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ORLEN

PILLARS OF SUSTAINABLE DEVELOPMENT

Vision, raw materials, talent

Warsaw 2018

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This report was prepared by the Strategy Department and the Corporate Communication Department of PKN ORLEN S.A., with the other business areas having also contributed to its contents.

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Why has this report been produced?

The economy moves in cycles, for which there is no effective remedy despite long-standing efforts to find one. Ways to avoid an economic crisis are sought in the sphere of rational behaviour, but markets are rarely efficient and some investor decisions are hard to understand. The cyclicality of economic growth is a nightmare for any business, as it entails losses resulting from underutilisation of production assets during a down phase or profits lost due to capacity constraints during an upswing. Since cyclicality cannot be avoided, a plethora of methods are employed to increase business resilience to unpredictable (crisis) shocks. These measures focus at once on targeting new markets and products for the long term and on maintaining an adequate buffer of liquid assets for the short term.

Companies pursuing a diversification strategy spend considerable sums on research and development without any certainty as to when and how much of their investment will be recovered.

On the other hand, liquid assets deliver lower returns than physical assets. Since cutting back on R&D spending or tapping into the safety buffer (when no crisis is seen in the offing) has the immediate effect of boosting profits, the temptation to go for them is strong. Few managers are ready to forego short-term profits for the bigger reward of protecting their business against the impacts of a potential downturn or, worse still, a bankruptcy (if a crisis does occur). It is hard to blame them, as the human brain is wired up to respond more strongly to stimuli that are present here and now (real danger) than to factors remote in time (potential danger).

The issue of short-term action taking priority over long-term thinking (a vision for growth) in corporations has been debated by business, government and academic communities since the Great Depression of 1929. Blame for the collapse was placed on rapid economic changes and too short a horizon adopted by businesses and financial institutions, who underestimated signals of the imminent financial crash. Shock-resilient business strategies were back on the agenda after the global financial crisis of 2008. Today the focus is on how to safeguard business models disregarding crisis scenarios in case they do materialise. Therefore, risk management strategies at large corporations focus on financial aspects, with existing ownership structures largely passing that risk onto financial intermediaries. Instruments to enhance companies' resilience to (financial) shocks are to be found outside their business models. Economic, political and social changes are happening even faster than before the great crisis of 2008 and 2009, and the search for business strategies resilient to shocks has taken on a completely different meaning. Apart from unpredictable events like a market collapse, companies need to be prepared to confront the inevitable consequences of demographic, social and economic processes, about which a lot can be said. Global population growth and the fourth industrial revolution have accelerated social and technological change to a pace that precludes the continuation of existing business models. For more information, see the previous report *Economy 4.0 – Time of Change for Business*[1].

1 PKN ORLEN, Economy 4.0 – Time of Change for Business, November 2017, www.napedzamyprzyszlosc.pl/raporty/gospodarka-4-0-czas-zmiany-dla-biznesu [October 10th 2018].

What is a business model?

Business models are variously defined, depending on what purpose they serve. In the case of companies with a successful track record on the market, they are usually synonymous with those track records. On the other end of the spectrum are businesses that failed, providing examples of bad models. There is a good reason why Michael Lewis in his book 'The New, New Thing' applies artistic categories to business models. After all, many people have a sense that they can tell a work of art when they see one (especially if it is either outstanding or horrible), but few can define it.

This report relies on the approach to business models proposed by Peter Drucker, who underscores the role of assumptions about the market made when thinking of gains. An effective business model provides clear answers to the ever valid questions: who are our target customers? What do they value? What specifically will we earn money from? What is the economic logic behind the business, or, in other words, how will we deliver value for money?

Drucker also draws attention to the fact that to be successful, a business model must be dynamic as "[...] sooner or later, some assumption you have about what's critical to your company will turn out to be no longer true."* History has seen many smart companies, like Kodak or Nokia, which did not manage to adapt to a changing market environment only because they failed to make clear assumptions regarding change.

* A. Ovans, *What is a business model?*, "Harvard Business Review", January 2015.

Today, the awareness of risks from continuation of traditional business models is quite widespread in the business world. One look at the demographic trends is enough to see them. Forecasts say that by 2050 the world population will swell by 3 billion, which is equivalent to the current populations of China and India combined. Can we meet the needs of a global population of more than 10 billion without changing the development model? Definitely not, as this would inevitably lead to an increase in the prices of scarce raw materials and the cost of mitigation of various risks associated with depletion of natural resources, as well as deterioration in the living conditions of consumers and pressure from investors and shareholders to revise business models.

It starts to pay off for businesses to design their products and business models in a way ensuring recovery of used products from end users and reuse of assemblies, components and materials in new production. This completely new approach to the management of raw and other materials is in line with the circular economy concept, but goes beyond mere waste recycling. Business models are designed to ensure that as little waste as possible is generated throughout product life cycles. And products are designed to be repairable, with assemblies and components that can be regenerated. Thanks to digital technologies, products can be upgraded and made more functional by updating software, as is the case with laptops or smartphones. When computer hardware becomes obsolete, it is replaced, but the cost paid by the customer is reduced by the value of components recovered by the manufacturer. Proper design enables quick and efficient recovery of raw and other materials. For example, the BMW i3 is 95% made of recyclable materials[2].Benefits of deploying new circular business models include partially or totally reduced exposure to environmental and climate risks and growing regulatory costs, as well as lower consumption of raw materials and increased resilience to price growth and volatility. However, few businesses manage to accomplish that. Why is it so difficult?

If unnoticed in time, the trap of short-sightedness mentioned at the beginning of this report starts to hinder business development. For example, without extending the timescale of strategic thinking, it is difficult to see imperfections of the linear economy and solve the pervasive conflict (fight for resources) between production (current business model) and growth (new business models). How then to design new business models and strategies that would be capable of bypassing the barriers to sustainable growth?

2 H.Boeriu,*Watch the BMW i3 get recycled*,May2015, *www.bmwblog.com/2015/05/09/watch-the-bmw-i3-get-recycled/* [September 10th 2018].

Linear economy trap

Already in the 1970s, Herman Daly, an ecological economist, made the following proposition: all economic activity depends on resources provided by our planet and the sun (terrestrial and solar sources). Without energy and resources, economic life would come to a halt. The earth's ecosystem is closed (circular), meaning that everything we draw from it must be eventually returned. The economy, on the other hand, is an open (linear) subsystem of the earth's circular system. It draws resources from the earth and throws waste away. Since nothing can be thrown away outside the earth's ecosystem, waste goes to the nature-based resource regeneration machine. Once we begin to take from the earth more than it is capable of giving us, expecting it to absorb more waste than it can handle, we will find ourselves in a world that Daly called "full" [of waste] with no room for any further activity.* In his opinion, we already live in such a world. Because its waste sinks are overflowing, the earth cannot simply replenish vital resources as quickly as they are depleted.

This is reason enough to change the way we think about the economy! First of all, our linear economy must become circular and function as a closed system, like nature does.

The paradox of modern development is that manufacturers, with tacit agreement from consumers, have for several decades been moving in the opposite direction: from durable, reusable goods (such as washing machines or telephones that could be repaired and last for many years) to unrepairable, disposable products, which are most easily thrown away as rubbish. In a circular economy, we would need to start 'cleaning up', i.e. come up with new production methods that would allow us to use waste as raw materials.

Plastics are a perfect case in point. As we know, they have existed for the past 60–70 years, but over that time they have altered the way we think about everything – from clothing, cooking and food serving, to product design and retail. One of their biggest advantages in utility terms is that they are durable, which means that almost all plastics that have ever been produced still exist in some form today. The total volume of plastic output has been estimated at 8.3 billion tonnes. Of this, approximately 6.3 billion tonnes are waste, 79% of which has ended up in landfills or the environment. This huge waste stream fuels modern life, where plastics are used to make a wide range of single-use items – from bottles to diapers, cutlery and cotton balls.**

* H. Daly, *Economics for a full world,* June 2015, www.greattransition.org/publication/economics-for-a-full-world [10.09.2018].

** BBC, Seven charts that explain the plastic pollution problem, December 2017, www.bbc.com/news/science-environment-42264788[10.09.2018].

Report structure and main conclusions

The following three chapters present examples of companies and the measures they have implemented. Three principal dimensions have been identified for the implemented adjustments:

- Extending strategy and action planning timescales
- Eliminating waste from production along the entire product life cycles, and
- Engaging employees in designing and implementing new business models.

