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INNOVATION
8 Science for a Better Tomorrow
Ulrich A.K. Betz

TOP EXECUTIVE EDUCATION PROGRAMMES WITH THE BEST ROI
12 Get Ready for Disruption: WBS Prepares Executives for a Volatile Future
Interview with Professor Tim Wray, Director of Executive Education Warwick Business School

TOP EXECUTIVE EDUCATION PROGRAMMES WITH THE BEST ROI
19 Cross-Border and Cross-Cultural: the KEDGE Global Executive MBA Programme has a Worldwide Reach
Interview with Professor Hervé Remaud, Director KEDGE Global Executive MBA, KEDGE Business School

SUSTAINABILITY
26 A Wake-Up Call for the Corporate World
Christoph Burger, Antony Froggatt, Catherine Mitchell, and Jens Weinmann

ORGANIZATION
31 How to Build a Thriving Self-Managed Organization
Anne Krog Iversen

SUPPLY CHAIN
35 From Family Business to Global Brand

GREEN SUPPLY CHAIN
39 Let your Supply Chains be Sustainable too: Sound Advice from Luxembourg

HEALTHCARE
42 Finding New Products by Vision: Eurodrug Innovates in a Sector Dominated by “Big Pharma”

FUTURE OF BUSINESS
46 The Cyber-Organisation and the New World of Work: Advocating a Twin Governance and Collaborative Intelligence Solution to Overcome a Constant Disruptive Business Context
Mario Raich, Simon L. Dolan, Dave Ulrich and Claudio Cisullo

INNOVATION
59 How the Next Wave of Innovators will Change the Fabric of the World
Jean-Marc Ollagnier and Vedrana Savic

DIGITAL STRATEGY
63 Partnering to Grow in the Digital Era
Ina M. Sebastian, Peter Weill and Stephanie L. Woerner

IIoT & DATA
68 Good Governance for Dark Data: Guidelines for Industrial IoT Managers
Gregory Gimpel and Allan Alter

ACCELERATING ORGANIZATIONS
73 DVC Framework: Accelerating Digital Value Creation
Mike Cooray and Rikke Duus

DIVERSITY
80 What Colour Blindness Shows Me About Diversity
Ben Fuchs

MARKETING
82 How to use your Eco-Friendly Approach as a Selling Point
John Baird

BANKING
85 Strategic Change in Banking from Pre- to Post-Crisis: Evidence from Europe, North America, and Asia
Boris Liedtke and David Young

LEADERSHIP
92 All Future Leaders Need to Become Explorers
Jacob Morgan
Bradley Cooper and his Big Pilot’s Watch Edition “Le Petit Prince”. Ref. 5010:

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The rapid outbreak of the coronavirus presents an unprecedented crisis that the world is grappling with. It is causing tragedy to hundreds of thousands of people and family. It is also creating severe disruptions to businesses and the global economy.

In The European Business Review, we always know that the future holds daunting challenges for the human race, and being prepared with a futuristic insight is the key to overcome the current and future crisis. In the front cover of this issue, Ulrich Betz, VP Innovation of Merck, shares with us how Merck has, back in 2018, already predicted the crucial need for “Pandemic Preparedness” - the search for new science and technologies to fight the threat of newly emerging viral diseases with pandemic potential. Furthermore, he discusses the ambitious initiatives around science and technology that Merck has been supporting along with the company’s 350th anniversary, all with the aim to create a better tomorrow for the world we live in.

In this issue’s Top Executive Education with the Best ROI special series, we have the pleasure of featuring the Warwick Business School in the UK and the KEDGE Business School in France.

Director of Warwick Executive Education Tim Wray shares with us how WBS has an impressive suite of executive diplomas that aim to arm executives with the training they need in order to deal robustly with a volatile business environment such as what we are experiencing right now.

With the COVID-19 crisis sending shock waves around the world, it is more important than ever for business leaders to have a solid training for cross-border operations and the leadership skills for leading a cross-cultural organization. Professor Hervé Remaud, Director of KEDGE Global Executive MBA, outlines how the truly global ambience of the school makes an ideal training ground for executives today.

Further in the issue, we continue to highlight the importance of digital transformation for businesses. The theme is particularly important given today’s uncertain business environment and the massive lockdown measures across the world. Experts from MIT highlight that one of the big opportunities for achieving growth is digitally partnering with other companies to seamlessly find new customers or to offer more products and services to existing customers. Mike Cooray and Rikke Duus propose the Digital Value Creation (DVC) framework as an evaluative method for organizations to create, enhance and consolidate digital value.

Aside from fighting the pandemic, sustainable development is still one of the crucial issues we need to tackle today. Experts from ESMT discuss how new regulations and opportunities in the decentralized energy market can be good for the planet and business. Luxembourg Centre for Logistics and Supply Chain Management offers advice on how companies should devote an equal amount of commitment to green their supply chain.

Lastly, we sincerely hope that all our readers can stay safe, stay healthy, and may the information here would help position your business to be resilient in the face of this and the next global threat!
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The future holds daunting challenges for the human race, and some good news wouldn't come amiss. Here, Ulrich Betz gives us some uplifting background on ambitious initiatives around science and technology aimed at addressing those challenges. And, as he explains, the issues of tomorrow are not only technological, but also have a strong moral dimension.

When Merck’s CEO Stefan Oschmann announced the roll-out of the Merck Future Insight Prize on July 17th 2018 at the legendary Curious2018 – Future Insight Conference in Darmstadt, Germany (Curious2018 – Future Insights in Science and Technology (Springer, ISBN 978-3-030-16060-9)) on the occasion of the company’s 350th anniversary, nobody was yet talking about, even knew about, SARS-CoV-2, the new coronavirus that would, 17 months later, break out in China and send shockwaves around the globe. Yet the foresight was amazing, as already, back in spring 2018, Merck had selected “Pandemic Preparedness”, the search for new science and technologies to fight the threat of newly emerging viral diseases with pandemic potential, as the topic on which its €1m Future Insight Prize would be awarded the following year. The Future Insight Prize is based on the dream product concept. A dream product is something that is highly desirable but cannot be realised with the current state of science and technology. The Merck Future Insight Prize recognises and enables top scientists whose work is laying the required scientific and technological foundations to enable a realisation of the visionary dream product years down the road. The first visionary dream product concept, composed with the help of an international scientific advisory board, was the “Pandemic Protector”, which, starting with a clinical sample of a person infected with an unknown pathogen, is able to produce an agent to cure or prevent infection of others within a clinically relevant time frame. On July 9th 2019, the Future Insight Prize was awarded for the first time and presented to two research teams, the team of James E. Crowe from Vanderbilt University and the team of Pardis Sabeti from the BROAD institute. The Merck Future Insight Prize will be awarded annually for the next 35 years. In its next instalment, the focus will lie on the issue of multi-drug-resistant bacteria, an area with tremendous unmet and growing medical need. Researchers will be honoured whose work contributes to the later realisation of the dream product “Multi Drug Resistance Breaker”. The dream product is a series of novel, narrow-spectrum antibacterial agents that are able to cure any bacterial infection without inducing drug resistance, empowered by...
a one-hour diagnostic test. The prize will be presented on July 14th 2020 at the Curious2020 – Future Insight Conference in Darmstadt, Germany. The Curious Future Insight Conference is one of the most prominent gatherings on the future of science and technology. Some of the world’s best scientists and most accomplished entrepreneurs come together to present their work, to shape the future, to solve the challenges of today and to enable the dreams of a better tomorrow. With the slogan “Science for a better tomorrow”, the conference covers a wide range of topics, such as healthcare, life sciences, synthetic biology, nutrition, material sciences, digitalisation, energy, mobility, the secrets of the human brain, as well as new ways of working together. The conference will feature more than 70 top speakers, including many Nobel laureates, and also comprises panel discussions organised in collaboration with Nature and AAAS/Science. Future editions of the Future Insight Prize will cover the areas of nutrition (a dream product aimed at feeding the growing world population) in 2021, and energy (a dream product to reverse the effects of climate change) in 2022. The decision on which research team receives the prize is made by a distinguished jury of more than 70 eminent scientists, including several Nobel laureates.

Also at the Curious2020 – Future Insight Conference, the newly created Nature-Merck Spinoff Prize has been established by Nature Research in partnership with Merck, the world’s oldest pharmaceutical and chemical company and a vibrant player in science and technology, to showcase and celebrate global excellence in the application of academic research through the creation of spin-off companies. Award winners will demonstrate exceptional ability in pursuing the commercial application of original, high-quality scientific research. The Spinoff Prize aims to recognise companies that offer potential to bring new products or services to the marketplace and make a positive impact on the world. The organisation from which the underpinning research originated must be a university or a research institute. The prize will be awarded in the following categories: 1) pharmaceuticals, biotechnology and medical technology; 2) agriculture and food technology; 3) chemicals and advanced materials (life and health sciences applications); and 4)
digital technologies (life and health sciences applications). While the Curious2018 – Future Insight Conference was fully and exclusively sponsored and organized by Merck on the occasion of its 350th anniversary, the 2020 event is open for additional partners to join. The mission “Science for a better tomorrow” and the corresponding Curious2020 – Future Insight Conference are now supported by close to 100 different organisations.

To advance the progress of science and technology in 2020, Merck is also offering a series of research grants in the areas of drug discovery, bioreactor design for cultured meat, next-generation machine learning and pandemic preparedness. In addition, a series of research competitions has been initiated in the areas of lab digitalisation, impact factor prediction and electronic chemicals.

Young talent is a key factor in building a bright future. In 2020, Merck is conducting the 10th Anniversary Innovation Cup. At the Innovation Cup, some of the brightest students from all over the world are invited to a one-week summer camp at Merck. The young talents are combined with company retirees in teams of high diversity to brainstorm and develop new ideas for innovative new products. The teams receive training, support and coaching from company managers, scientists, and alumni of previous editions. On the last day, the teams pitch their project plan to a jury composed of Merck internal and external experts, which selects the winning team to be awarded the Merck Innovation Cup, along with €20,000. Alumni stay connected, meet annually and are now starting to be a source for the emergence of new, highly innovative joint projects in this amazing community. For the first time in the history of the Innovation Cup, we are now expanding to even younger talent, with one team composed of participants prior to, or at the beginning of, their undergraduate studies. In addition, alumni who have already won the cup in previous years are having another go in 2020 with a super-experienced “winners team”.

Humanity is facing huge opportunities, but also considerable challenges. With a predicted population of up to 10 billion people by 2050, we will only be able to solve these challenges with further advancements in science and technology. Going backwards is not an option. Especially in the age of growing defence budgets, pressure from global migration, climate change and collapsing ecosystems, it is important to ensure that science and technology are provided with the resources they need to advance and make further progress. To support this goal, on the occasion of Merck’s 350th anniversary in 2018, the Darmstadt Science Declaration was rolled out. The declaration is a call to all nations, societies and organisations to devote more resources to the advancement of science and technology. The aim is to shape public opinion and create a global movement resulting in a boost for research and development, along with increased emphasis on attracting bright, young talent to science and technology. The objective is also to promote an optimistic, utopian outlook to ensure that the technologies required for a bright and sustainable future are made available in time. The declaration reads:
We are truly convinced that science is a force for good which enables us to solve many of mankind’s most pressing challenges. We believe that huge opportunities will arise from future science and technology efforts.

“We, the signatories, are people of different national origins, creeds and convictions. We all firmly believe that human progress is deeply linked to further advances in science and technology. We are truly convinced that science is a force for good which enables us to solve many of mankind’s most pressing challenges. We believe that huge opportunities will arise from future science and technology efforts. Yet we are also very well aware of the responsibility and accountability we bear for the new technologies that are realised. We call on all nations, societies and organisations to devote more resources to the advancement of science and technology. We encourage the international community to join forces in battling debilitating diseases, ensuring sufficient food for a growing world population, stopping the destruction of our environment, and engaging in joint endeavours to elucidate the secrets this fascinating universe holds.”

The declaration has in the meantime been signed by thousands of people, including many Nobel laureates, and mirrored by declarations in many major cities all over the world. It can be signed online by anybody who supports this cause at http://make-science-not-war.org.

It is important to ensure that new technologies are applied for the greater good. A first, important step in building a better world is changing ourselves, the way we think, the way we act, the way we lead. Here are five principles that could form a basis for a new “loyalty-based leadership” that has the potential to transform organisations: 1) Truth - communicate the truth and nothing but the truth; 2) Love - the well-being of others is not less important than mine; 3) Courage - be no coward, take action; 4) Liberty - accept that other people can think differently; and 5) Spirituality - be inspired for a greater cause. Discussions around these new potential transformative leadership principles have started in social media at #loyaltybasedleadership.

When the Club of Rome published its study “The limits to growth” in 1972, it was a real landmark. The study comprised a computer simulation of exponential economic and population growth with a finite supply of resources. The report’s authors were Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens III, representing a team of 17 researchers. The study predicted a global collapse in the 2030s in a “business as usual” scenario, due to growing pollution and resource scarcity. The real-world statistics of key indicators have unfortunately developed pretty much in line with that scenario so far. We will only be able to break that dynamic with new and better technologies. Otherwise we will soon hit the maximum capacity of the global ecosystems.

But there is hope. The truth is that, in fact, there are no limits to human growth, and we can certainly grow beyond this planet. The universe is huge, the future is bright, and nothing will be impossible.

References
5. https://www.nature.com/nature/awards/spinoffprize

About the Author
Ulrich A.K. Betz, Vice President of Innovation Merck, is responsible for innovation management and strategic academic collaborations at Merck. He is an accomplished R&D manager with >20 years of experience in the pharmaceutical and chemical industry, including positions in the President’s Office Merck Biopharma and positions reporting directly to the Heads of Research and Development at Bayer and Merck.

In his current role for example he designed and implemented the Merck Innovation Cup, the Curious-Future Insight Conference, the Merck Future Insight Prize, the Darmstadt Science Declaration, the idea competition innospire and the BioMed X Outcubator.

Prior to joining Merck in 2005, he worked 7 years for Bayer AG in various scientific and managerial positions in Pharma Research. Ulrich received his PhD in functional genomics and immunology from the University of Cologne and his diploma in biochemistry and physiological chemistry from the University of Tübingen.

He is a co-inventor of the marketed anti-viral drug Letermovir (Preymis) and Pritelivir (Phase II) and the innovation incubator innospire he designed led to the development of bintafusp alfa (Phase II).

Ulrich has won several innovation awards such as the German Industry Innovation Award (the world's oldest innovation award), two International Business Awards (Stevie Gold Awards Executive of the Year – Pharmaceuticals and Innovator of the Year), Stevie Gold Germany Award (R&D manager of the year Germany), Edison Award, the Bio IT world best practice award, and the German Idea Award. Ulrich is author and co-author of ~90 publications and patents (e.g. Cell, Nature Medicine, Nature Biotechnology).
We live in turbulent times, and business leaders need to draw on a range of different skills as they plan their strategies, look for innovation, strive for sustainability and cope with digitalisation. Against this background, business educators are working hard to arm executives with the training they need in order to deal robustly with the issues. Warwick Business School (WBS) has an impressive suite of executive diplomas that aim to do just that. Director of Executive Education Tim Wray fills us in.

Q Hello, Tim! Thank you for taking the time from your busy schedule to talk to us. Could we begin with a few words about your work day? What does a normal day look like for you?

A It may be somewhat clichéd to say it, but no two days are the same! The variety in my role as Director of Executive Education at Warwick Business School is one of the great attractions for me. The job can take you anywhere. To start with, we have a base at Warwick University and also at The Shard in London. But I could just as easily wake up anywhere around the globe, as we have an international client base. One day might be spent with a client in a highly creative process as we put together a learning intervention; the next may be taken up navigating the procedures and committees that necessarily underpin life in a university setting. There will always be regular interaction with my team, either in person or virtually, as we are constantly managing multiple projects. It’s often fast-paced and pressurised and you need to thrive in that...
The executive diplomas are aimed at a senior executive audience who are interested in addressing a specific organisational challenge, like digital transformation, or plugging a capability gap, such as their own leadership skills and understanding.

environment. Having said that, wherever I am, I like to get up early and have a couple of hours at my desk before the demands of the day really kick in. That's an important time to ensure that I keep focused on the highest priorities.

Warwick Business School’s suite of executive diplomas are a key part of its executive education programme. Could you give us some background on what led the school to set up the programme in this format?

We recently conducted an extensive survey among our alumni, who are located all around the globe and are typically operating in senior executive roles. We asked them to identify the most pressing challenges they are facing today, both organisationally and individually as business leaders. We wanted to know how we could best add value as they seek to take on these challenges.

The key areas that surfaced in the survey were leadership, strategy execution and building digital capability. We have designed the suite of executive diplomas around these critical themes. The diplomas represent a deep dive into each subject area, in contrast to a more general management programme. They are delivered in a more concentrated format over one calendar year, and the modular format suits people working in high-presured jobs who are time-poor.

The executive diplomas are aimed at a senior executive audience who are interested in addressing a specific organisational challenge, like digital transformation, or plugging a capability gap, such as their own leadership skills and understanding.

activity in a business organisation. Could you enlarge on that idea?

We know in the world we’re operating in that leadership has changed dramatically, and the idea of hero leaders at the top of an organisation who know everything has long gone. We need distributed leadership right across the organisation, and very often the executives we work with are seeking to build that leadership strength at all levels of the organisation. If we look at companies who do that extremely well, such as the likes of GE, they will have a premium on their share prices as a result. So, there is a real, genuine recognition of not just the strength of the senior management team, which of course is critical, but also the strength of your leadership right down through the organisation.

In a rapidly changing business environment, it is people located at the boundaries of the organisation, close to the market and competitors, and directly interacting with customers, who see opportunities first. How you enable these people to respond and mobilise support across the business is a critical question for those at the top of an organisation and a key theme of the strategic leadership diploma.

The Diploma in Strategy and Innovation is another member of the WBS executive diploma
suite. What led to the establishment of a diploma course that links these two concepts? We all know that every sector of the global economy is facing exponential change. Technological innovation is disrupting whole industries and shortening product life cycles. Where there is high uncertainty about the future, the strategy paradigm shifts away from analysis and planning, towards experimentation and discovery. Essentially, we need to learn our way to the future, building a portfolio of projects from which we hope the business of the future emerges. All of this requires a fundamentally new mindset and is why the diploma also focuses on leadership and creating an organisational culture supportive of innovation. Increasingly, strategy is emergent rather than planned, and the diploma helps senior leaders think about the individual and organisational capabilities required to make this happen.

If there is one feature that characterises the world in which we are now living, it is change. Warwick Business School’s Diploma in Organisational Change would seem to be highly relevant to today’s business scene, but how can the course help executives who probably come from a range of different business sectors to cope with this challenge?

Strategy execution, that “knowing-doing” gap and how to bridge it, is of critical importance. We know that up to 80% of strategies sit on the shelf and the real challenge is about strategy implementation.
to stay the same as well as what needs to change – and to think carefully about what all this means for the approach to change that’s adopted.

I think a critical feature of a programme like this is also how participants evolve their own thinking and craft their own solutions from the many inputs. The expertise of faculty is one obvious source, but the diversity of experience and backgrounds in the room adds further richness to the discussion and encourages a participant to see their own situation through a different lens. A typical day on the executive diploma will involve a lot of break-out work, working in small groups, working on case-study material, making it a very interactive and dynamic learning setting that spans sectors and industries. That co-creation of learning is a critical aspect.

We’ve been talking about leadership, strategy, innovation and change. How can businesses cope with the extra dimension implied by digitalisation in connection with these concepts?

Digital disruption is washing across most sectors and industries. Our research has surfaced a real desire among executives at all levels to have a better understanding of the implications of digital transformation – both the opportunities this presents and the potential for a business to be disrupted if it does not keep pace. There is clearly a significant knowledge gap. The senior executives we work with have a lot of experience, but the pace of technological change is such that this experience can rapidly become redundant. Our digital leadership diploma provides a deep dive into topics like artificial intelligence, data analytics and platform strategy. It helps leaders identify the full potential of new technologies to add value to their own business, transforming the customer experience and growing value for shareholders. As with the other diplomas, Digital Leadership is all about application and the course work that participants engage in is intended to move forward the digital agenda tangibly within their own organisation.

Our research has surfaced a real desire among executives at all levels to have a better understanding of the implications of digital transformation – both the opportunities this presents and the potential for a business to be disrupted if it does not keep pace. These days, the notions of sustainability and defence of the environment are very much in people’s minds, in both the social and the business context. What do you think are the implications of these factors for today’s business leaders? How can business educators help?

A key research theme for WBS is understanding how companies respond to and integrate global sustainability challenges into their business strategies, management practices and corporate governance systems. In fact, our MBA programme has been declared the best in the world for sustainability and advancing environmental and social goals in business. Corporate Knights’ 2019 Better World MBA ranking focuses on the programmes that educate students on sustainability and responsible business, with WBS coming top out of nearly 150 of the best business schools in the world.

Research by colleagues in WBS has identified that a firm’s green credentials can insulate against the worst effects of an economic downturn. A business built on an ethical approach based on clear values can build a loyal customer base, making profits more stable and less correlated with economic cycles, reducing risk and increasing firm value. So not only is the approach better for the environment, it’s better for business.
As examples of the rapid changes taking place in the business environment, we may cast RXU WKRXJKWV WR ÀQWHFK DQG WHFKQRORJLHV VXFK as AI, blockchain, mobile payments, crypto-currencies and crowdfunding platforms. Can the school help executives to understand these kinds of developments and, if so, how?

Trends like these are a core part of our research and teaching agenda. It’s a key benefit of coming to somewhere like WBS, where our teaching is informed by groundbreaking research. In fact, the University recently received one of its largest donations from an individual to establish a new fintech research centre. The Gilmore Centre for Financial Technology will be housed at Warwick Business School and will bring together the school’s existing research in the area along with a host of new appointments. Developments in AI, blockchain, mobile payments, cryptocurrencies and crowdfunding platforms will be a key area of focus for the new centre and the insights generated will be immediately integrated into programmes such as the digital leadership diploma.

