drawing upon the innovative CEMS-HSG course 'Disruption and Innovation in International Business' we explore how disruptive technologies can make the world a better place.

A bigger kind of disruption but undeniably beneficial

As a result of the global financial crisis, younger and older generations alike are confronted by a series of systemic shocks that continue to reverberate politically. Less noticed or understood are profound and disruptive changes to the real economy. These are both similar and dissimilar to those of past industrial revolutions.

Arguably, the fears, the uncertainties and the resistance processes of the 1st industrial revolution are as much a feature of today's landscape as they were some two hundred years ago. Such fears begin with the realization that something big and different is happening, and that the technology it brings is difficult for the majority of people to comprehend. Today the omnipresent concern is that technological changes will result in massive unemployment with artificial intelligence (AI) overtaking humans and a new machine age reshaping society. However, a dystopian future, while possible, is far from preordained. The difference lies in several key characteristics of a 4th industrial revolution that point towards much greater benefits for business and society than the disruptive drawbacks and strain that may initially arise from change.

In order to understand this, it is first important to recognize that digitalization is a 21st century phenomena that differs significantly from digitization in the late last century where data was converted from an analog to a digital format. Moreover, in the context of the 4th Industrial Revolution, digital technology is enabling a range of emerging technologies from the physical and biological worlds to combine, creating innovations at a speed and scale unparalleled in human history. Take, for example, the speed to which we were able to map our genetic code and then move on to editing the genome. These two major advances in life sciences will influence the future of precision medicine – otherwise impossible without the advances in information technology and data science.

Thus, while the speed and scale may prove testing for many, the undeniable benefits of 21st century digitalization outweigh any initial fears or resistance that companies, organizations and people may have.

Impacting the what, how, and who we are

For business and management, the 4th Industrial Revolution provides a clear set of stakes, primarily those of adopting both digital technologies and the mindset required to change an international business model rapidly in response to shifting trends and so create new value at scale. In any industry, the company that will master digital technologies will gain two distinct advantages over competitors: it will be faster and lighter both in terms of assets and people and its growth potential could be exponential versus linear.

However, those very same elements are also a source of deep societal concern. In his book *The Fourth Industrial Revolution*, Klaus Schwab, Founder and Executive Chairman of the World Economic Forum (WEF), highlights that the velocity of change is distinct from previous industrial revolutions. The speed of this change might leave people with the feeling that they are replaceable, secondary to the pace and efficiency of machinery and digital tools. Be that as it may, it is interesting to note that there are many people in the world that still do not fully benefit from the 1st industrial revolution, a striking example being the one billion plus humans still without access to electricity – two hundred years after its first commercial use.

On the other hand, there are also many other telling examples of successful technology-people combinations. And one of these can be found in the mobile phone. Today, nearly five billion people throughout the world use them – a device that was invented in 1973 – the major difference being, thanks to advances in digital technology, that people now use their mobile telephone for an increasing range of applications such as purchasing goods and services, monitoring their health or entertaining themselves and others.

The 4th industrial revolution is therefore evolving at an exponential rather than linear pace and leverages our multifaceted, deeply interconnected world. Indeed, it is not only changing the 'what' and 'how' we do things but also 'who' we are if we consider how we already interact with digital technology – for example, the influence of social media on daily news and national politics. We can also extrapolate how advances in life sciences will soon allow us to change our own genetic code to prevent illness or to enhance our wellness. Leaders will not be expected to predict the future but will instead have to develop a compelling strategic narrative that invites stakeholders to build a shared future together.



Digital disruption for the stability of society

The CEMS-HSG course Disruption and Innovation in International Business taught in spring 2017 for the first time was indeed launched with the ambition to bring the multifaceted implications of the 4th Industrial Revolution to the classroom. The course was thus designed to disrupt participating students and project them into scenarios where digital technology would generate beneficial outcomes for humanity. Most importantly, its aim was to develop high-performing teams that would create a strategic narrative that acknowledges disruption and embraces innovation. To that end the St.Gallen Top Team Model (SGTT), a framework to reflect on team work to achieve high-performance, was effectively deployed.

As we enter the 4th Industrial Revolution, opportunity and danger come hand in hand in a world that is increasingly complex, globally connected and uncertain. Many futures are possible in an era where data is the new oil powering the economy, where international business models must disrupt to scale, or where licenses to operate can easily be revoked. To succeed the course created a different and unique learning experience where students were exposed to thematic lectures, expert interviews, visits to international companies and organizations. The capstone project was both an integrative read-thread and a challenging assignment that proposed tangible examples of AI, digital and other technologies leveraged for the future benefit of society.

PHOTOS:

The course closed with a trip to Geneva. On the way, the group visited the Nestlé Research Center in Lausanne and Dr. Bernhard Maier presented the Swiss giant's game-changing efforts to disrupt food, one of the areas where venture funding is at its hottest. Students visited the lab where food products are, yes, prototyped. They then met with the scientists who are re-engineering sugar – that is, a Nestlé sugar boasting more sweetness with 40% less sugar crystals. (On the final day of the course Professor Klaus made a surprise appearance and to the student's delight discussed a variety of topics with them).





"As we enter the 4th Industrial Revolution, opportunity and danger come hand in hand in a world that is increasingly complex, globally connected and uncertain"

AUTHOR PHOTOS BELOW:

Lee Howell (left)

Tomas Casas (right)



One student project concluded that manufacturing and low-skilled office professions will especially face rising unemployment as a result of digital disruption, with a -2% and -6% impact respectively. Inversely, two job sectors look likely to enjoy a period of growth – Engineering and IT and Math. On a global scale, nearly one third of the workforce is directly associated with automatable activities with China and India most likely to be impacted. At the same time, digital tools and applications will enable human beings to follow their intrinsic motivation and focus on creativity as a comparative advantage over machines. This in turn can lead to a purpose-driven, entrepreneurial society in which independent and hyper-enabled workers can make meaningful contributions to things that matter to them and shape the future.

Other student research assignments pointed to healthcare, energy, agri-food and legal services. Tomorrow's world will see technology serving people and society in ways we could hardly have imagined barely ten years ago. Affective computing – machines capable of interacting with humans and expressing such human characteristics as empathy – will be a lifesaver for patients and a boon for the mental healthcare industry. Digital disruption will also lead to decentralized energy, giving people the possibility to tap into the grid and cherry pick electricity generated by renewable energies, perhaps even their neighbors'. Legal and financial services, stabilized by blockchain technology, will undoubtedly liberate the customer until now constrained to purchase services via an

intermediary such as a bank or insurance company. And bigger still, digital inroads may also provide the answer to food scarcity, 3-D printers enabling 'meat printing' to feed the world of 2050 in a sustainable way.

As many of the student participants in this unique and highly original course explained, being thrown into the complexity and challenges of technological disruption was tough, eye-opening and demanding. Yet understanding disruption, and learning how to harness it for a better future was "exhilarating" too. What initially began as pessimism when confronted of the immensity and dangers of the challenges to international business, the political economy and humanity, turned in to optimism once the tangible opportunities of it all became, in moments of team insight, very clear.



University of St.Gallen

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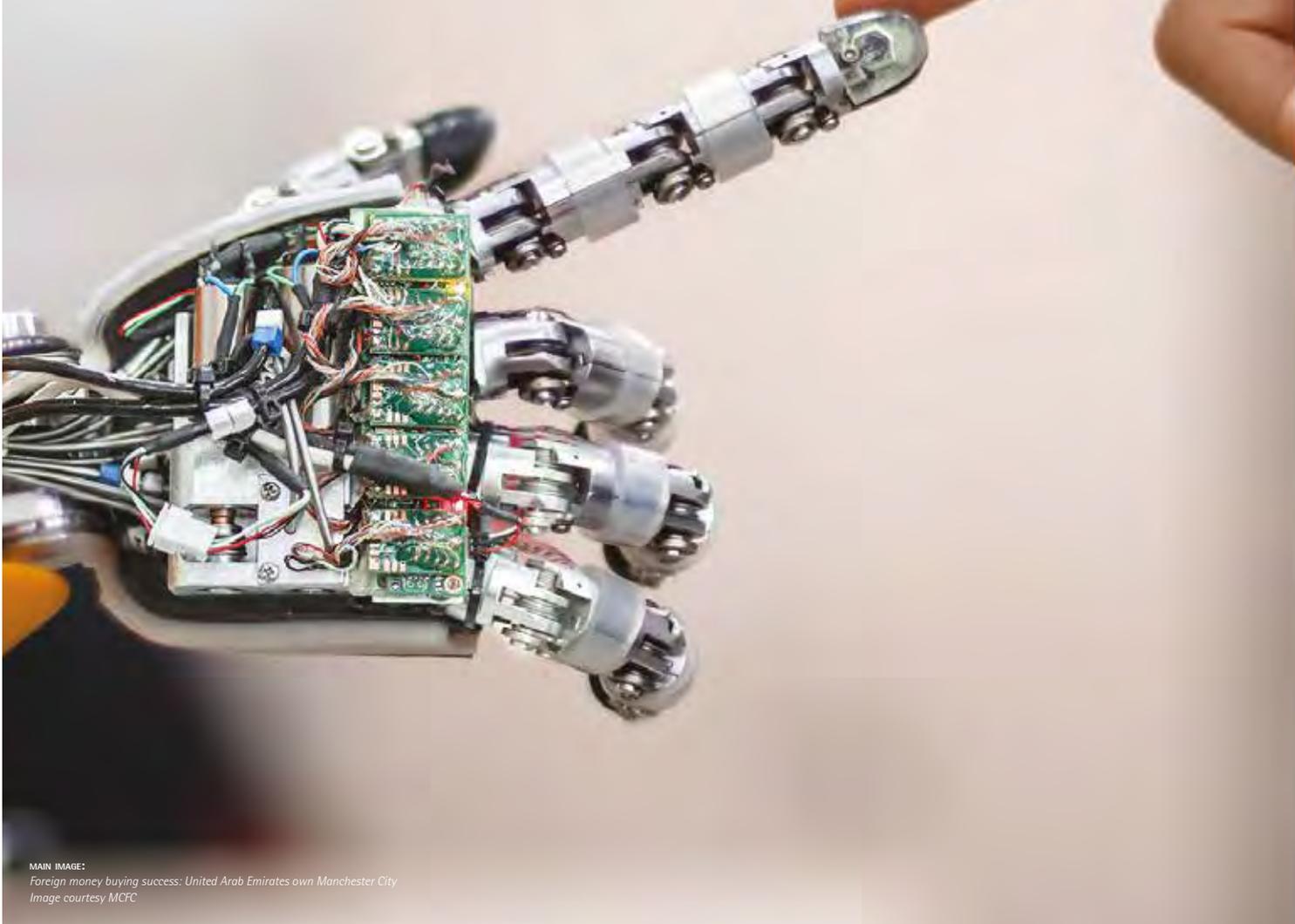
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Dr. Lee Howell is on the Managing Board of the World Economic Forum (WEF) and as Head of Global Programming is also responsible for the WEF Annual Meeting in Davos.

BANK ADVISOR VERSUS BANK ROBOT: HOW FINTECH CAN DOVETAIL THE TWO

BY **Mr. Shinichi Mizuno**, Senior Managing Director at Nomura Securities Co., Ltd
Professor Masa Inakage, Dean, Graduate School of Media Design, Keio University
and supervisor of the CEMS student business project

A CEMS student project at Nomura Securities takes us into the world of Fintech, banking robots and beyond



MAIN IMAGE:
Foreign money buying success: United Arab Emirates own Manchester City
Image courtesy MCFC



In spring 2016, a group of CEMS students at Keio University were given the opportunity to work on a business project with Nomura Securities, Japan's largest investment bank and brokerage firm. The assignment was to deliver a business proposal centered on the topic of Fintech. As little as four months later, Nomura securities launched 'Robo Advisor', a groundbreaking new service developed around a major breakthrough in computer technology. Robo Advisor provides automated, goal-based asset management advisory services to retail investors in Japan, proposing model portfolios based on investors' answers to a series of questions designed to understand their financial situation and goals. The added value for investors is that they have the option to immediately access fund offerings based on these model portfolios. Cool technology – but does it mean the end of the human interface in our banks?