Operational planning horizons should be sufficiently long. The world is changing, and new business models designed today should constantly evolve to remain relevant in 15–20 years' time. Natural resources used in manufacturing will shrink relative to the needs of the expanding population. The current model in which companies buy raw materials on the market and 'sell' waste to third parties will not stand the test of time when confronted with rising raw material prices as well as costs of emissions and waste disposal. Faced with inevitable rises in external costs, companies increasingly find it economically viable to design products for maximum reusability and to organise their manufacturing and distribution systems so that used products can be recovered from consumers (a circular economy model). The third area of focus is human resources. Success in business is impossible without fully leveraging the unique talents of each staff member. Thinking, prognosticating, designing, implementing, making mistakes and starting anew, employees are key in the process of building new business models. All the three dimensions serve as key themes for the individual chapters.

This report was born out of the conviction that companies need to extend their strategic and operational thinking to mitigate potential shocks and exploit new niches arising from megatrends. Companies that prioritise long-term goals over short-term targets generate 50% more in revenue and 80% more in profits than their peers. What do they do differently?

Firstly, they root out short-termism within the organisation by devising strategies expected to deliver results over a few decades, depending on the industry. They also have concrete operational plans underpinning their long-term vision that are actioned starting today.

Secondly, they effectively rein in the expectations of shareholders, who seek quarterly earnings growth at the expense of building long-term advantage. This is a major challenge requiring steadfast resolve from the chiefs of multinational corporations – 87% of the boards of such corporations are under pressure from shareholders to deliver short-term outcomes. On the other hand, a third of the growth financing capital is long-term. So investors must be engaged in dialogue to make them appreciate the advantages of new business models.

Thirdly, they build lasting trust-based relationships with key stakeholders in their business environment: local communities and employees. Next to human resources, stakeholder trust is a company's key capital in the digital reality of the 21st century, and the commitment to building this trust prompts companies to act rationally and responsibly in the long run.

Fourthly, customers should come first. This principle always holds true, particularly now in the world of novel technologies and business models. Failure to accurately identify the needs of customers often drives them into the arms of competitors. The omnipresence of social media also exacerbates the risk of reputational damage. It is really difficult to build an organisation capable of delivering robust profits in the long term without the strenuous effort of predicting new customer needs. In this context, the user experience manual has become the new bible for business in these hard times.

Fifthly, an agile corporate culture. Nowadays, innovation can come from, well, anywhere. Successful companies readily embrace new ideas. This means that they are willing to experiment and spend more on R&D and innovation. One złoty spent on research and development will generate up to a dozen złotys in revenue from new business streams in times when they will be vital to weather market turbulence undercutting previous models. Conversely, one złoty 'saved' on research furthers the materialisation of a loss-of-liquidity and bankruptcy scenario.

Chapter 2 focuses on measures taken by companies to mitigate long-term challenges related to access to raw materials. Since 1970, that is over the past half a century, the annual consumption of essential raw materials has more than tripled. The fast pace of resource depletion is no longer just an environmental issue but, first and foremost, a real economic challenge. Skyrocketing raw material prices and mounting supply issues (e.g. in the case of cobalt used to produce lithium-ion batteries) make a shift in the approach to natural resources one of the most pressing sustainability challenges for many companies. But this time it is not only about supply constraints and elevated material prices. Customers increasingly expect businesses to generate additional value added along the entire production chain, and investors, aware of the risk involved in sticking to linear business models, refuse to engage in projects that fail to take account of the issue of overexploitation (as illustrated by the widely reported decision of a large bank to withdraw from financing a coal-fired power project). The new approach to raw materials should not therefore be treated as a CSR or PR exercise, but a business investment. Further persistent pursuit of linear business models would generate excessive financial costs in the long run, deterring investors oriented towards long-term profits from financing linear projects.

In changing their approach to raw materials, companies implement various strategies, such as in-house supply of raw materials (quality control, reliability of supply and prices, extended value chain) or the 'do more with less' philosophy, which stands for lower consumption of raw materials and use of alternative materials (lower production costs, mitigation of supply risks and green marketing). Companies also strive to reduce waste by designing products for reuse in future production. To that end, they organise their sales and customer relations so that products no longer fit for use (because they have become obsolete or worn out) can be recovered. The benefits are manifold, including reduced procurement volumes, lower regulatory costs of waste disposal, improved efficiency, lower reputation costs, green marketing, investor satisfaction, and better access to capital. All these forms of the new approach to raw material strategies involve significant investment expenditure, which offers no returns in the short term. It is incurred anyway, to make the business immune to impending rises in the operating costs of existing models. Its economic sense will become apparent over time as the costs of raw materials, emission allowances and environmental charges go up, and they inevitably will.

The last, third, chapter of this report describes organisations that want to operate in a mature way. For this to happen, they need to adapt their business models to a sustainability strategy in the form of a doughnut, moving between human needs and the environment's capacities. Such organisations must dare to grow through budding, that is by developing small-scale, regenerative-by-design and innovative projects. In order to create an organisation able to withstand any turbulence, you need talent, i.e. personnel not limited by any rigid rules of the corporate game. Talents work exclusively in teams, the responsibility of each member resulting from his or her individual capabilities rather than being position-specific. Talented employees should hold key positions within an organisation, which does not mean promotion to the upper rungs of the corporate ladder. What matters, instead, is expert development. In order to coordinate such teams, agile project work methods are needed, geared towards swift gathering of knowledge and flexible adaptation to a changing landscape.

This report ends with a summary of the main conclusions. Our aim was to show, using the example of selected companies, that it is possible to make money while reducing environmental impact ahead of the applicable regulations, and that it is possible to follow a sustainable business strategy based on a long-term action plan.

Have we managed to do that? Check out for yourselves!

Figure 1. There are more and more factors prompting businesses to implement sustainable development strategies

	Traditional strategies	Reasons for changing the model	Long-term development strategies
Vision	• Focus on short-term results • Conservative approach to changing business models and investing in areas beyond the company's competence • Rigid corporate culture	• Improved financial performance of businesses following long-term strategies • Competitive advantage of organisations that are resilient to external shocks • Investor preferences shifting towards companies with long-term visions	• Long-term strategic objectives and consistent implementation of the vision • Educating shareholders and managing their short-term expectations • Closely aligning business models with customer needs • Flexible cooperation culture open to the adoption of far-reaching business models
Raw materials	• Extensive use of natural resources • Linear production model ('take, make, dispose') • Ease of 'exporting' environmental problems	• Rising costs and dwindling availability of raw materials and energy • Rising charges and stricter regulatory requirements • Customers and media pressing for change in existing manufacturing models	• Reduced use of raw materials and search for alternative materials • Use of raw materials obtained in a sustainable way and investing in own raw material and energy sources • Radical reduction of waste generated throughout product life cycles
Talent	• Business models tailored to manage low risk in a slowly evolving environment • Waterfall management • Organisational structure determining the work content and prestige of jobs	• Growing volatility of the economy • Promoting longer-term thinking among customers and employees • Automation of repetitive work • Difficulty in filling positions with the right employees	• Swiftly responding organisation – growth through budding • Agile management methods, delegating responsibilities • Talent management – business processes subordinated to expert networks

Source: In-house analysis

Chapter I Strategy, tactics, operations – from vision to action

"Anybody can run a company for the short term, and anybody can run a company for the long term, but the hard part about management is getting the balance right."

Jack Welch, CEO GE

The gathering pace, intensity and scale of economic, business and social processes force companies to work out business growth strategies that would make them resilient to potential turbulence and shocks generated by long-term megatrends. This pressure reaches businesses through four channels: consumers (changing their preferences and behaviours), employees (wanting a deeper meaning to their work, beyond that of earning them a living), regulators, and investors (no longer willing to finance projects exposed to environmental and climate risks).

Such strategies, built around the needs of customers and employees, should look at least ten years forward, or still further ahead in the case of many branches of the economy. What products and services should be rolled out and when should they be introduced to maintain profitability in the long run? What assets should a company have to gain a competitive advantage within 20–30 years? How to secure access to finance, talent and raw materials to be able to pursue new projects? How should a business organisation evolve to keep up with the changes? The main challenge is in the gap between short-term returns and the need to create long-term value[3].

However, it turns out that by converting long-term goals into specific actions a business can achieve its revenue and profit targets also in the short term. Companies that prioritise long-term goals over short-term tasks deliver better financial performance. This has been shown through an empirical performance study conducted by McKinsey & Company on a set of 650 large and mid-cap US companies[4].

In 2011–2014, the market capitalisation of companies with strategic horizons of more than 5–10 years (classified as 'long-term') grew on average USD 7bn more and their business was less leveraged. Their total return to shareholders was also superior. Although long-term firms took heavier hits to their market capitalisation after the crisis of 2008, their share prices were also quicker to recover.

In 2014, the revenue of long-term firms grew 47% more than the revenue of other firms. Their net profit increased 81% more than that of short-term firms and their market capitalisation was 58% higher.