We’ve mentioned business involvement in wider issues, such as sustainability and the environment. Do you think that today’s business leaders have a role in terms of their responsibility to society as a whole? The concept of the inclusive society is one aspect that springs to mind.

Yes, I do. I remember looking at a survey that asked people who would they trust to tell them the truth. Business leaders came one place off the bottom, with only politicians ranked lower! So, we have a lot of work to do to restore trust and confidence. The first step is to understand that the public good is a key consideration, right alongside, if not ahead of, profitability and shareholder value. However, as I mentioned earlier, the mood of society around issues such as climate change and ethics means that responsible business practices are no longer at odds. The biggest constraint on growth for most businesses is attracting and retaining the best talent. Increasingly, these people only want to work for organisations that share their values. So, the way to succeed is to fundamentally understand how your business fulfils a wider purpose in society.

On a more personal note, most people seem to accept the idea that we all need to find a suitable equilibrium between our professional and private lives – in other words, a work-life balance. What, for you, is an ideal work-life balance?

A former colleague of mine used to rail against that phrase, arguing that what we need is life balance rather than work-life balance, and I think he had a point. Work is a big part of most people’s lives and we should not think that it competes in some way with everything else that then gets labelled “life”. It’s along the same lines as someone asking, “Do you work to live, or do you live to work?”! If you enjoy your work, if it is engaging, fulfilling and purposeful, it is an incredibly important part of life! Of course, that also requires the space for physical, mental and spiritual renewal, and that’s where the balance issue kicks in, alongside a perspective on what is most important in life, particularly time for family and friends.

Finally, the word “success” means many things to many people. How would you, personally, define success?

Without wanting to sound overly high-minded, I find that as I progress further into my career, the answer to that question becomes much more about impact and legacy than anything else. What difference have you made, what impact have you had on those around you, what have you built that will outlast your tenure in the job?

Thank you very much Mr. Tim Wray. It’s a pleasure speaking with you.
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39th Worldwide
18th in Europe
4th in France
Time will tell whether history will record the Zeitgeist of our times as one of isolationism or internationalism. But one thing is certain: in today’s world, business leaders need to be comfortable collaborating across borders and cultures. Here, Professor Hervé Remaud, director of KEDGE Global Executive MBA of the KEDGE Business School outlines how the truly global ambiance of the school and its international partnerships makes an ideal training ground for executives.

“KEDGE EMBA is not about making sure they become experts in blockchain, IoT, big data or Industry 4.0, etc. My job is to make sure that they understand what it’s all about, and how this can disrupt the business model of the company they work with or manage.”

-Professor Hervé Remaud

Interview with Professor Hervé Remaud
DIRECTOR KEDGE GLOBAL EXECUTIVE MBA
KEDGE BUSINESS SCHOOL
These results are also the fruit of collaborative teamwork towards the same ambition: making the KEDGE Executive MBA programme amongst the best in the world, in terms of the personal and professional achievement for our participants. This fully illustrates the values that our school advocates and that we wish our participants to foster: values of innovation and open-mindedness to new technologies and ways of achievement; caring values to others and themselves; and sharing values, be they knowledge, best practices or skills-sharing.

The KEDGE Global EMBA ranked thirty-ninth in the world (fifteenth in Europe, fourth in France) in the 2019 Financial Times survey, and we are collectively proud of this result, though it does not yet totally reflect the quality and value of the EMBA to our participants. There remains room for further improvement.

With ten campuses spread across three continents, KEDGE Business School is a truly international school. What do you think are the advantages of KEDGE Business School that set it apart from other business schools in Europe and globally, and what are the imitable attributes and highlights of the KEDGE Global Executive MBA programme?

Actually, KEDGE Business School has seven permanent Campuses (four in France, two in China and one in Africa) and three associate campuses in France.

KEDGE’s campuses abroad definitely give the school an international reach in terms of faculty, students, global network and image. It also paved the way for some of the international programme partnerships, such as: the Global Executive MBA in partnership with JiaoTong University in Shanghai - China; and the recent partnership developed with Athena School of Management in Bombay, India. This international exposure and implantation overseas is related to our capacity to train executives with an international ambition and with an international background. It also enables our EMBA participants to interact both professionally and socially with participants from different cultures. Starting with the next intake, we will organise one of our core courses – Negotiation – with European- and Chinese-based cohorts all together. My objective is to motivate KEDGE cohorts to mix and network, right from the beginning of the EMBA programme. Likewise, French-based EMBA participants will visit their Chinese colleagues in 2021 for another core course in Shanghai, which is Leadership across Culture.

In the same perspective, we initiated a collaboration with two excellent universities and executive MBAs in Europe: Frankfurt School of Finance and Management in Germany, and Bocconi SDA.

Apart from this international openness for our participants and faculty members, we are enthusiastic about the attribute of flexibility that we bring to the delivery of the programme. The KEDGE Global EMBA can be taken over a period of from 20 to 48 months. The participants set their own pace and can either accelerate or slow down, according to their professional agenda. The whole team is dedicated to facilitating the participants’ journey through the EMBA.

The values that our school advocates and that we wish our participants to foster: values of innovation and open-mindedness to new technologies and ways of achievement; caring values to others and themselves; and sharing values, be they knowledge, best practices or skills-sharing.
Another attribute of the programme that we put a lot of focus on is personal development, with guidance through individual and group coaching, as well as a mentoring programme.

We work to promote participants’ self-confidence and open-mindedness through practical business cases and multi-cultural teamwork.

The KEDGE Global Executive MBA programme has a unique flexibility option that offers not only a fully transformational learning experience for the executives, but helps them to have a good work-life balance. What do you think are the particular facets of the executive education curriculum that are the most valuable tools for your participants?

We are in a business world that requires more and more adaptability from high-level professionals. At KEDGE, due to the geographical split between our campuses in France and abroad, we practise agility on a daily basis, and are in a good position to share this experience with our EMBA participants. Physical agility favours intellectual agility. As we offer schedule and geographical flexibility, there is a constant movement of participants attending the courses. Even if you are part of a specific intake, you can easily find yourself mixing with participants from earlier intakes who have delayed or anticipated courses, and happen to share yours at a point in time. This is a good way to enlarge networks and learning experience. International business seminars and international majors are also outstanding opportunities to grow both networks and the sharing of best practices. We fully understand the value of creating a cohort spirit, with some participants knowing each other very well after a few courses. But extending their networks through participation in courses delivered for previous cohorts is a real chance to get to know other EMBA participants at KEDGE.

For 14 years, KEDGE has been a key player in higher-management education in China, where high quality of education is given the utmost importance. The KEDGE Global Executive MBA is also the only French MBA recognised by the Chinese government. Can you tell us more about your experience and plans for engaging with the Chinese market?

For many people, saying that you “build a relationship over the years with your partners” is somewhat of a cliché. What our Chinese friends call “guanxi” is actually important. We may be doing fantastic things, and sometimes things that are less fantastic but, in any case, we trust each other. Trust is the key to foreseeing what the future could hold. We have been building our collaboration with Shanghai Jiao Tong University on one side, and with Renmin University on the other, with a long-term perspective in mind. Today, that positioning is rewarded with the recognition of our Global MBA by the Ministry of Education of China, and we operate (with two other French institutions) a French Chinese Institute in collaboration with Renmin University. A couple of other initiatives will be announced before the end of the year, so stay tuned …

International exposure and implantation overseas is related to our capacity to train executives with an international ambition and with an international background. It also enables our EMBA participants to interact both professionally and socially with participants from different cultures.
share a particular student's success story or the career paths of some of your participants?

A We have quite a number of examples to share. There are some entrepreneurship successes, such as Nino Sapina, who founded Realcast in 2017 after a successful career with UbiSoft. His start-up creates innovative solutions using augmented reality, and was a finalist at the Aurea awards 2020. Our graduates also either achieved positions of higher responsibility in their companies or entered new ones. I can mention Hermann Chenal, who became Head Supply Chain Director at LIM (Leather In Motion) Group, a mid-sized company with strong expertise and “savoir-faire” in leather, saddlery and tannery. He is based today in Florida, where he reorganised the entire LIM business in the US. Nadine Gouba became Purchasing and Project Director at Amaury Group, a family press group specialising in sports, and well known in France for its newspaper (and app) L’Equipe; or Dr Maximilian Hemgesberg, who became Global Head of Business Development Coatings-Adhesives-Specialties at Covestro (Germany). On a different perspective, Pierre-Jean Laine became Head of Procurement, Vehicles & Tactical Systems BL at Thales; or Max-Ariste Metadier, who took up the position of General Manager EMEA for Mercury Marine. There are many more examples, of course, of people who developed their competencies and displayed their leadership skills, reaching the next step.

There is a constant movement of participants attending the courses. This is a good way to enlarge networks and learning experience.

How do you make sure that the participants and their organisations will gain the highest return on their investment in terms of knowledge acquisition, career advancement, long-term profitability for the business, and other measures of ROI for executive education?

A This is a good point and let us be clear on this. KEDGE assures its EMBA participants of high-quality content and cutting-edge faculty members (all with doctoral degrees and work experience, or close to the business), offers optimal learning conditions, maximises exchanges, listens to participants’ proposals, provides opportunities to meet in France and abroad, and offers individual and group coaching. But in the end, an Executive MBA is what you make it through your personal involvement, work, posture development, open-mindedness, and your will to network.

ROI is measured not only in terms of salary increase (as demonstrated in the FT ranking), but also in terms of...
soft-skills development. Our last graduate survey (June 2019) shows that 84 percent of graduates developed their self-confidence, 88 percent felt an impact on their professional evolution within two years after completion of the EMBA (66 percent within a year), 80 percent developed their personal performance, and 75 percent their leadership. We're rather proud of the fact that 97 percent of our graduates would recommend the KEDGE Global MBA to people looking for an EMBA.

Today’s leaders need to adapt and respond quickly against the digital disruptors to generate new value for customers and to manage their workforce better. How does the Global Executive MBA programme help companies and leaders achieve their goals of creating a high-performing workforce in these fast-changing times?

To put it briefly, the KEDGE EMBA is not about making sure they become experts in blockchain, IoT, big data or Industry 4.0, etc. My job is to make sure that they understand what it's all about, and how this can disrupt the business model of the company they work with or manage. I want to make sure that, with all the seminars and experience they gain from the EMBA, they can connect the dots between all pieces of information and assemble them as a result of their EMBA journey. Then, they can make sure to recruit, bring aboard and work with the real “technical” experts in these domains, to help them implement the strategy they come up with. It would be fantastic for many of them to be expert in everything, but somewhat impossible. However, we can help them to understand the big picture, and give them the knowledge and tools to catch the opportunities that our fast-changing environment generates.

You are also known for your research expertise on the interface between consumer behaviour, marketing research and integrated marketing.

In the KEDGE Global EMBA programme, our aim is to refresh and update hard skills, but are very keen, too, on developing soft skills. This will ensure that participants are agile and adaptable, and able to cross-fertilise.

How does this help you in developing the KEDGE Global Executive MBA programme into a stronger international brand?

Thanks for giving me the opportunity to discuss the research expertise I have developed during these last 15 years. I spent five years at the University of South Australia, working at the Ehrenberg-Bass Institute for Marketing Science, where empirical generalisation is the way of producing knowledge. As part of that, I analysed the real purchase behaviour of people buying wine and spirits. Although you may think this industry is far from an EMBA type of business, in fact it’s not. Part of my job is to make sure that the KEDGE EMBA brand is easy for candidates to “buy” and easy to think of when they look for an EMBA. In brief, along with various marketing and academic contents, I try to maximise the physical and mental availability of the KEDGE EMBA brand in the international EMBA market. Being well ranked by the FT is one such content, but just one of many.

As the director of KEDGE Global Executive MBA, what excites you most or what do you eagerly anticipate in terms of the programme’s present and future endeavours and partnerships with elite schools?

We look forward to welcoming more high-level foreign candidates to our programme and, to this end, I anticipate quite a few international exchanges in the context of our partnerships, which is very exciting. International partnerships are on the corner and the next few months will see the first intake of our Indian participants in Bombay, in partnership with Athena School of Management.
An exciting partnership is currently building in the form of an alliance with Frankfurt School of Finance and Management, and Bocconi SDA. I do believe in a coopetition world. But to develop efficiently, I believe that we need to partner with institutions that share similar values and similar challenges. In that perspective, alliances are a chance to have three brains and wills building the future development of our respective programmes, instead of just one.

Q Based on your experience working with senior leaders and executives from different industries, what advice would you give to aspiring leaders and seasoned managers in terms of building a successful career? What do you think are the essential qualities a 21st-century leader must have? Can you give any examples of leaders whom you consider to be inspiring?

A You may be disappointed, but I don’t have in mind any leaders who are really inspiring, not because they don’t exist, but mostly because I don’t try to imitate or get into the shoes of someone who might be perceived as a successful leader. On top of that, a successful career is very personal. Long story short, I enjoy my job today because it gives me an equal opportunity to learn and a deliver knowledge… If I really have to give you a leader persona, it would be someone who accepts risk when building and developing a business.

The essential qualities of a leader today, to answer your question, would include understanding the big picture of the business environment you evolve in, anticipating and implementing the changes in your organisation that are required to survive tomorrow, demonstrate empathy for others and for society at large.

Managing people is a different story... something of a daily learning process and experience! You can be a good leader and a poor manager, and vice versa. We tend to focus a lot on managers, but having good people to work with is also important in that relationship and exercise.

Q Lastly, can you share with us what success means to you?

A As the director of the Executive MBA, success means having the chance to congratulate EMBA participants onstage during their graduation ceremony – not because of the piece of paper with “MBA” written on it, but because of the transformational journey that they achieved. In that perspective, I would make mine this quote from Albert Einstein: “Try not to become a man of success. Rather become a man of value.” The KEDGE EMBA promotes values of innovation, sharing, diversity; it encourages participants to take risks. These values bring them out of their comfort zone, enable them to fail, and try again. This is what will make participants successful.

Q Thank you very much Professor Hervé. It’s a pleasure speaking with you.

Executive Profile

Professor Hervé Remaud is the director of KEDGE Global Executive MBA and a Senior Professor of Marketing at KEDGE Business School. Following 5 years spent at the Ehrenberg-Bass Institute of the University of South Australia, he took over the direction of KEDGE Wine and Spirits MBA in 2010. Hervé obtained his Doctorate of Philosophy (PhD) in Agricultural Economics and Management from Ecole Nationale Supérieure Agronomique de Montpellier. He is the author of some 50 articles that are published in academic, professional journals and conferences. His area of research focuses more specifically on agrifood and wine marketing, brand perception and brand performance measure.
At Grand Hotel Villa Serbelloni, we believe that the success of a business meeting is based on a combination of inspiration, creativity and focus on the goal. We aim to create a high-level experience to guarantee your best performance: you dedicate your energies to the result, we take care of all the rest.
New regulations and opportunities in the decentralized energy market can be good for the planet and business.

January 2020 was the warmest January since temperatures started being systematically recorded more than 140 years ago, according to both the US National Oceanic and Atmospheric Administration and Europe’s Copernicus Climate Change Service (C3S).1 Future generations may not only face more extreme weather conditions, such as hurricanes and floods, but also a worldwide sea level rise of around seven meters due to melting Greenland ice.2 Over the last years, the arctic region has been heating up two to three times faster than the rest of the planet.3

However, the international community struggles to find pathways to a more sustainable use of energy, the largest source of greenhouse gases, which are driving climate change. The 2015 Paris Agreement, intended to curb emissions and keep global warming to well below two degrees Celsius above pre-industrial levels, does not seem to have an immediate impact on national economies. On the contrary, many countries are emitting more global greenhouse gases; emissions rose by almost two percent from 2017 to 20184 and are projected to increase by 0.6 percent in 2019.5

Yet, the foremost challenge that humankind currently faces – a “deep decarbonization” of national economies – may be tackled by three strategic options. The first is the use of carbon capture and storage (CCS), a technology which traps carbon dioxide emissions directly at the tailpipe of power plants and injects it into the ground. However, many CCS projects have been stopped because of resistance from local residents, environmental concerns, and doubts about its environmental and economic viability. The second option is a reduction of total primary energy consumption of humankind. However, only a few countries on Earth have succeeded in decoupling economic growth and energy consumption over longer periods of time, despite innovations and increases in energy efficiency.6 The third option and the most promising path of decarbonization is that of renewable energies supplying the majority of electricity to our economies. Since 2009, the costs for solar energy based on photovoltaic cells decreased by around 80 percent, whereas wind turbine prices fell by 30 to 40 percent, according to the International Renewable Energy Agency (IRENA).7

Future generations may not only face more extreme weather conditions, such as hurricanes and floods, but also a worldwide sea level rise of around seven meters due to melting Greenland ice.
market-oriented regulation of the electricity sector and incentives for green energies has led to an unprecedented rise of renewables. National governments have established regulatory systems that reward clean energy sources, and corporations and entrepreneurs have seized opportunities in liberalized markets. This has reduced the dependency on fossil fuels and has accelerated the deployment of decentralized, climate-friendly energy resources.

For example, in Germany and Italy the availability of feed-in tariffs led to a boom in the deployment of photovoltaic power – much of this small scale and individually or community owned. Some countries, such as Denmark and Germany, which both have a long history of renewable energy deployment, have put renewables at the center of their energy and electricity policy. Emerging economies – such as China and India, characterized by rapidly growing power demand – have become global leaders in renewable technologies, including in manufacturing and deployment.

The developing world is also leapfrogging into a decentralized energy supply infrastructure, comparable to the jump from no telephone service to handheld devices while bypassing the line-based telephony stage. Here, micro-grids and solar storage kits for individual households co-exist at the periphery of the central grid, substituting the further rollout of the public transmission network. This decentralized infrastructure, formerly perceived by rural residents as second-class service compared to an official grid connection, often provides more reliable and stable power supply than the central distribution network.

High annual renewable installation rates may initially make small differences to the respective countries’ overall power mixes, given the size of the existing supply portfolio, but the scale of these investments has indeed affected technology adoption internationally by driving down the price. Progress in developing and commercializing new storage technologies – in particular solid-state batteries with a higher energy intensity than lithium-ion batteries – will be likely to accelerate the usage of batteries not only in automobiles, but also in stationary applications around the smart home. Enables peak-shaving and thus brings down peak costs. It will counteract many of the issues raised by the intermittency of renewable energy resources, such as solar and wind, at much lower costs than installing new generating capacity with conventional sources of power. This strategy has succeeded in power markets such as in the US with Pennsylvania-New Jersey-Maryland (PJM), where almost 10 GW of active load management was used to reduce demand during the hot summer months – the equivalent of around ten units of conventional power plants.

Regulatory flexibility as enabler of new business models

The conventional energy system tended to have separate sector regulation, for example in electricity and gas, and was top-down optimized with few incumbent players. As the energy system decarbonizes and decentralizes, the convergence of heat, mobility, and power on the distribution level allows for coordinated regulatory instruments and actions to create new markets and platforms in ways that are cost-effective to customers, but also nimble and adaptive enough to enable, rather than undermine or block, innovation, new business models, and customer wishes. For example, peer-to-peer trading and exchange between residential energy micro-producers and consumers still face regulatory hurdles in many countries.

Notwithstanding, the new energy world offers a broad spectrum of opportunities to capture value for utilities, large corporations, and even startups. Based on our research, we found that the core competency to succeed in a decentralized system is expertise in digitalization – be it with artificial intelligence for predictive maintenance, granular weather forecasting, legacy device recognition, or chatbots in customer interaction. It was also served by skills in data analytics for the optimization of decentralized assets and

National governments have established regulatory systems that reward clean energy sources, and corporations and entrepreneurs have seized opportunities in liberalized markets.
Remote operating centers as well as deep tech knowledge, for example on trading platforms based on blockchain or other decentralized ledger technologies.

Corporate leaders can prepare their companies (and society) for the energy market transformation by offering tailored services and value propositions. Technological advances and innovations can give start-ups and established companies an opportunity to create competitive differentiation. In a complex and highly dynamic market environment, no single company is able to provide all the elements of its value proposition by itself – entering partnerships and alliances can be key to survival.

The global transformation of the energy sector has just started. Major international institutions as well as many political and corporate decision makers across all continents are taking key roles and responsibilities in the process. However, if global emissions are to reduce at a pace that is at least in line with the Paris Agreement, then the role of decentralized renewable energy must significantly increase. This will require new thinking in energy governance to enable the opportunities of innovation to be fully exploited and deployed.

Corporate leaders can prepare their companies (and society) for the energy market transformation by offering tailored services and value propositions.

The companion book to this article, “Decentralised Energy – A Global Game Changer,” was edited by Christoph Burger and Jens Weinmann of ESMT Berlin and their co-editors Antony Froggatt (Chatham House) and Catherine Mitchell (Exeter University). The book is available for free via Ubiquity Press London at https://www.ubiquitypress.com.

About the Authors

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**Antony Froggatt** has studied energy and environmental policy at the University of Westminster and the Science Policy Research Unit at Sussex University. He is currently an independent consultant on international energy issues and, since 2007, a senior research fellow at Chatham House (also known as the Royal Institute for International Affairs). Since 2014 he has also been an honorary fellow at the Energy Policy Group at the University of Exeter. While working at Chatham House, he has specialised in energy security in emerging economies with extensive work in China on the establishment and methodologies of low-carbon economic development. He has also undertaken international research on public attitudes to climate change and energy security. He is currently working in two main areas, assessing the climate and energy policy implications of Brexit as well as evaluating the future of the electricity sector considering decarbonisation objectives and technological developments.

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We hear a lot these days about corporate modernization taking place by deploying technology innovations such as cloud computing and artificial intelligence. But there’s another type of transformation that is occurring within corporate circles that is having a profound effect on enhancing agility and innovation. These efforts are typically led by a senior business executive overseeing corporate DNA and culture. Whatever the official title, these executives are adherents to the idea of “next-generation leadership.”