Of opening hours and interaction: robot versus bank clerk

The word 'robot' might scare a few of us. There are nice ones like Astro Boy or Pepper in Japan, but there are also the nasty ones we are used to seeing in the Hollywood productions. We tend to remember the latter – machines which always seem to grow super intelligent through a technological quirk during development and which then inherit an unpleasant habit of wanting to enslave the human world.

Rest assured: the Robo Advisor is not actually a physical robot but a sophisticated software package used via digital devices such as our personal computers, the web, and smartphones. Robo-advisors are digital platforms – possessing robotic technologies – which provide asset allocation recommendations. However, they do indeed perform tasks that were previously carried

out by humans, from collecting client information such as their financial situation and risk appetite to providing asset allocation guidance.

So why do we need such an innovation when most banks and brokerages are within a mile of every customer, and especially given the core competencies of establishments that may include quality human service? An initial answer lies in opening hours: retail branches of financial institutions in Japan are generally open from 9 a.m. to 5 p.m., or until 3 p.m. in the case of a bank. However, with the diversifying lifestyles of customers, there are many people now unable to visit branches during these traditional hours. It is significant that robo-advisors are positioned as a touchpoint with these customers. Moreover, the opportunities represented by robo-advisors are widening and they are also beginning to be used as a sales support tool. So there is still room for the human.

It may get physical

Japan is a pioneer in many fields and when it embraces new technologies, the country seems to have the knack of being able to create feelings, empathy and relationships between man and machine. Physical robots such as Pepper are a good example: they are charming, have almost human-like qualities, and are being accepted as touchpoints, especially among the younger generation. For the moment, Nomura has chosen to add touchpoint and adviser functions to digital devices such as tablets and smartphones rather than adopting something in the form of a robot. But the physical robot scenario might well see the day in a not-too-far-off future. Indeed, there may come a time when each household has a robot that, in addition to supporting daily life, also offers financial services.



For the moment, there are two types of robo-advisors available on the market. The first type – as employed by Nomura Securities – performs up to asset allocation, as well as buying and selling of securities products in cases where customers hold an account. The other type can be used from the moment a user opens an account right up to sales transactions. In Japan, the first type is the most prevalent, mostly due to the low level of financial literacy in the country compared to the US.

Generally, use of touchpoints with the younger generation has increased – though when analyzing its Robo Advisor users, Nomura noticed that it was also being used by people in their sixties and seventies, meaning that the service is something that can be used across generations. This may in part be due to the development phase behind the digital service which included ensuring that people from other industries who were not familiar with financial services were involved in the design process. Moreover, assistance was also sought from the people behind the smartphone services for retailers such as MUJI and UNIQLO, as well as calling upon illustrators to back up the service with a unique and very different visual communication from that usually employed by the institution. Robo Advisor and its success will surely undergo further analysis in the future, and if it doesn't actually find a physical presence within branches or in shopping malls, it will benefit from the singular feature of all digital products – it is relatively easy to improve.

“Fintech and the increasing use of Blockchain and bitcoins will ultimately show people that they can benefit from technology in their daily lives. It will also see the perceived distance between general users and the financial sector – something that ordinary folks see as complicated and only for the rich – reduced”

From robo-advisor to Fintech: will they transform financial institutions?

The advent of Fintech looks likely to provoke changes in how finance operates and how it is structured. One of the clearest of these is that Fintech will help automate administrative operations, allowing businesses to significantly improve productivity. Secondly, the true meaning of innovation will be realized when things that users previously felt were inconvenient are improved gradually. This is true of virtual currency and Blockchain which, in the future, may present the possibility that users utilize the platform of a bank or a service of a financial institution before they even realize it.

Fintech also seems to be shifting the ball-game in terms of the players on the field. Developments in China are a clear example, where non-financial, e-commerce companies are attracting huge investment as they begin to offer financial services hitherto only offered by banks. In the case of Japan, where developments

have been slow due to stringent regulations, regulators are now beginning to show an understanding of the possibilities offered by Fintech. But although this points to major transformations looking likely in the near future, it is less a question of seeing new, non-financial entrants on the market than linking partners via virtual currency and Open Application Program Interfaces (OAPI) to increase the level of satisfaction for customers who go between partners.

However, clear-cut decisions cannot be made in the world of finance only from the perspective of profits. Until now, customers have been conscious of physically visiting branches in order to use services and it is probable that this mindset will weaken in the coming years. When this happens, the strengths and weaknesses of each individual service will become clear, leading to the bottom line that it is the uniqueness each financial institution has fostered in its bouquet of services which will prove decisive for their respective success or failure.

Fintech and the ageing society: technology knows no age

Japan is a developed country with a high average life-expectancy, and how it responds to this and whether it will continue to evolve methods applicable to an ageing society is something closely observed around the world. Healthcare and insurance systems are important, but living longer increases expenditure. Coupled with the distinctly Japanese phenomenon of accumulating large amounts of savings deposited in banks, the question of how to financially secure a long life with one's assets is a major proposition that has come to the forefront. Could Fintech provide a win-win?

The feeling is that Fintech will provide financial services in Japan with an age of unequalled development. Not only will digital touchpoints provide easier, user-friendly solutions, the methods of delivering information will also change dramatically. If banks can share customer traffic with other industries, it may be possible to analyse customer behavior using AI and respond to their needs more efficiently. Looking further down the road, the points system operated by various shops and convenience stores that incentivizes customers, stores purchasing power within an electronic card and generates daily information on consumer behavior patterns, may well provide the trigger for shifting from a so-called saving accounts mentality to an asset management mindset. In other words, customers will feel that they can gain something through asset management instead of leaving money in a bank which does not lead to higher yields.

Fintech and the increasing use of Blockchain and bitcoins will ultimately show people that they can benefit from technology in their daily lives. It will also see the perceived distance between general users and the financial sector – something that ordinary folks see as complicated and only for the rich – reduced. But there is a still long way to go before Fintech accelerates the change. An example? An overseas visitor to Japan would nowadays find it difficult if they didn't have a small amount of cash in their pocket – even in Tokyo. But there is an opportunity – and not very far down the track – the Tokyo 2020 Olympics which many see as a starting block for Japan's mass utilization of Fintech.



AUTHOR PHOTOS ABOVE:
Mr. Shinichi Mizuno (left)
Professor Masa Inakage (right)

NOMURA

 Keio University

ABOUT THE AUTHORS

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ABOUT NOMURA HOLDINGS, INC.

Nomura is an Asia-headquartered financial services group with an integrated global network spanning over 30 countries. By connecting markets East & West, Nomura services the needs of individuals, institutions, corporates and governments through its three business divisions: Retail, Asset Management, and Wholesale (Global Markets and Investment Banking). Founded in 1925, the firm is built on a tradition of disciplined entrepreneurship, serving clients with creative solutions and considered thought leadership. <http://www.nomuraholdings.com/company/outline/>

Masa Inakage is the founding Dean and Professor of Keio University Graduate School of Media Design, known as Keio Media Design or KMD. He is a member of CEMS Strategic Board, and he oversees Keio's Business Projects. Inakage sits on advisory and executive boards of private companies, as well as serves as a member of government committees and international organizations including the World Economic Forum.

ABOUT KEIO UNIVERSITY

Established in 1858 by Yukichi Fukuzawa as a small school of Western learning, Keio has a history as Japan's very first private institution of higher learning. Over 150 years since its founding, Keio has thrived under its founder's motto of jitsugaku, or empirical science, as it continues to transform Japan as a modern nation through contributions to education, research, and medicine. <https://www.keio.ac.jp>

DIGITAL DISRUPTION: AN OPPORTUNITY FOR CULTURAL TRANSFORMATION

BY **Dr. Jochen Stratmann**, Principal at A.T. Kearney and **Janne Mengelkamp**, Consultant at A.T. Kearney

For companies to be and remain competitive in the future, they will have to increase the speed with which they innovate and create new digital initiatives

Major changes ahead

The Consumer and Retail industry will change more over the next 20 years than over the last 200 years. First on the list is the drive towards increasing personalized, one-to-one marketing with companies leveraging data analytics to deliver individualized messages and product offerings. Examples are chatbots or intelligent in-store signage that adapts its message to the consumer depending on age and gender. Another example is autonomous vehicles drastically reducing last-mile-delivery costs will open up an era of mass direct-to-consumer disruption, and 3D printing will most likely offer decentralized supply and demand matching. And in terms of value chain transparency, blockchain will push consumer information to a new level: whether the manufacturer wants it or not, there will be no secrets left for the consumers in the ingredients list! The Internet of Things (connected products) will revolutionize retail stores with self-service checkouts, and will also provide a unique opportunity for companies to build a consumer eco-system and diversify their stream of income via data, services, and hardware. Each of those dynamics in isolation has the potential to drastically change any particular industry. Connected together, they will revolutionize all industries.

For all the technological advances, the brick-and-mortar store looks likely to live on. However, there will be a huge change in role that

the brick-and-mortar store has to fulfil. The focus will no longer be on selling specific items stored in a specific location – consumers will be able to finish the purchasing process at home or online via mobile apps. It will instead lay on consumer advice, personalization of the product and offering additional services. In this light, the size and number of physical sales outlets and employees look likely to decrease. As a result, companies will have to adapt to this new digital era by not only changing its workforce but also by adapting internal structures and its organization.