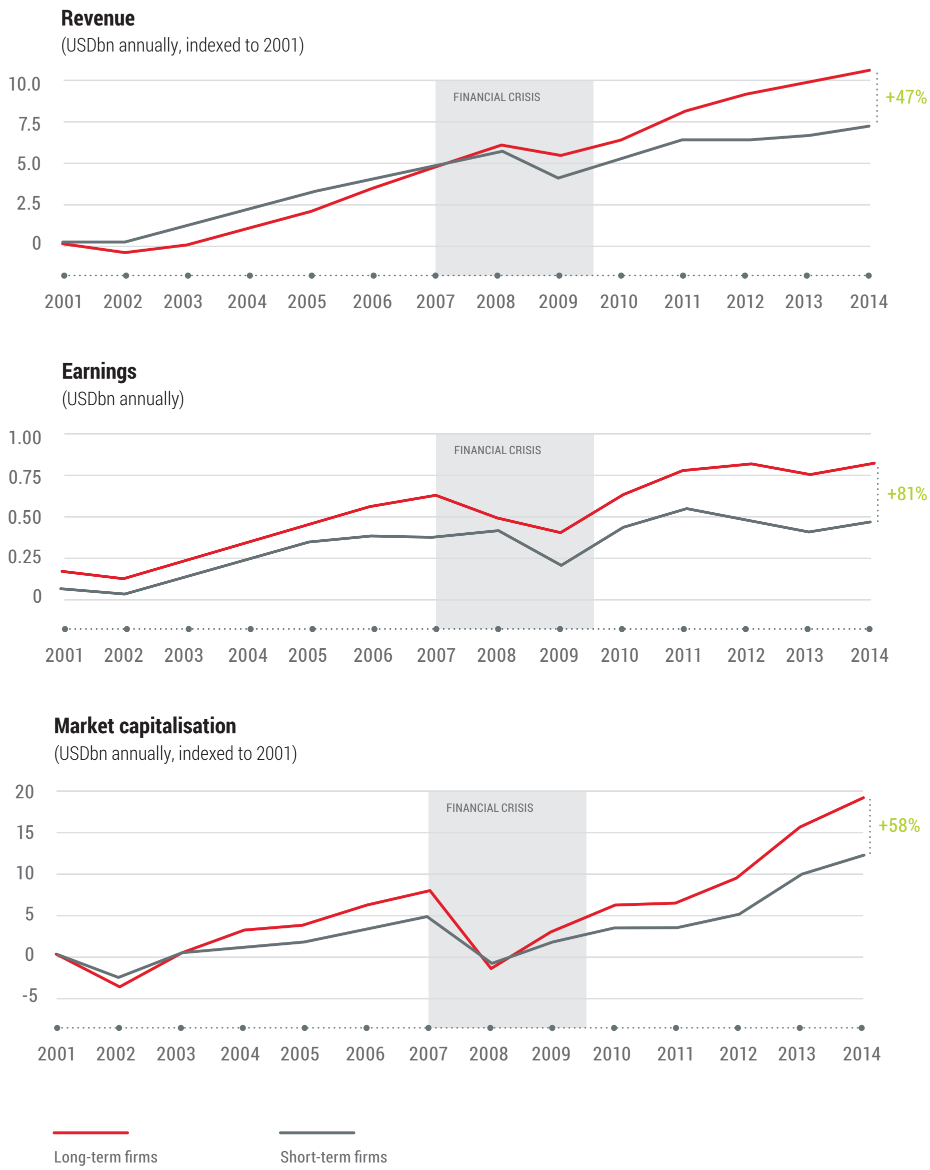
Long-term firms added nearly 12,000 more jobs on average than other firms from 2001 to 2015. If all the 650 surveyed companies had had equally well-considered long-term strategies, the US economy would have gained more than 5 million additional jobs and generated an additional GDP of USD 1tn.

3 I. Kocher, *The Age of responsibility,* LinekdIn [August 4th 2018].

4 McKinsey Global Intitute, *Where companies with a long-term view outperform their peers,* February 2017, *www.mckinsey.com/featured-insights/long-term-capitalism/where-companies-with-a-long-term-view-outperform-their-peers* [August 4th 2018].

Long-term firms also invest more. On average, they spent 50% more on R&D than other companies in 2001–2014. This took place during the financial crisis: from 2007 to 2017, R&D spending by long-term companies grew at an annualised rate of 8.5% versus 3.7% for other companies.

Figure 2. Long-term firms exhibited stronger financial performance and recovered value more quickly after the market collapse in 2007–2009

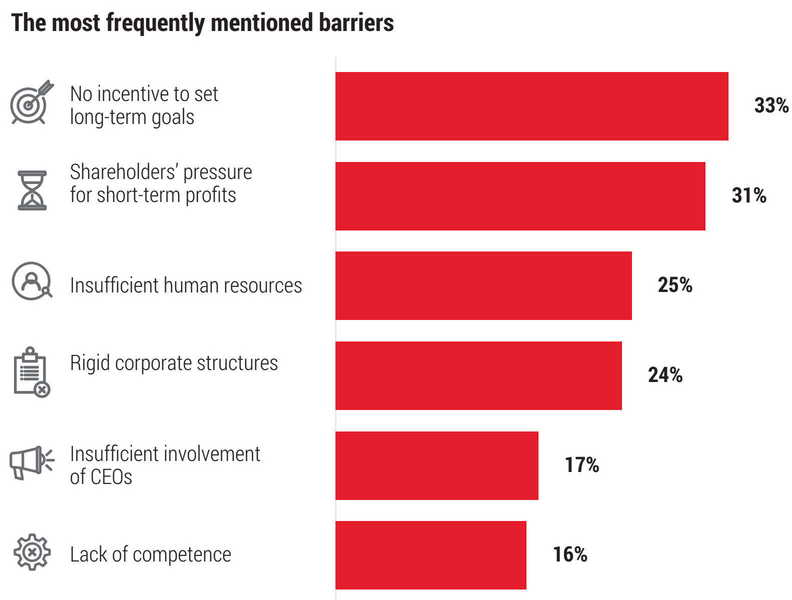


Source: McKinsey Global Institute

The shareholding structures of the world's largest publicly listed companies also indicate that they follow long-term investment strategies: 75% of shares listed on the US stock market are held by long-term investors, e.g. index funds, funds focused on enterprise value growth, and retail investors[5]. 70-90% of the value of companies measured with the discounted-cash-flow (DCF) method is generated after 3–5 years.

Nevertheless, despite investors' strategies and hard figures highlighting the importance of long-term investment strategies, the CEOs of listed companies often get caught in the trap of quarterly earnings reported at regular press conferences. A short-term perspective hurts returns in the long run if it intensifies actions aimed at improving Key Performance Indicators (KPIs), which usually severely affect a company's growth potential as it cuts its spending on R&D, innovation or human capital. That is what happens in actual business practice, which is not good for companies in the longer run.

Figure 3. Why do businesses fail to fully realise their long-term growth potential?



Source: McKinsey Global Institute

Strive against too short timescales in strategic planning

Businesses with long-term visions are better placed to enter new segments and discover new markets. The Managing Director of McKinsey & Company Dominic Barton draws attention to the necessity of combating short-sightedness in companies, giving examples of long-term strategies of such companies as Hyundai, Intel and Apple[6,7]. At the beginning of the 21st century, Hyundai introduced a ten-year warranty on vehicles sold in the US[8]. Its competitors considered this step ill-considered and destructive to profit margins, and they were right, but only in the short term. In the long run, by offering the ten-year warranty Hyundai quadrupled its US sales in less than three years[9]. In addition, it entered the niche of premium vehicles – improved operations, higher component quality and lean technologies allowed it to create top-of-the-range cars in terms of reliability, which is particularly important in the luxury segment.

5 M.E. Blume, D.B. Keim, *Institutional investors and stock market liquidity: trends and relationships,* Wharton School Working Paper, August 2012.

6 www.napedzamyprzyszlosc.pl/raporty/planowanie-w-czasach-niepewnosci?flipbook=1#

7 D.Barton, *Capitalism for the long term*, www.hbr.org/2011/03/capitalism-for-the-long-term [August 7th 2018].

8 B. Choi, J. Ishi, *Consumer perception of warranty as signal of quality: An empirical study of powertrain warranties,* September 2009, www.economics.yale.edu/sites/default/files/files/Workshops-Seminars/Industrial-Organization/ishii-091001.pdf [October 20th 2018].