Next-generation leadership is the commitment to building resilient and sustainable organizations by supporting employees to develop and achieve greater heights with innovative skills, progressive business methods, self-awareness, and emotional intelligence.

One such practice, under the guidance of next-generation leaders, that is growing in popularity is self-managed teams. In this organizational structure, employees work in a fully autonomous team. Each member shares in the responsibilities of technical leadership, management, planning, implementation and ensuring delivery of a final product or service. They are guided by purpose and driven for results, and they do so without mid-level supervision.

Some call this “people management,” but no, it’s much greater than that. It’s actually enabling people to become self-managed. With next-generation leadership, companies are directed to empower employees with freedom, responsibility, self-management techniques and transferable life skills that will help them make quality decisions for themselves and their organization.

With that in mind, how can next-generation leaders architect a corporate framework to enable the development of these skills within their workforce?

Leadership. Having the desire to put forth such a program starts with vision. It also begins with purpose to achieve key results across all levels, using corporate teams or circles and individual achievement. Today’s next-generation leaders realize that employees are a most valued asset who spend a significant portion of their life at the company, and so they inspire to invest and embolden the individual. Recent efforts by progressive business leaders have involved helping employees achieve greater life/work balance, but they’re now taking this approach to a whole other level by helping employees become self-managed.

Culture. Helping others to become self-managed begins by having employees who find the notion of personal responsibility and team alliance desirable. Frankly, it starts by recruiting and hiring the right people who will fit into the company’s

Next-generation leadership is the commitment to building resilient and sustainable organizations by supporting employees to develop and achieve greater heights with innovative skills, progressive business methods, self-awareness, and emotional intelligence.
culture and who will accept this value system. First, begin by aiding the right type of candidate to easily discover the company. This can be done by having a self-managed culture in place that would be enticing to select candidates, followed by sharing the corporate culture identity to the public through communication channels.

Training. Making mindfulness and awareness training available at work will help as well. This training should be regular and voluntarily so that the ideas are not forced onto people, but rather available to them once they’re ready to participate. We have found that incorporating mindfulness into one’s daily work schedule as small breaks helps them to remain focused, aware and innovative throughout the day.

Recruiting. Any good recruiting effort begins by stating clear, articulate requirements in the job description. It’s then important to scrutinize resumes and pre-screen with the right questions. Once a candidate is invited in for an interview, it’s imperative to query them on various hypothetical work scenarios to assess their responses for cultural fit. Recruiting may also include putting candidates in a team environment for the day to have them work alongside potential peers to gauge their skills for teamwork, project management, and collaboration. Doing so is essential, as having the ability to thrive and function in autonomous teams takes significant self-awareness and self-management to be able to achieve results for yourself, your team and your company. It demands that you put aside your ego and set the team results as a higher shared purpose.

Onboarding. Our job as next-generation leaders continues once a new hire begins with the company. At TimeXtender, our new hires get acclimated with our onboard training program based on “The 7 Habits of Highly Effective People” by Stephen Covey. Through The 7 Habits, we’re able to instill several important work and life lessons such as being proactive, beginning with the end in mind, and looking for win/win solutions. We apply The 7 Habits program as a platform to educate and communicate our corporate values from the outset, coupled with our voluntary mindfulness training.

Consistent communication across corporate channels is central to reinforcing corporate values and delivering feedback for the organization to learn from and act upon. Communication helps introduce voluntary mindfulness as a way to recharge habits and to help new hires and existing employees balance their day to stay focused, innovative and alert – all enabling one to make quality decisions for themselves, the team and the company.
our corporate purpose and individual purpose will become intertwined as a fundamental part of our corporate purpose talks. Each circle has an appointed circle lead with a professional focus, while the people circle will have regular purpose talks with individuals to ensure that they thrive. When initiating a purpose circle, each circle works off a set of guiding questions to consider; for example: “What’s the purpose strategy of the circle?” “What are the values?” and “How do we commit?”

Collaboration. Collaboration is a big part of TimeXtender. Our X-People meet with mentors on a regular basis to engage in 1:1 purpose and goal discussions. They present each year to the company to reflect how their own personal purpose and goals tie into the company’s purpose and strategy. Discussing their goals, values and purpose helps build direction, alignment and commitment throughout the organization, ensuring a free flow of feedback – both bottom-up and top-down.

In addition, with staff located in various parts of the world, we use technology to collaborate with X-People across projects, functions, regions and continents. And we start online meetings with a moment of silence to land, focus and connect with our fellow X-People who work across various time zones and cultures.

Uniqueness. We set out long ago to be an industry difference maker. Over the years, we’ve striven to build an advanced organization to help our employees succeed and to become more successful self-managers with a tool set of skills to help us build resiliency and to deal with life’s challenges. Our employees enjoy being part of a unique company where they have a high level of freedom and flexibility to drive results. However, freedom and flexibility requires a strong level of self-awareness and responsibility to be self-managed, and this is why we make time available for voluntary life skill tools and training during work hours.

We hear quite regularly from job candidates that our culture is what attracted them to apply. And that’s when we secure the best matches possible, when we’re able to communicate our beliefs, purpose, technology and culture clearly enough so that our purpose resonates to attract candidates that relate. As mentioned, another example of our unique identity is our practice of starting meetings with a minute of silence. This inspirational moment is part of our belief system, and the feedback from guests who join our meetings and enjoy this leisurely moment has been overwhelmingly positive.

Bigger Purpose in Mind

During our tenure on mother Earth we all aspire to living a healthy, fruitful life where we have the tools to take responsibility for our own happiness. While we spend a significant portion of our life within the boundaries of a corporation, we know that people want to strive for more than simply improving corporate revenue. They want to be part of something larger, something with a bigger purpose in mind that will pass on through generations.

With next-generation leadership, we can help them accomplish that endeavor. For many of us, this aspiration does not come naturally, it takes enlightenment, proactivity and personal responsibility that we all possess, but simply need to be awakened to. And doing so, can ultimately lead to a healthier, more resilient workforce that achieves greater corporate success for all to enjoy – as a team.

Anne Krog Iversen is the Co-Founder and Chief People, DNA and Culture Officer at TimeXtender. Along with directing the company’s business culture, she built, implemented and manages corporate mindfulness together with TimeXtender’s team-oriented X-tended leadership circle.
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Raben Group has branches in 13 European countries, employs a total of 10,000 employees, and dispatches over 8,500 trucks on the road each day. However, it all started really inconspicuously, with a small Dutch family business. Today, the values characteristic of family-owned organisations are still important for the company, a fact that fosters employee engagement and customer loyalty to the brand. It also facilitates expansion into foreign markets.

“A family-owned company has an advantage over other businesses because it treats customers and employees as family members. That is why we offer logistics ‘with a human face’. Partnership and loyalty fit this style of cooperation. We have many long-term customers. Their business has been changing over the years and we adapt to them. We are partners and together we respond to the challenges which emerge. We also grow together. This constant development is inscribed in the DNA of our company,” says Ewald Raben, CEO Raben Group. – “We aim to standardise our warehouses across Europe. They should have the same set-up, the same processes and IT systems. For us and for our customers, standardisation means optimisation and the highest quality of provided services.”

Birth of the global brand
In 1931, in the small town of Winterswijk in the Netherlands, Jan W. Raben, grandfather of the current CEO, began transporting local farmers’ products to market. He started a company that is a global brand today. The next milestone in the history of Raben Group was when the founder’s son, Theo Raben, took over the helm of the company in 1960 and started to develop the transport of textiles to and from Poland. But the first step abroad was taken by the grandson, Ewald. He knew the company inside out; already, at the age of 10, he washed trucks on Saturdays, and later he worked as a truck driver while at college. After the transformation of 1989, he spotted the opportunity to develop the Polish market and travelled to Poland with the aim of setting up a branch of Raben. It was then that he bought a map of Poland and marked twelve locations in
The last 29 years have been a history of continuous development of the company and dynamic expansion into foreign markets, and one of the secrets of the success is the skilful combination of the best of a family business with models taken from corporate management.

Expansion into Europe
Raben Group developed as it accompanied its customers on their road to business success. In 2002, Fresh Logistics Polska appeared on the market, specialising in servicing fresh products that require a controlled temperature from +2 to +6 and from 0 to +2°C (UltraFresh) throughout the whole logistics chain.

The period from 2003 to 2010 brought expansion to new markets. In 2003, the first branch was opened in Ukraine, and a year later the operations of Raben Group in Europe covered Lithuania, Latvia and Estonia. In 2008, the company entered the Czech and Slovak markets and, after two years, was also present in Hungary. In 2016, the company began to do business in Romania. The next year, the group acquired a 20% stake in the Italian company SITTAM, and has owned 51% of the company since 2019. The decision to intensify the group’s presence in Italy stemmed from the fact that the country is the sixth export destination in terms of turnover.

The German market is very important for Raben Group. The company is building up its position there organically and through acquisitions. In 2005, Birkart Systemverkehre was taken over. In 2011, the network of German terminals was expanded through the purchase of Wincanton. In the following years, more companies joined. Currently, Raben has its own independent transport network in Germany, with 34 own branches.

Bulgaria joined the Raben family in 2019, when

Go East
The Group made the decision to launch Raben East in 2017, complementing the Raben portfolio with international road transport services, including regular groupage connections to Eastern countries, as well as customs agency and advisory services with regard to organising transport to Eastern markets. The company services countries such as Armenia, Azerbaijan, Belarus, Georgia, Iraq, Kazakhstan, Kyrgyzstan, Moldova, Mongolia, Russia, Tajikistan, Turkmenistan, Turkey, Ukraine and Uzbekistan.

Road to success
As one of the fastest-growing European companies in the freight transport and logistics industry, Raben Group takes full advantage of the market opportunities which emerged with the opening of European markets and the free flow of goods. Raben Group offers comprehensive logistics services: contract logistics, road network (domestic, international and East), transport of fresh products with the Fresh Logistics brand, full truckloads (FTL) and intermodal
transport, sea and air freight. The main industries served by the company in 2019 were food (27%), consumer technologies (21%), automotive (20%), retail (12%) chemicals (11%), non-food fast-moving consumer goods (FMCG) (9%). Road transport, which is responsible for 66% of the Group’s turnover, offers great opportunities, but it also poses challenges that Raben reacts to every day by adapting its network of groupage connections in response to the expectations of customers from all over Europe.

The activities aimed at creating a network of international connections perfectly fit into the mission and vision of the company. Moreover, since trucks with the Raben logo can be seen on many transport routes, there is no doubt that, each day, the Group strives to be “one axle ahead” of its competitors.

Development through innovation
Development is written into the DNA of Raben Group. Hence, the company constantly invests in the transport network and optimizes processes and IT systems, which translate into fast and on-time deliveries. For many years now, the Group has been focusing on automation and robotization of processes and services on different levels: physical processes, IT processes, and also robotic processes automation (RPA).

“When it comes to automation, we opt for advanced IT solutions, such as platforms automatically transmitting information to our customers, platforms presenting ETA (estimated time of arrival), etc. With respect to automation and warehouse robotization, we are implementing devices measuring shipments, autonomous or semi-automatic fork-lifts, as well as ‘co-botic’ arms, Internet of Things (IoT) sensors and many other solutions increasing the effectiveness of warehousing and transport processes. With respect to RPA (robotic process automation), these are implementations of software robots supporting or replacing users’ work in particular applications (WMS/TMS/FK) or at the interface of various IT systems” – says Zbigniew Kępiński, Genius Lab (R&D) Manager, Raben Group

Socially responsible business
People are the greatest asset of Raben Group: an experienced and engaged team focused on exchanging experience and achieving goals together. These “people with drive” build the right atmosphere at work and oversee the standard of transport services, as a result of which Raben stands out against rival transport companies.

Trust also means a responsible business. Raben Group is aware that it does not operate in a separate social space. Development, growth and innovation translate into quality of life in the environment. The foundation of sustainable operations is dialogue with the society. That is the reason that Raben has organized dialogue sessions with stakeholders. Based on their outcome, the company has developed a strategy of social engagement which is determined by areas of support that are important for local communities, namely education, safety and ecology. In accordance with its corporate social responsibility (CSR) vision, the company wants to set sustainable trends in the sector which bring added value to the environment.

“As a socially responsible company, we care about ethics in the entire value chain while building an organizational culture based on honesty, transparency and mutual respect. In business, one of the elements that guides us is the fair play approach. Fair play is a universal principle which works not only in sports. We believe that relations based on mutual honesty build a better tomorrow. We want every kilometre covered by our trucks to bring us closer to a better future and social welfare. Therefore, every year we invest in more efficient and environmentally friendly transport solutions, we plant trees neutralizing tons of CO₂, and we also transport thousands of pallets for Food Bank free of charge. We believe that it will help us actively support the implementation of the UN sustainable development goals: responsible production and consumption, economic growth and climate action. Responsible transport is necessary.” – explains Ewald Raben.
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Let your supply chains be sustainable too: SOUND ADVICE from LUXEMBOURG

In their pursuit of sustainability, organisations’ initial and keenest focus is likely to be on their own operations. Nevertheless the supply chain is an aspect that demands at least equal commitment. In this article, we get advice from the Luxembourg Centre for Logistics and Supply Chain Management about how companies can address the issue, and about the centre’s active role in the drive to research and address sustainability in the supply chain.

Supply chains and the environment
Flows of goods and services – supply chains – are at the core of how economic prosperity is created. Decisions made by regulators, policymakers and firms, as well as consumers, shape the flows of goods and services. Regulators and policymakers (such as governments and international institutions) set the boundary conditions according to which firms and consumers operate; firms design and operate supply chains within these conditions to deliver goods and services to their consumers; consumers decide when and where to use these goods and services.

Yet, current practices in the management of these flows and supply have an adverse impact on the environment in which we live. There is an increasing awareness of this adverse impact and the necessity for forms of supply that safeguard the future availability of scarce resources, limit environmental impact and withstand the scrutiny of stakeholders concerned about potential reputational damage to the firm. World leaders and media have put sustainability on the agenda and the world is now pursuing the limitation and reduction of this footprint (see, e.g., the UN Sustainable Development Goals (UN, 2015) and the Paris Agreement (UNFCCC, 2015)).

The decision you face
The C-suite faces increasing pressure to make supply chains more sustainable from an environmental perspective. Whether an executive believes that care for the environment poses “the challenge of our time” or is a climate

The reality is that executives need to manage their organisations’ use of scarce resources, comply with regulatory requirements, and build and protect the value of their brands, regardless of their personal beliefs.
The sceptic may not make a difference in identifying the best path forward. The reality is that executives need to manage their organisations’ use of scarce resources, comply with regulatory requirements, and build and protect the value of their brands, regardless of their personal beliefs. On top of that, sustainable products have created a growing niche market, in particular in North America and Europe, and there is a growth opportunity in supplying to customers seeking these products.

Many firms have now launched initiatives to reduce the environmental impact of their supply chains. Numerous firms have made clear moves in declaring bold objectives. For instance, Maersk announced in 2018 the objective of having net-zero CO₂ emissions from their operations by 2050. Delta, which has had carbon-neutral growth for several years, has recently committed $1 billion over the next 10 years to become the first carbon-neutral airline globally. And Nike is now committed to its Move to Zero initiative, whereby it will shift to renewable energy by 2025, reduce carbon emissions by 30 percent by 2030 (in line with the Paris Agreement) and divert 99 percent of footwear manufacturing waste from landfills. Evidently, the pressure is building up and firms are scaling up their commitment.

Translating your commitment to actions: first steps
The commitment itself is part of the long-term vision, the strategy of the firm, and a guiding principle according to which the organisation should operate. Translating the commitment into actions requires a closer look into the trade-off that businesses face. Changing decisions can come at a cost, but then there is the benefit, which is often harder to quantify. Decision makers should be aware of the trade-offs and understand how their decisions could affect the bottom line and the environment. Having a menu of options could make the process clearer to managers.

At the Luxembourg Centre for Logistics and Supply Chain Management, numerous past and ongoing research projects are dedicated to this topic. We engage research projects at both graduate and postgraduate levels. We work closely with firms, and several master’s thesis projects have been completed in order to help them in this respect. A typical finding in such projects is that considerable reductions in environmental impact can be (and are) achieved with minor or negligible cost increases. One example is a supply network design study at a large manufacturer with global operations, which found that the global carbon footprint due to transportation could be reduced by around 10 percent at an increased transportation cost of around 0.1 percent. This is possible by using more-direct, high-volume shipments to reduce the total travel distance, as well as geographically aligning the production locations of goods with their most important markets. At the master’s level, projects strive to provide decision makers with a clear decision-support tool for environmentally driven decisions.

At the doctoral and postdoctoral level, researchers are leading projects to identify gaps, develop tests and assess solutions to help firms in this respect at a more fundamental level, supporting not only firms, but also decisions at other levels, such as policy making. For instance, one PhD project considers a redesign of firms’ supply chains in a way that allows them to provide the required customer service, have a low negative environmental impact and yet be cost-efficient. Dual-sourcing supply chains is one such redesign. A dual-sourcing supply chain
uses two distinct supply sources, e.g. local and offshore, recycler and non-recycler, or two distinct transport modes for shipments from one supplier. An example of such a sustainable dual-sourcing strategy is to replenish most products using an eco-friendly, but slow, transport mode, and a fast, but polluting, mode as an emergency source in the event of imminent stock-outs after a supply disruption, such as the coronavirus poses at present.

Translating your commitment to actions: the holistic approach

The challenges that firms face in making the transformation to more sustainable supply chains come in three broad categories. The first challenge is to gather and organise all the information that is relevant to assess the current or a proposed supply chain design. Sustainability impact comes in many forms during the life cycle of goods and services. The development of tools and methods to measure impact and use it for supply chain decision making is an ongoing challenge.

The second challenge is to redesign supply chains fundamentally with more detailed information about the sustainability impact. Sometimes this can be done within the context of a single firm, as the dual-sourcing strategy above illustrates. In many cases, sustainable supply chains will require different firms along the supply chain to align. This is also where the third category of challenges lie.

Alignment of different firms along a supply chain does not come naturally. It is incumbent on regulators and policy makers to develop a portfolio of instruments, such that they align the incentives of different decision makers along a supply chain to adopt more sustainable practices.

The University of Luxembourg is actively pursuing research to help firms face challenges in all three categories: (i) assessment of sustainability in all its relevant dimensions, (ii) design of more sustainable, yet economically viable, supply chain configurations, and (iii) alignment of incentives along long supply chains through policy and governance.

Students of the one-year master’s programme in Logistics and Supply Chain Management (lscm.uni.lu) can choose research projects addressing these challenges with companies that partner with the centre.

References

How does a medium-sized company stand out in a highly concentrated market with rapidly increasing capital requirements? Eurodrug is an international pharmaceutical company active in more than 30 countries, with a differentiated portfolio and a unique business model. They follow a vision that has pushed them to create their own innovative products, developed in Europe and backed by European research. With more than 30 years of experience, the company is growing rapidly in ways that others are still experimenting with.

The pharmaceutical sector has the highest incidence of mergers and acquisitions, reshaping the industry as we know it. Merging large marketing and sales teams, R&D capabilities and production facilities enables “big pharma” to keep the power in their hands and enjoy economies of scale that make them extremely competitive. Being a “traditional” business, these firms seek innovation mainly in R&D, whereas their other departments (marketing, sales, manufacturing and distribution) often lack substantial innovative changes. This is confirmed by the fact that pharma companies devote a large part (around 17%) of their turnover to R&D purposes (which is high compared with other industries). This, combined with the increased costs resulting from the higher number and quality of clinical trials and tests that are required in order to register products, means that the need for financial capital is increasing. This puts up a significant barrier for SMEs and has pushed Eurodrug to innovate in different areas to allow them still to be committed to their original vision.

Eurodrug Laboratories is a privately owned company that has managed to become a key player in several therapeutic areas globally. The company was born from a vision that all countries in the world should have equal access to innovative top-quality medicines (in Eurodrug’s case, from Europe) without having to resort to generic forms. The backbone of this vision was created through operations driven by local people, building on their knowledge and network, while providing the market with products developed by Eurodrug. They implemented a low-fixed-cost business model and a shorter (less bureaucratic) lead time to new product commercialisation, and started to collaborate with both public and private R&D centres. Since the company’s founding in the early eighties, it has successfully brought its products to over 30 countries, predominantly throughout Asia, Latin America and CIS countries, with a focus on respiratory, paediatric, gastroenterology and women’s health.

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Unique product development

One of Eurodrug’s latest developments, Diapo-Care®, is an excellent example of how their vision finds solutions that are often overlooked by others. Building on both their experience and network in paediatrics, they developed a unique product for a market without any real innovations in recent memory. Diapo-Care® is indicated for perianal dermatitis (or nappy rash, as most of us would call it), developed, researched and manufactured in the Netherlands. The product originated with the question: “Why, despite the many nappy rash creams out there, is there almost no baby that goes through its infant years without experiencing rash at least once (or more often for the unfortunate ones)?” It quickly became apparent that the current treatment options are aimed at treating the symptoms, instead of preventing the root cause, leading to an “after the fact” market. Together with researchers from both the Erasmus Medical Centre in Rotterdam and Groningen University Medical Centre, Eurodrug focused on finding a solution for the main culprit in causing nappy rash: protease enzymes. Fast-forwarding to development, the company partnered with a manufacturer that was able to isolate protease enzyme inhibitors from a natural source suitable for topical application and, more importantly, safe for baby skin. Of course, for Eurodrug, this product performed in collaboration with research centres in both the UK and Netherlands. This run-of-the-mill (for Eurodrug) development has created a product that is effectively able to prevent and reduce inflammation of

The company was born from a vision that all countries in the world should have equal access to innovative top-quality medicines without having to resort to generic forms.

Eelco Broersma
CEO of Eurodrug Laboratories
The safety aspect is something that Eurodrug takes very seriously, and quality of life is regarded as key during the creation of its products.