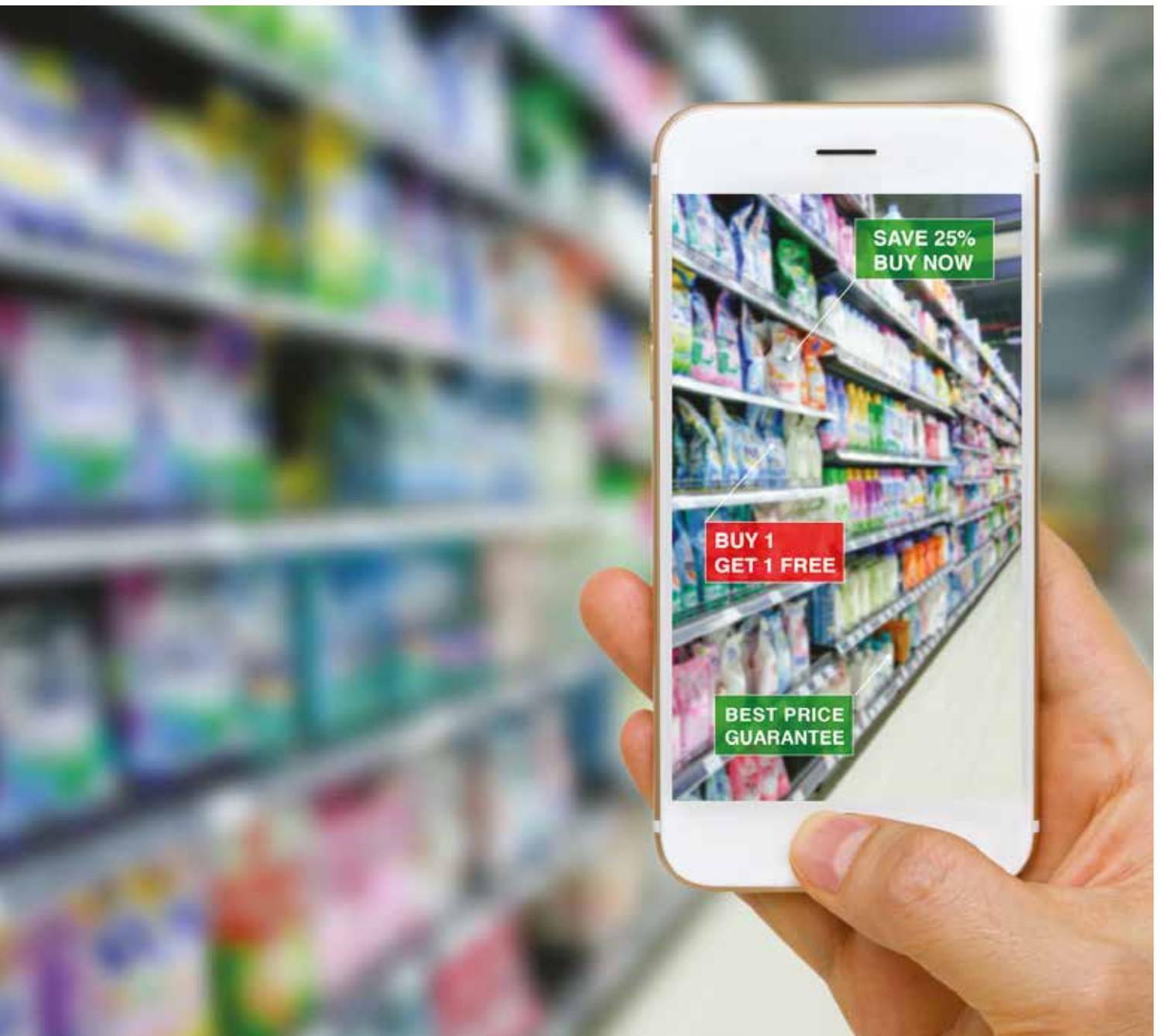
Digital disruption and leadership

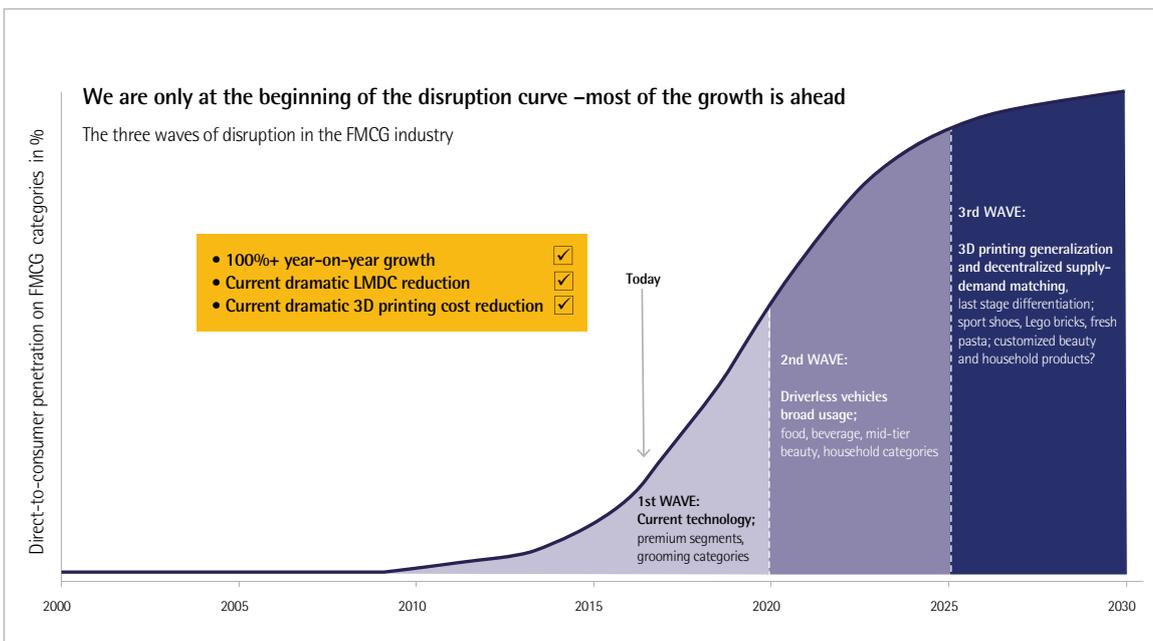
For companies to be and remain competitive in the future, they will have to increase the speed with which they innovate and create new digital initiatives. Success is not in predicting a certain future, but in structurally transforming the business to deal with an ever uncertain future:

- Future leaders will have to focus strongly on creating the 'new and different'. In return, this requires more risk taking compared with today.
- In order to sustain in the ever-changing environment, leaders need to learn and adapt continuously. The ability to apply past lessons to new situations and handle first-time situations will be key.
- Future challenges will not be easy. Leaders who are successful in the future will not be afraid but motivated by tough obstacles.



"For companies to be and remain competitive in the future, they will have to increase the speed with which they innovate and create new digital initiatives. Success is not in predicting a certain future, but in structurally transforming the business to deal with an ever uncertain future"





"The digital journey will require a drastic new, strategic approach to talent management that is built on a deep understanding of the complexity and diversity of the talent pool"



AUTHOR PHOTOS BELOW:
Dr. Jochen Stratmann
Janne Mengelkamp



ATKearney

Successful business doesn't start with digital strategy but rather education

The main challenge for the Consumer and Retail industry – as for other industries – will not lay in adapting business strategy to digital disruption but to make the culture and organization evolve:

- Digital education and continuous learning: As a first step in the learning journey, leaders must learn about the disruptions to come and the ever-changing new challenges they may represent.
- Consumer-centricity: Employees need to learn that the consumer is at the centre of the business and that also requires deep understanding of the massive change in consumer behaviour as a result of ongoing digitization.
- Transformative Purpose: At the beginning «of a transformative journey stands the definition of a company's transformative purpose. As part of a company's vision, this strongly impacts employee culture and steers digitalisation initiatives.
- An entrepreneurial, experimentation culture: Fostering this type of culture means implementing empowered, multi-disciplinary, decentralized teams.

The digital journey will require a drastic new, strategic approach to talent management that is built on a deep understanding of the complexity and diversity of the talent pool. On the one hand, the pace of change will accelerate – new jobs and roles will emerge, and some others disappear. On the other hand, requirements will change – talents that got the companies 'here' may not get them 'there' and to the future. As such, attracting and retaining employees cannot be the sole responsibility of HR. Moreover, recruitment and retention of top executives must be a top priority. Getting the right mix of talents is essential too: companies must combine internal talent determined to be 'digitally ready' with select, externally recruited, 'born-digital' talent from pure-play Web 2.0, IoT organizations.

The 'war' for talents will further intensify and increased employee mobility will be tough

on companies without clear employee value propositions. Thus, companies need to be aware of what attracts people – the inspiring vision/purpose of a company, flexible employment, challenges and autonomous working opportunities and the moving away from skills building to aligning capabilities with the strategic objectives of the business.

Strategy: risks and challenges

Strategies written today can only incorporate what we know at the moment. However, what will shape and transform the industry is most likely not yet out there! Change is constant and companies and leaders therefore need to be aware of the driving innovations that will shape the industry in the future – new technologies, changing consumer preferences, and business model innovations.

Entering into e-commerce and direct-to-consumer requires large investments as well as patience. Manufacturers and retailers should not risk pumping money into 'digital' without a clear purpose and thought-through target consumer value proposition. And when investing, retailers and manufacturers should remember their brick-and-mortar stores – it is important to create a consumer experience to still make it worth going to an offline store. A digital strategy therefore needs to incorporate both the online and the offline worlds.

Most companies are already fully aware that consumer data has enormous potential. Getting and owning this data will over time become even more important. However, companies need to take full advantage of analysing this data to get to know the consumer and shape the proposed value proposition to the consumer's needs. Consumer data is not only key in the online sphere – but needs to be leveraged both offline and online.

ABOUT THE AUTHORS

Dr. Jochen Stratmann is Senior Principal with A.T.Kearney advising Consumer & Retail Client CxOs on Strategy & Digital Transformation related topics. Janne Mengelkamp, Senior Consultant, is a member of A.T. Kearney's Consumer Goods & Retail Practice. Her focus lies on Transformation and Direct-To-Consumer Strategy.

BLOCKCHAIN: TECHNOLOGY AS POWERFUL AS THE INTERNET?

BY **Christina Lomazzo** CEMS Alumna, Consultant & Blockchain Researcher at Deloitte Canada
Michal Gromek Stockholm School of Economics, Center for Strategy and Competitiveness,
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Much ink has already been spilt on blockchain, with two distinct schools of thought wrestling for space in the headlines: those who proclaim that blockchain will unshackle the world's population from financial institutions and other intermediaries, and those who doubt the technology's chances of success.

Blockchain, did you say?

Blockchain is a type of database – a chain used to store and transmit information and arranged in the form of data blocks – that once saved in the network cannot be changed. Imagine a publicly accessible excel file, where the content can never be erased. Each block contains information about a certain number of transactions. And when the block is full, the next will begin to fill with information. But what is so revolutionary is that an operation carried out by one user is visible to others within a peer-to-peer network without central transaction verification computers (such as a bank). Thanks to a system of such connected computers and a public book, transaction records are difficult to hack – not only through complex cryptographic tools and other security measures, but because would-be pirates would have to break into several dozen, hundreds or even thousands of computers at the same time.

The origins of blockchain can be traced back to the late 1980s and a small group of anti-establishment geeks that Julian Assange termed in a 2012 book *Cyberpunks*. These activists advocated the use of cryptography and privacy-enhancing technologies to minimize risks coming from outsiders and defend personal privacy. Satoshi Nakamoto – the pseudo used by the unknown person or persons who designed Bitcoin – built on this and when he introduced his Blockchain-Bitcoin

software solution in 2009, it was the first to align economic incentives in securing a decentralized system of digital cash. Released as an open source, it launched the network and created the first tokens of the cryptocurrency. Bitcoin provided its users with a way to have ultimate control over their financial wealth, its users being able to participate in fast, decentralized and secure global transactions.

Blockchain will disrupt

Not everybody may benefit from the development of blockchain: established market players such as banks and financial institutions are two examples. This is because Bitcoin can be compared to a revenue and expense ledger, with each transaction being visible to the public. Moreover, a newer development within blockchain technology called Ethereum can be compared to an Excel file where users can add formulas or texts, such as an IF THEN statement that auto-executes, but never erases content. Ethereum allows facilitating so-called smart contracts – and these decentralized arrangements might challenge stock exchange operations.

There is also the additional possibility that Ethereum will disrupt the dominant presence of interoperability players such as Visa and MasterCard, simply because transactions via cryptocurrency will no longer have to be conducted through an intermediary. This will cause the high fees customers currently face from remittance services providers to





"The origins of blockchain can be traced back to the late 1980s and a small group of anti-establishment geeks that advocated the use of cryptography and privacy-enhancing technologies to minimize risks coming from outsiders and defend personal privacy"



reduce. Moreover, as transaction costs between players in the financial sector fall, and instant international transfers become taken for granted, the established order characterized by the Swift solution looks likely to be threatened. To account for the impact, this disruption can be compared to what the introduction of cell phones has done to the landline infrastructure. But so far, another potential competitor has resisted: traditional currencies. The extraordinary price fluctuations of cryptocurrencies, their price often looking like a bubble, and their relatively tiny market – with the combined market value of all cryptocurrencies being less than \$40 billion as of May 2017 – mean that the established currencies of, among others, the Dollar, Euro, Stirling and Yen have nothing to fear from the competition – yet.

Look back at the 1990s: even after years into its deployment, many believed that the internet was just a passing fad. Blockchain supports many applications, including smart contracts, asset registries as well as transactions that go beyond purely financial uses. So can it disrupt established players? Think of it in the following way: established currencies are not relevant simply because people believe that they are, but because their respective governments can collect taxes...in traditional currencies. This tells us something about the way in which the majority of transactions will be conducted in the foreseeable future.

Ultimately, the multi-billion dollar question is: can one function in a modern economy without putting their trust in something – be it an independent central bank or a technological breakthrough? Moreover, can we trust an institution without being controlled by it? This is not, however, a rhetorical question. After all, the benefits of having an established organization and the benefits of blockchain technology are not necessarily mutually exclusive.

Blockchain has to be understood to thrive

As with many new technologies, blockchain has faced many challenges in its short lifespan and will need to overcome a few more. It is generally agreed that there are currently three elements which could impact the mass adoption of blockchain: its image, the role regulators and governments will play, and the need for a common set of standards.

When Bitcoin was first introduced, much media coverage around cryptocurrency carried stories of it being used for heinous reasons and because the concept of blockchain was introduced hand-in-hand with Bitcoin, this often scared off individuals or organizations from considering the technology. However, it is also true that society continues to use cash to pay for goods despite the fact that it is often used in illegal transactions.