9 D.Barton, Capitalism..., op.cit.

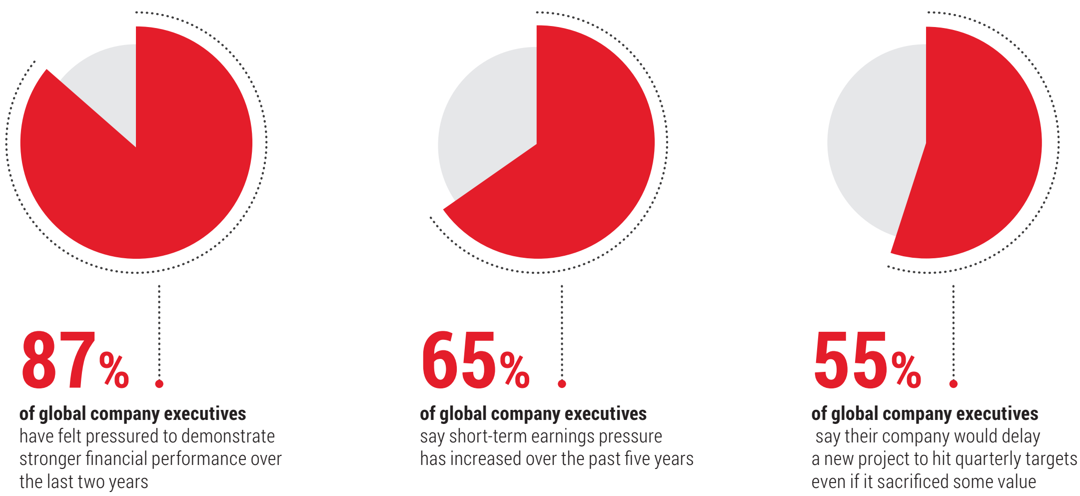
In 1985, faced by growing competition from Japan, Intel decided to abandon its core memory chip business, focusing instead on the infant microprocessor industry[10]. The then management of Intel later admitted that the decision had been a very painful one and had been misunderstood by shareholders. However, thanks to the vision and conviction of its CEO, Intel climbed to the top of the new multi-billion industry[11]. Apple is another example of how investors' resistance was overcome for the sake of long-term returns. This time it was done by Steve Jobs[12]. After the launch of iPod in 2001, Apple sold only 380,000 of these devices in the first fiscal year. However, at the end of 2013, cumulative sales of iPods reached 370 million, and the product itself has revolutionised and set new standards for the music industry.

Have your own vision and determination

Stock markets often experience speculator activity of buying and selling shares within seconds to profit from fluctuations in stock prices. Short-term investors usually bombard companies with queries about quarterly earnings. This practice makes capital markets increasingly volatile[13], with the tenures of global company CEOs shrinking as shareholders, dissatisfied with short-term earnings, sack them overnight. How to successfully resist investors chasing fast returns in order to achieve long-term gains? Some companies have already made the effort, for example by delisting their stocks or changing reporting strategies. Unilever, Ford and Coca Cola have stopped publishing quarterly earnings guidance, and IBM shows shareholders five-year roadmaps instead of quarterly performance.

"I could quickly improve quarterly financial KPIs by reducing R&D spending and cutting distribution and administrative costs... but then I wouldn't be able to build a truly innovative company," said IBM CEO Sam Palmisano[14].

Figure 4. Global company executives are under pressure from shareholders to produce short-term profits



Source: McKinsey Global Institute

10 Ibidem.

11 A. Smoak, *Andy Grove and Intel's move from memory to microprocessors,* March 2016, www.anthonysmoak.com/2016/03/27/andy-grove-and-intels-move-from-memory-to-microprocessors/ [August 10th 2018].

12 Barton, Capitalism..., op.cit.

13 Ibidem.

14 Ibidem.

In the wake of the 2008 crisis, Ford chief executive Alan Mulally decided to sell off the iconic brands Aston Martin, Jaguar and Volvo, which nettled some shareholders. But Mulally was determined to prove the validity of his vision to shareholders and his own employees. And he did – soon afterwards operating costs fell by USD 5bn, the company secured USD 23bn of financing for new models sought after by customers and, as a result, posted one of the biggest profits in a decade, of USD 6.6 bn[15].

Educate shareholders

A long-term vision will remain merely a vision if not translated into a chain of concrete projects with short implementation timescales. As the costs of such projects weigh on quarterly financial results, companies setting themselves long-term goals are not attractive to investors pursuing short-term gains. The result is a situation where executives of companies with extensive R&D budgets are dismissed. Many long-term-oriented companies yield to that pressure, cutting back on their R&D spending and thus undermining their own vision.

Luckily, not all financial investors opt for short-term returns. Long-term financial investors hold assets of USD 60tn, equivalent to between one-fifth and one-sixth of the world's financial assets[16].

They are the ones interested in companies with long-term strategies. Such long-term investors are public or private financial institutions, including pension funds, insurance companies and sovereign funds, whose mission is to earn fair returns on money invested for the long term.

Larry Fink, the founder and chairman of BlackRock, a trust company with assets under management of USD 1.7tn, believes that stock market short-termism is an issue, particularly in the context of increasing use of index funds by investors globally. BlackRock can choose to sell the securities of a company if there are doubts about its strategic direction or long-term growth. In managing its own index funds though, BlackRock cannot express its disapproval by selling that company's securities as long as the company remains in the relevant index. How to solve this dilemma? In his letter to CEOs this year, Larry Fink proposes a new model for corporate governance based on cooperation with the boards of companies included in the indices. "In order to make engagement with shareholders as productive as possible, companies must be able to describe their strategy for long-term growth. I want to reiterate our request, outlined in past letters, that you publicly articulate your company's strategic framework for long-term value creation and explicitly affirm that it has been reviewed by your board of directors. This demonstrates to investors that your board is engaged with the strategic direction of the company. When we meet with directors, we also expect them to describe the board process for overseeing your strategy. The statement of long-term strategy is essential to understanding a company's actions and policies, its preparation for potential challenges, and the context of its shorter-term decisions. Your company's strategy must articulate a path to achieve financial performance. To sustain that performance, however, you must also understand the societal impact of your business as well as the ways that broad, structural trends – from slow wage growth to rising automation to climate change – affect your potential for growth"[17].

Larry Merlo joined CVS Health in 2011 as CEO with a vision to transform the retail chain selling medicines and other consumer goods into a leading healthcare provider. An obstacle to achieving that goal was the fact that the offering of CVS Health included... cigarettes[18]. The company's annual revenue from tobacco sales was approximately USD 2bn[19]. Merlo believed that cigarette sales put at risk his plans to have medical clinics as a new revenue segment, because you could not poison and treat your customers at the same time. Therefore, he made a very difficult decision to stop selling cigarettes. Wall Street did not appreciate that step: the company's share price collapsed on the day the decision was announced. But Merlo was convinced he had been right in making it and the future bore out his belief – by abandoning the tobacco offering, the company gained new institutional customers (hospitals, corporations) as well as retail ones. From 2011 to 2014, CVS' retail sales grew by more than 10%, while revenue from new contracts with institutional customers rose 50%[20]. Merlo knew that nothing of this would have been achieved if tobacco sales had not been discontinued and the company had not begun to project a credible image of a healthcare player committed to helping patients. Following that up, CVS Health focused on creating new value for its customers. It launched medical consultations for retail customers of its pharmacy network called MinuteClinic, referring them to the right specialist to avoid errors in prescribing medicines[21]. Every year, losses caused by the use of inappropriate medicines in the US amount to approximately USD 300bn[22]. The company also entered a new segment of providing medicines and medical services to the elderly, where healthcare spending per capita is the highest. The American population aged 65+ will have grown from

15 Mainland Ford, *The way forward; Ford & Alan Mullaly*, www.mainlandford.com/blog/the-way-forward/ [July 16th 2018].

16 *Here's what the $294 trillion market of global financial assets looks like,Business Insider, www.businessinsider.com/global-financial-assets-2015-2?IR=T* [October 1st 2018].

17 BlackRock, *Larry Fink' annual letter to CEOs. A sense of purpose,* www.blackrock.com/corporate/investor-relations/larry-fink-ceo-letter [October 1st 2018].

18 Carey D., Dumaine B., Useem M., Zemmel R., Go long: why long-term thinking is your best short-term strategy, Wharton Digital Press, Philadelphia 2018.

19 B. Japsen, After CVS stopped cigarette sales, smokers stopped buying elsewhere, too, „Forbes", 20.02.2017, www.forbes.com/sites/brucejapsen/2017/02/20/after-cvs-stopped-cigarette-sales-smokers-stopped-buying-elsewhere-too/#fb42d30c8f51 [July 18th 2018].

20 Statista, *CVS Health's revenue from 2010 to 2017, by segment (in billion U.S. dollars),* www.statista.com/statistics/261282/cvs-caremarks-revenue-by-segment/ [July 19th 2018].