About the CEO

Eelco Broersma is the CEO of Eurodrug Laboratories since August 2017. Prior to that he was CFO while simultaneously overseeing the Supply Chain and Human Resources departments for 9 years. Before joining Eurodrug, Mr. Broersma was CFO of Docs International (now Docs Global), an Executive Search company for the Healthcare industries, driving the European expansion. Before this he worked as a consultant for Akzo Nobel and as an auditor in the life sciences industry. He holds a degree in Business Economics from the University of Amsterdam.
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The Cyber-Organisation and the New World of Work:
Advocating a twin governance and collaborative intelligence solution to overcome a constant disruptive business context

BY MARIO RAICH, SIMON L. DOLAN, DAVE ULRICH AND CLAUDIO CISULLO

This paper explores the concept of the cyber-organisation and, in particular, the so-called cyber-enterprise and its functionality in a business context that is constantly generating disruption due to rapid technological advances and a shift in the definition of work. The cyber-enterprise is, and will be, operating in this fast-changing context driven by artificial intelligence. We argue that cyber-reality will change the fundamental roles of all stakeholders, be they employees, suppliers, customers, investors, partners, associations or governmental agencies, and will require corresponding changes in the governing bodies of organisations. Today, we are living in a world in transition and transformation. There are three powerful converging megatrends that may explain the shaping of the new world of work: globalisation, digitalisation and creation/destruction. Add to this the rise in cyber-reality, artificial intelligence (AI), global connectivity, as well as hybrid reality, hybrid work and business entity, and, finally, new, disruptive technologies like quantum computing, blockchain, neurotech and robotics, and you will understand that a new form of cyber-organisation is emerging. It is not a luxury; it is a vital necessity in order to survive and sustain business. We propose a new structure of twin boards to deal with this new business environment strategically and operationally.

Beyond contexts related to business, we are also facing global challenges threatening our sheer existence: demographics and global migration; environmental deterioration through global pollution; climate change; asymmetric conflicts and wars. Other contributing factors that are shaping, or will shape, the cyber-enterprise include the emerging new “Intelligent Internet” (including the Internet of Things), combined with machine learning, mobile technology and new technologies encompassing people, artefacts and cyber-entities (CE), which is on the way to becoming the first autonomous cyber-entity existing and acting in hybrid reality.
Beyond digital reality, a new, much-more-potent and disruptive revolution is surfacing: cyber-reality (CR). Cyber-reality is a powerful configuration of elements from digital reality, augmented reality and virtual reality. Together with artificial intelligence (AI), it will lead to a far more radical transformation than anything we have seen before. In fact, digitalisation is just one step, albeit a necessary one, in the transition towards virtual reality (VR). The progress of VR is tightly linked to the development of computer technology and artificial intelligence.

The radical changes in business environments occurring as a result of the rise of cyber reality and advanced AI are causing a totally new design of the enterprise, including structure and governance. We argue that a new form of corporate governance is emerging (or perhaps needed), based on the twinning of more-traditional executive boards with a replica of the coronation in virtual reality.

Adding to this complexity are new forms of higher education which are becoming a core part of cyber-business development. Education has become strategically important and will definitely move to the corporate board level. In a recent paper, we asserted that the design of lifetime education is essential for the Cyber-Age, and it is based on four pillars: learning, research and design, development and deployment.

The new generation joining the workforce and entering the markets is highly “cyber-savvy”. Social and professional life are shifting increasingly into virtual reality. People need to be willing and able to coexist, live and work side by side with smart machines and cyber-entities, creating collaborative intelligence.

To prepare for the big transformation ahead, we need to understand what is happening right now, what is on the horizon, and how and where all this will shape the cyber-organisation and its corresponding governance. Since transformation is already in effect, we wish to alert the readers that there are issues that need to be dealt with immediately (here and now), while other important issues can be left for the future.
humans are considered to be the intellectual elite, with coaching and mentoring duties towards the rest of the population. They create the talent pool of scientists, technicians, engineers, future researchers and future designers or even spiritual leaders. Imagine how social and professional life will shift into virtual reality. By the same token, crime and wars can also occur in this virtual reality. In countries ruled by powerful lords, advanced technologies permit control over the citizens.

**Reality or imagination**

Digital reality has already made big inroads into all domains of our life. Augmented reality is expanding fast in gaming, education and business. The market for augmented reality is expected to be worth $61.39 billion by 2023, growing at a 55.71-percent compound annual growth rate. Virtual reality is establishing its presence in many industries in a number of ways, such as experiences and business processes.

So, we are witnessing different elements of new forms and structures of organisation that are unfolding: the so called “cyber-organisation” or “cyber-enterprise”. Once fully developed, these will be very different kinds of organisations. We do not argue that all organisations will become cyber-organisations, as we will most likely see a mix of traditional forms side by side. Some organisations will be relatively stable, such as those in charge of infrastructure, but there will also be those who will constantly be adjusting in a highly automated environment, and these will struggle to satisfy the growing and changing needs, requirements and wishes of its multiple stakeholders. They will have a structure that is highly nimble and agile, creating and driving new markets in the hybrid reality as a substitute for, or an addition to, the more traditional markets.

Many working activities will be executed collectively by highly sophisticated, AI-based entities (machines and robots) in a joint effort with humans. Technology will accomplish routine, standardised tasks that are often seen as repetitive. Humans will spend their working years performing a mix of productive, creative and educational activities. An increasing part of work and education will be shifting into cyber-reality, in particular virtual reality.

**Re-examining AI and CR: Taking a closer look**

If we look at the world today, waves of new applications which employ artificial intelligence are being introduced across all spectrums of life – work, business and leisure.

People are using various AI applications in daily activities and work tasks without even being aware of them. Research by McKinsey has gone as far as describing AI as contributing to a transformation of society “happening ten times faster and at 300 times the scale” of the Industrial Revolution. Several authors see AI as the new driver of growth.

Purdy and Daugherty argue that AI has the potential to overcome the physical limitations of capital and labour, and open new sources of value and growth. A report entitled “How AI Boosts Industry Profits and Innovation”, published by Accenture Research and Frontier Economics, claims that AI technologies have the potential to increase productivity by 40 percent or more by 2035. Accordingly, they will increase economic growth by an average of 1.7 percent across 16 industries, with information and communication, manufacturing and financial services leading all industries. In the same vein, Columbus, in an article published in Forbes magazine, claims that artificial intelligence will enable 38-percent profit gains by 2035. Profitability will be noticed mostly in education, accommodation and food services, as well as the construction industries.
AI is already enabling a wave of innovation across many sectors of the global economy. By and large, it helps businesses use resources more efficiently.

A McKinsey article entitled “Global AI Survey: AI proves its worth, but few scale impact” looks at AI adoption across industries, regions, and capabilities, and the research bears out the instincts of those early movers. Healthcare is emerging as the prominent area for AI research and applications. According to a 2016 report from CB Insights, about 86 percent of healthcare provider organizations, life science companies and technology vendors to healthcare are using artificial intelligence technology. Healthcare AI start-ups have raised $4.3bn across 576 deals since 2013, topping all other industries in AI deal activity. Bioz, for example, has developed advanced AI that reads and understands life science articles, helping researchers to accelerate the discovery of cures for diseases and the development of new treatments and medications.

The number of AI applications and AI start-ups is continuing to grow. AI is on the way to becoming omnipresent in our world, and we are increasingly dependent on functioning AI applications. A recent Siemens report entitled “Unlocking the potential of digitalization” shows the growth of various forms of AI and its increase between 2014 and 2019:

- Autonomous robots: 31% increase (from 3,582 to 3,927) (including self-driving vehicles)
- Digital assistants: 30% increase (from 2,175 to 8,075) (e.g., Siri, automated online assistants)
- Neurocomputers: 22% increase (from 1,590 to 4,685)
- Embedded systems: 19% increase (from 877 to 2,095 (machine monitoring and control systems)
- Expert systems: 12% increase (from 7,055 to 12,433) (e.g., medical decision support systems, smart grid)

In addition, we can see AI and CR converging. Future progress depends very much on the development of ICT, but also on new technologies, like photonic computers, quantum computing and Web 3.0 (which may well be the spatial web). According to CB Insights:

- AI applications begin to go beyond the focus on narrow tasks, moving towards general AI.
- New techniques for the creation of AI applications are being invented. For example, deep learning is getting a makeover, thanks to capsule networks.
- The effect of AI is increasingly entering into the activities of white-collar workers, such as lawyers, consultants, financial advisors, journalists, traders, and more.
- China is catching up fast with the United States in AI development. In some areas, China already has the lead.

Nevertheless, it will take a while before we see fully fledged cyber-organisations in a hybrid world.

Applications of Cyber-Reality (CR)
CR is being used in different industries, such as finance, healthcare, architecture, construction, manufacturing, retail, tourism, transportation (air, water, land, outer space), mining, etc. For more, see overviews of applications. Obviously, the development of CR is tightly linked to the progress of AI. VR is being deployed in different areas of business: procurement, production, R&D, innovation, HR, marketing and sales, etc. Here are a couple of examples:

- **Virtual and augmented reality is creating innovative methods in healthcare for treatment and training, and for the collaboration of doctors.** Shafi Ahmed, Professor of Surgery and Associate Dean at Barts Medical School, has based his efforts to solve the huge global shortage of trained surgeons on merging the world of medicine, global education, and virtual and augmented reality to democratise and scale surgical education, so as to make it affordable and accessible to everyone, using the power of connectivity to allow equitable surgical care. See also a list of top healthcare VR and AI start-ups.
- **Researchers at Nvidia have taught artificial intelligence systems how to generate and detail new virtual cityscapes, by training neural networks on real video footage.**
- **At Almotive, self-driving AI is learning to drive almost entirely in a virtual world. The company is doing 90 percent of its testing in virtual reality.**
- **eXp Realty is the largest residential real estate brokerage by geography in North America. eXp Realty has 11,000 agents (and counting), who connect through a virtual office reminiscent of the massive online multiplayer game Second Life.** Inman, the industry’s leading source of real estate information, is calling eXp Realty one of the most innovative real estate companies in the world.

In the next couple of years, we will most likely see the biggest progress in applications based on augmented reality. In this way, people will bring VR into their daily and working lives, preparing for its deployment across the entire spectrum
of life and business. We will see many specific VR applications for conferences, the gaming industry, the movie business, the travel industry, education, etc.

Nonetheless, the biggest progress is anticipated in human-machine collaboration, where the two sides will complement each other. This will open the way for future enhancements of human capabilities based on sophisticated AI, neurotech, biotech and genetech. Perhaps one of the killer sets of applications will reside within the fast deployment of VR, and research suggests that it will be implemented in the healthcare sector, helping to contain the cost explosion.

In an earlier article published in this journal, we presented a classification of the realities that we are facing or will be facing. Based on the different “realities”, multiple “hybrid realities” will be created. The full power of cyber-reality will come when virtual reality is seamless with “our reality”. This will be the result of the convergence of AI and CR.

So, what are the implications for governance and ownership?

A new form of organisation is emerging – the “hybrid organisation” – which operates simultaneously in several or all “realities”. Some areas of organisational activities are already shifting towards virtual reality, e.g. marketing, education and R&D. The cyber-organisation, therefore, focuses on providing solutions in the Cyber-Age. Each solution is a project, based on a digital solution, which becomes available later on a virtual platform. As challenges and solutions are far more complex, core members of the interdisciplinary hybrid project teams will be carefully selected and assigned to specific purposes. Additionally, ad hoc talents will support them across the globe.

This new organisational species has also been called the Market Oriented Ecosystem (MOE), which evolves and melds the traditional holding company and multidivisional firm. The cyber-enterprise represents the Zeitgeist of the Cyber-Age at its best. Its sustainability is not based on stability of the structure and linear continuation of “more of the same”. It is the product of continuous change, transformation and innovation based on its agility, flexibility and rapid adaptation. Many cyber-enterprises are the outcome of unexpected, often disruptive changes. It is a model for future education, deploying the full range of learning, understanding, development, creative solutions for the future and, finally, implementation. It is constantly exploring and analysing a thousand possible futures, and designing its own – ever-changing – future as well. This requires the interlinking of many disciplines of knowledge on a global scale, with interdisciplinary teams composed of humans with enhanced abilities and cyber-entities using and leveraging technology on the edge.

**What is the purpose of the cyber-enterprise?**

The cyber-enterprise is a self-sustaining adaptive CR network of relations acting as an engine for multiple value creation. It has the capacity to produce and deliver the corporate promise (i.e. the creation of meaningful solutions, products and services, leading to multiple value creation). The form of the enterprise is based on value creation networks. The key issue is the ability to form networks and relationships by working on digital platforms and virtual networks within multiple ecosystems.

The digital value platform and, later on, the hybrid value network will be the most important structure of an organisation. This kind of structure allows for several contact points with the environment. The three most important will be marketing, sales delivery and procurement.

The cyber-enterprise represents the Zeitgeist of the Cyber-Age at its best. Its sustainability is not based on stability of the structure and linear continuation of “more of the same”. It is the product of continuous change, transformation and innovation based on its agility, flexibility and rapid adaptation. Many cyber-enterprises are the outcome of unexpected, often disruptive changes. It is a model for future education, deploying the full range of learning, understanding, development, creative solutions for the future and, finally, implementation. It is constantly exploring and analysing a thousand possible futures, and designing its own – ever-changing – future as well. This requires the interlinking of many disciplines of knowledge on a global scale, with interdisciplinary teams composed of humans with enhanced abilities and cyber-entities using and leveraging technology on the edge.

**We can expect a shift in the core assets of an enterprise towards:**

- **Brands** based on trust, leading to loyalty of core employees and customers, and value promised vs. created and delivered
- **Talents**, access and ongoing lifelong development. AI and CR savvy
- **Technology**, access and ability to use and leverage it (AI, CR, CE)
- **Readiness and agility** for transformation, change adaptation
- **Future exploration, future design and TrAction** i.e. concurrent development of corporate direction and action
- **Partnership** of enhanced humans with cyber-entities. Collaborative intelligence leading to incredible increase of quality and efficiency
- **Care** of resources, environment, products and, last but not least, key stakeholders
- **Smart CR platform** allowing global access to talents and markets; enhancing agility and resilience
Business in the future will need to have a structure on two levels: agile and transforming ongoing business, and at the same time preparing new business ventures for emerging and uncertain future business.

The leading members of the cyber-enterprise can be called the “high priests” of the future, since they explore and design constantly, watching the context changes and in particular the emerging changes, their investigations supported by special exploratory platforms.

The challenge of governance in the cyber-enterprise
Due to the constant transformations in the business environment, strategic entrepreneurship is becoming a main driver of business. Permanent change, sometimes highly disruptive, requires a permanent adaptation of the strategic direction, sometimes even of the purpose of business.

Quick reaction and agility alone are not enough. Agility without strategic entrepreneurship can lead to wrong decisions. Therefore, strong business leadership requires a combination of strategic leadership and strategic entrepreneurship to play a major role in the executive board of directors. This means that “strategic twins”, or individuals with two core competences – leadership and entrepreneurship – will be indispensable.

This leads to the critical issue of getting a corresponding talent with multiple competences to run in parallel. As companies need more and more digital-savvy employees, the question becomes whether just substituting senior executives with digital natives is sufficient, or whether perhaps it is risky, since the organisation is losing decades of precious executive experience. This is a real dilemma.

The solution to this dilemma, perhaps, is to create parallel boards (we call them “twin boards”) that will together maintain agility, future-oriented and responsible for the overall strategy. The two executive committees need to be working side by side. We argue that we will need, perhaps, one board consisting of young, high-potential executive talents that will oversee future business, and another board with senior executives in charge of taking care of the actual business effectively and efficiently.

Future business means preparation for virtual-age technology, with corresponding innovative projects and initiatives, and start-ups. The actual business represents not only the generation of profits, but also securing the necessary funds for the creation and development of future business. In addition, the senior executives will also have the role of mentoring and coaching the members of the “future business board” in their talent development and executive decisions.

Adding to this complexity is the fact that business in the future will also be composed of AI entities working in tandem with humans. So, we may need to draw scenarios of collective intelligence in order to predict what is coming and aid the selection of the best paths and solutions. We are talking about joint governance of human leaders and intelligent digital and virtual entities. This joint governance will be based on blockchain principles. Blockchain is a peer-to-peer network, which distributes power among the different members, using technology. This means no single person or system can ever shut down the blockchain. It would require many users with serious computing power to run the blockchain down, and even then they might not be successful. Blockchain is robust and resistant to attacks and fraud, due to a distributed power system. The new form of corporate governance, therefore, will put an end to most of the administrative management work, as it will be delegated to AI entities.

In other words, business in the future will need to have a structure on two levels: agile and transforming ongoing business, and at the same time preparing new business ventures for emerging and uncertain future business. This will have a deep impact on corporate governance and structure. It will require a double executive board, as we have suggested before, but with a different focus: one for existing business and one for future business. Each one will have its own budget, strategy and strategy implementation, business development
and projects. But, at the same time, they will use a common corporate structure and have a common board of directors in charge of the entire corporate strategy.

The above proposal may lead to the creation and deployment of new business practices and the spreading of digital and virtual expertise within the corporation. In addition, it is a smart way to attract young, promising talent to the organisation.

Successful new business ventures can be incorporated into the running business, or become separate business units, or be spun off.

More about strategic twin governance
In the Cyber-Age firm, we will see at the strategic level core executive competences converging and creating what we call “strategic twins”: leadership and entrepreneurship, as well as management and business acumen. Recall that the main reason is permanent business transformation in hybrid reality. The operational part of the executive work will be increasingly done by cyber-entities. The top executives will have to take care of the transformational ability and readiness of the enterprise. The speed of transformation will vary in the different industries, and will from time to time be subject to unexpected disruptions. Only quick and adequate adaptation will allow them to survive and to thrive. The list of business challenges is growing: managing hybrid teams composed of humans, robots and intelligent programs; enhancing human talents; digital and, later on, virtual entities on the board and the executive committee; blockchain in governance; emerging new leadership competences, etc.

It is assumed that in the Cyber-Age, the economy and business paradigms will be shifting from a focus on growth towards sustainable transformation and innovation. Permanent transformation and innovation will be the rule. The business paradigm in the Cyber-Age will move towards partnership with cyber-entities, creating collaborative intelligence and allowing business to leverage the achievements of the Cyber-Age, to deliver values for multiple stakeholders.

<table>
<thead>
<tr>
<th>Twin boards of directors for the cyber-enterprise</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Board of Directors</strong></td>
</tr>
<tr>
<td>Closely tied strategic leadership and strategic entrepreneurship</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Executive Business Board</th>
<th>Executive Future Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior Executive Mentoring and coaching their peers on the Future Board</td>
<td>Young Executives Digitalisation and virtualisation expertise</td>
</tr>
<tr>
<td>On-going business Financing future development Foundation of the company</td>
<td>Business in transition and emerging business Developing future business Spin-offs and innovation</td>
</tr>
<tr>
<td>Care, balancing multi-value creation</td>
<td>Future foresight, future orientation, future design Promoting innovation and transformation</td>
</tr>
<tr>
<td>Joint leadership of humans and cyber-entities</td>
<td>Co-working, co-creation, co-existence Lifelong education</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Governance key terms and definitions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Board</strong></td>
</tr>
<tr>
<td><strong>Executive team</strong></td>
</tr>
<tr>
<td><strong>Leadership</strong></td>
</tr>
<tr>
<td><strong>Cyber-enterprise</strong></td>
</tr>
<tr>
<td><strong>Hybrid Leadership team</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The expanded core competences of executives (LEMBAC)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Core Executive Competences</strong></td>
</tr>
<tr>
<td>L Leadership Leadership on all levels Collateral leadership</td>
</tr>
<tr>
<td>E Entrepreneurship Enhancing and leveraging generic entrepreneurship</td>
</tr>
<tr>
<td>M Management Resourcefulness of the organisation</td>
</tr>
<tr>
<td>BA Business acumen Managing core assets</td>
</tr>
<tr>
<td>C Cyber-savvy All C-level executives. Ability to use available computing devices, systems and solutions relevant to the organisation.</td>
</tr>
</tbody>
</table>
Broadening the core competences for executives in the cyber-organisation

Traditionally, the core competences for executives were considered to be: leadership, entrepreneurship, management, and business acumen. These now need to be expanded to include “cyber savviness”, which will enable executives to use and leverage ICT, AI, CR & CE, etc. for the well-being and survival of their organisations.

Towards transition and expansion of key executive competences

We argue that, in the future, leaders will become enablers of education. The cyber-organisation, therefore, will become a “hyper-education community”, embedded with continuous learning and unlearning processes, involving its entire ecosystem and, according to some experts in particular, its customers.

Revisiting the concepts of work, workforce, industry and technology

Let’s redefine the concept of work. We may consider work to be any activity (physical, virtual or mental) which creates value for quality of life. Initially, work was mainly necessary for survival. Later, there came a split between paid and unpaid “work”.

Some key questions arise. How will future work be positioned within the new business models based on digital platforms and, later, hybrid value networks? How will the framework of supply and value creation affect work? What will be considered work in the future? Where do we have untapped potential of work? What role will working time play in the future? How much time will be allocated for work, for education and for private life?

First and foremost, we need to understand the uniqueness of people and their core competences on one side, and those of smart machines on the other. In addition, we need to explore the synergies and the collaboration of people with smart machines. Probably there will not be an either/or situation. Smart machines will just enter gradually into many job areas, enhancing people’s work. It will be a complementary collaboration, rather than a competitive one. But there will also, no doubt, be a total shift in the content of work from people to smart machines.

Collaborative intelligence, i.e. the smart collaboration of people and smart machines, is therefore an important theme to be discussed. Just fuelling people’s fears about job losses does not seem constructive. In the Cyber-Age era, the problem is not “work, or no work”, but rather the way in which work is remunerated and the values which we attach to work. We need to stop paying for working...
time and start remunerating for meaningful activities that add value to quality of life in society.

The perceived value of work needs to shift from materialistic outcomes and values towards life values. This would allow shifting from paying working time towards paying for outcome and value created. In this way, work can become a meaningful activity again. Maybe we should start to base taxation on value created and shift part of these to a universal income.