Having undergone multiple developments and improvements since its inception, blockchain technology continues to evolve. In this context, governments – while refraining from regulating technology – have created legislation on elements that impact how a blockchain would be used. The effect is that this can determine some of the specifics of how a user sets up his blockchain solution or even the jurisdiction under which he establishes his company. For example, some companies have begun using blockchain technology to raise money – the process being called Initial Coin Offering. And since regulators have not yet commented on this type of crowdfunding, some companies have been hesitant to pursue this avenue of raising money. However, since this



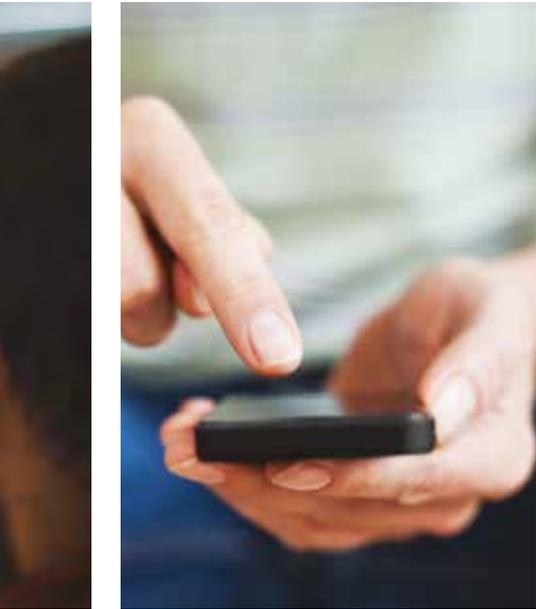
improves the bargaining power of market participants when they deal with brokers, the intermediation business should be concerned. The level of adoption of blockchain by regulators and governments can therefore potentially be a catalyst or a hindrance, in the latter scenario people or organizations taking a 'wait and see' approach until they see government bodies leveraging it.

As the blockchain ecosystem continues to grow exponentially, a further stumbling block for future growth and adoption could be the lack of common standards across solutions. Projects are being built on various blockchain fabrics such as the Bitcoin, Ethereum and the Hyperledger blockchain – which carries the risk of creating silos of information. Creating an element of interoperability would exponentially increase the functionality of leveraging a blockchain solution.

The near future: chains of a different, liberating kind

Remember the times when the 'modem' was used to connect to the internet? It was not only expensive, slow and quaintly noisy, but it also blocked the phone line for all family members. Using the simple functions of the internet back in the time of modem or ISDN, it was impossible to imagine that 20 years after we would be downloading applications on our smartphones that allow us to store our credit card data and navigate our car. It can be argued that blockchain technology in 2017 might be somewhere between the fax and modem period: it is general knowledge that it exists but the average Joe might be challenged to say how it might be used in the everyday life.





"However, the future is only a link away in the chain of things. Already, blockchain is being used in the background – often unpublicized to avoid negative customer reaction – Google and Apple, for example, using blockchain technology instead of Visa regarding interoperability"



However, the future is only a link away in the chain of things. Already, blockchain is being used in the background – often unpublicized to avoid negative customer reaction – Google and Apple, for example, using blockchain technology instead of Visa regarding interoperability. On a non-financial level too, blockchain is freewheeling into our digital lives. Practical implementations include basic digital spin-offs of blockchain to verify smart contracts, a Singaporean bank which recently saddled up other banks in Asia and Europe and facilitated instant transactions between them that excluded the Swift banking system, and a Stockholm-based company that enables its customers to benefit from blockchain-based crowd-funded insurance solutions. Even the UNO is gearing up into the possibility of using blockchain technology – a Danish company having received a letter of intent for the development of credit scoring models in emerging economies. But these examples are just the tip of the blockchain iceberg. To visionaries, blockchain is the sky. And it has no limit.



AUTHOR PHOTOS
CLOCKWISE FROM BOTTOM LEFT:
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Timotheos Mavropoulos is an empirical finance researcher focused on impact investing and fintech, with experience in real estate finance and asset pricing. Michal Gromek is a Researcher on FinTech; InsTech; RegTech and Crowdfunding at Stockholm School of Economics. Christina Lomazzo is a CEMS alumna and a Consultant, Technology Enthusiast & Blockchain Researcher with CEMS Corporate Partner, Deloitte Canada

BUSINESS AND MANAGEMENT ON THE EDGE: HOW TO SURVIVE IN AN ERA OF CHAOS

BY Prof. Piotr Ploszajski SGH Warsaw School of Economics

Insights into how disruptive technology shapes and re-invents business, management and entrepreneurship

Today, the whole economy is 'new' The term 'New Economy' is typically used to describe new, high-growth industries that are on the cutting edge of technology and that are the driving force of economic growth. This new economy is commonly believed to have started in the late 1990s when high-tech tools such as the internet and increasingly powerful computers began penetrating the consumer and business marketplace. At that time, companies in the new economy were heavily involved in the Internet and biotech industries, but the ripple effects of new technologies have since spread out to all other industries as well.

The result is that today there is no longer a division between an 'old' and 'new' economy: indeed, the whole economy becomes 'new' today. Every company, whatever the sector they are operating in, finds itself constantly required to be on the lookout for the latest technological developments that may directly or indirectly influence their business. Moreover, these technologies transform conventional thinking on strategy, marketing and innovation, giving rise to a new set of business rules.

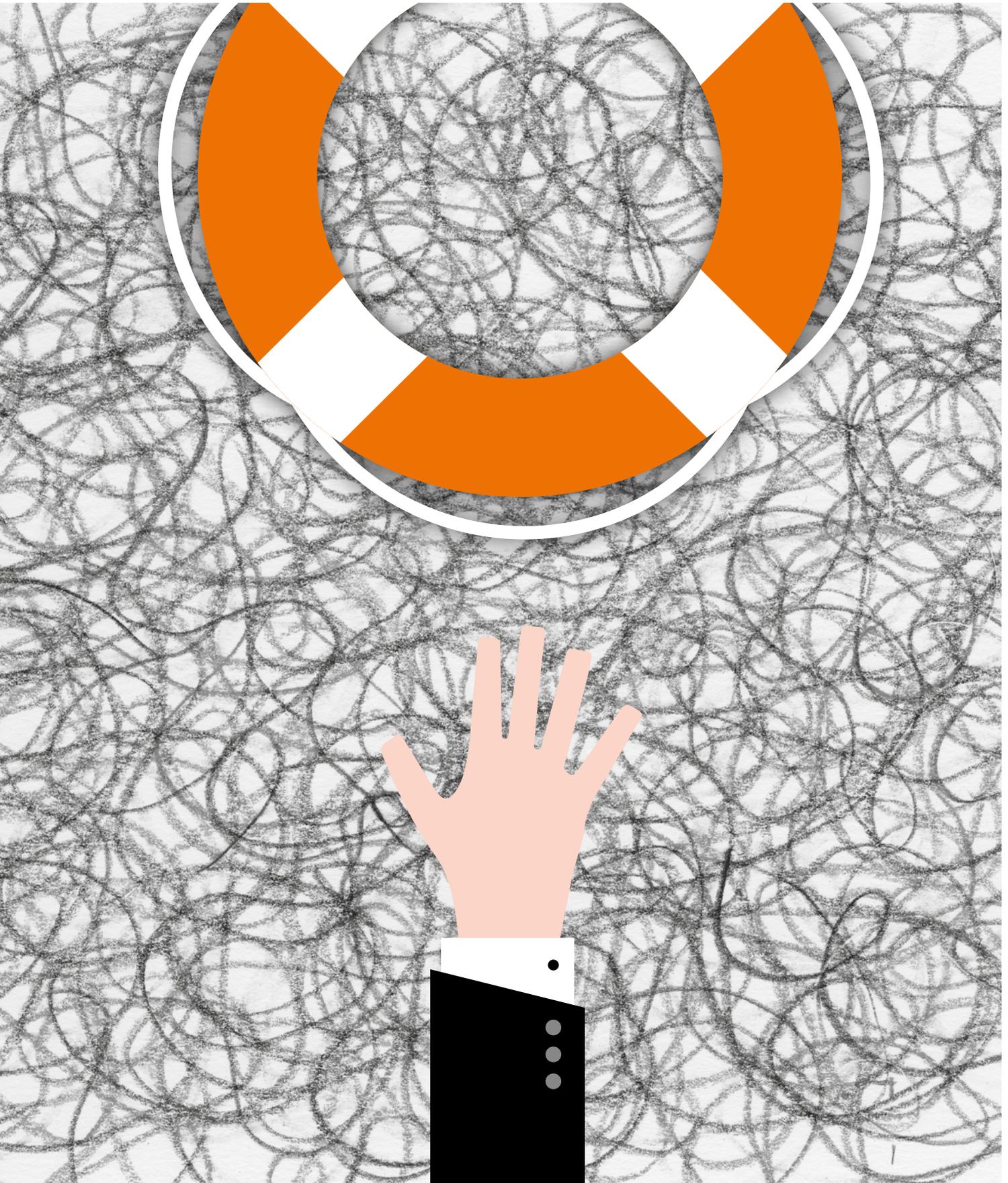
Over the years, the business world has become accustomed to seeing mature products wiped out by new technologies and ever-shorter product life cycles. But now entire product lines – whole markets – are being created or destroyed

overnight. Disrupters can come out of nowhere and instantly be everywhere: and once launched, such disruption is hard to fight.

So what can a company do to predict or defend against big-bang disruptions? The hard answer must be – nothing! However, in this context, it is critical for firms to gain an understanding of the new realities of the market and transform their organization in order to provide quicker and smarter adjustments to those realities. Indeed, the stark reality is that everything invented in the last one hundred years will have to be re-invented within the next fifteen, the major danger to any company being an inability to see the connection between today's fiction and tomorrow's reality.

"The stark reality is that everything invented in the last one hundred years will have to be re-invented within the next fifteen, the major danger to any company being an inability to see the connection between today's fiction and tomorrow's reality"





Taking it to the edge

Today, there is an infinite amount of ink and pixels spilled on most any topic, making the job of a company's business intelligence unit both rich and taxing. However, the principle today points rather to the fine print and tiny announcements, meaning that the greatest nuggets of information and foresight are located at the edges, not the center – weak signals are worth watching, not the strong ones. Indeed, if something has become a strong signal, more often than not it is unimportant from the point of view of business opportunities. Too bad for those seeking acclaim: If everybody says your idea is great, best to drop it – because it's most probably too late.

Dealing with complex economic, social and organizational systems that operate on the edge of chaos, today's managers and entrepreneurs alike need the ability to pick up subtle changes, even without knowing quite where to look for them and by looking everywhere at once. If we take a look at the major revolutions in business, almost all of them were started by a small group of people huddled around a beer in a bar – and there are millions them going for a drink every day: metaphorically, we have to spot the ones that will start a revolution, whether it is a new technology, customer value, market trend, or business model.

Weak signals, strong messages

Given that the future most likely manifests itself on the edges, detecting weak signals is nowadays becoming one of the most critical managerial skills. Big social, economic and management systems (just as much as biological) are chaotic in nature as they are defined by chaos theory. And as we all might know, the main feature of a chaotic system is the so called sensitive dependence on the initial conditions – more widely known as the *butterfly effect*: tiny changes in one parameter of the system may eventually produce a profound effect somewhere far away in that system: a butterfly beating its wings over Japan may 'create' a tornado in South America.

This brings us again to the importance of detecting weak signals in business early on. Business in general, but even more crucially the managers on an individual level, need to build and constantly develop a personal system of antennas continuously reading the environment in search for new, important but still tiny, developments. However, the big problem with weak signals is that there are far too many of them, and most of them with no real meaning, though it is certain that an obsession in tracing weak signals in faraway places, seemingly distant from where we stand and supported by well-selected antennas such as smart-info platforms, inspirational blogs and magazines such as Kevin Kelly's *Wired*, will give our students as well as business clients and their companies a real life-time competitive advantage in these times that are increasingly chaotic and butterfly-like.

"Only the hybrid companies will survive, those able to combine the two seemingly contradicting organizational formulas: a corporate rigor and a 'garage' vigour. One of the things that makes a great company today is realizing that somewhere on the planet Earth, in some backyard garage, there's a kid who's going to do it better"





The art of survival in the 4th Industrial Revolution

There exists no single model that leads to success despite what myriads of management books and MBA programmes in the last 50 years have been suggesting. Yesterday's *either-or framing* is a gross oversimplification. Take a look at the airport bookstore (something of a personal crusade), its shelves typically stocked with three kinds of books: cookbooks, romance, and business/economic books. Look at the titles and it will describe this oversimplification we live in: "Four Simple Methods to Fight Global Recession", "One Minute Manager", "Become a Leader in Three Weekends" (sitting next to "Becoming a Surfer in Three Weekends").