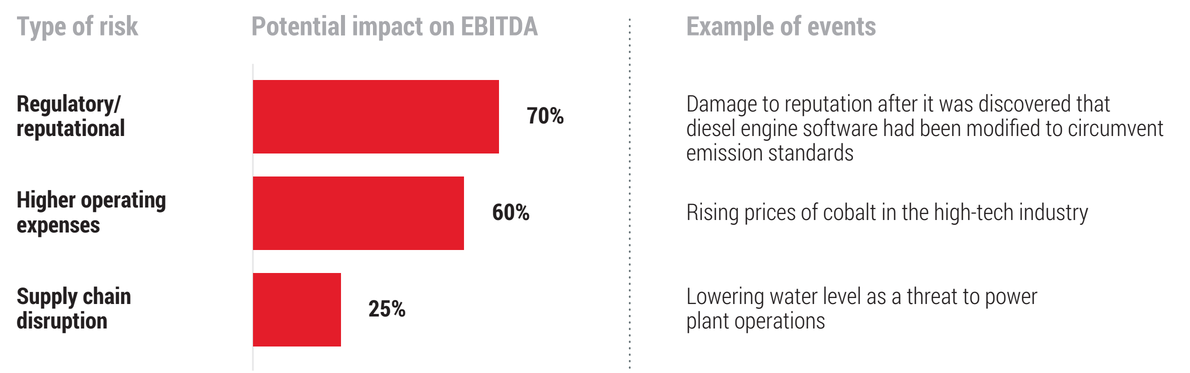
21 Carey D., Dumaine B., Useem M., Zemmel R., Go long..., op. cit.

22 Ibidem.

45 million to 56 million between 2013 and 2020 – taking up the bulk of healthcare spending (to which the US currently allocates 18% of GDP). 10,000 US baby boomers reach the age of 65 daily and CVS is now poised to become a leading provider of healthcare services for this lucrative market[23]. If the CEO had not taken the decisive step of withdrawing from the tobacco segment worth USD 2bn annually, the company would not have been able to build an image of a credible provider of comprehensive healthcare services and win new customers in the promising market niche.

When Paul Polman took charge of Unilever, one of the largest FMCG companies with a 180-year history, which he did amid the still raging economic crisis, he soon revealed his priorities: to double Unilever's profits within ten years while slashing the raw material consumption by 50% and improving the well-being of 1 billion people around the globe. The CEO put Unilever's shareholders on notice declaring that he would not report on quarterly results, but would instead focus on building a fair, long-term value-creation model that would not play into the hands of stock market speculators[24]. Polman said he wanted to improve the welfare of Unilever customers, i.e. several billion people the world over, rather than boost the earnings of a handful of billionaire shareholders. Those who did not share his vision were advised by Polman to put their money somewhere else[25].

Figure 5. The potential impact of reputational, regulatory and operational risks on a company's financial performance may be quite severe



Source: McKinsey & Company

Manage the expectations of your business environment

A long-term strategy enhances the value for shareholders as it properly prioritises the company's activities, entails well-considered allocation of (financial and human) resources, and helps build new competences and organisational mechanisms necessary to achieve success in the long term. In addition to maximising profits for shareholders, a long-term strategy should also meet the expectations of local communities, employees, lenders, environmentalists and – above all – customers. Satisfied customers, nature activists and local communities create a positive aura around the company, increasing the value and attractiveness of its products, which at the end of the day contributes to revenue growth.

Coca Cola is present in more than 200 global markets, managing a network of nearly a thousand water and carbonated beverage bottling plants. Many of them are

23 *How will CVS health benefit from its acquisition of omnicare?,* "Forbes", 1.06.2015, www.forbes.com/sites/greatspeculations/2015/06/01/how-will-cvs-health-benefit-from-its-acquisition-of-omnicare/#e44924612032 [May 14th 2018].

24 J. Confino, *Unilever's Paul Polman: challenging the corporate status quo,* "The Guardian", 24.04.2012, www.theguardian.com/sustainable-business/paul-polman-unilever-sustainable-living-plan [May 14th 2018].

25 A. Boynton, *Unilever's Paul Polman: CEOs can't be 'slaves' to shareholders,* "Forbes", 20.07.2015, www.forbes.com/sites/andyboynton/2015/07/20/unilevers-paul-polman-ceos-cant-be-slaves-to-shareholders/#dad0040561ef [May 14th 2018].

located in countries with scarce drinking water resources. In 2002, protests against Coca Cola were organised in the Indian state of Kerala, the protesters accusing the drink maker of polluting groundwater and privatising water supplies. In 2003, the Coca Cola management pointed out that the company's core business in key international markets was threatened by limited resources of drinking water. In 2004 and 2005, a dedicated team formulated a comprehensive strategy for managing water risk both inside the company (use of water in its production process) and outside it (e.g. access to water by local communities). As a result, Coca Cola set a number of KPIs to address the risk of water unavailability for operational reasons (depleted springs) and from the perspective of managing stakeholder relations (protests). Since 2015, Coca Cola has been returning to the environment as much water as it uses in its finished beverages. In 2016, partnering with local communities, it returned to the global water system 221 billion litres of clean drinking water (by treating rainwater or protecting watersheds), which represented 133% of the annual volume of water used in its beverage products[26]. In addition, between 2004 and 2016, Coca Cola significantly reduced its water-related operating expenses – in 2016 it used 1.96 litres of water per 1 litre of finished product, for which in 2004 it needed 2.7 litres of water[27]. By 2020, Coca Cola's water consumption per 1 litre of product will fall by a further 0.26 litre to 1.7 litres[28]. Notably, when the project was launched in 2004, Coca Cola had a long-term vision of what to do over the next 15 years, a time horizon well beyond what shareholders are usually interested in. These long-term actions have helped mitigate the risk of water availability, while bringing down operating costs.

Stay focused on customer needs

Most powerhouses of the world's business were established in the 19th or 20th century, during the second industrial revolution. Without new strategic and operational models, those business giants are finding it very hard to succeed in the realities of the fourth industrial revolution including rapid transformations, low operational barriers, vanishing advantages based on fixed assets, new business models, and growing expectations from both customers and employees.

Customers expect businesses to address their needs better and faster: a consumer dissatisfied with any single element of the customer service is likely to leave for a competitor

Figure 6. Companies that consistently offer best-in-class customer experience tend to grow faster and more profitably

26 Coca Cola sustainability strategy, www.coca-colacompany.com/sustainability [June 11th 2018].

27 Ibidem.

28 Ibidem.

(in some industries, customer migration rates due to dissatisfaction are in excess of 50%).

Since 2000, more than 50% of the Fortune 500 corporations have been acquired, merged or have gone bankrupt. In the digital 'war of the species', the greatest chances of survival are with companies that were created on the wave of computerisation and 'smartphonisation' of the world economy, i.e. companies with a completely new business DNA, such as Amazon, Facebook, Uber, or Netflix. According to John Chambers, the CEO of Cisco Systems, 40% of the currently operating businesses will disappear from the market within the next decade, 70% are trying to achieve a 'digital restructuring', but only 30% are likely to succeed.

To avoid going out of business within the next ten years, companies must stay closely in touch with customer needs and be able to predict how those needs will evolve. One of the digital tools for analysing customer needs are artificial neural networks, which survey customer satisfaction on social networking sites. Among more proactive tools, however, are products based on 'distributed wisdom' in response to customer problems.

Leading consumer appliances manufacturer Haier has launched its HOPE platform bringing together customers, suppliers, businesses and scientists. HOPE is a tool helping Haier to develop new products for its customers. It was used, for instance, to conduct a customer survey in which 300 respondents agreed that the biggest inconvenience while cooking on hot days is that one sweats heavily. In response, Haier successfully rolled out a kitchen air purification system with an air conditioning functionality to make cooking on hot days easier[29].

Google is a company committed to creating user-friendly products. They require little promotion, as consumers tend to pick solutions that are intuitive, easy to use and offer good value for money. Android, Google Maps and YouTube are examples of products built around customer needs, sometimes by customers themselves. Resilience strategies are all about unique customer experience.

Build a flexible corporate culture

An organisation set to build long-term value should be agile: flexible, innovative, non-hierarchical, and ready to take on new challenges.

The most daunting task when developing a long-term resilience strategy is to effect a change in the corporate culture. Fear of failure and low risk appetite may be obstacles to the implementation of business ideas that could burgeon in the future. The fear of stepping out of the comfort zone, beyond the short-term 'business as usual' model, hamstrings projects that could help the organisation build value in the long term. One of Google's nine principles of innovation is that innovation comes from anywhere. This means staying fully open to new ideas from both within and outside the organisation. All Google employees are encouraged to spend 20% of their work time (one day a week) to pursue new ideas and products. Although many of the ideas end up in a waste bin and sometimes several teams in different corners of Google labs are working on the same solution, such experimentation pays off. Google now holds almost USD 90bn in cash, an effect of an agile organisation that is close to its customers and is not afraid to release new products. Just like Apple and Microsoft, which have together amassed USD 400bn in cash reserves, more than the market capitalisation of ExxonMobil or Samsung.