No doubt within the next decade we will have a massive reduction and transformation of human work and working activities as a result of cyber-entities (some estimates go as high as 50 percent). But these numbers are unevenly distributed; some jobs will vanish, while others will be only slightly affected. Moreover, many jobs will simply be enhanced by cyber-entities. The workforce will be engaged in a mix of “old” jobs, jobs changed because of cyber-entities, and many new jobs, most of them not known today.

The shift from Leadership 4.0 towards Leadership 5.0

In a world that is undergoing revolutionary technological transformation, the way we work, live and act an eventually have an effect on leader transformation, too. Leadership in the Fourth Industrial Revolution will be defined by the ability to rapidly align and engage empowered, networked teams with clarity of purpose and a fierce resolve to win (this is Leadership 4.0). According to the Oxford Leadership programme, agility is the principal competence of digital leadership, coupled with the involvement of employees. In addition, leaders need to be open and transparent and create an innovative culture. Today even the most advanced agile enterprises – Amazon, Spotify, Google, Netflix, Bosch, Saab, SAP, Salesforce, Riot Games, Tesla, and SpaceX, to name but a few – operate with a mix of agile teams and traditional structures.

Leadership 5.0, on the other hand, operates in a volatile VUCA context, which requires the ability to anticipate disruptive changes, adapt purpose and business models and do it almost instantly. It will require collateral leadership and future affinity on all levels. This means, among other things, access to the necessary talents and resources on a “just in time” basis. These leaders will have to deal with a rapidly changing “workforce” composed of humans and smart machines, operating in symbiosis in cyber-reality.

Keeping a sense of meaningfulness and sharing corporate values will represent a permanent challenge to both models of leadership. Collateral talent development and deployment and access to necessary talent in time will entail a higher level of responsibility for leaders. Collaboration and co-creation amongst hybrid teams composed of people and CEs will become a key competitive advantage. Lastly, leadership will also require lifelong education in the leadership competences. Fine-tuning and acquisition of additional competences represent the characteristics of these new leaders.

Most key competences in the near future are strongly related to specific human competences. They include:

- **Life competences (self)**
  Generic and digital literacy, verbal and written communication, negotiation, critical and future thinking, imagination, creative problem-solving, generic entrepreneurship; self-development

- **Social competences (important other people)**
  Relationships and empathy, life partnerships, parenting, collaboration, trust and respect, empathy, collaboration, virtual collaboration, negotiation

- **Cognitive / mental competences**
  Rational and irrational thinking, mental switching between the different realities, common sense and sense-making, computational thinking, cognitive flexibility, finding creative solutions, complex problem-solving, critical thinking, future thinking, design thinking, transdisciplinary, holistic and systemic, encompassing thinking and actions

We argue that, in the future, leaders will become enablers of education. The cyber-organisation will become a “hyper-education community”.
• **Work competences (work)**
  Performance, value creation, adaptation, collaboration and co-creation, entrepreneurship, care, and specific professional and executive competencies

• **Future orientation**, anticipation and design and meaning**ful and purposeful action** based on free will and autonomy

• **Creation based on creativity and entrepreneurship**
  Curiosity, exploration, imagination, resourcefulness creative problem-solving

• **Caring** (social and healthcare, sustainability, service orientation)

• **New media literacy** (social media, visual media)

• **Business competences** Partnership and collaboration with CEs; cyber-reality competencies; coping with permanent transformation and innovation; business expertise and hybrid organisations know-how. Executive competences: leadership, entrepreneurship, management and business acumen. Tightly linked strategic leadership and entrepreneurship. Coping with cyber-entities, cyber-reality, artificial intelligence, the Internet of Things, and the “Future Internet”

• **Value based leadership** / Leading by values (see also: www.leadershipbyvalues.com)

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**Cyber-work with a focus on Web 3.0**

Evolving AI and CR are changing the nature of markets, geographical boundaries are increasingly blurred, and technology has emerged as a powerful creator of new markets. They also are increasingly reshaping how companies interact with their customers.

In his work on the future of marketing, Kumar has introduced the concept of “transformational marketing” as a response to marketplace changes and future trends, in order to present customers with superior-value offerings over the competition. Over the next 2-5 years, convergence into the virtual market, including the introduction of 5G technology, will be a fact. Peter Diamandis, the co-creator of Singularity Hub, wrote in a recent blog that all this transformation will create a trillion-sensor economy that will “enable us to both map our physical world into virtual space and superimpose a digital data layer onto our physical environments. Suddenly, all our information will be manipulated, stored, understood and experienced in spatial ways”.

Given that current knowledge and competences will become obsolete in a very short time, the growing demand will be for lifelong learning, which will also be achieved using Web 3.0 and its innovative new VR interfaces and platforms. And again, Diamandis argues that tomorrow’s career model will shift from a “one-and-done graduate degree” to continuous, lifelong education, professional VR-based re-education,

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**A note on collateral development and talent enhancement**

The aim of collateral development is to educate a few selected, talented individuals within the organisation and enable them to spread what they have learned across the organisation.

Since talent development is the most important element of education, let’s look at executive talent development. It begins with focus on individualised talent development for talented executives and those with high potential. After an in-depth talent exploration, they need to complete an executive challenge, with collateral development of the competences and talents of the project team.

At the core of collateral talent development is the talent development project, which deals with a key issue selected for each participant in the talent development. This is the beginning of a talent development journey called the “talent challenge”. During their engagement in the talent development project, the participants work on their core competences and have an opportunity to develop them within the project. The participants in these projects are also learning how to develop their talents in a sustainable way through specific on-site and online projects. Sustainable talent development is driven by specific personal characteristics, in particular, curiosity, perseverance and resourcefulness. It is fuelled by passion, joy and pleasure.

Collateral talent development needs to have strong links with the development and implementation of solutions for corporate key issues and the future development of the corporation. It creates and enhances entrepreneurial spirit in the corporation. Later on, a roll-out into the organisation takes place.

The aim of collateral education is to spread talent development practices across the organisation, making it more entrepreneurial and innovative.

Research on the future of higher education indicates that talent development will become the most prominent topic in education during a large part of our lives - in particular, our working lives.

Talent development begins with the definition of key skills and the focus domain (expertise) where these skills will be deployed. This leads to the development of core competences, and their successful deployment leads to the creation of talents. Talents can only be developed in their application.

Higher and postgraduate education, in particular executive education, will converge towards dual education, because there is no talent development without proper deployment. Lifetime education will be based on four pillars: learning, research, development and deployment.

Collateral development allows the transformation of an organisation into a ‘talent forge’, shaping talents and securing the development of critical competences.
Each organisation needs to organise its own “future intelligence”, which enables the exploration of what will have the biggest impact in the short and long term on the organisation.

which, all in all, will reduce barriers to entry for anyone wanting to enter a new industry.

Today we can see several trends in the virtual workplace which redefine what work really means:

- Technology development (e.g. AI, CR, Blockchain) and new technologies (e.g. IoT, spatial Internet) are reshaping marketing; “imagine showing up at your building’s concierge and your AR glasses automatically check you into the building, authenticating your identity and pulling up any reminders you’ve linked to that specific location” (Diamandis, 2020, op. cit).
- Multiple channels are leading towards an “encompassing platform-based, all-channels marketing”.
- Social media and influencer marketing are gaining in importance.
- Positive brand perception becomes crucial in the ever-changing markets. Emotional branding becomes crucial46.
- Focus on individual customers and extreme personalisation are crucial for success. This is leading to hyper-personalisation of content, and a one-to-one relationship.47
- Mobile connectivity is moving to the core of marketing and communication.

Conclusions and implications
The advancement of artificial intelligence, the rise of the virtual workplace, the developments in 3D technologies, the shift to Web 3.0 and the improvements in digital data integrity via blockchain technologies are unstoppable. They are already present in all areas of our life and work. To prepare for the big transformation ahead of us, it is important to understand what is happening right now, what is already emerging and what is coming later on.

- Due to the development of cyber-reality (digital reality, augmented reality and virtual reality) and artificial intelligence, we are also experiencing the transformation of reality towards “hybrid realities”.
- Organisations need to define the best way to leverage the growth potential for themselves
- New technologies, materials and technological solutions will bring new challenges and opportunities. All this will require organisational readiness for change and transformation to cope with the coming challenges; i.e. agility, fast adaptation, flexibility and resourcefulness.
- Each organisation needs to organise its own “future intelligence”, which enables the exploration of what will have the biggest impact in the short and long term on the organisation. It also needs to create mechanisms to translate these insights into meaningful action.

This means also exploring available AI and CR solutions to find out which ones are relevant for the organisation, and testing the best way of deploying them. Teach leaders how to create and use contextual and future frameworks.

- To be ahead of the competition, the organisation may need to create a “Future Executive Board”. In this article, we proposed the idea of a “twin board”. It also needs to find out what the critical corporate assets of the organisation in the Cyber-Age are and refocus the organisation accordingly.
• The workforce needs to be prepared for collaboration with smart machines and robots, so as to harness “collaborative intelligence”. Lifetime education solutions for the employees of the organisation must be introduced, in particular collateral education and talent development.

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Endnotes and references

1. By cyber-entities (CE), we mean all digital and virtual programs and algorithms; AI-based smart machines; robots; digital and virtual assistants; smart communication devices; all kinds of computing devices and the Internet.
2. We have presented ideas and insights about the future of higher education in a separate article: “Rethinking future Higher Education”. TEBR January/February 2019.

17. By cyber-entities (CE), we mean all digital and virtual programs and algorithms; AI-based smart machines; robots; digital and virtual assistants; smart communication devices; all kinds of computing devices and the Internet.
The next wave of innovation will see products and services combining technology from across the digital, physical and biological worlds. Intersections between these worlds are opening up new sources of sustainable value, providing a foundation for such technology.

2019 has been the year that the tech Unicorn lost its wings. What was supposed to be a coming out party in which a bumper crop IPO’d has turned into an annus horribilis. The 25 that listed have seen their combined market value decline by 17% (as of the time of writing). Name brands like Uber, Pinterest, Lyft, Slack and Peloton have seen falls ranging from 6% to 47%.

But there are exceptions. Beyond Meat has seen a 231% rise. 10x Genomics 76%. What distinguishes these two groups? While the former focused on incrementally retrofitting digital technologies onto the world, the latter are creating sustainable value by more fundamentally weaving them into its very fabric. This approach will form the foundation of the next wave of innovation.

New opportunities are coming from creating products and services that combine technology from across the digital, physical and biological worlds. It is the intersections between these worlds that are opening up new sources of sustainable value. Take buildings. New entrants are going beyond using digital technologies to optimize their use, and are instead rethinking their fundamental design and purpose, creating a built environment that lives and breathes. Pavegen seeks to deploy new materials in flooring so that it can generate electricity through footsteps. Basilisk is pioneering a new form of concrete that can self-heal. Econcrete partners with cement makers to produce modified concrete that fosters the growth of plants and animals. And 3M has developed roofing granules used in asphalt shingles to reduce smog – each ton of these granules has the capacity to mitigate the smog created annually by one car driven 3,000 miles.

Emerging innovators are also targeting human biology. Platforms like WeChat and Snap have enabled us to develop and edit our virtual selves. But a combination of AI, robotics and CRISPR may soon enable us to edit and upgrade our physical selves. Biotech start-ups are using machine learning to identify cancer-curing agents and wearable robotics start-ups are working to enhance human strength and mobility. Roam
builds robotic exoskeletons that help Navy Seals run faster and more efficiently and has begun offering a commercial device for skiers. Seismic’s activewear looks and feels like apparel but is fused with discreet robotics to augment human strength. Its Powered Clothing suit supports the body’s core by providing up to 30 watts of power to each hip and the lower back.

Early-stage capital is already switching its attention to these new opportunities. Our analysis of global VC flows over the past five years shows that funding to physical and biological technologies has increased by 441%, almost double the rate of digital technologies. Y Combinator, the Silicon Valley “accelerator” that supports early-stage start-ups put 23% of its 2018 investments toward physical or biological technologies, up from 4% in 2013.

The digital, physical and biological systems upon which these examples are built are more complex to engineer and scale than pure-play digital solutions. To succeed, would-be innovators will need to re-focus their efforts in three ways.

1 To innovate at the next frontier, disrupt your R&D habits

Companies will need to go beyond today’s proven digital technologies to innovate at the next frontier. And doing so depends on fundamental research, and the requisite skills, knowledge and infrastructure – as well as patience. This will prove challenging for many. It’s true that overall spending on R&D has been increasing in recent years: our analysis of the innovation habits of the largest 10,000 public companies by revenue over the past five years shows that average R&D spending rose by 31%. But that spending tends to be focused on incremental innovation in the legacy business. In a survey we conducted of 1,090 executives, only 18% reported they were applying disruptive innovation in emerging businesses.

Ikea counters this trend. To take aim at radical solutions for a sustainable planet, it funded a fully independent R&D lab called Space10. The lab’s staff is made up of a rotating group of freelancers, selected for their expertise project-by-project in areas such as architecture, clinical psychology and 3D imaging. Space10’s projects have included Building Blocks, an open-source blueprint for low-cost modular housing that can be printed and adjusted to the environment; Lokal, a vertically integrated salad bar based on hydroponic and aquaponic farming that Ikea plans to offer via at-home kits; and Neatball, a set of meat-free alternatives to the 2 million meatballs the retailer serves each day.

According to Space10 co-founder Simon Caspersen, “We try to find patterns in the chaos. But we don’t look for solutions for Ikea, we look for solutions for humanity. And then say, ‘OK is that something that could be relevant for Ikea to actually solve?’ Which just gives us a completely different perspective.”

Marriott is another company using R&D facilities to push the frontiers of its business. Its lab, called The Underground, is a 10,000 square-foot space in the basement of its headquarters. It is a maze of rooms, each a working prototype of a guest space in one of its hotel brands. Ideas from The Underground are channelled into its M Beta hotel in Charlotte, which operates in “live beta,” with guests giving feedback in real-time. One floor is dedicated to “Stay Well” rooms, which features chlorine-neutralizing shower heads and lights that adjust to the sun’s natural movements.

2 To achieve scale, don’t be afraid to make new friends

While developing internal R&D capabilities is important to making new breakthroughs, few organizations will have access to the full range of capabilities required to take them to market at scale. After all, operating beyond the confines of digital technologies means dealing with the messiness of hardware, requiring access to highly developed industrial design and manufacturing skills. This calls for new models of collaboration that span the digital, physical and biological worlds.
Corteva Agriscience, which was spun out of the chemical giant DowDuPont, is one company building a network of partners to scale its innovations. It has pioneered the first large-scale industrial use of CRISPR/Cas9 genome editing, which makes it possible to deliver nutritious plants that could occur in nature or be developed through conventional breeding, but faster and more efficiently. There are a range of potential applications for the technology, including creating low-gluten wheat, improving the flavour and cost of decaffeinated coffee with a naturally decaffeinated bean, and reducing vineyard fungus affecting the wine industry.

To accelerate their development, Corteva and the Broad Institute of MIT and Harvard have jointly offered access to their CRISPR-Cas9 technology for use in agricultural applications, removing a significant barrier for organizations of all sizes to apply it. One such organization is Simplot, which is using the technology to bring desirable traits forward in fruits and vegetables such as potatoes. This could reduce the bruising and browning of potatoes, eliminating some of the 3.6 billion pounds of potatoes wasted each year.

3 To reduce risk, get serious about corporate venturing

The infrastructure, skills and resources needed for the next wave of innovation require substantial funding capacity over an extended period. Testing and scaling is much more costly when it involves purchasing hardware as well as software, which is available and relatively inexpensive from the cloud. Not only is the capital intensity higher than digital product development, the payback periods are typically further in the future because of the longer time to market for frontier technologies.

In order to reduce the risk associated with their innovation efforts, incumbents are broadening the investment vehicles they use beyond their internal R&D efforts and M&A activities to also encompass a greater focus on corporate venture capital (CVC). According to CB Insights in 2018 CVC funding hit an all-time high of $53 billion, an increase of 47% over 2017, and up from $10 billion in 2013. 264 new CVCs invested for the first time – spanning industrial verticals from logistics and shipping (Maersk Ventures) to automotive (Porsche Ventures) – with 773 CVCs making investments. In the United States, CVC constituted 50% of total venture capital deal value in 2019.

These investments aren’t just about capital, they also come with the provision of technical and operational expertise. Nor are they solely allocated externally – internal teams can also access it. The biotech company Genentech, which became a subsidiary of Roche in 2009, runs an innovation fund that supports employees with novel ideas that aren’t necessarily being explored by the company, such as new drug-delivery systems or applying AI to drug design. The industrial giant Siemens runs a Quickstarter program that allows employees to independently allocate money to support the development of colleagues’ ideas. And ZX Ventures, the brewer AB InBev’s CVC, runs a two-week boot camp every summer for around 15 AB InBev employees, where they learn and then apply techniques for developing new products.

The past era of innovation, in which atoms were replaced by bits, saw industry incumbents fundamentally challenged by start-ups. The next era of innovation may be different. The future will advantage those with patience, partnering prowess and risk management capabilities, all of which are more commonly associated with incumbents.

The 2010s were the age of the Unicorn. Will the 2020s be the age of the incumbent? 🟥

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For many companies today the most important goal is growth. One of the big opportunities for achieving growth is digitally partnering with other companies to seamlessly find new customers or to offer more products and services to existing customers. We found that companies which added more reach (new customers) and range (new products and services) via digital partners have significantly more revenue growth. Companies who added both reach and range via digital partners grew at 9.8 percentage points above industry average, while companies who did not partner grew at 7.7 percentage points below industry average. Therefore the stakes are high to get partnering right to grow in the digital era.

What is Digital Partnering?

Digital partnering is increasing reach and range via digital connections. These connections make it possible for partnerships to become plug-and-play, with less overhead than in the past – think of digital marketplaces and app stores that offer products and services by many partners with a single sign-on. This means you can have more partners and develop a variety of unique value propositions seamlessly, while focusing on what you do best.

Bayer is a great example of growing via digital partnering. Bayer’s subsidiary The Climate Corporation, a digital agriculture company, digitally partners with more than 65 companies to grow its subscription service called Climate FieldView™ which offers farmers a single place to go to manage their crop yield per square meter of land. The range of Climate’s digital agriculture platform has expanded rapidly as they have added partners who provide integrated services like satellite imagery, drone mapping, data analytics based on crop sensors, an online grain marketplace, soil monitoring, insurance, grain marketing,
and farm equipment. These partners plug into the platform via digital connections and enrich Climate’s core offering of agronomic recommendations. The reach of the FieldView platform has increased rapidly from five million paid acres in 2015 to over 95 million paid acres in 2019 in the US, Latin America, and Europe.²

In this article, we share insights on growing with digital partnering from more than 200 companies based on an MIT CISR survey (N=158) and interviews with more than 70 executives in 2018/19.

Three Digital Partnering Strategies

We found three strategies to grow with digital partnering: increasing your reach, range, or both.  

1. Reach: Companies with a unique product or service but few distribution channels tend to focus on reach first. Digital partnering helps them grow by building a presence, gaining access to new customers, and building reputation by association. PayPal, a born digital company, started out with the goal to grow by partnering with big companies that would offer their product – payment services – to their customers. PayPal designed their payment services to work with any ecosystem. The company has achieved 41 percent growth in total payment volume in 2018 from their top 20 marketplaces and partners, which include Uber, Lyft, Airbnb, Etsy and others.³ Companies focused on increasing reach need digital connections (typically APIs) that describe their product and can plug and play into almost any ecosystems and legal jurisdiction.

2. Range: Incumbents with a large, established customer base tend to focus on increasing range first by adding complementary products or services from partner companies, helping provide customers with broader solutions that address their “life event” needs. For example, Fidelity Investments has created digital marketplaces where partners provide complementary services. In Personal Investments, partners add services like tax preparation, student lending, ID protection, and legal advice, that offer additional value to Fidelity B2C customers as they face a life event like sending a child to college. In the institutional business, partners provide services like digital advice or customer relationship management to B2B customers. Companies focused on increasing range need digital connections (typically APIs) that describe: their customers, their customer’s needs, and their customer’s existing products.⁴

3. Reach + Range: To achieve growth via both reach and range, companies frequently start or acquire new ventures like Bayer’s Climate FieldView™. These new ventures – often ecosystems with platform models – grow beyond the established company’s customer and product base by using digital partners to increase both reach and range. The Climate Corporation has created its own innovative new subscription service for farmers

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**Digital Strategy**

**Figure 1: Digital partnering: Growth by increasing both customers and their options**

Reach:
- Adding more on-line customers through partners
  - Access to partner customers, sharing leads, referrals

Range:
- Adding more products available to customers through partners
  - Stand-alone products in a digital marketplace, seamless bundled products

**Figure 2: Most revenue growth with high reach and range through partners**

| Reach: Attract more online customers for our products | +0.8 pp |
| Range: Add both customers and products | +9.8 pp |

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Source: MIT CISR ecosystem survey (n=158) and interviews with 70+ executives in 2018/19.

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and developed a diverse ecosystem of partners. The partners provide integrated products to the farmers and data to Climate that improve Climate’s agronomic recommendations. Partners like crop insurance companies may also offer Climate access to new customers as the companies partner to simplify crop insurance reporting.5

Revenue Increases with More Reach and Range through Partnering

We found that the fastest growing companies use partnering to increase both reach and range (see Figure 2). Often, there is a mutually reinforcing relationship between the additional products and customers – it’s about creating opportunities like a one-stop shop meeting more needs for more customers. To achieve these premium growth rates requires a great customer experience, including a single sign-on and easy payment for all purchases, and easy-to-use search and recommendations.

However, reach- or range-dominant strategies should not be discounted, as they also yield significant performance improvements. Companies grow at 0.8 percentage points above industry average when focusing on increasing reach via partners – often a good way to start your digital partnering efforts.

We do see companies move beyond a reach-dominant strategy. As PayPal has grown, they added an ecosystem of partners to reach new customers and became “stickier” with their current customers by offering easy access to a broader range of products. For example, PayPal Business is “a one-stop shop for businesses” to access PayPal and partner services.