Tolerating, accepting, and, yes, revelling in paradox is the approach demanded by our chaotic economy. Management today is paradoxical. It requires: efficiency and openness, thrift and mind-blowing ambition, nimbleness *and* a workplace that fosters creativity.

Organizational systems based on the Newtonian model are not equipped for these dualities. Moreover, managing a creative company today entails a balancing act between the potentially opposing goals of encouraging creative freedom and ensuring an orderly process and consistent financial results. Management is (almost) never about 0-1: good-or-bad, yes-or-no, wise-or-stupid, short time-or-long time, people-or-profit, tradition-or-novelty. It is about fine lines and the necessity of finding the right balance between hierarchy and spontaneity, necessary control and tendency for experimentation, benefits of standardization and leaving a space for "deviations", closed and open innovation, useful employee integration and protecting creative 'unadjusted' individuals. And it is a general reality that companies clearly have a problem with this.

Today, only the hybrid companies will survive, those able to combine the two seemingly contradicting organizational formulas: a corporate rigor and a 'garage' vigour. One of the things that makes a great company today is realizing that somewhere on the planet Earth, in some backyard garage, there's a kid who's going to do it better.

In conclusion, this age is witnessing the end of management as we knew it, and in every aspect:

- strategy (emergent, based on weak signals)
- business models (cross-sectorial, patchwork, technology-based)
- marketing and branding (many small interactions on customers' terms)
- decision-making (real-time big data-based, predictive modelling, information symmetry)
- a company's architecture (loosely coupled, fluid, curious, paradox-imperfection-based)
- the customer (well informed, spoiled, erratic, connected)
- competitors (coming from outside, convergent)
- innovation (open, emergent)
- competitive advantages (short-term, both construction and self-destruction)
- human resources (multi-cultural, independent, mobile, life-centric)
- an economy's structure (no sectors, global transformation, new global centres of gravity)
- the management paradigm (no more *either-or*)
- the major management metaphor (quantum systems, holography).

Accordingly, and as a final word, a business leader has to do three things well today: driving design, driving technology, and thinking paradoxically. Some people who are really good at one can build a pretty good company. People who are very successful are good at any two. The true business visionaries have to be good at all three.



PHOTOS LEFT & ABOVE:
Prof. Piotr Ploszajski



SGH

ABOUT THE AUTHOR

Prof. Piotr Ploszajski is Chair in Management Theory, Warsaw School of Economics, international business consultant and speaker.

HOW TECHNOLOGICAL DISRUPTION LEADS TO GREAT FINTECH SERVICES

BY **Kristóf Dócs** CEMS Student at Corvinus Business School, Hungary, and President of the CEMS Club Budapest

This CEMS-Corvinus business project saw five CEMS students involved in a business project working alongside with MasterCard Advisors to assist a real client, a mid-sized Hungarian bank

The CEMS-Corvinus business project saw five CEMS students involved in a business project working alongside with MasterCard Advisors to assist a real client, a mid-sized Hungarian bank. During the project, the combined teams created case studies on more than seventy international Fintech solutions and companies, and then summarized the acquired information to determine significant trends and identify success and failure stories with the aim of helping the client develop digital banking services. The student business project team presented their final research materials to the top management of the bank. From this rich experience, Kristóf Dócs of Corvinus Business School, Hungary, and President of the CEMS Club Budapest, shares his insights into how technological disruption can lead to tailored Fintech solutions for customers.

The European Union goes Fintech

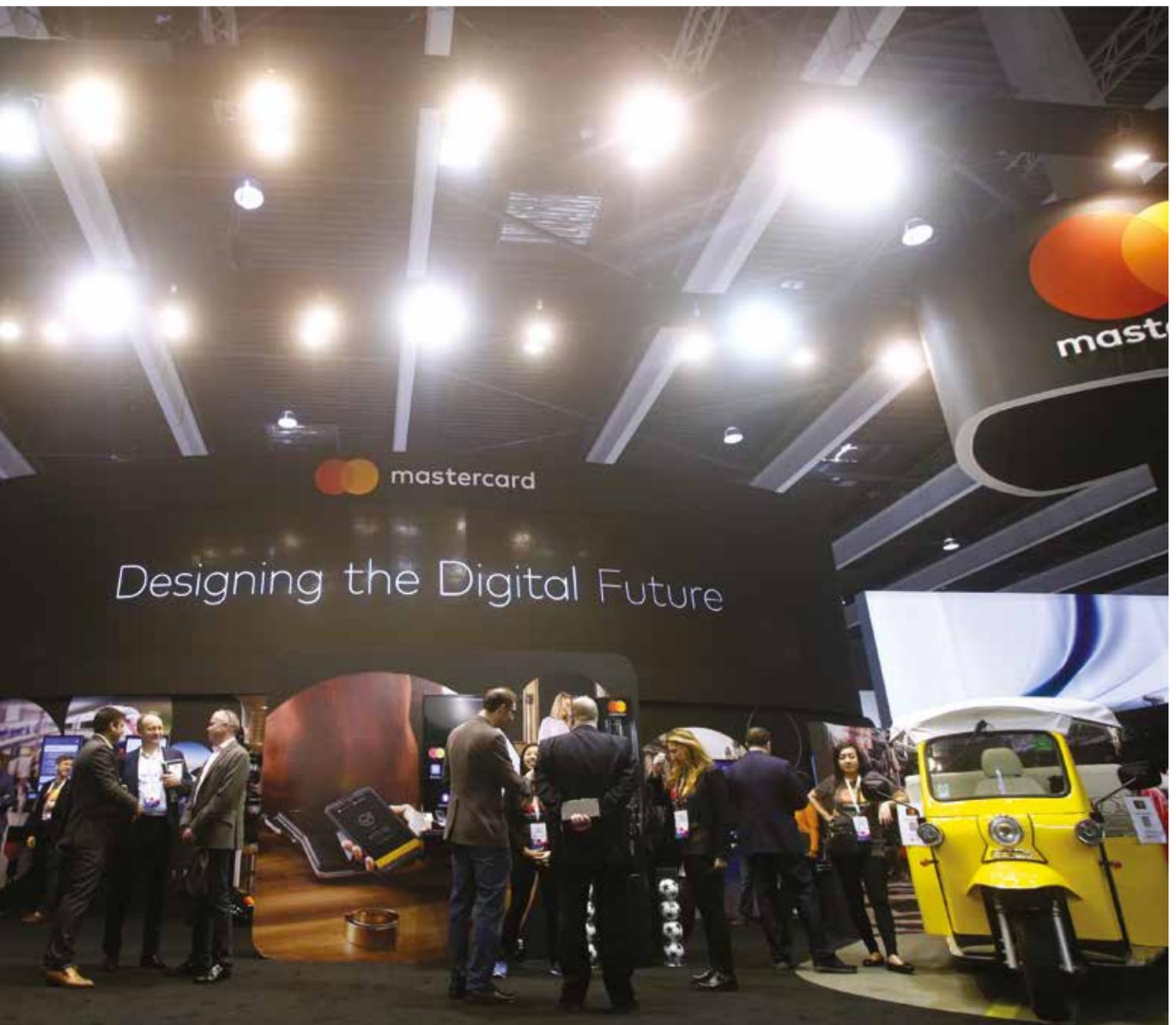
Rapid technological disruption in recent years has produced a bouquet of concerns but also opportunities. In force since January 2016 and mandatory by January 2018, the European Payment Services Directive (PSD2) is one such initiative in the

attempt to seize the opportunities offered by new technologies. On the surface, PSD2 greatly improves market efficiency and it is hard to find a counter-argument against its implementation. Its goals include laying a legal foundation for a better integrated internal market for electronic payments within the EU, a comprehensive set of rules for making international payments within the EU as easy, efficient and secure as payments within a single country, reinforcing the Single Euro Payments Area (SEPA), and opening up payment markets to new entrants – leading to increased competition and, ultimately, greater choice and better prices for European consumers. However, there is always an argument against regulations for an entire continent: this is its rigidity. Indeed, we can witness on a daily basis how complicated it is to agree on something on EU level, and if a regulation becomes outdated, implementing a new one may take a large slice of time on this scale. It can especially be problematic on such a fast-paced market as the financial market, with regulatory reactions having to be equally as fast in order to maintain competitiveness and avoid crises. The latter provides matter for concern for all of the EU citizens and firms.



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"The goals of PSD2 include laying a legal foundation for a better integrated internal market for electronic payments within the EU, a comprehensive set of rules for making international payments within the EU as easy, efficient and secure as payments within a single country, and opening up payment markets to new entrants"



Banking and financial services: the impact of Fintech on organization, structure and human resources

Digital innovation transforms every industry on every level, and European banking and financial services are no exceptions. Typically, digital inroads affect those tasks which are repetitive and carried out by labour, for such tasks are the easiest to automate. And the banking sector is still characterised by a vast amount of these human-undertaken tasks. Until now, regulation accounts for the fact that many processes are still paper-based, but as regulation changes and these processes become digital, automation will not only take over those jobs, but will also create large numbers of new positions. This is because new digital channels create tons of data and contain lots of information on customers that banks could effectively utilize. In this light, low value added repetitive jobs look likely to disappear but new highly skilled employees will be needed. As execution becomes more and more automated, and the workforce's focus shifts towards more creative tasks, the classical highly hierarchical organizational structure of banks will become flatter and previously unheard-of skills will be required.

But does Fintech mean the end of the all-important relationship customers have with their bank manager – when trust, listening and emotions play just as big a part in buying a service as the conditions and benefits it offers? Many Fintech firms would answer yes without hesitation, though the situation is more complicated than that. While it is true that emotions play a huge role in making decisions, it does not necessarily need personal, face-to-face contact. Facebook for example has a very close relationship with the most active users despite operating solely in the virtual world. Indeed, Fintech firms are eager to aim to achieve something similar, offering a personalized product but through automation. On the other hand, financial services are way more important for most people than Facebook and other social media players and bank branches do indeed seem to create a sense of safety and trust that is essential for financial services contracts to be signed. The question begs to be asked if it is simply a generational difference – today's youth being only too happy to use digital-only services, but it can be that a sense of trust can only be achieved through actual personal contact, proximity and relationship-building.



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"Digital innovation transforms every industry on every level, and European banking and financial services are no exceptions. Typically, digital inroads affect those tasks which are repetitive and carried out by labour, for such tasks are the easiest to automate"



PHOTOS LEFT & BELOW RIGHT:
(left to right) Gilles Dobbelaere,
Kristóf Dócs, Stefania Vág
(MasterCard), Bernadett Koncz,
Katinka Földi and Franziska Gleiche



Does Fintech mean an end to unethical business practices?

Some may claim that technology has produced a darker side to our daily transactions. Take, for example, when we book a hotel or flight online. Skipping from provider to provider in the space of a few minutes to compare prices, we return to the initial site consulted only to discover, to our astonishment and indignation, that the price has hiked to a level as high as its competitors. This leaves the customer not only forced into an option but also leaves a nagging feeling that he has been tricked into purchase.

Unfortunately, unethical business practices appear in the financial industry from time to time regardless of Fintech solutions, although regulators have historically been keen on ensuring safe and fair financial services since the early 20th century. The same is valid for Fintech. Indeed, new digital financial service providers must apply the same procedures as large banks, disclose the same information, and have the same capital adequacy requirements besides many other necessities. This cannot guarantee a fair and honest market for eternity, but it can mean that starting up unethical practices is much more complicated on the financial markets than in travel booking, for example, due to the aforementioned highly regulated nature of the market. In the end run, customers must be aware, as always – and not forget it – that these companies aim to make money. Choosing services carefully is therefore essential in order to avoid scams. Fortunately, it can be said that Fintech firms have been able to operate without any major scandals so far. We can only hope that it will remain so.