Encouraging creativity leads to risk-taking and readiness to accept failure. Start-ups apply lean techniques: they try, lose, learn and start anew, going through a continuous process of experimentation and learning. One of the things such process entails is a bigger R&D budget. A 25% cut to R&D spending implemented by the 3M Company at the beginning of this century caused the share of its innovative products in total sales dwindle to 14%[30, 31]. This resulted in revenue stagnation – as sales grew slower than the overall market, 3M was losing market share to competitors.

In 2007, the company's management decided to divest the pharmaceutical business for about USD 2.1bn in order to raise R&D spending from 2% to 4% of revenue[32]. As a result, the company derives 30% of its revenue from new products developed over the last five years[33]. Its stock price soared from USD 73 in 2007 to USD 200 in 2018, which clearly demonstrates that investors appreciate 3M's innovative approach and long-term thinking. In 1997, Walmart closed over 60 of its Bud's discount stores because they generated insufficient revenue of USD 200m per year, representing 0.2% of the company's total revenue (USD 108bn in 1997). The lessons learnt helped Walmart successfully deploy a new smaller retail format (Walmart Neighborhood), streamline logistics and enhance the range of sold goods. Today, the company generates over USD 500bn in revenue, four times the 1997 figure.

During his first days in office as Ford CEO, Alan Mulally, whom we have mentioned before, introduced new management principles focused primarily on value-based management and human capital. 'People first', 'Everyone is included', 'Respect, listen, help, and appreciate each other' are some of the principles implemented by Mulally, which helped him unite the team and go ahead with ideas that were not popular with shareholders[34].

According to the Gartner research agency, over 50% of global corporations will have agility embedded in their corporate DNA by 2021, both in terms of organisational structures and their R&D, innovation, production and sales processes.

29 Haier, *Successes,* www.haier.net/en/research_development/successfulCases/ [September 10th 2018].

30 Entrepreneur, *Why your R&D budget should be the last place you cut,* www.entrepreneur.com/article/313491 [September 11th 2018].

31 Carey D., Dumaine B., Useem M., Zemmel R., Go long…, op. cit.

32 Leaderonomics, *Lessons from 3M: why investing in R&D is your ticket to success*, leaderonomics.com/business/lessons-3minvesting-ticket-success [September 11th 2018].

33 Carey D., Dumaine B., Useem M., Zemmel R., Go long…, op. cit.

34 Ibidem.

Chapter II
Revolutionary change in the approach to raw materials: *do more with less*

The world economy is at a stage where further evolutionary changes in economic models are no longer sufficient.

Avoid the trap of overexploitation

The pace and scale of the shift, dubbed by publicists the fourth industrial revolution, have particularly strong implications for entities operating in traditional sectors of the economy, with a history of evolutionary changes happening over many years or even decades. Economic volatility is a major challenge today, especially for businesses whose manufacturing and sales models are based on physical products.

Therefore it has become vital to build long-term strategies for raw materials, particularly to companies whose profitability depends on the prices and availability of essential feedstocks as well as on costs of emissions and waste disposal. Having a sustainability strategy in place brings the biggest benefits to those companies that rely on raw materials as a mainstay of their operations[35].

In an extensive sustainability survey conducted by McKinsey & Company in 2017, a shift in approach to raw materials was identified as one of the most pressing challenges facing business[36]. It is imperative to optimise resource use in today's reality of extensive exploitation of natural resources and inevitable increases in raw material prices and in emissions and waste disposal costs. But how have raw materials become a key sustainable development theme? Until now, in the economy dominated by linear production models, there was no need to radically change the approach to raw material strategies. This is best illustrated by the post-war economy of Western Europe, fuelled by ever-growing demand and unrestricted access to cheap energy and raw materials, which, by the way, finds its clearest reflection in traditional production models, as they take no account of any barriers in access to resources and materials. However, times have changed. The world economy is at a stage where further evolutionary changes in economic models are no longer sufficient.

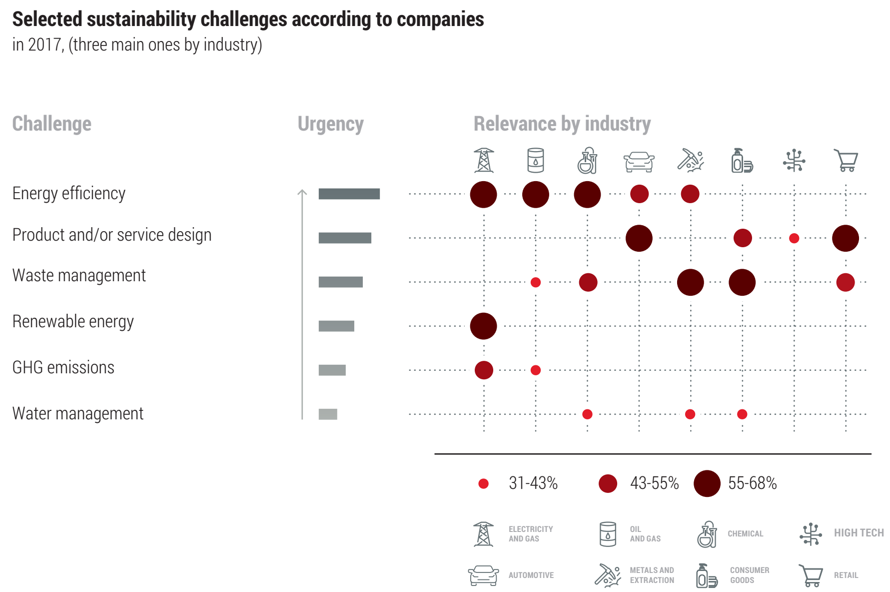
Total consumption of biomass, fossil fuels, non-metallic minerals and metal ores has more than tripled over the last 50 years since 1970, driven primarily by sharp demographic growth, leading to an almost twofold increase in the world's population. Material consumption has been concurrently driven by a rise of the global middle class, reflected in consumer spending growth and changing consumption patterns, e.g. with regard to packaging and inefficient waste management.

The sharp population growth and changing consumer patterns coupled with limited

35 D. Kiron et al., *Corporate sustainability at a crossroads. Progress toward our common future in uncertain times. Summary findings from the sustainability. Global executive studies, 2009–2016,* "MIT Sloan Management Review", May 2017.

36 McKinsey & Company, *The business of sustainability: McKinsey Global Survey results,* 2017 (and earlier editions).

Figure 7. Raw material strategies are key to sustainable development of businesses



Source: McKinsey & Company

resources are already turning the seemingly remote environmental risks into tangible challenges facing the global economy[37]. The consumption rates for vital natural resources, including air, water, rare earth elements and fossil fuels, have recently become a real economic challenge.

Prepare for raw material bottlenecks

In August 2018, HSBC issued a warning to investors about the ramifications of resource overexploitation. Citing Global Footprint Network's calculations, one the world's largest investment banks noted that seven months into 2018 the global economy had already consumed natural resources that the earth would take 12 months to replenish (in other words, in 2018 humans would use 70% more resources than the earth is able to renew in a year).

HSBC added that many companies were poorly prepared for the progressing climate change and that they were inefficient in resource use[38]. This powerful warning to investors signifies that, contrary to popular belief, new strategies for managing raw materials should not be treated as mere PR or CSR stunts. Rather, they are dictated by the need to brace for uncertain times and look for business opportunities in an ever-changing world, where prices and availability of raw materials are becoming a daily challenge across industries. Therefore, raw material strategies building on the spirit of 'doing more with less' are receiving growing support from investors. Environmental challenges apart, investors' concerns about sustained development are not limited to the rising costs of raw materials, emissions and environmental charges. They also have to do with customers and regulators expecting companies to withdraw from projects involving unethical use of natural resources. A clear example of this shift in the approach of large investors are proprietary indicators long published by Bloomberg, Thomson Reuters and others to rate companies' performance across environmental, social responsibility and corporate governance aspects (ESG rating)[38].