Companies grow at 2.2 percentage points less than industry average when focusing on growing by range alone, but this is still much higher growth than companies that don’t digitally partner. A challenge with revenue growth in a range-dominant strategy is value capture. Many executives we talked to mentioned that increasing range has been important for meeting customer expectations for more choice, and customers are often delighted with the unique value provided by partners. But this approach has not necessarily meant a big increase in revenue. It may be that the extra services are seen as part of an existing subscription, or they may have been offered for free or at minimal cost. A key question is how to charge for these extra services.

Partnering Strength is Key to Success

So what does it take to be effective in digital partnering? All three strategies to grow with digital partnering require what we call Partnering Strength. Companies in the top quartile on Partnering Strength grow revenue at 9.7 percentage points higher than industry average, while companies in the bottom quartile grow revenue at 6.8 percentage points less than industry average.

Partnering Strength assesses how effectively you coordinate with digital partners. Partnering Strength has three parts: creating joint goals, sharing benefits, and sharing information.

• **Creating joint goals** establishes a shared vision and value creation model with partners. It takes joint ambition or at least complementary goals to create value together, and partners have to be clear on who creates what value. This is not always easy to achieve or maintain when there are some digital partners that may also be competitors.

• **Effective sharing of benefits** reinforces joint goals by clarifying who captures what value and creating mutually beneficial relationships. Companies with large customer bases who want to increase their range, offer increased reach to partners, and vice versa. For many companies in our research, customer stickiness, customer engagement, and visibility are important shared benefits – in addition to revenue – in digital partnerships. Being clear about who creates what value and then who captures what value is a recipe for successful partnering.

• Finally, partnering is more successful when companies **share information** that help each other create value. Effective information sharing includes negotiating who gets what data and analytics and how it is shared digitally. Digital partnerships have enormous potential to surpass traditional partnerships’ scale and scope with automation, self-service models, and data, which help all digital partners add value. But to be successful information has to be shared equitably. The CEO of Adidas Kasper Rorsted explains “For us, getting access to the data is fundamental. Not only in the context of being able to engage directly with the consumer from a commercial standpoint, but getting the appropriate feedback for the creation of the next generation of products. That, of course, we’re working on. It’s a battle we have with Amazon.”6
In our survey, companies that grow both reach and range through digital partners have the highest Partnering Strength. Often new ventures that focus on both reach and range have big visions for value creation with partners and offer seamless, integrated solutions to customers. Climate wants to help all the world’s farmers to increase their productivity through the use of digital tools. Farmers get an integrated report that optimizes outcomes for their farmland with Climate and partner data. Working together effectively in such a model requires more Partnering Strength than a range-dominant strategy, such as connecting to partner products at a discount or a reach-dominant strategy of adding distribution partners.

Fidelity and Okta Build Partnering Strength Following Different Growth Strategies

Let’s look at two companies – one born physical and one born digital – and how they built Partnering Strength.

Fidelity is an asset management company in the US with a large customer base. Their goal is to increase range by building a trusted ecosystem of digital partners. These partners offer complementary products for more choice, better prices, and ultimately one-stop solutions that meet more customer needs.

In 2018, Fidelity launched marketplaces in their different businesses. For example, the marketplace in Fidelity’s Personal Investments business with more than 30 million customers has digital partners in tax preparation, student lending, ID protection, legal advice and other categories – and plans to scale. The institutional business with more than 13,000 financial advisory firm customers offers more than 100 third-party technology solutions (such as for customer relationship management, financial planning, and analytics) via their Wealthscape® Integration Xchange storefront marketplace. Fidelity ensures joint goals by curating partners based on their customers’ current needs and best value. Partnerships are mutually beneficial, because they enable access to Fidelity’s large customer base as they increase Fidelity’s range. The marketplace teams work on automation for fast and easy partnering and sharing benchmarking data with partners to help them create better offerings.

Okta is a born-digital company providing identity and access management services for enterprises in the cloud. As a start-up, they began with one service – single sign-on – and continuously built on it, looking for partners that could help them extend reach. As their customer base grew, Okta partnered with companies to increase their range by enabling seamless access to partner apps and technology services. Curation plays a smaller role in Okta’s ecosystem, because the value proposition is different from Fidelity’s – Okta wants to work with as many apps as possible. All more than 6,500 digital partners in the Okta Integration Network meet a minimum bar to entry so customers can deploy the applications with ease. A self-service model makes it easy to get listed in Okta’s catalog. In addition, strategic partnerships, typically with larger companies like Microsoft, align roadmaps and sales to increase reach for both partners. Important shared benefits include revenue, stickiness by creating more value for customers jointly, and visibility by associating with other companies. The partner community and the Annual Partner Summit encourage information sharing and help partners create value.

How Will You Grow?

We found strong evidence that faster-growing companies digitally partner more successfully. You need to decide on your company’s growth strategy and build partnerships and Partnering Strength. Ask yourself: How important is growth to our company? How will we grow with partners – reach, range or both – and in which businesses?

• If you are a company with a great product but few distribution channels, partner for reach, but then look for opportunities to increase range via partners as you grow.
• If you have a large customer base, a great starting point is to add range by adding products via partners to sell more to your customers. But how will you capture the value created – charge more? To whom?

• If growth is urgent or you are developing an ecosystem with a platform model, do both at the same time. But it’s higher risk with a potentially higher return.

• Whichever partnering growth strategy you adopt, start building Partnering Strength now – developing shared visions, win-win partnerships, and APIs that enable effective information sharing among partners. We found that companies with more of their core capabilities service-enabled via APIs grew faster.

• Ask who leads partnering in your organization. The partnering lead should be a senior executive who represents your company’s reach and range aspirations – not the purchasing department.

About the Authors

Ina M. Sebastian, PhD, is a research scientist at MIT CISR. Ina studies how large enterprises transform for success in the digital economy. Her current research areas are digital partnering, and value creation and value capture in digital models. In previous research projects at MIT CISR, Ina focused on ecosystem business models, digital strategies and organizational redesign, and digital workplace and talent. One of her ongoing research interests is leveraging digital technologies for coordination in health care systems, within and across organizational boundaries.

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Stephanie L. Woerner, PhD, is a research scientist at MIT CISR. Stephanie is an expert on how companies use technology and data to create more effective business models and manage the associated organizational change. She has a passion for measuring hard-to-assess digital factors such as connectivity and customer experience, and linking them to firm performance. Stephanie is the coauthor, with Peter, of What’s Your Digital Business Model? Six questions to help you build the next generation enterprise (Harvard Business Review Press, 2018).

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1. MIT CISR ecosystem survey 2017, n=158. The combined regression of reach and range with revenue growth is significant (p=0.015).
Companies are increasingly introducing “smart products” and deploying sensors into the environment, intent on gaining data-driven insights. Although often framed as the future, most industrial companies can benefit from Industrial Internet-of-things (IIoT) data without spending a fortune on creating an ecosystem of new and connected instruments. Many firms can benefit by tapping into the vast amounts of data generated by their operational technology, transactional systems, and other equipment. Concerns about data breaches, customer trust, unauthorized data use by partners, as well as an uncertain legal environment cause many firms to remain on the sidelines rather than leveraging the extensive data they already generate. This article presents strategies for overcoming these challenges.

Companies are introducing “smart products” and deploying sensors into the environment, intent on gaining data-driven insights for improving operational efficiency and delivering better services to their customers. While some companies are launching cutting-edge Industrial Internet-of-things (IIoT) initiatives, most industrial companies can benefit from IIoT data without spending a fortune on new technological ecosystems. Most of these firms can benefit by tapping into the vast amounts of data generated by their operational technology, transactional systems, and other equipment. As with new IIoT initiatives, these existing data can be analyzed to improve processes and provide competitive advantage, but at a fraction of the cost and with considerably less lead time.

Unfortunately for most organizations, these data remain unused, or “dark.” This “dark data” remains unanalyzed, despite offering opportunities to leverage IIoT insights right now. Even when companies are made aware of dark data’s usefulness, few take advantage of the data-driven opportunities it offers. Similar to other IIoT initiatives, questions about data management impede many companies from exploiting their dark data. Cybersecurity concerns create substantial roadblocks. Uncertainty about how partners and customers will react to having their data from current operations stored and analyzed also inhibits many companies from taking full advantage of the data they have. Additionally, as technology outpaces the law, companies face unanswered questions about whether certain uses of dark data are even legal.

Good Governance for Dark Data: GUIDELINES FOR INDUSTRIAL IOT MANAGERS

BY GREGORY GIMPEL AND ALLAN ALTER
Data hacks and other unauthorized access pose existential threats to many businesses. In today’s connected world, if you are connected, you can be hacked. Hackers can wreak havoc in all sorts of ways. The president of a large machine tool supplier shares an example of how cybersecurity concerns are paralyzing efforts to bring dark data into the light.

“In this case, we wanted to be able to diagnose issues with the machine tool remotely. It was very simply a connection through their intranet, through their server, to connect to the machine so they could call up the conditions on the control at that time. But they would not allow us – either through a separate one with a cellphone-type connection or hard-wired – to do that because they didn’t want to take a chance that anybody else would be able to get into their system.”

Hackers are not the only cybersecurity concern. Companies are also facing concerns about how to govern how data will be used by their strategic partners. Once you give access to data to a customer or partner, can you revoke it? Or will they always have access to the data, even after the originally intended time period or project is over? Will partners use the data in unauthorized ways? Will partners maintain confidentiality?

The challenge of managing data extends beyond protecting it from unauthorized access. Questions about how customers will react to the use of their data keeps can prevent companies from using the data to create better customer experiences. For example, consumer goods companies spend billions building their brand reputations. A senior data analyst for a leading consumer products company explains: “But first and foremost is the consumer trust. We have to earn that. So we can’t do anything with the data that comes anywhere close to something that would violate any privacy agreements we have with consumers or anything like that.”

Governance of dark industrial IoT data extends beyond preventing unauthorized access and preserving company reputations. Effective governance must also prevent unlawful data use. Because technology outpaces the law, the legality of bringing dark data into the light is in question. Privacy protection laws differ country-by-country and can change province by province. The Senior Director of Data Science at a large global insurance company explains the challenge: “there are all these data rights and users’ rights which come into play here. We are stepping into something we quite don’t know what it’s going to be, but we know that it’s something new, especially with the interpretation of data and having the rights to use data in more than one way. That’s definitely something which is new and actually nobody knows how to deal with it right now.”

The director of an analytics think tank summarizes the legal concerns that are preventing many firms from exploiting their dark data: “There is a definite advantage to using the data they’ve already collected in new and different ways. But it’s not as simple as doing that. There are issues around making sure you’re not violating some law. That’s #1 that comes to mind. I don’t want my executive to end up in court because they could use somebody’s data in the wrong way.”

**Improving Governance**

Concerns about data security, customer approval of data use, and an uncertain legal environment prevent many firms from unlocking the power of their dark data. Thankfully, the executives participating in this study have identified strategies to help navigate this challenging environment.

**Reducing Cybersecurity Risks**

Connecting via the Internet provides the greatest level of accessibility but also provides hackers with the most points of entry. Traditional data security measures such as strong encryption and access controls provide a solid foundation for collecting and analyzing dark data. But since operational technology and Internet-of-things devices may be in the field for many years, even decades, even strong

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**The challenge of managing data extends beyond protecting it from unauthorized access.** Questions about how customers will react to the use of their data keeps can prevent companies from using the data to create better customer experiences.
Trust can be strategically advantageous for supply chain partners. One way to build stronger relationships is to share information about demand and logistics, so partners can improve demand forecasts and improve just-in-time operations.

Encryption and security protocols quickly grow obsolete. It is imperative to be able to remotely update the firmware during the life of the devices. Therefore, implementing a formal technical strategy for refreshing the security on the equipment will help mitigate some of the security concerns that are preventing companies from making use of dark data. Additionally, by including a useful life protocol when creating equipment maintenance plans, firms will have plans to deactivate equipment once security patches become ineffective.

While broad connectivity offers the most potential, it may not be suitable for some companies. Instead, those companies can use a closed network that sends data to a local computer that is not accessible from the outside. This can be useful for information that must remain a guarded secret. The principal researcher at a precision measurement company explains: “When we installed our system on a machine at a defense contractor, they insisted that we set up a separate PC, completely isolated, not put on their network, to do the collection of the data and the data processing.” A less restrictive approach is to connect data-generating equipment within a company’s local area network. The data remains behind company firewalls and is never exposed to the open internet. These two strategies allow for companies to start bringing their dark data into the light while reducing the cybersecurity risks.

In addition to technical solutions like firewalls, encryption, etc., companies can get cybersecurity insurance. Insurance companies such as AIG, AON, and Zurich offer insurance against cyber breaches, transferring the risks of operating losses, product liability for hacked products, third party claims arising from the breach, and protection against the fallout if a partner who is using your data gets hacked. While not a substitute for thoughtful technological measures and internal cybersecurity policies, insurance adds an extra layer of protection for businesses.

Using Data Appropriately
Companies who wish to build customer trust are well served by being clear about how they intend to use the data. They should make a few key promises to assure their customers and offer clear, simple policy rules that can be explained in a few bullet points. Few customers read lengthy terms of service, and such legal agreements increasingly are being invalidated when challenged in court. Even if the legalese holds up, violating consumer expectations erodes customer trust in the brand. Therefore, the uses of data should be clear, specifically stating the ways data may be used without vague blanket-use language. While this may preclude new uses of data in the future, it can help open the window to using data today.

Trust can be strategically advantageous for supply chain partners. One way to build stronger relationships is to share information about demand and logistics, so partners can improve demand forecasts and improve just-in-time operations. It also makes sense for firms within an industry to pool certain types of data to establish best practices or create insights on how to extend the lifespan of their equipment.

Still, there will always be the risk that once a company has data from other companies, it may use it in unauthorized ways. Perhaps a company will mine a collaborator’s data for insights that it can use to its advantage during a

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<th>Improving Governance: Key Takeaways</th>
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<tr>
<td><strong>To reduce cybersecurity risks:</strong></td>
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<tr>
<td>• Be able to update OT and IIoT equipment firmware with new security protocols.</td>
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<td>• Create an equipment deactivation strategy for when its useful life is over.</td>
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<tr>
<td>• Keep network local, either hard-wired in a closed network or locked behind company firewall.</td>
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<tr>
<td>• Carry cybersecurity insurance.</td>
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<td><strong>To keep data use appropriate:</strong></td>
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<td>• Use short, plain language terms-of-service explaining clearly how data will be used and promising ways it will never be used.</td>
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<td>• When collaborators can use partner data against them, enlist trade associations to aggregate and analyze data to provide insights useful to all members.</td>
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<td><strong>To keep data usage legal:</strong></td>
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<td>• Play it safe in all territories by basing policies on the markets with the strictest data regulations.</td>
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<tr>
<td>• Aggressively exploit the data under today’s regulations to create company strategies and operating policies that will remain useful after new rules prohibit collecting data or further restrict its use.</td>
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future contract negotiation. Perhaps it will combine the data with data from other partners to generate insights that it doesn’t share with its partners.

Within many industries, trade associations already help advance the interests of their members by analyzing data. These trade associations can bridge the trust divide as they already aggregate data to create sales reports, trend analyses, and other useful information. They can act as the trusted, neutral data aggregator that turns the dark data from its members into insights that everyone can use.

Keeping It Legal
Companies should not let the uncertain legal environment covering data collection and use stop them from leveraging their dark data. Instead, they should commit to a strategy.

One potential strategy is to play it safe. Companies can adopt the most restrictive regulations and legal policies in the marketplace. For example, adopting GDPR regulations for other markets reduces the likelihood companies will have to dramatically change their policies in the other jurisdictions.

Playing it safe reduces risk and uncertainty. It does not eliminate it. Laws are still going to change. Rules will still vary among different territories. An alternate strategy is to adopt a policy based on current rules for each market with the expectation that rules about data storage and use will be in flux. The goal is to get insights to develop strategies and policies before legal changes preclude certain types of analysis or new regulations force mass purges of database records. Firms can continue to incorporate and benefit from the data-driven insights long after they have deleted the actual data.

Companies can more affordably benefit from the Industrial Internet-of-things by tapping “dark data” from existing equipment. Concerns about data governance hold companies back from capitalizing on the opportunities afforded by this existing IIoT data. By focusing on governance to reduce the risk of data hacks and unauthorized data use, and to navigate an uncertain legal environment, executives seeking to capitalize on dark data can address the concerns of their customers and their fellow business leaders.

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In this article, we present the Digital Value Creation (DVC) framework. The DVC framework can be used as an evaluative method for organisations to create, enhance and consolidate digital value. We propose that organisations focus their digital value creation efforts in three interconnected areas: creating and managing ‘Experiences’, building meaningful and personalised ‘Relationships’ and accelerating ‘Evolution’ to support business longevity. Organisations must structure their digital value creation efforts within a strengthened outer layer comprising of ‘Digital Competences’, ‘Digital Infrastructure’ and ‘Digital Outputs’. In order to accelerate digital value creation, organisations must be digitally ready and have the internal capabilities and digital set-up that enable it to respond to new and emergent opportunities. At the heart of the DVC framework is ‘Relevance’. The process of digital value creation should be undertaken with Relevance as the interconnecting force between the three DVC elements.

Based on our on-going empirical research with organisations that are spearheading digital value creation, we explore the DVC framework through three case organisations: DSB, Coop Denmark and Moleskine.
We propose that organisations focus their digital value creation efforts in three interconnected areas: creating and managing ‘Experiences’, building meaningful and personalised ‘Relationships’ and accelerating ‘Evolution’ to support business longevity.

Experiences
Experiences an organisation creates are central to how customers evaluate the organisation’s ability to meet their needs and expectations. Customers evaluate their experiences both on how they engage them on an ‘emotive’ level (e.g. how does this experience make me feel?) as well as how the experiences meet certain ‘utilitarian’ needs (e.g. is this experience solving my problem?). It is moreover useful to categorise experiences into those that are ‘set’ (i.e. expected by customers) and those that are ‘situational’ (i.e. arises suddenly and unexpectedly). Many organisations design specific customer experiences which can be marketed to their target audience and broader peripheral groups. Much effort is then made to ensure that the set experiences are optimised, providing certainty and retention of customers. The set experiences are typically measured and monitored with investment made to ensure consistency across delivery points. The organisation has a certain amount of control over these experiences, contrary to those that are situational. Here experiences are unexpected and often deviate from what has been promised to customers, i.e. the set experience. This could be unforeseen delays or a sudden breakdown of a company’s ecommerce site. These situational circumstances influence customers’ experiences and it is at this point organisations’ responsiveness is put to the test. Adverse experiences like these tend to have a wild-fire-effect through the freedom of digital media channels, becoming unruly and with potentially devastating consequences. Importantly, the situational experiences evaporate considerable investment otherwise made towards optimising the set experiences.

As a way of creating enhanced customer experiences, many organisations use customer journey mapping methodologies to break down the end-to-end journey experience. This methodology highlights which points of interaction add to the experience and which detract. Importantly, customer journeys need to be reviewed on an on-going basis to respond to emerging customer needs and requirements, including the creation of multi-track journeys to deliver more personalised and segmented customer journey experiences. Increasingly, we see that customers want organisations to use digital technologies and platforms to empower them to make better decisions to manage their set and situational experiences.

Experiences: DSB Digital Labs
The Danish State Railways, DSB, is a large incumbent organisation making greater efforts to enhance customers’ journey experiences. Like many state-owned railways, DSB has its share of challenges relating to train delays, cancellations and poorly perceived customer service. In 2016, as a radical move towards digitalisation, DSB took the first steps to set up a digital innovation hub, called DSB Digital Labs. Clarissa Eva Leon spearheaded this initiative with the overarching purpose of unleashing DSB’s innovative potential.

During our visit to DSB Digital Labs, Clarissa reflected on the journey to date:

“In the last three years, we have come a long way in using digital technologies at DSB Digital Labs, not only, to digitise customers’ journey experiences, but also to look at ways in which we can reduce specific painpoints. DSB Digital Labs is now a key partner in driving DSB’s strategic initiatives and continues to focus on enhancing customer experiences and integrating trains with other modes of transport across Denmark.”

DSB serves the citizens of Denmark and has a significant responsibility to ensure reliable travel infrastructure and information. However, one of the significant painpoints for the provision of train travel is track repairs and maintenance work.
Therefore, DSB Traffic Information and Digital Labs went into action to find a new way to minimise the negative customer experience incurred when replacement bus services are put in place during track repairs and maintenance. Customer dissatisfaction mainly arises from lack of clarity on which bus to take, where it stops, the time it departs/arrives and which connecting trains can be taken for their onward journey.

To find a solution to this challenge, the Digital Labs team looked to the deployment of a chatbot, which, in real-time, could answer customers' questions and give them the information they need. Using agile innovation methods that led to multiple prototypes, the chatbot “Togbus Tony” (Trainbus Tony) was launched and showed promising results. Based on this early success, the team worked on a chatbot MVP that became “Togbus Frederik” (Trainbus Frederik), which was tested on a selected train route with major train maintenance and use of replacement buses in the summer of 2018. The “Trainbus Frederik” chatbot has proven highly successful, reducing customer dissatisfaction and enhancing the overall travel experience. Based on this success, DSB is putting the chatbot “Togbus Guiden” (the Trainbus Guide) into action from March to November 2020 in five key locations across Denmark. Importantly, DSB will link this chatbot feature to dsb.dk and Rejseplanen.dk (national online travel planner), which connect trains, buses, carpooling, bike hire and car sharing (e.g. DriveNow and GoCarShare), delivering relevant digital value to customers.

In the case of incumbent organisations such as DSB, the Trainbus Guide is a proactive digital initiative that can retain previously built digital value. Such initiatives act as a flood barrier when passengers face situational experiences due to cancellations, track maintenance and other unexpected changes to their journey.