Fintech can benefit industry and customers alike

Fintech has the potential to provide tremendous improvements both on cost and quality of service. This is because automated processes require a less labour-intensive workforce which in turn could lower operational costs. Furthermore, advanced analytics in credit rating can improve risk costs, and Blockchain-based general ledgers have the potential to reduce the number of system failures. The list of cost-saving opportunities is almost endless, but I believe customers will most benefit from these savings due to high competition on the market. So much for cost-saving – but customers will benefit from improved service quality too. Clients will no longer need to visit physical high-street branches to do their banking, but do it online. Indeed, the customer experience of applications is fast-improving and more individually tailored products will soon be offered to meet their needs.

Will customers' needs shape Fintech or vice-versa? The answer is most likely both, with perhaps the upper edge going to customers' needs shaping Fintech. Most new startups have emerged on the idea that there is a customer need not yet met by current solutions. In the CEMS-Corvinus business project with MasterCard Advisors we scanned more than 70 Fintech solutions for analysis. While Fintech firms can shape customer behaviour, a majority of our findings pointed towards a typical founding story that an entrepreneur was dissatisfied with the offer provided by banks, a factor that triggered the desire to start his own service provider platform to fill this void.



ABOUT THE AUTHOR

Kristóf is a CEMS student at Corvinus University of Budapest and the president of CEMS Club Budapest. He spent his exchange at Stockholm School of Economics last fall and did his international internship at McKinsey and Company. Besides professional activities he enjoys playing the guitar and is a big fan of sailing.

METHODS IN THE MADNESS: SOCIAL MEDIA AND LESSONS FROM POLITICAL LEADERSHIP ELECTION CAMPAIGNS

BY **Keith Carter** Visiting Senior Fellow, Department of Analytics & Operations, NUS Business School

Taking a hard look at the US Presidential election to share the lessons we can learn from disruption in digital media



"The 2016 US election campaign will be remembered for personal attacks and daring statements. With accusations flying, disinformation, misinformation and appeal to emotion and identity, politics became reality TV – 'live' wherever there is an Internet connection"

We still remember it – and rightly so. The 2016 US election campaign result took the world by surprise, not least for its successful use of digital media to spin opinion, control the narrative and disrupt the established order that had apparently ruled since 1950. After nearly 8 years of subtly attacking the legacy of a sitting president to try to establish one candidate, an un-expected contender leveraged a deeper vein of discontent in the country. The one of class difference, a story mainstream media always tries to convert to race, often successfully. Looking at Trump's audiences carefully, the attendees were a surprise, racially mixed but class unified.

Donald Trump punched into the 2016 campaign cycle with energetic style. The 2016 US election campaign will be remembered for personal attacks and daring statements. With accusations flying, disinformation, misinformation and appeal to emotion and identity, politics became reality TV – 'live' wherever there is an Internet connection and abetted by viral marketing through social media. Donald Trump's campaign appealed to emotion and identity, featuring brazen attacks on individuals and institutions. Inversely, Hillary Clinton's campaign was about stories (real heroes), families (hers and yours) and legacy (inspiring future women leaders), delivered through statements that appeal to identity, role and tribe.

In past elections, US voters have sought a hero. Barack Obama's campaign played out a recognisable 'hero narrative', the lone figure succeeding against all odds. In 2016, we saw high colour images of the election candidates, standing alone, warrior-like in their pose, fist raised against a dark background: 2016 was all about the maverick. No institution was safe, even the old and mighty ones – the UN, Wall Street, Science, and NATO among them – all came under attack. 2016 was all about the promise of something different – a new way of doing things that made sense at the scale of a home, a family, and the individual citizen.

“Was the US election campaign simply part of a wider trend? Emotion was a similarly core feature of the Brexit and the French elections. In political campaigns the focus is generally not on what is said, but how it is said, who is saying it and critically, when and where it is said”

A global trend?

Was the US election campaign simply part of a wider trend? Emotion was a similarly core feature of the Brexit and the French elections. In political campaigns the focus is generally not on what is said, but how it is said, who is saying it and critically, when and where it is said. It is for this reason that comparisons across different countries are difficult: no two places are the same, no two histories identical. But there are indeed a number of behavioural traits that are similar: the appeal to 'tribe' and identity, visual cues, and the timing and location of key speeches.

In France, for example, Macron's 'over-the-top' speech at the 10th December campaign launch was among the high drama moments of the election campaign that ultimately won him the presidency on 7th May 2017. Damning attacks on rival Fillon reached a crux in January 2017, while 'stunt' campaigning featured in the campaign of far-left Melenchon (who showed up in several places at the same time, by using a hologram). The cases for and against the UK remaining a member of the EU (however ambiguous that relationship may be in practice) played strongly on an appeal to individuals' sense of nationality and identity, with words like 'sovereignty', 'ours' and 'protect' signalling that, legal complexities aside, this was a vote about territory.

The digital aide

Social media is a gift to advertisers who want near-real-time insights about the success of their concept, product or image management. Data analytics allow analysts to sift reactions that matter from those that fall outside of, say, the target demographics or market, while natural language processing and generation can be used to auto-generate responses to trending sentiments. Similar techniques are recognisable in the 'advertising' campaigns of politicians and their sophisticated digital media teams.



© From Flickr: French Embassy in the U.S.



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"Successful advertisers know that consistent and repetitive messaging works well with busy audiences and the best messages are the ones that people already want to hear"

AUTHOR PHOTO BELOW:
Keith Carter



Quality of provenance and fact-based reporting is out, 140 character real-time politics is in. The key to successful messaging is, get it out fast and first. Veracity is less important when the prime objective is to stake out digital territory. Key to this strategy is controlling the narrative. Governments around the world have used 'troll factories' (legions who are paid to create fake accounts and comment on social media) since at least 2010. Russia has several thousand 'internet troops', China at least 300,000. The 'AK Trolls' of Turkey were formed in 2013 and number about 6,000, paid to neutralise critics of Erdogan's ruling party. The UK has at least 21 highly specialised soldiers: the British Army's 77th Brigade was specifically formed to 'control the narrative', particularly on persuading the UK's more impressionable and ideologically vulnerable citizens not to go to Syria.

Lessons for the corporate world

If the masters of the art of successful marketing are currently among the world's political elite, what trends and lessons can be transferred to the corporate world? New jobs have taken form in the past five to ten years, most notably those of community manager and big data analyst. And if business leaders are to use digital tools to relay traditional leadership attributes – providing vision, inspiring, fostering trust, setting example, etc. – it is reasonable to wonder if companies and organisations will see the rise of additional new job functions linked to that. However, we are seeing a transition, not a replacement. In large companies worldwide, HR is getting smarter at communicating across new channels, marketing managers are connecting with younger generation employees, and data scientists are analysing and supporting information needs across more units and functions.

Successful advertisers know that consistent and repetitive messaging works well with busy audiences and the best messages are the ones that people already want to hear. The concept of

'territory' is constantly evolving as personal brand is built around networks, social media status and 'tribe' (e.g. how many followers an individual can recruit, how many 'likes'). Text analysis of tweets and posts from the US election campaigns show that staying on-message builds brand. Once a message is built, smart advertisers control the narrative by constant surveillance and editing of their social media posture.

In the digital age, personality still matters. Political leaders use personal style to convince others of their mandate to act. Digital simply cannot replace a good speech – and even if we don't agree personally with the content of the speech, we remember it. Appeal to – and use of – emotion was an important feature in both the US elections and the Brexit vote – as it has always been throughout recorded human history.

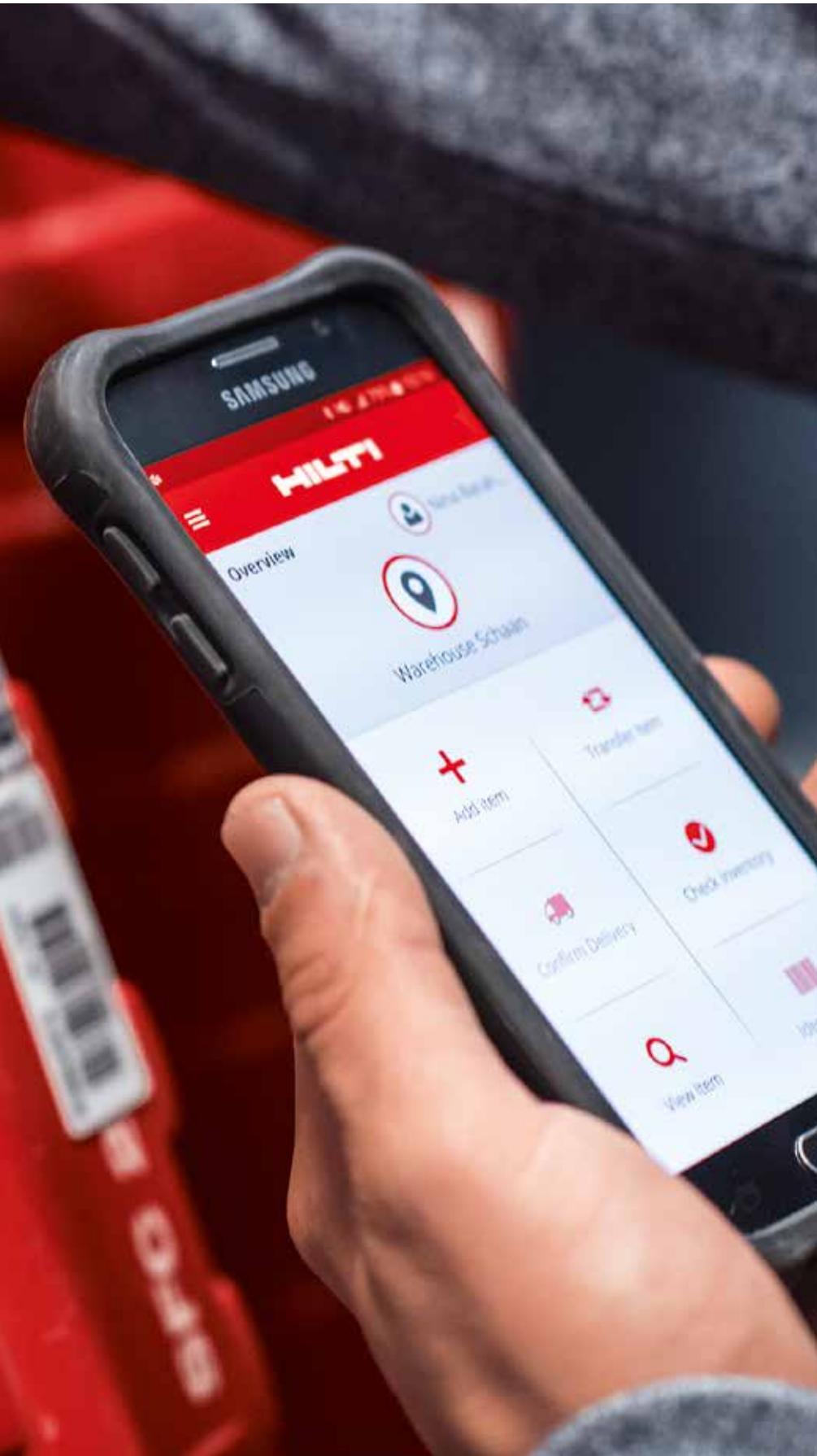
ABOUT THE AUTHOR

Keith Carter is Visiting Senior Fellow, Department of Analytics and Operations at NUS Business School, and Associate Professor at NUS School of Computing, Information Systems and Analytics. He consults senior business leaders on strategy, actionable intelligence, design thinking, and human capital. Keith started his career in finance with Accenture working at Goldman Sachs, then moved to supply chain as Head of Global Supply Chain Center of Excellence Competitive Intelligence, Estee Lauder Companies Inc. Keith has a passion for engaging and inspiring students to achieve more. He connects students with companies bringing theories to life through interactions with the business world.