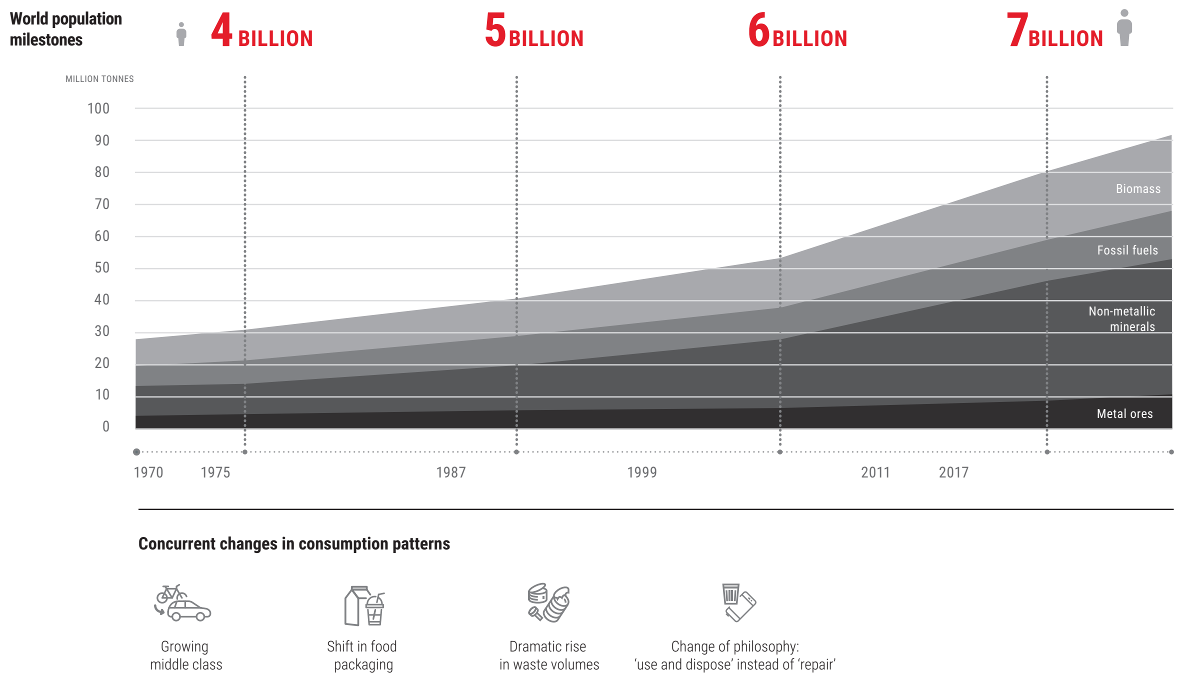
Growing exposure of energy, fuel, commodity producing and transport companies to climate-related risks is an increasing concern for financial institutions, which press for regular reporting on the progress in mitigating such exposure as a condition for further provision of funding. On the other

37 It is worth noting that much publicised reports on the various risks associated with overexploitation of natural resources were published as early as the 1970s and 1980s. See, for instance, the Club of Rome's 1972 report *The Limits to Growth.*

38 T. Nace, *England's HSBC Issues Stark Warning: Earth Is Running Out Of Resources To Sustain Life*, "Forbes", 13.08.2018, *www.forbes.com/sites/trevornace/2018/08/13/englands-hsbc-issues-stark-warning-earth-is-running-out-of-resources-to-sustain-life/#7ade918ebeab* [August 13th 2018].

39 In April 2018, HSBC announced that it would no longer invest in new coal-fired power generation projects or any further offshore oil projects in the Arctic. Besides reputational gains, the decision followed from the bank's intention to avoid the stranded asset trap. In 2015, HSBC wrote about it in its famous report *Stranded assets: what next,* in which it warned investors of committing long-term funding to fossil fuel projects.

Figure 8. Changing consumption patterns and growing populations are driving a sharp increase in demand for raw materials

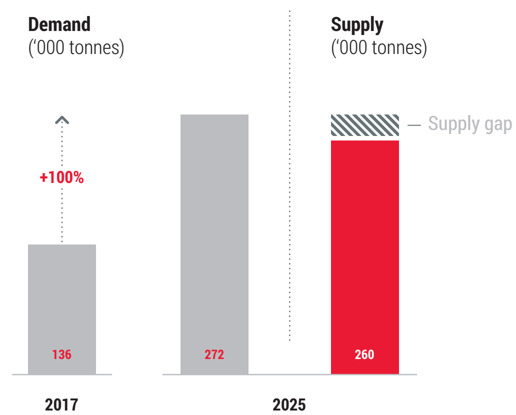


Source: In-house analysis based on UN Environment, World Bank, McKinsey & Company

Cobalt: supply constraints may hamper advancement of electric mobility

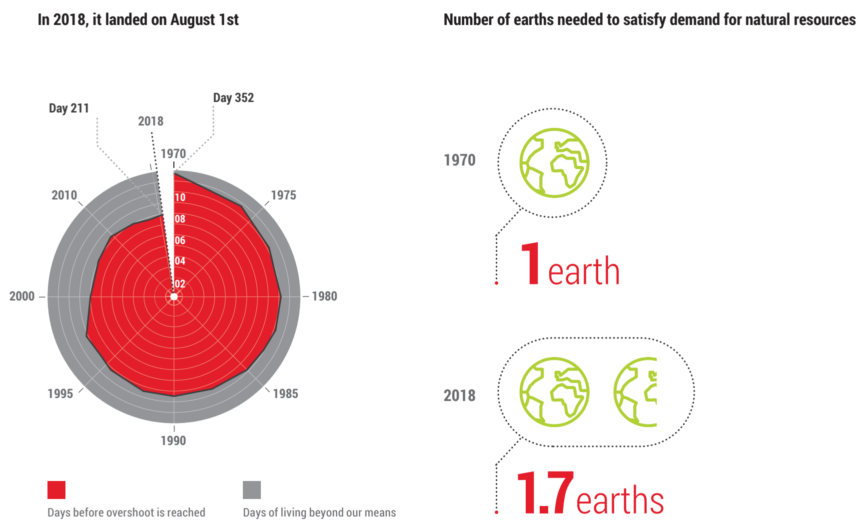
The price of cobalt, a metal used to make lithium-ion batteries, has more than tripled over the past two years. Its soaring prices are led by a dramatic rise in cobalt demand from the car battery making and other industries. In view of forecasts predicting continued rapid growth in demand for that metal (by 100% over the eight years from 2017), producers are already worried about supply (the more so because a whopping 60% of the world's cobalt is mined in the politically unstable Democratic Republic of Congo).

Figure 9. A step increase in cobalt demand is creating the risk of shortages of the critical raw material for energy storage



Source: McKinsey & Company

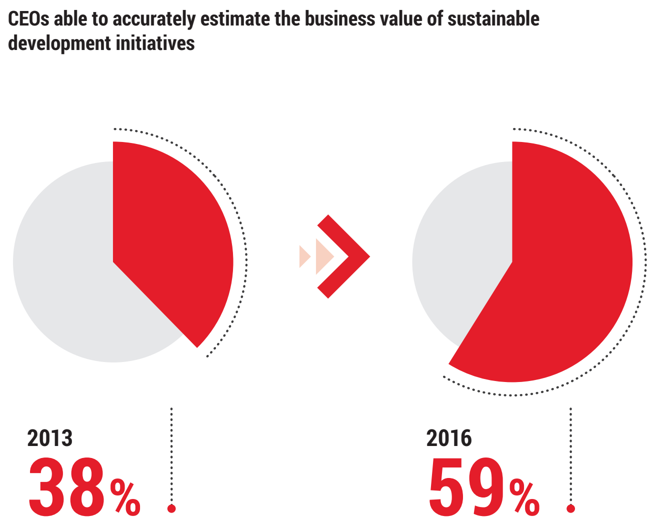
Figure 10. The Earth Overshoot Day falls earlier with each passing year



Source: Global Footprint Network

hand, what companies exposed to such risks need, apart from compelling exit strategies, is more money to support the transition, and more time, because any adjustment takes time. Relying solely on reported performance metrics in assessing corporate strategies creates a temptation to greenwash, i.e. raise funds for investments in 'green companies' and actually apply them to finance traditional assets exposed to climate-related risks.

Figure 11. Sustainability is increasingly a driver of business value



Source: Accenture

Get ready for higher costs in linear production models

It is no coincidence that the number of CEOs of large companies who can see that commitment to sustainability is translating into business value growth has almost doubled recently. In a survey conducted by Accenture for the UN Global Compact in 2013, 38% of CEOs said that their company was able to quantify the business value of sustainability initiatives. Only three years on, 59% declared the same[40].

This clearly shows that continuing with the traditional linear economy, into which no sustainability vision is embedded, is fraught with risks in the long run and entails higher real costs of raising finance. The traditional take-make-dispose linear economic model is not only bad for the environment but also increasingly expensive.

Task Force on Climate-related Financial Disclosures

The upstream sector shares the opinion that oil reserves are sufficient to satisfy future demand at reasonable prices in the long term. This, however, will require exploration for and launch of production from yet-to-find (YTF) fields. They are needed because existing sources are being depleted at a rate of approximately 2.5–3.0 million barrels per day – such volumes must be produced to keep demand levels stable. Although today the oil sector appears to believe that demand is set to plateau out, such belief is not shared by the financial sector, which provides funding for upstream projects.