Organisations must allow customers to design relevant relationships so that each individual customer can decide what to share with the organisation, which features to use and benefits to gain. Importantly, this individualised approach can help to “declutter” the relationship by surfacing only the information, features and benefits that are deemed relevant to the individual customer at the right moment in time.

Strengthening relationships is ever more important in today’s business environment as brand loyalty is weakened due to increasing market fragmentation and explosion of brand, product and service choice. Thus, organisations need to review and often re-think how they build better and more value-adding relationships with customers to avoid customer desertion.

**Organisations must allow customers to design relevant relationships so that each individual customer can decide what to share with the organisation, which features to use and benefits to gain.**
Relationships: Coop Denmark

In Denmark we find one of the most holistic and innovative approaches to building and maintaining digital customer relationships within the FMCG food retail and groceries sector. Coop is one of the largest supermarket chains in Denmark and operates brands, such as Kvickly, SuperBrugsen, Dagli’Brugsen, Coop.dk Shopping, Coop.dk MAD, Fakta A/S and Irma A/S. Coop is a cooperative owned by more than 1.8 million members, which makes up approx. 39% of Denmark’s adult population.

In 2016, Coop launched a digital shopping ecosystem delivered through a mobile app to respond to changing customer demands and to enhance its capability to build digital relationships. The app redefines Coop’s relationship with its customers, enabling them to respond swiftly to changing consumption habits and food interests. Importantly, the app creates immediacy and longevity in the way customers engage with Coop.

At its core, the Coop app paves the way to engage with customers in an individualised manner across the 1.8 million members and build digital relationships that ultimately create new value for customers, suppliers and other ecosystem partners. The Coop app ecosystem engages customers through multiple activities, benefits and real-time information. One of the key differentiators is that Coop customers gain a one percent bonus when shopping at Coop and Coop’s partners, which is immediately rewarded in Danish kroner (not loyalty points) and visible within the app to be used for future shopping. This provides a heightened level of transparency and customer gratification, encouraging on-going engagement. To further personalise customers’ relationship with Coop, they receive weekly individualised product offers in the app based on their personal interests, needs and past shopping patterns. This also extends to a feature that gives customers access to superior offers available in their selected local Coop store on a first-come-first-serve basis. This consequently helps Coop to drive local traffic and footfall in their stores.

Today, the app goes much beyond enabling rewards and superior offers. It also helps to remove a significant painpoint within the in-store experience. Customers can use the Scan & Pay solution in the app, which enables them to scan their grocery items, put them directly into their shopping bags and seamlessly pay with the app at the exit. This feature helps to free up time for the individual. Importantly, the app is also designed to be a destination for cooking and meal inspiration. Customers can undertake their food shopping according to specific recipes created by Coop and can select items from across Coop’s supermarket brands, such as Fakta, Kvickly and Irma. This gives customers unique digital access to a wider product range from across the larger Coop supermarket portfolio. Consequently, customers are given the choice to upgrade on some products and choose from a more value-based range for other items. Such digitised provision and empowerment to move freely up and down the value scale induces trust and transparency, which strengthens Coop’s relationship with customers. To further heighten convenience, customers can create shopping lists, access previously bought items and digitised receipts in the app, all contributing to the immediacy and enhanced control of shopping spend. The app also facilitates quick borrowing of up to DKK 1,000 when customers require a
Coop's digital journey has been an exciting challenge where we successfully found a way to respond to our customers' changing needs, enhance their shopping experience and build closer relationships. As an organisation, we have evolved and constantly strive to strengthen our relationships with both Coop members and wider communities as we now have advanced digital capabilities. The Coop app gives us the ability to drive traffic to our stores, strengthen our relationships with both customers and suppliers and continuously try to be relevant to a wide range of customer segments."

For Coop, the launch of their mobile app has acted as a catalyst for an organisation-driven relationship, adding new value to current customers and enthusing others, who may be customers of competitors, to switch to this digital platform. Coop has been able to significantly drive digital relationships with customers by continuously enhancing the necessary digital infrastructure and competences, growing the digital team and focusing intensely on new digital value creation. The enhanced digital competences and data analytics have enabled Coop to expand its membership, strengthen relationships with suppliers, build geographically relevant product portfolios and facilitate the provision of cross-brand portfolio shopping. Coop's digital infrastructure is now uniquely positioned to provide, not only, horizontal movement across its brand portfolio, but also oxygenate vertical movement, facilitating purchases from value to luxury items. Such consumption flexibility opposes assumptions that consumers remain stagnant and desire to engage. This type of engagement is of higher digital value due to being customer-led in nature and an indicator of an 'earned' relationship.

Evolution
We live in unprecedented times, where natural disasters, diseases and economic upheaval in one corner of the world can have a detrimental domino effect across markets, regions and nations. In these uncertain environments, possession of superior digital competences and infrastructure can be the difference between collapse and organisational flourish. Some organisations evolve through a ‘forced’ response when they are under significant pressure to maintain their existence. This kind of response can be uncomfortable for decision-makers and leaders as the actions are driven by external factors with limited internal control. It will also typically require the acquisition of new digital skills and systems. Comparatively, ‘proactive’ evolution is driven by the organisation through a series of strategic moves. These moves accelerate the organisation’s relevance through the use of digital platforms, devices and data.

Through forced and proactive evolution, organisations use digital technologies and channels to evolve the purchase experience, product/service...
features and the level of customer empowerment and decision-making, leading to enhanced digital value creation. The advanced use of digital technologies can assist to evolve the core product and, at times, extend the original product into a portfolio of affiliated digital services and experiences. This is a sign of an organisation’s ability to adapt to changing customer aspirations and consumption behaviours, while also responding to the impact of the expectancy spillover effect. The spillover effect is an outcome of evolutionary innovations by players such as Amazon, Google and Apple that have wider portfolios of digital products and services.

**Evolution: Moleskine**

Moleskine is an excellent example of an entrepreneurial organisation that has dramatically evolved its core business model and product offering from a traditional notebook to a digital ecosystem of integrated and interactive physical and digital experiences. Driven by discovery and curiosity, Moleskine is positioned as an exclusive and premium journey brand that enables everyday life on the move. Despite success with the traditional notebooks and time planners, Moleskine has continued to engage in proactive evolution to enable users’ journey along the analogue-digital-analogue continuum. The product portfolio now includes the Moleskine+ range, which is focused on the smart writing system, smart notebooks and apps.

At the core of Moleskine’s evolution is the creation of a digital ecosystem of partners, including Evernote, Adobe and Dropbox. These partnerships have been essential to Moleskine’s acceleration into digital spheres by creating connections between customers’ offline experience and their digital creativity. For example, the Adobe Creative Cloud connected Moleskine Paper Tablet allows customers to digitise free-hand drawings and sketches in real time when using the Moleskine Pen+. The Moleskine Paper Tablet uses invisible Ncoded technology embedded within each page, which enables the Smart Writing Set Pen+ to recognise where it is within the notebook and to transfer all the freehand notes from page to screen in real time. Moleskine has also developed a suite of apps for mobile and tablets. Moleskine’s iPad app, Flow, received the Apple Design Award and Apple Best iPad App Award in 2019.

These digital innovations illuminate how Moleskine has penetrated through the upper threshold of product enhancement and new product development. At the heart of proactive evolution is an organisation’s ability to go beyond its core product focus and pursue new value through co-creation, working effectively with selected partners. Successful partnerships with Dropbox, Adobe and Evernote have expedited Moleskine’s evolution into digital value creation, enabling them to, not only, respond to the demands of current customers, but also be relevant to new users in a bi-directional way. Here we see how loyal Moleskine notebook users integrate and extend into digital spheres through the new-found connectivity, whilst those who are already using Dropbox, Adobe and Evernote are able to use Moleskine notebooks and Paper Tablets, freeing themselves from digital devices and digitised surfaces. Such bi-directional movement helps organisations to evolve rapidly and ensure their products and services are relevant to wider groups of customers.

In our conversations Peter Hobolt Jensen, Head of Digital Innovation, stated that:

> At Moleskine, we are always trying to see how we can do things differently. In the last few years, we have evolved to create value going from analogue to digital to analogue. This, we have achieved by working with great partners, such as Evernote, Adobe and Dropbox. By creating a new digital ecosystem, our customers are able to continue to do what they like, to create, to reflect and build. We have also evolved as a company to go beyond the notebook that we are known for. The digital ecosystem is now complemented with reflective spaces and Moleskine retreats, uniquely positioning us within this shared and creative ecosystem.
Organisations such as Moleskine have achieved an extended life through proactive evolution, stretching its notebook to be positioned as the ideal platform for creativity and reflection, while partnering with digitally-fuelled organisations such as Evernote, Adobe and Dropbox. Such counter-intuitive partnerships create inimitable digital value that extends and boosts Moleskine’s evolution, yet grounding its originality of creativity and reflection.

Digital Value Creation
The DVC framework is an evaluative method for organisations to create, enhance and consolidate digital value. DVC highlights the need for organisations to acquire digital competences on an ongoing basis and invest in ‘stackable’ digital infrastructure that leads to viable digital outputs. This outer layer drives the ability of organisations to enhance set experiences and respond to situational experiences. Organisations that are able to continuously provide freedom of digital infrastructure expansion and create growth funnels to attract cutting-edge competences are able to build organisation-driven relationships and fire up customer-led affiliations. Importantly, in a constantly reshaping digital environment, organisations need to continuously evolve. Organisational evolution can be two-fold: forced or proactive. Forced evolution refers to organisational survival driven by crisis whereas proactive evolution is initiated by organisations through clarity of data, insight into trends and understanding of competitive scenarios, all paving the way to accelerate digital value creation.

References

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What Colour Blindness Shows Me About Diversity

BY BEN FUCHS

“To see ourselves as others see us is a most salutary gift. Hardly less important is the capacity to see others as they see themselves” – Aldous Huxley

I inherited a condition that makes some colours more difficult to see and yet, to me, the world appears perfectly normal because it is all I’ve ever known. I see colours very well, or so I believed. I would not have known about my condition if others had not pointed it out. A simple test confirmed my colour vision limitations. Without this knowledge I would have gone through life trusting my own perceptions without any idea that some colours appear differently to most people.

Colours are not the only area of my life in which my perception is limited; I also have what I call ‘advantage blindness’. As a tall, middle-aged, educated, able-bodied, heterosexual, white, male, I do not experience many of the disadvantages that others do in their daily lives. This means I have relative advantages. Of course, I don’t feel advantaged most of the time, just as most people don’t feel advantaged to have unimpaired colour vision. I don’t perceive any special treatment as I experience life’s ups and downs; it all just seems perfectly normal. But as with my vision, this assumption turns out to be equally erroneous. As a white man, I’m actually a beneficiary of the world’s longest-running and least acknowledged affirmative action programme.

Advantage blindness means that I’m likely to miss things that others can see. Just as I need help with seeing colours, we all need a little help to recognise our advantages. We tend to see ourselves through our own lived experiences, while others see us through theirs. We need the perspectives of people who can see where we are likely to have blind spots. To paraphrase Marcel Proust, the real voyage of discovery consists not in in seeking new lands but in seeing with new eyes.

So I began seeking feedback, listening to people who are different from me and learning to see what is in plain view but often beyond my awareness: a Muslim colleague pointed out that our work calendar is designed with Sundays and major Christian holidays as non-working days; a black friend asked if I had noticed that police and security people do not automatically look at me with suspicion; my daughter asked if I’d ever moved seats or carriages on public transport because of unwanted sexual attention.
with the cultural beliefs they held. This left a legacy of conscious or unconscious bias built into many longstanding assumptions, ways of working and cultural norms. I noticed that senior leaders and people in positions of power often look similar to me. The embedded formal and informal processes and procedures for advancement and influencing are familiar territory to ‘people like us’. Recognising our advantages can help us to see and understand how this legacy of bias sustains the lack of diversity in so many senior roles.

As Stephen Covey noted: “We must look at the lens through which we see the world, as well as the world we see, and that the lens itself shapes how we interpret the world.”

The retired CEO of a large British corporation told me the following story. Attending a course on diversity to “demonstrate sponsorship from senior management”, he’d assumed that being an open-minded man and having lived all over the world in his long career, there was little for him to learn about the topic. The facilitators asked the group what, other than technical and professional skills, conferred relative career advantage in the company. The group agreed on the points as they were listed on a flipchart: race, nationality, gender, education (including which universities), age, sexual orientation, and so on all played their part. The facilitators then lined everyone up, shoulder-to-shoulder and instructed them to take one step forward each time a statement was true about themselves. They went through the list, calling out each potential advantage, with people stepping forward when it applied to them. At the end the CEO was way out in front, having taken a step forward for every point on the list. When I asked him what he made of this, he said: “I’d always thought my success was due to hard work and my innate talents. But I realised that I’d also had every advantage to help me get to the top.” The experience, he reported, made him a humbler person, less convinced that his success was solely a matter of his efforts and abilities.

Talking about differences in perceptions of advantage and disadvantage may be uncomfortable but it can also be transformative in how we see ourselves and others. Our life experiences inevitably limit our perspectives and will therefore always leave us with blind spots. By acknowledging we may have blind spots of advantage, we open the door to hearing how others see us and make it easier for others to tell us about their own experiences of life. The opportunities for learning are all around us.

About the Author

Ben Fuchs is a senior consultant in leadership and organisational development at The King’s Fund, adjunct faculty at Hult Ashridge Business School and associate faculty at NHS Leadership Academy.
As the market for eco-friendly and sustainable consumer goods grows and marketing campaigns emblazoned with environmentally conscious messages begin to reign mainstream advertising, what once appealed to customers may have aged into a model of the past. Actively engaging with the climate crisis of the 21st century and shaping the mammoth-sized issue into a smaller, more relatable problem which can be tackled through smaller acts of kindness to the planet has transformed into a marketable theme.

By weaving your ethical and moral stance into your marketing, you can attract customers, transforming this into a selling point. By aligning your marketing strategy to match this theme, you can do more by emotionally connecting with prospective buyers which not only secures the sale but also wins customer loyalty, converting them into returning customers.

Drumming into moral consciousness
Taking an emotive approach to environmentally friendly purchasing can generate self-satisfaction for the customer, adding emotive and moral value. Recent developments in the banking sector have resulted in banks pledging to contribute more to the climate crisis by cutting off investment to fossil fuel companies and halting funding to businesses without a climate change plan in place. This adds an ethical dimension to business banking, underlining the urgency of the climate crisis.

Your ability to incorporate climate control messaging into your marketing strategy will depend on your sector and the services on offer. As customers begin to purchase emotively, you should aim to delve under the surface in your marketing campaigns to mirror this emotion, sharing your view on tackling climate change, one customer at a time.

Taking a behind-the-scenes approach
Opening the door into your production process offers transparency into the business, which is an effective move in an era where businesses are often put under the spotlight for the use of unfair practices. Transparency helps the customer confidently make a purchase without any doubts surrounding the origins of the product.

Ethical Consumer is a not-for-profit organisation which raises awareness of injustices in the consumer world. Current boycotts to businesses holding a poor environmental record include:

- **Yo Sushi** - Bluefin Tuna, an endangered species that is soon to be extinct continues to be used across restaurants in the UK, including Yo Sushi.
- **BP** - The oil and gas multinational company are partially responsible for a major oil spill that took place in the Gulf
of Mexico ten years ago. The environmental disaster led to momentous damage to the ocean floor, drastically affecting aquatic life.

- **EDF Energy** - The energy company which is responsible for 50 nuclear reactors across the UK and France is increasing the number of nuclear power stations in the UK, discouraging the shift to renewable energy, such as solar or hydropower.

The revolutionary organisation opens the eyes of consumers to ethical buying, questioning mainstream businesses in the UK, ranking them by their ‘ethiscore’ and impact on the environment. This adds additional emotive and ethical value to businesses, other than just monetary.

Transparency in terms of corporate ethics can refer to numerous factors in addition to climate control. This concerns the likes of fraud, fixing, manipulation, corruption, equal pay and workforce diversity in relation to gender, religion, sexual orientation, and age. Corporate social responsibility is also a determining factor, such as involvement in the local community and ties to charitable organisations.

**Promoting eco-friendly appeal through newsworthy tie-ins**

If your eco-friendly initiative is newsworthy, this gives you a strong media standing and a pedestal to stand upon which can help promote your brand and strengthen its reputation. Current brands capitalising from ethical initiatives include Greggs. Greggs launched its new creation – a vegan steak bake, in conjunction with Veganuary³, an organisation promoting the vegan lifestyle, urging members of the public to test try it for January.

The month of January provided an ideal in-road for UK’s biggest bakery chain to launch its new vegan creation. As the media agenda for the month of January focused heavily on veganism, Greggs used this as their entrance by giving the public a taste of their innovative product, a twist on the traditional steak bake, branding it the ‘fake steak bake’. Research carried out by Veganuary found that more than 200 new vegan products were collectively introduced by brands in January 2019.

This follows suit to a similar initiative established by smart energy system providers, Nest and Hive through which you can conveniently control your heating and hot water through an app, reducing unnecessary use and in turn, protecting the environment. By aligning your business with these initiatives, you can take advantage of the media chatter around the topic, earning you a reputable standing.

**Establishing your eco-friendly initiative**

By earning accreditation to show your understanding of leading an eco-friendly business, you can show official acknowledgment of your efforts. For example, the Green Mark⁴ or Investors in the Environment⁵ accreditation is an internationally recognised organisation assessing environmental sustainability, checking that businesses comply

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Opening the door into your production process offers transparency into the business, which is an effective move in an era where businesses are often put under the spotlight for the use of unfair practices.
Operating in a transparent manner shows sincerity, elevating the value of your product, however, it’s vital to strike a reasonable balance between pushing your product and the associated environmental beliefs, ensuring that your marketing strategy doesn’t borderline political or lose focus.

with environmental legislation. Your environmental efforts can set you apart from competitors, making customers feel emotionally attached to your brand. In addition to giving customers a reason to purchase from you, this could also reduce operational costs, such as energy bills.

Environmental corporate social responsibility

As many businesses enthusiastically give back to their local community as part of their corporate social responsibility strategy, this provides an ideal opportunity to raise awareness of the climate crisis and make a difference. This not only helps you share knowledge but contributes towards building your brand and humanising your business.

In addition to involving yourself in the community, you can hold a charitable event in aid of a dedicated climate change organisation or even pledge to donate a percentage of your turnover to raise awareness of the charity. Environmental corporate social responsibility can provide more opportunities for your business and separate you from other businesses operating in your marketplace, enhancing your appeal.

Implement environmentally friendly initiatives internally

By reducing damage to the environment, you can also streamline the costs incurred to your business through the implementation of energy-saving measures. This can include the likes of rolling out paperless marketing, a companywide plastic ban, possible relocation outside the city and the general encouragement of green thinking and enforcing an environmentally conscious work culture. By enforcing a strategy as such in-house, employees can have a first-hand experience of the initiative, helping them understand customers looking to move towards a service which is more environmentally orientated.

Operating in a transparent manner shows sincerity, elevating the value of your product, however, it’s vital to strike a reasonable balance between pushing your product and the associated environmental beliefs, ensuring that your marketing strategy doesn’t borderline political or lose focus. By integrating an awareness of climate change in your marketing strategy, you can attract a wave of new customers, working hand in hand to make a change.

About the Author

John Baird is an experienced personal debt advisor, specialising in debt solutions in Scotland, insolvency and corporate recovery. He previously worked at one of the Big Four accounting firms and has a wealth of experience under his belt, later joining business recovery heavyweight, Begbies Traynor Group in 2004.

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Introduction
Economic and financial crises often lead to profound changes in the way businesses, and especially financial institutions, are managed. In this article, we explore the extent to which such changes occurred (or did not occur) after the 2007-8 global financial crisis (GFC). Our results are based on comparing formal statements of strategy found in letters to shareholders from the chairpersons, chief executive officers (CEOs), and presidents of banks. In particular, we compare the statements made during 2006 (pre-crisis) and 2016 (post-crisis) by 36 “money centre” banks in North America, Europe, China and Japan. This group of banks accounts for most of the assets held by the global banking system.

We find that the influence of the GFC on bank strategy can be detected in several ways and most notably by an increased focus on risk and corporate governance, especially in North America and Europe. At the same time, growth became less important (if not entirely absent) as an explicit strategic goal for non-Chinese banks, although an emphasis on growth increased considerably among Chinese banks. Perhaps the most remarkable result is that, even post-crisis, value creation barely registered as an explicit strategic imperative.

Research Method
Following Gioia et al. (1994), we define strategic change as “a redefinition of the organisation’s mission and purpose or a substantial shift in overall priorities and goals” (p. 364). To identify strategies and any changes in them, we sought data that was comparable across the sample banks. We determined that letters to shareholders in a bank’s annual report met this requirement better than alternative sources. The main reason is that the success of strategic change depends on an organisation’s ability to convey new missions and priorities to its many stakeholders, and few tools accomplish this task as effectively as these letters.

Letters to shareholders discuss financial results, the bank’s current position, and its plans. They also address specific events (both positive and negative) that happened in the past year, changes in the bank’s share price, and – especially relevant for our purposes – key aspects of top management’s strategic vision.
Such letters offer executives the opportunity to speak directly to shareholders and other interested observers. Therefore, a careful reading of them enables observers to identify areas that management intends to emphasise: financial strength, value creation, capital management, the bank’s competitive position, and so forth.

Thus, our research examines whether senior management of the world’s largest banks altered their strategies after the global financial crisis and, if so, how.

Our research examines whether senior management of the world’s largest banks altered their strategies after the global financial crisis and, if so, how.

When examining the letters to shareholders, we mostly ignored discussions of historical performance (e.g., earnings in the previous year, return on capital) and focused instead on statements that were oriented toward the future. We compared the stated strategies of these banks from their 2006 and 2016 annual reports. Because the annual reports for 2006 were issued early in 2007, the statements of strategic intent made by senior bank executives could not have been affected by the crisis that was soon to engulf the banking sector. We chose 2016 as a suitable year for comparison on the assumption that ten years was sufficient time for each of the institutions to overcome, and adapt to, the losses, dislocations, and regulatory changes that occurred in the GFC’s aftermath, and hence to modify their strategies accordingly.