ON TRACK TO TRANSFORM DISRUPTION INTO OPPORTUNITY

BY **Eduard Matús** CEMS Alumnus and Marketing Manager ON!Track
Josef Plachý Talent Acquisition and Development Manager at Hilti

Exploring the CEMS-Hilti business project to explain how the construction and maintenance giant harnesses digital disruption to provide innovative customer solutions



The last five years have witnessed the influence of digitalization on all the phases of the construction business. The most visible of these has been the use of smart technologies to improve a building's functionality. However, digitalization has also impacted the more traditional side to the industry with the emergence of smart tools and automated processes throughout the whole range of the construction phase. Engineers working on the early phases of building design and infrastructure have moved from 2D technical drawings to 3D models of future buildings and even virtual reality tools have recently found their way into the industry. Of significant importance is the fact that digital technologies are now influencing how construction companies run their business. Put together, all of these changes are resulting in both the speeding up the construction process and the increasing of overall efficiency.



PHOTO ABOVE:
 CEMS Hilti Business Project Team 2017
 (l to r)
 Michal Vačko – Hilti
 Jaroslav Ploc – Hilti
 Eliška Macháčeková – CEMS student
 Mariya Belcheva – CEMS student
 Petr Báša – CEMS student
 Aakash Ahuja – CEMS student
 Josef Plachý – Hilti
 Eduard Matús – Hilti

“In 2017 a mixed group of CEMS students and internal Hilti talents focused in Hilti ON!Track – a cutting-edge asset management software package that is a direct result of the influence of digitalization in the construction industry”



The Hilti-CEMS business project

It was in this context that in the spring of 2017 a mixed group of CEMS students and internal Hilti talents focused in Hilti ON!Track – a cutting-edge asset management software package that is a direct result of the influence of digitalization in the construction industry.. Combining their knowledge earned through academic studies with global guidelines and best practices from successful pilot projects abroad, the business project team crafted guidelines for marketing and sales in Hilti Czech Republic headed by Eduard Matús, himself a CEMS Alumnus. Greatly appreciated by the Hilti management team, special mention must be made of the team's final presentation of the project outcomes which both consolidate market vision and awareness and contribute to the insights featured in this article.

Digital disruption brings challenge: re-shaping the company's structure, processes and employee skills

For an organization to survive and grow, innovation is paramount. Among professionals in the field, it is widely recognized that Hilti's direct fastening solution, for example, allows workers to fasten electric cables and pipes 10-15 times faster in comparison to traditional methods: and these first direct fastening tools were launched by Hilti back in 1957. While a challenge, technological disruption forces organizations to look for radical leaps and, as in the case of Hilti, to take big steps in broadening their product portfolios. The company now enters new field and provides an effective asset management solution, helping companies to handle all the tools they require for their operations. Baptized ON!Track, the solution is technically an asset management and tracking software tool, but the related services that Hilti has tacked on are much broader in their scope and impact. In a nutshell, the software helps to make an in-depth analysis of the all the assets possessed by a customer, whereupon these are tagged and recorded in the

software system. This opens up a whole new vista of practical applications to the client that cover anything from tracking equipment and minimizing loss, optimizing the fleet park, saving time on inventory audits and speeding up the reassignment of products from site to site. In addition, the system also supplies handy data on frequency of usage and the movements of each asset and future applications are under study regarding purchasing, leasing and rental decisions.

This move also means dealing with a much broader range of contacts at the customer site. As such, employees suddenly need to understand specific customer concerns and answer questions regarding not only the people involved in the construction work but also, among others, the supply chain and finance. For customers, the implementation of new technology solutions represents a change in their internal processes and significant investment. In this context, the ON!Track experience has seen a shift in the negotiation pattern, with customers assigning senior management to discussions. – a challenge but also an opportunity to acquire new skills and know-how.

For innovation and the offering of new technology necessarily adds a rush of adrenalin to operations. New teams have to be swiftly built and deployed in the field to cater not only for system roll out but also for the issues generated by change that the customer will or may experience – resistance to the new, training and coaching needs, reassurance and technical support. Team mix too has to cater for the new challenge, composed not only with the solid base of experienced, existing internal sales teams but calling upon new talent from outside the company skilled in digital solutions and consultative due diligence. At Hilti, this new combination of skills has led to the creation of a new global organization structure, with enormous focus being given to close international cooperation and instant experience exchange between the national teams.

The era of new technologies does not mean the end of the human touch

Despite the age of digitalization, Hilti's purpose remains the same – to passionately create enthusiastic customers, build a better future for all the stakeholders and at the same time, aim for a strategy of sustainable value creation via leadership and differentiation. The company's business model remains firmly cemented in building strong long-term relationships and this necessarily calls for trust – something that the company sees as its main advantage over its competitors.

Explore internships, management trainee program for graduates and other opportunities in Hilti at careers.hilti.com.

ABOUT THE AUTHORS

Josef Plachý - Talent Acquisition and Development Manager in Hilti Eastern Europe, himself University of Economics Prague Alumnus, Finance, Sales, HR professional – passionate in people development.
Eduard Matúš - Marketing Manager On!Track, himself Alumnus of CEMS Prague and Hilti Outperformer Trainee Program, Sales and Marketing professional responsible for implementation of On!Track in Czech Republic, Slovakia, Hungary and Baltics, currently building teams of consultants, business analysts and On!Track managers.

"For innovation and the offering of new technology necessarily adds a rush of adrenalin to operations. New teams have to be swiftly built and deployed in the field to cater not only for system roll out but also for the issues generated by change that the customer may experience"



PHOTOS RIGHT & BELOW:
 Matúš Eduard
 Josef Plachý
 Management Team of Hilti Czech,
 as well as visiting GM's of Slovakia,
 Hungary and Baltics highly appreciated
 outputs of the student's work





GOING UP IN THE WORLD: TECHNOLOGICAL DISRUPTION CAN DRIVE CUSTOMER BENEFIT

BY **Teppo Voutilainen** Head of New Services & Solutions at KONE and
Corporate Supervisor for Aalto-CEMS Business Projects in 2016 and 2017

How KONE harnesses technological disruption and the CEMS partnership into an opportunity for developing value for its customers. CEMS MIM students from Aalto University teamed up with KONE, exploring the need for technology with a human touch



Urbanization means an opportunity for growth in innovative personalized services

Technological disruption and transparency make this truly the age of the customer. To succeed companies need to change their thinking from inside-out to outside-in. Driven by these circumstances, KONE works together with its customers and partners to identify their needs using co-creation and service design methods. KONE's initiative called Winning with Customers essentially makes the customer the focal point of the company's strategy and innovations. This means the company concretely walks in their customers' shoes. One example is putting on cycling gear and walking through the corridors of a residential building with bicycles to identify the challenges faced by the office workers who cycle to work in the early morning. Using the hands-on experience from the customer cases, KONE is able to provide customers with flexible solutions to improve the customer experience.

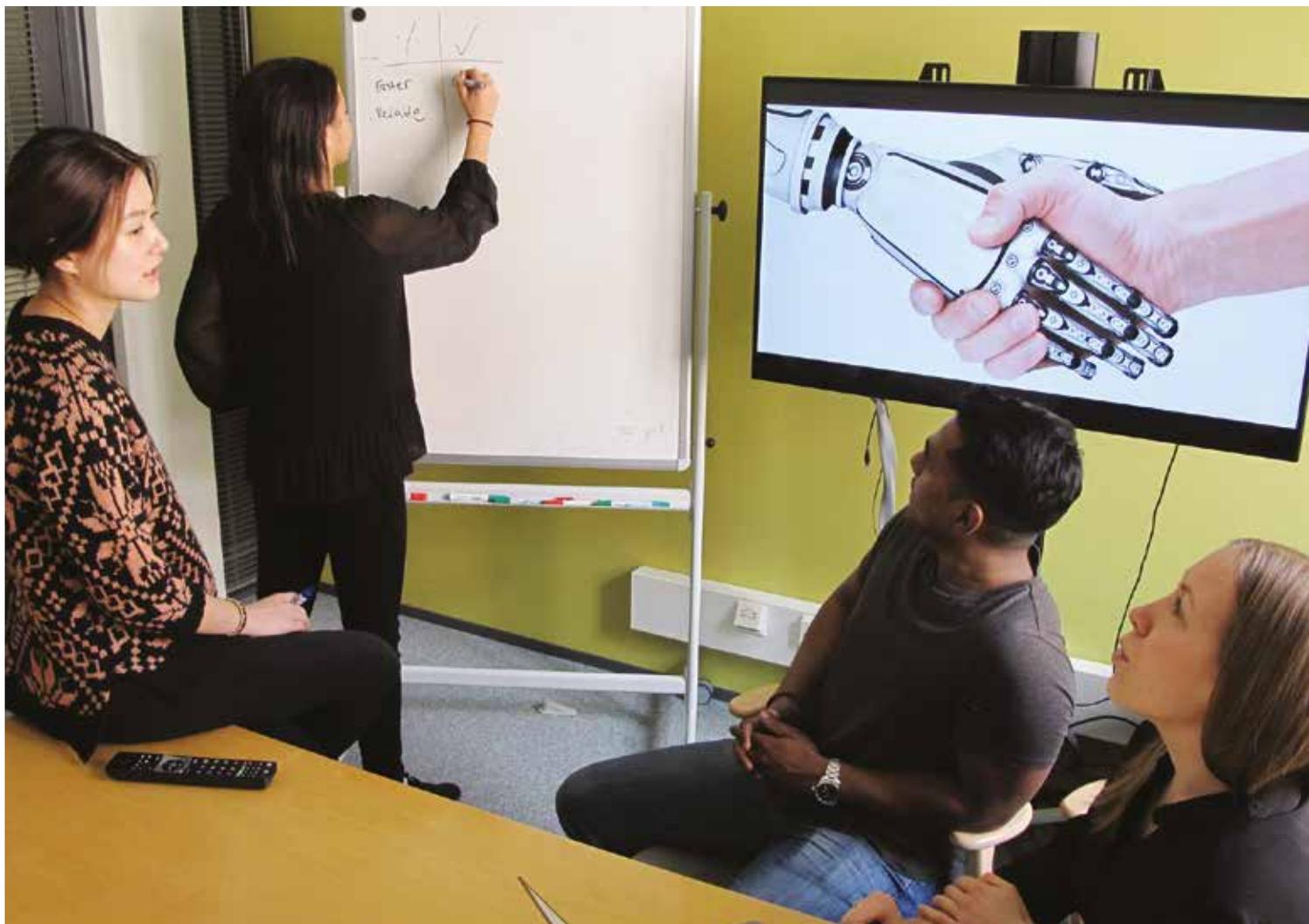
Think how much the world has changed in a decade. Digitalization is more than just automation and artificial intelligence. In the elevator and escalator business, digital disruption helps KONE to create a more personalized People Flow experience. Technological disruption has permanently raised customers' and users' expectations: they demand increased convenience, efficiency and enjoyment. Naturally not all customers are interested in the latest technological innovation, and the beauty of KONE's strategy 'Winning with Customers' is that it takes ownership of delivering what is important to their customers. Still, many of the new digital services are so cool, valuable and tailored to their needs that the users *want* to use them instead of *having* to use them.

Managing disruption

In addition to understanding customer needs, the value chain and the other players in the market, the second major challenge KONE has identified in a context of technological disruption is to be ready to change company processes, approach and culture. Here, proactivity and agility combined with a solid change management approach are required. It is also essential to understand the human component in changing the ways of working and thus, ultimately, changing the company culture. Finally, the third challenge is to build up the new skills and competences necessary in the era of technological disruption. This means that a company must strive for the development of skills and competencies and ecosystem thinking. It is essential for a "not-invented-here" attitude to be transformed into co-creation and co-innovation thinking.

KONE continues to adapt, re-invent and explore in these times of technological revolution, taking advantage of the CEMS business projects to further its advances into what some may view as uncharted and at times dangerous waters. KONE sees these uncharted seas of change as an opportunity to discover new worlds that enhance both company and customers alike. In 2017, KONE had two CEMS teams from Aalto University working on the challenges and opportunities of digitalization.





Reaping the benefits of automation while keeping humans at the heart of business

One of the CEMS teams looked at the opportunities of automated customer service. Like KONE, many organizations now have a myriad of automation technologies at their disposal, harnessing such benefits as robotic process automation, machine learning, and artificial intelligence. This multitude of options has flourished in what many see to be the fastest-paced era of change the world has ever seen; an era that has witnessed giant technological leaps and bounds in the areas of cognitive computing, text recognition, natural language processing, virtual assistants and cloud technologies. Within this highly topical and daunting context, the CEMS Aalto-KONE business project challenged students to look at how companies could reap the benefits of automation while still maintaining the personal touch and customer focus in their services.

On the surface, the technological inroads of the last few years offer almost limitless benefits to users and customers. Artificial intelligence, for example, can be used for understanding natural language and speech, providing services such as chatbots, or helping customers to browse and pinpoint the right information they require on the Internet. For employees, automated services offer the possibility to make their daily work more meaningful, simple questions being able to be catered for by robots while employees' expertise can be used in more complex and ultimately satisfying issue resolution scenarios.

On the consumer side, changes in technology first need to be explored with potential users, for resistance to change may result from the unclear comprehension of new technology. Included in this approach is the awareness of the capabilities and limitations of the tool – machines can be as good as, or even better than humans in certain areas, but

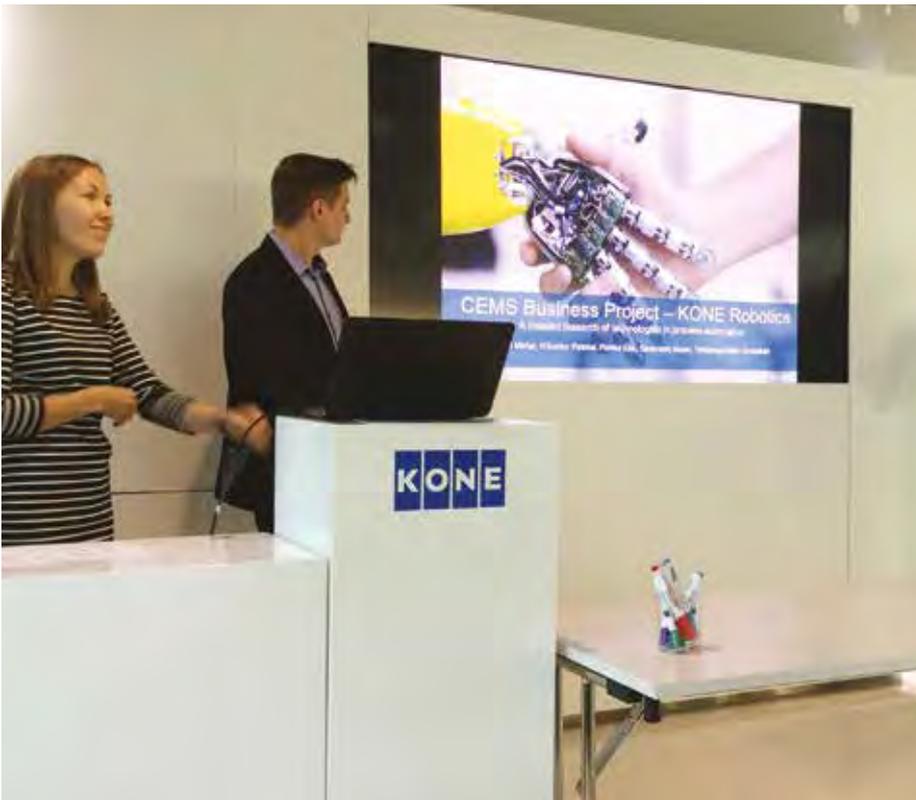
the human touch and unique aptitude to deal with complex, cognitive and emotional situations still provide the upper hand. Interestingly, a series of interviews with customers during the business project demonstrated that clients valued the speed and issue-resolution offered by automation over the human, on the condition that the robot or automated machine understood their needs properly compared to the interaction with a human interface.

It is also important that employees feel comfortable with technological disruption. Within KONE, various initiatives have been set up to cater for this aspect including forums to share information on up-and-coming changes, train-the-trainer workshops whereupon trainers then deliver on-site training in their respective countries on new technology and tools, and close support from Change Managers to explain the benefits and impact of implemented change or tools.

PHOTOS:

Pictured Left: CEMS Students,
Akane Saneyoshi, Patricia N'Sombo,
Gowsihan Vathanagopalan and Essi Porkka (l to r)

Pictured right: CEMS Students
Essi Porkka and Michal Dudel (l to r)



"Technological inroads of the last few years offer almost limitless benefits to users and customers... For employees, automated services offer the possibility to make their daily work more meaningful, simple questions being able to be catered for by robots while employees' expertise can be used in more complex and ultimately satisfying issue resolution scenarios"



AUTHOR PHOTO:
Teppo Voutilainen

**The CEMS Aalto-KONE experience:
humans at the service of achievement**

The students' great commitment and professionalism has produced convincing results that tie in with and support the KONE strategy. The CEMS student team has provided an extensive academic report including customer survey results, and a final presentation for business representatives and the whole Aalto CEMS cohort. KONE representatives were positively surprised that the team was able to deliver even very concrete recommendations on what technical capabilities KONE should utilize first.

The CEMS student research and analysis enables the understanding of future trends which helps KONE in designing services to better meet customer expectations within a context of rapid technological innovation. Needless to say that a hands-on professional project within one of the world's leading firms in its field has provided the student team with priceless experience and learning insights for the future.

CEMS would especially like to thank the invaluable input and supervision of the Academic and Business Tutors, respectively Dr. Esko Penttinen, Professor of Practice, Department of Information and Service Economy, Aalto University School of Business, and Sari Paulasaari, Global Solution Manager, Customer Care Centers and Customer Service Development at KONE – as well as special acknowledgement to the student team members for their high-caliber work on the project: Patricia N'Sombo, Gowsihan Vathanagopalan, Essi Porkka, Akane Saneyoshi, Michal Dudel. We would also like to thank Henrietta Haavisto, Director, Change Management, KONE Way Development for coaching the other CEMS team.



ABOUT THE AUTHOR

Teppo Voutilainen is currently leading the New Services and Solution Business Unit at KONE. He has been working at KONE since 2010, first leading the KONE's strategy development team and later leading the product strategy of KONE's second brand in China.

THE 'HUMAN TOUCH' WILL STILL HAVE A PLACE IN WORK

BY **Leslie Willcocks** Professor of Technology Work and Globalisation at London School of Economics

Drawing on his research Leslie Willcocks demonstrates a balanced view of the future human-machine relationship while advocating an adapt-as-you-go strategy for people and organisations

Peering through the mist of prediction it is a general truism that people overestimate the short-term impact of new technologies and underestimate the long-term implications. Technologists, moreover, tend to believe too unswervingly in the perfectibility of technology and the value of technical solutions. However, social and economic and political factors should dampen down significantly the more extreme technological determinist predictions: just because work can be automated doesn't necessarily mean that it should or will be automated.

To clear the mist in the debate, it is important to separate the issues related to job numbers and skill types, the scary figures on numbers of job losses over the next 20 years being just one scenario among many possible. Moreover, few studies producing those figures work through different assumptions and scenarios and, indeed, most studies have flawed assumptions with the result that they project unreliable data into a future set of circumstances they cannot possibly know.

The most probable scenario for the next 20 to 50 years is that it is not so much a question of entire jobs being lost, but parts of these jobs that will be automated. Many of them look likely to be restructured to take advantage of what can indeed be automated and how these automated tasks fit with human strengths and abilities. At this point, it is important to factor in the jobs that will be created as a result of automation: new technical jobs, restructured jobs at a higher level in terms of skills, and new jobs as productivity and economic growth

feed off the productivity gains from more automation. Over the next ten years we foresee, conservatively, that for every 20 jobs lost through digitization, another 13 will be created.

However, it is important to stress that there are some serious qualifiers to the idea that human jobs and skills are going to be replaced with all too few worthwhile jobs left for humans to do in 50 years' time. One of these qualifiers – and a major one – is that of ageing populations, especially in countries like China and Japan. In addition, it can also be pointed out that there are serious skills shortages, possibly as much as 45 million workers, being experienced today in certain sectors of the 20 biggest major economies, especially in areas of medium and high skills. Moreover, there is also the issue of how these countries making up over 80% of the world's GDP can maintain present, let alone projected larger, economic growth rates. Such concerns lend support to the argument for automation, as can be seen in a 2017 McKinsey study that points to major productivity and skills shortfalls over the next 50 years for at least 13 of the top 20 economies, and how automation could help cope with this.

An interesting point to make here is that our own analysis at LSE suggests that until now studies have neglected another side to automation – that of the dramatic increase in work to be done as a result of the exponential data explosion. We argue that the volume of audit, regulation and bureaucracy will continue to rise over the next 20 and, most probably, 50 years. It increasingly seems we will need much more automation just to cope



with new inroads in technology and automation. In addition, many studies also underestimate the unintended consequences of new technologies, and the need for social control and regulation that arises when they are applied on a large scale: think how roads have become highly regulated and policed. All in all, it appears that the fears on automation in the long-term are misplaced, though short-term negative transitory impacts may well be exacerbated by lack of preparation by governments, organisations and individuals alike.

It is sometimes asked if industry has reached a tipping point in terms of machines at the service of humans or, inversely, humans at the service of machines. In reality, we are far off such a tipping point, the machine-controlling-the-human scenario receiving more attention than it deserves. Indeed, there is a serious over-belief in two things: the perfectibility of technology and how quickly and massively automation technologies can be deployed and institutionalised. Past studies show that technologies can take from 8 to 28 years to become fully deployed in an economy, and this has also been seen to apply to recent software-based technologies. This said, people may get distracted by seeing a faster rate with certain consumer technologies, such as smart phones, or by speed with one sort of application in a specific sector.

And there are other reasons for seeing such a tipping point being somewhat remote. According to a McKinsey study, it is probable that only 5% of jobs at the present date in time can be replaced by existing technologies. Going forward, while there is huge investment into automation technologies, the diffusion of innovation is a long winding path. Not only has the technology have to become usable, it also has make economic sense, address a compelling problem for the organisation, be better than the alternatives, and then be fitted into the legacy technological and cultural base and structure of organisations that has already been designed and functions to address their various business imperatives. In reality, legacy technologies have a habit of continuing to be utilized, something we can call the 'shock of the old': they are useful, people are familiar with them, and organisations have invested in them – further arguments for an 'if it ain't broke, don't fix it' approach that may delay new technological implementation.

"Standing back and taking perspective on the technological revolution we are living allows us to reiterate that in the past people have not predicted technological progress well. Historically we have seen dramatic shifts as a result of new technologies, but these have taken many decades to work themselves through – few are those who have anticipated the direction and consequences"

People will still be around – because they are unique

Machines are able do some discrete tasks and activities incredibly well but do not, and are unlikely to be able to, combine abilities to have the composite skills that humans bring to tasks and whole jobs. Take, for example, the skills needed at work: listing those skills a human is good at as opposed to a machine, it is easy to recognise that machines are not going to be able to do many of these even individually, let alone a in combination and flexibly, at least not without massive investment and over a long period of time. For people's skills are a combination of hard but also soft – empathy, social interaction, delegation, leadership, experience, tacit knowledge, creativity, care and service, composite skills, critical thinking, teaming, multi-tasking are only a few of these unique characteristics of what we are and the value we provide.





AUHOR PHOTO ABOVE:
Leslie Willcocks



In terms of the human need for meaningful work, it may well be that, as we say in our book, *Service Automation: Robots and the Future of Work*, "automation takes the robot out of the human", enabling the human to focus on those things humans enjoy most and are best at in the workplace. This being said, the future of work does depend on which design philosophy is adopted – will machines replace people or complement people at work?

So far, research points to the fact that all processes in businesses still need human intervention, the typical balance being 80% machine and 20% human except for the most automatable processes. Today, techno-enthusiasts like to claim that eventually machines will be able to do everything humans can do and a lot more. But the more likely scenario is that technology is imperfectible and will need human intervention to make it work satisfactorily and human oversight and control for practical, ethical and safety reasons.

Standing back and taking perspective on the technological revolution we are living allows us to reiterate that in the past people have not predicted technological progress well. Historically we have seen dramatic shifts as a result of new technologies, but these have taken many decades to work themselves through – few are those who have anticipated the direction and consequences. All in all, people and organisations still shape the future and the technologies they design and utilize. It is therefore essential for them to portray several scenarios about the future, and constantly revise those scenarios against the evidence as it comes in.

ABOUT THE AUTHOR

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