The contents of these letters published in the 2006 and 2016 annual reports were reviewed for each of the 36 banks. More specifically, we searched for key words and themes (“strategy markers”) that were indicative of the bank’s strategic direction.

Our Findings

Our research revealed that the evolution of corporate strategy, from pre- to post-crisis, was noticeably different between Chinese and non-Chinese banks. Among the most unexpected findings was the nearly total absence of growth as a stated strategy among Chinese banks in 2006, unlike the banks in Europe, North America, and (to a lesser extent) Japan. Yet, even though almost all North American banks in our sample mentioned growth as a strategic priority in 2006, only Bank of America did so in 2016. Thus, the widespread adoption of growth as an explicit strategy was reversed worldwide, except among Chinese banks, which shifted their priorities toward a pro-growth stance. In fact, the 2016 annual reports of many non-Chinese banks emphasised simplicity (or the reduction of complexity) in their operations: cutting back on product lines, divisions, and the number of clients assigned to each relationship manager, while exiting from less-profitable countries and regions. There was a new emphasis on narrowing the scope of bank activities, becoming smaller, and simplifying processes for the sake of clients, employees and operating cost structures.

Table 1. Sample Banks, by Region

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<th>Europe (15)</th>
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<td>Agricultural Bank of China</td>
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<td>Citigroup</td>
<td>Bank of China</td>
<td>Mitsubishi UFJ Bank</td>
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<td>Toronto-Dominion Bank</td>
<td>Bank of Communications Industrial Bank</td>
<td>Norinchukin Bank</td>
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<td>Banco Santander</td>
<td>Royal Bank of Canada</td>
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Note: Banks are listed in order (from largest to smallest), based on asset size.

1. China Banking Regulatory Commission; European Central Bank; US Federal Reserve; Bank of Japan; see also Thomson Reuters Eikon.
2. All quotes in this section are taken from the respective banks’ 2016 annual reports.
Deutsche Bank exemplified this strategy, stating that: “We focused our business. We completed disposals including of Abbey Life business, our 19.99% stake in Hua Xia Banks of China and our US brokerage unit, Private Client Services. We further announced the sale of our Sal Oppenheim Asset Servicing business.”

Meanwhile, Citigroup’s Global Consumer Banks divested its retail banking and credit card businesses in Argentina, Brazil, and Columbia, actions that enabled the bank to consolidate its resources on its three major consumer markets: the United States, Mexico and Asia. Citigroup echoed Deutsche Bank in emphasising focus: “We … continued to make progress in our journey toward being a simpler, smaller, safer and stronger institution.” Goldman Sachs also boasted of a more conservative balance sheet that would help the bank “better weather challenging environments”. One motivation behind the reduced investment that accompanies such “focus” is the desire to strengthen bank balance sheets; that is, to meet the higher capital requirements mandated after the global financial crisis.

In contrast to non-Chinese banks in 2016, most of which were contracting and narrowing the scope of their operations, a common theme among Chinese banks was expanding their geographic reach beyond China. For example, ICBC writes: “We gradually increased the number of overseas institutions and have established 18 overseas institutions and an equity joint venture bank in 15 countries and regions, reinforcing the presence of our network [across] five continents.”

Under the reign of President Xi Jinping (i.e., since 2012), Chinese banks have renewed their emphasis on supporting state and Communist Party initiatives. China’s “Belt and Road” undertaking, launched in 2013, is probably the best-known example. Its stated aim is to reconnect the countries along the ancient Silk Road network by improving the trade and transport links between China and the rest of Eurasia. Most of the associated investments address infrastructure: upgrading roads, railways, bridges and port facilities. The initiative’s scale is enormous, as loans have been granted to more than 70 countries and total funding is anticipated to exceed $1 trillion. Given this level of commitment, Belt and Road is a high priority of the Xi government and of the Party itself. Chinese banks are expected to fall in line by viewing Belt and Road as fundamental, and their annual reports indicate that they are doing just that. In short, banks are among the front-line troops responsible for making the initiative a success.

For example, Bank of China’s letter to shareholders includes the following statement: “We … actively served the nation’s diplomatic strategy by holding the ‘Belt and Road’ international and cooperation seminar, which was widely acclaimed at home and abroad.” And from the Bank of Communications: “We strictly adhered to the State’s strategic ‘Belt and Road’ and achieved five successful ‘international expansion’ targets in 2016,” projects that included, inter alia, the establishment of branches in London and Luxembourg. In its letter to shareholders, China CITIC states that it “supported the implementation of the ‘Belt and Road Initiative’ with enthusiasm.” Similar statements can be found in the 2016 annual reports of China Construction Bank and the Industrial Bank Company.

As further evidence of the Xi administration’s reach, nearly all leading Chinese banks expressed their commitment to the Communist Party in their 2016 annual reports, despite the fact that none did so in 2006. Thus, the Bank of China writes: “We will carry on technological innovations, intensify Party and team building, and take concrete steps to perform our social responsibilities.” In its letter to shareholders, Bank of Communications reports on its efforts to support the state’s 13th Five-Year Plan by “deepening reform, promoting transformation [and] development and strengthening Party self-discipline.” It goes on to say, “We firmly implemented the decisions of Party Central Committee and State Council and closely adhered to their most fundamental objective, serving the real economy.”

Although China CITIC Bank Corporation does not specifically mention the Party, it does quote Deng Xiaoping, as follows: “Be brave in innovation, be generous in contribution.” A similar quote can be found in China Construction Bank’s letter: “Looking into 2017, the Group will loosely follow the national strategy of the ‘13th Five-Year Plan’, and continue to

When examining the letters to shareholders, we mostly ignored discussions of historical performance (e.g., earnings in the previous year, return on capital) and focused instead on statements that were oriented toward the future.
contribute to supply-side structural reform and support development of the real economy.” Another instance of toeing the Party line is this statement, from the chairman, in the Bank of China’s 2016 annual report: “We will carry on technological innovations, intensify Party and team building, and take concrete steps to perform our social responsibilities, so as to reward our shareholders and the public for their trust and support by delivering better and better performance!”

The 2016 annual reports of other (non-Chinese) money centre institutions included language that underscored the importance of responding quickly to changes in government policy or in macroeconomic conditions. There was also an increased emphasis on compliance with banking regulations, some of which were enacted in the aftermath of the GFC. Yet, because such banks are private and function in societies that are relatively more open and democratic, there was no explicit acknowledgement of the need to carry out government policy.

Recall that one rather startling result of our research was that so few of the sample banks named value creation as a strategic priority. Defining value creation as “returns on capital in excess of the cost of that capital”, we searched for any mention of this strategy as a stated objective. However, we found little, in either the pre-crisis or the post-crisis period, that was directly related to this value-creation imperative.

Even when a bank did mention value creation as a strategic priority, other statements in the same letter suggest confusion about what value creation actually means. In its 2006 annual report, for instance, Banco Santander claimed that “the return on … investments must always exceed the cost of capital in a maximum period of three years”, by which it likely meant that, in present-value terms, investments have a three-year payback period. But then the letter also stated that the bank “pay[s] particular attention to growth in earnings per share (EPS).” It’s certainly true that, all else being equal, the higher the EPS, the better; however, this *ceteris paribus* condition hardly ever holds. After all, managers can take many actions that boost EPS without creating value: “earnings management” can be used to inflate accounting-based earnings without increasing the bank’s value; and the bank can buy back shares and thus increase EPS by reducing the number of outstanding shares. Senior executives are incentivised to engage in such behaviour when their annual bonuses are linked to EPS targets.4 Promoting EPS growth, then, does not amount to promoting value creation and may even impede that goal in the banks that do adopt it.

Other banks addressed the issue of return on capital, but without explicitly stating that their aim was to generate returns greater than the opportunity cost of that capital. Post-crisis, HSBC, for example, discussed the importance of maintaining its dividend and of returning capital to shareholders via share buybacks; it also claimed “to make strong progress in implementing our strategic action to improve returns”. Yet, at no point did HSBC identify value creation as a strategic goal. The Italian banking giant UniCredit was one of the few banks to cite value creation as a strategic priority in the post-crisis period, although it made no mention of the need to earn returns greater than the cost of capital. Rather, its letter to shareholders reads: “Our priority is to increase Unicredit’s capacity to create value by strengthening its balance sheet and taking a more vigilant approach to risk management.” Mitsubishi UFJ also mentioned higher capital returns as a strategic priority but makes no commitment to value creation *per se*.

In 2016, a consistent theme across Europe, North America, and Japan was the changes brought by technological disruption. That disruption was interpreted as a threat to future profitability, as an opportunity for future growth, and sometimes as both. Thus, banks viewed the advent of “financial technology”, or fintech, with uncertainty. A few banks (e.g., Santander) boasted of collaborating with fintech start-ups, while others (e.g., ING Group) viewed such innovation as more threat than opportunity: “New entrants to the market, like FinTechs, are making it more challenging to compete.” For its part, Japan Post Bank mentions “dealing with FinTech”, but without offering any clues about just what that means. Another aspect of technological disruption is cybersecurity, and banks in all regions wrote that increased efforts were needed to counter the threat from Web-based fraud.

Our review reveals the somewhat surprising result that environmental issues were more prominent in 2006 than in the post-crisis period. Crédit Agricole is one notable example: “In the light of the results of the carbon balance assessment carried out in 2006, priority targets have been set for reducing carbon dioxide emissions, accompanied by training of working groups in charge of transport, energy and raw materials matters. As regards the indirect

4. These remarks are not intended as a criticism of share buybacks in general. There are several valid motives for buybacks, but increasing EPS is not one of them.
One more prominent post-crisis theme, at least in Europe and the United States, was the management of “legacy issues” (e.g., lawsuits, regulatory actions, charges of improper mortgage practices, and various criminal charges).

Impact of our activities, Crédit Agricole has developed customer incentives by launching environmentally-friendly financial products.” However, climate change was a much less prominent aspect of banks’ letters to shareholders in 2016.

Another instance is that of BNP Paribas, which likewise addressed climate change in 2006: “The recent conclusions reported by the Intergovernmental Group of Experts on Climate Change … reinforce BNP Paribas’s commitment to combating climate change. We have created a Carbon Team to provide trading and financing products to enable our clients to seize the opportunities related to CO2 emission quota mechanisms”; no such language was used in 2016. Lloyds Banking Group also addressed climate change in 2006 but largely ignored the issue in its 2016 annual report. The following text appeared in its pre-crisis letter to shareholders: “We recognised the challenge posed by global climate change and we are committed to making meaningful reductions in our carbon footprint. We have already set a target to reduce property related CO2 emissions by 30 percent, and we aim to enhance this plan through the introduction of a carbon management programme and other initiatives.” However, there were some exceptions to this pattern. Royal Bank of Scotland is one of the few banks that, in 2016, explicitly cited the management of climate change as a continued strategic imperative.

One more prominent post-crisis theme, at least in Europe and the United States, was the management of “legacy issues” (e.g., lawsuits, regulatory actions, charges of improper mortgage practices, and various criminal charges), many of which resulted from actions undertaken prior to and during the financial crisis. Deutsche Bank, for example, “resolved major litigation matters. Of our twenty most significant litigation matters, which include RMBS and account for roughly 90 percent of the anticipated financial impact, we achieved full or partial resolutions in nine, including some of the largest, and made progress on most of the others.” Royal Bank of Scotland (now officially RBS) noted, in its 2016 annual report, that “the attributable loss, at around £7 billion, was more than three times as large in 2015. It is hard to present that as a positive outcome for shareholders, though in fact it does reflect the impact of stronger efforts to resolve the bank’s legacy issues.”

Perhaps the most notorious of these legacy issues was Wells Fargo’s cross-selling scandal, which erupted in 2016 when it emerged that the bank had added a huge number of products to client accounts without their permission. The scale of this subterfuge became apparent when thousands of clients began to complain about charges on accounts they never asked for. An interesting aspect of the affair was the prominence of cross-selling as a strategic imperative in 2006, a clear indication that the scandal’s groundwork had been laid at least ten years before. In its 2006 annual report, Wells Fargo boasted of its cross-selling efforts, citing with pride that one in five clients already had at least eight different products with the bank. This statement is significant, because the bank later devised its “eight is great” slogan, a message to all bank employees that eight accounts per client was a bank-wide goal rather than an exceptional achievement. After the scandal broke, the strategic focus of Wells Fargo shifted to understanding how such unacceptable sales practices proliferated and to rebuilding trust among its clients and other constituencies. As the 2016 letter to shareholders reported: “We are committed to transparency as we connect with all stakeholders more frequently through increased communications. … We are conducting thorough reviews and investigations to fully understand where things broke down and where we failed.”

Our last key finding is that nearly all European banks had strong reservations about three issues that arose in 2016: the fallout from Brexit, which British voters narrowly passed; the election of Donald Trump as President of the United States; and, to a lesser extent, the Italian “no” vote on its constitutional referendum. One such bank, Credit Suisse Group, wrote of the significant additional volatility observed in the immediate aftermath of these events. Similar concerns were often expressed regarding macroeconomic developments, as low interest rates and an unusually flat yield curve adversely affected bank profitability. Related to all these concerns was the perceived necessity...
of responding to market shocks as they occur; in Bank of America's words, “we must be agile and adaptive”. Mizuho picked up on this theme in its 2016 letter to shareholders: “While paying careful attention to the development of regulatory reforms of the global financial system, we are aware of the necessity for establishing a financial base supported by a balance sheet that is resilient against the uncertainties in the world economy, and by a sustainable and stable profit structure.”

Limitations
One limitation of our study is that simply identifying a strategy does not, in itself, say much about the depth of a bank's commitment to that strategy. We considered a ranking based on the strength of each strategic statement (e.g., weak, neutral, strong). However, we decided against the idea when it became apparent that cultural differences among the sample banks (in Asia, Europe, and North America), as well as the individual “tone” adopted by each executive, had a major influence on the words used to express strategic intent. Hence our contemplated ranking might well have reflected cultural differences and character types, more than genuine differences in strategic direction among the sample banks. For this reason, we made no a priori assumptions about which aspects of a bank's strategic intent were the most important.

Another limitation is our reliance on materials written in English. Of course, letters to shareholders were originally prepared in English for banks in anglophone countries (e.g., the United States, Canada, and the United Kingdom). In most other cases, however, English versions were offered to readers as “convenience translations”. In other words, they were prepared in the language of the banks' home countries and then translated into English. We acknowledge that some meaning is almost certainly lost in the translated versions, whose quality was highly variable.

Finally, although a CEO’s or board chairperson’s letter to shareholders typically contains true information about how top management views the bank and its strategic priorities, there is definitely a “public relations” aspect to that letter. It is usually written so as to put the bank in the best possible light, a tendency that necessitated the challenging task of distinguishing genuine intentions from mere marketing hype. Nevertheless, we remain confident that our focus on mandated executive statements yielded a source of reasonably objective data that can be compared across different banks.

Summary and Conclusions
The global financial crisis affected bank strategies in many ways, most notably by the marked de-emphasis on growth in North America, Europe, and Japan. The banks in those regions shifted their strategies, post-crisis, toward strengthening internal controls, improving governance, increasing focus, and downsizing. Meanwhile, Chinese banks initiated dramatic growth plans, with emphasis on expanding their geographic reach. This strategic change may have been driven, at least in part, by the Party leadership’s preoccupation with its Belt and Road initiative. Another important change in China was the direct control over bank strategy exerted by the Party and the state; such control had been less heavy-handed before the crisis.

It is also worth reiterating that, with very few exceptions, banks did not explicitly identify value creation as a strategic priority, either before or after the GFC. Although many banks mentioned the importance of sustaining or improving profitability, they were reticent about the need to earn value-enhancing rates of return on invested capital.

About the Authors

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Leaders of the future need to be comfortable charting their own paths and venturing into the unknown. In past decades, leaders had a fairly well-laid-out path: business often didn’t change very much, which meant they could simply follow what the people before them had done to keep things moving and find success. However, that’s no longer the case.

In order to succeed in the future, leaders will need to become explorers. Constant innovation and an ever-increasing pace of change have turned those old leadership paths into obsolete trails that won’t move a company forward. The path to success in the future is yet to be seen and differs for each leader and organization. To move forward, leaders have to step into the unknown. Think of the famous explorers of past centuries. These people only made great discoveries and found success because they were willing to do what had never been done before and venture into uncharted waters.

As part of the research for my new book, *The Future Leader*, I interviewed more than 140 CEOs around the world. One of the questions I asked was about the mindsets leaders will need to have over the next decade and beyond. I received a wide variety of answers, but a large portion of the responses fit into the need to become an explorer and be comfortable with the unknown and the uncomfortable. Explorers can teach future leaders many mindsets they should adopt.

**Curiosity**

From all the CEOs I spoke with, one of the most common mindsets for future leaders is the need to be curious. Curiosity is the foundation of a strong explorer. They have to wonder what is out beyond what they can see. They question how things are and wonder how things can be improved, both for themselves and the people around them. Curiosity is often the first stepping stone that sets people down a journey of exploration and discovery. It’s asking that question that propels them towards research and action. Curiosity involves asking yourself “Why?” and “What if?”.

In order to succeed in the future, leaders will need to become explorers. Constant innovation and an ever-increasing pace of change have turned those old leadership paths into obsolete trails that won’t move a company forward.
However, too many leaders and workers get stuck in the same old routine and don't give themselves time to be curious. Little kids are full of wonder and ask questions about everything to better understand it. But as we get older, that natural curiosity tends to fade away. Especially in the business world, there's often pressure to come across like you know everything without allowing yourself to ask questions and think about what could be.

Curiosity takes on many forms. The mindset of curiosity looks different in everyone. It starts by asking questions and wanting to find answers. Curiosity can look like research as people hunt for answers to their questions, which can then fuel new ideas. Curiosity can also be openness to other people’s ideas. Instead of instantly shutting down anything new or different, it takes curiosity to hear a person out and give new ideas validation and consideration. Curiosity can be open-ended thought and brainstorming without the constraints of the status quo or other limitations.

Super Perpetual Learning
Related to curiosity is the idea of super perpetual learning. Most people can agree that in order to move forward, we must always be learning something new. However, successful leaders take it to the next level by becoming super perpetual learners. These people consume knowledge like no one else and are always looking for new skills to add, new books to read, and new things to learn about. Explorers of old had to always be learning to stay up to date on changing weather patterns, transportation, and climate. Similarly, future leaders need to always be learning to stay up to date on advances in technology, what their competition is doing, and what’s happening in the world. Aside from that, super perpetual learners absorb all kinds of knowledge and want to learn about a variety of things simply because they find them interesting.

Everyone learns simply by experiencing things. As we move through life and our careers, we come across new situations and people that force us to learn new things. The difference between normal learning and super perpetual learning is the intention. The best learners don't just sit idly by waiting for some kind of experience to teach them something. They seek out new information that can benefit them and their company. That learning doesn't have to happen just from books. It takes a variety of forms like listening to new podcasts, attending conferences, reading articles, talking to new people, traveling the world, and so much more.

Super perpetual learners also must apply what they learn. It's one thing for future leaders to meet with new people or start a new project so they can learn, but it doesn't do them much good if they don't apply what they learn. Being a super perpetual learner should change you. The information should soak in so much that you simply can't avoid making changes in your own life and in your organization. The world is changing at a frantic pace, and it's the super perpetual learners and leaders who will change along with it and be able to keep up.

Growth Mindset
Like the name implies, a growth mindset moves people forward and encourages them to constantly improve. People with a growth mindset know that the skills and circumstances you're born with aren't the limits of what you can become and believe that people can make progress and develop new skills and mindsets. Explorers must possess the growth mindset in order to be successful. If they want to make the most of their teams, they have to believe they can work together to grow and achieve something better.
Explorers, like future leaders, need to be able to think on their feet and adapt quickly. When last-minute changes come, they need to quickly make a calculated decision. That doesn’t mean that they’ll be right all of the time, but they will continue to move forward and keep the company on track.

Kathy Mazzarelli, CEO of Graybar, told me this: “Leaders must possess a growth mindset in which they are constantly learning, innovating and exploring new ideas. They must learn to ask different questions and analyze issues critically, rather than relying on past experience and long-held assumptions to make decisions.”

The growth mindset turns challenges into opportunities for further growth. When explorers hit a roadblock, they don’t instantly give up, thinking they simply weren’t made to be an explorer. Instead, they use that challenge or failure as an opportunity to learn, revamp their idea, and try again. In order to be successful, future leaders must be able to bounce back from challenges and believe that no matter where they are now, each person and the organization as a whole can grow to become something better.

Adaptability and Agility
Just like explorers need to make regular course corrections as they come across a new route or an unexpected challenge, leaders also need to be adaptable and agile. Course corrections within an organization can come from new technology, disruption in the industry, geo-political changes, new personnel, and a number of other sources. The important thing for future leaders is that those inevitable changes don’t slow down the company or throw it off track. This can go against a lot of what business professionals learn in school – to simply repeat what works every time – but the truth is that in the future of work, there will be too much change to just apply the same actions and way of thinking every time.

Explorers, like future leaders, need to be able to think on their feet and adapt quickly. When last-minute changes come, they need to quickly make a calculated decision. That doesn’t mean that they’ll be right all of the time, but they will continue to move forward and keep the company on track.

Future leaders must be explorers to be successful. These mindsets show the necessity of embracing change and preparing for it instead of running away. The path forward may be uncharted, but following in the mindset of great explorers can prepare future leaders for whatever comes next.

About the Author
Jacob Morgan is one of the world's leading authorities on leadership, employee experience, and the future of work. He is a 4x best-selling author, speaker, and professionally trained futurist. He is also the founder of The Future of Work University, an online education and training platform that helps future proof individuals and organizations by teaching them the skills they need to succeed in the future of work. His new book, The Future Leader, which is based on interviews with over 140 CEOs around the world is coming out Jan 2020, you can learn more or order it at getfutureleaderbook.com

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