The seed of uncertainty was planted in 2015, when the price of oil fell and it was clear that it would not rebound soon. It was at that time that the end (of growth) of the demand for oil and the prospects of stable low prices were predicted to materialise. The financial sector began to show signs of worry since oil prices serve as the basis for valuation of oil companies and many financial assets. The first concerns were voiced by Mark Carney, Governor of the Bank of England, who at a meeting of Lloyd's insurance and reinsurance companies held on September 29th 2015 in London drew attention to the risk to long-term financial stability posed by impairment of the energy sector's assets due to climate change.

Afterwards, as Chairman of the Financial Stability Board, an international body that monitors and makes recommendations about the global financial system, Mark Carney announced, on December 4th 2015 in Paris, that the Task Force on Climate-related Financial Disclosures (TCFD) would be established with Michael R. Bloomberg as its Chair.

In June 2017, the TCFD issued recommendations for disclosing exposure to climate-related risks, which have in fact become reporting standards for companies with revenues in excess of USD 1bn. In December 2017, they were adopted by 230 organisations, including 150 financial institutions with assets worth more than USD 80tn, many major energy companies, governments of European countries, and the London Stock Exchange. According to the TCFD, the energy sector is exposed to climate-related risks due to shifts in demand for fossil fuels, production and application technologies, as well as emission reductions and water availability.

Think about access to 'good' raw materials

Long-term raw material strategies are underpinned by a drive to avoid current (and future) costs by switching from traditional linear production models to a circular system, in which consumption of raw materials can be significantly reduced.

One way of adapting the raw material supply chain to accommodate a company's growing demand is to invest in its own sources. By developing their own sources of raw materials, companies gain security of supply, increased control over the future cost of materials and extended value chain (with an added benefit of improved margins). On the other hand, own sources of raw materials in the 'do more with less' spirit also ensure greater control over their technical quality (e.g. having its own tree plantations, a company has better control over the properties of wood).

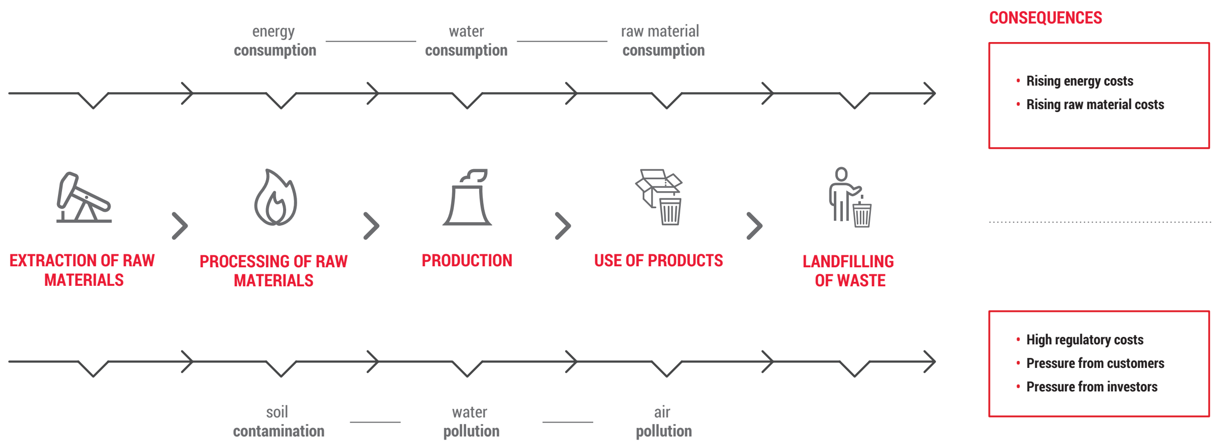
In 2014, IKEA, the world's largest manufacturer of home furniture, announced plans to almost double its sales over the next six years (from EUR 28.5bn to EUR 50bn in 2020). A key element of that plan was the new People & Planet Positive strategy (adopted by the company two years earlier to frame its sustainable growth ambitions), which led to a review of its entire value chain – from supply of raw materials to final use of products – in order to better understand deficiencies in the existing sales models[41]. The furniture maker and retailer decided to take steps to gain greater control over its key production input, i.e. wood (at that time, it used about 530 million m^3 of wood annually, which corresponded to 1% or so of its global consumption).

It is estimated that wood prices will continue to rise substantially in the near future,

40 A Accenture, *Agenda 2030: A Window of Opportunity, 2016, www.accenture.com/us-en/insight-un-global-compact-ceo-study.*

41 A notable thing is, however, that IKEA adopted its first Environmental Action Plan back in 1990.

Figure 12. Sticking to linear production models is becoming an increasing burden on businesses



Source: In-house analysis

driven mainly by the global demographic growth (and a resulting increase in demand for wood from traditional industries) combined with growing use of biomass for power generation.

Therefore, in 2015 IKEA announced that – with a view to delivering its ambitious sales growth plans – it would purchase 33,000 hectares of forest in Romania, thus launching a new business area, namely the production of its key raw material. When less than three years later, in early 2018, IKEA announced that it would buy its first forest in the United States (10,000 hectares in Alabama), it already had more than 100,000 hectares across Europe (mainly in Romania, the Baltic States, and Poland). By investing in forests on further markets where its manufacturing and sales are based, IKEA expects to secure long-term access to timber at affordable prices.

Extension of the value chain in what is IKEA's key raw material and investment in its own, reliable sources of wood are also the company's response to the need to manage its reputational risk more effectively given customers' expectations regarding sustainable development. IKEA has also declared that, by 2020, 100% of its wood purchases will be FCS-certified.

In response to the rising wood prices and their further anticipated increases, the company seeks to use wood more efficiently and reduce waste by optimising product design, improving its manufacturing processes and looking for new applications for materials. Together with its designers, IKEA works out new uses for materials which have so far been discarded as waste.

Recently, the company has introduced a line of chipboard products coated with a thin 3 mm layer of solid wood (e.g. Skogsa worktops or Mockelby tables) priced similarly as full value wood products. Such concrete measures geared towards innovative saving – given the large scale of IKEA's manufacturing operations – deliver real efficiency gains in the use of resources and reduced production costs.

Take advantage of changing consumption patterns

A holistic approach to the life cycle of products – underlying new raw material strategies – requires that special attention be paid to recycling and waste.

The challenge related to waste may be regarded as that related to raw materials, only in reverse. Looking at this challenge from the purely business perspective (environmental issues apart), it is not difficult to see that waste accounts for a measurable cost of a product, does not generate any value added for consumers, and is increasing becoming a factor driving them away and weighing down on sales.

In January 2018, Iceland Foods, a UK retailer, was the first large retail chain to announce

The ‘use instead of own’ social megatrend, already present in mobility (*as car sharing or ride hailing*), can be extended to many other durable goods purchased by households.

For example:

- a washing machine is designed to make it 95% reusable,
- it is not sold but lent to a consumer,
- it is repaired by replacing any worn components,
- when a new model is marketed, the old machine is collected from the consumer and a new one is delivered for a price reduced by the value of the recovered materials.

that it would entirely abandon plastic packaging for all its own-brand products by 2023 and replace it with fully recyclable paper trays. Iceland Foods had previously removed plastic disposable straws from its own label range. The company explained that its decision had been prompted by growing pressure from customers, who attach more and more importance to environmental issues, and thanks to the Internet and social networking sites, also to the environment in which other people live. As a result, they increasingly expect corporations to generate added value at every stage of the production chain – for customers, suppliers, employees and the environment. And customer expectations are a material factor behind inclusion of long-term sustainability into business strategies[42].

Iceland Foods’ decision to eliminate plastic packaging was preceded by a survey conducted on a sample of 5,000 respondents. It revealed that 80% of customers were for complete abandonment of plastic. When announcing the decision, Richard Walker, the retailer’s MD, said that “there really is no excuse any more for excessive packaging that creates needless waste and damages our environment”[43], and he also declared that his company would offer financial support to the promotion of paper recycling.

The findings of the survey cited by Iceland Foods when deciding to go ‘plastic-free’ are consistent with those of a major study commissioned by Morgan Stanley to probe the general support for giving up plastic packaging, but also its positive effect on customers’ buying decisions. High potential for firms to actually profit from sustainability has been confirmed by a study published by MIT Sloan Management Review, in which more than 40% of global CEOs admitted that customers were more willing to buy sustainable products and services.

‘Good’ products, i.e. products made with sustainable development in mind, are not only more popular as buying choices. Customers are also willing to pay more for them, which in turn boosts revenues. Sustainable sales projects are an opportunity to improve sales and profits through green marketing.

Exploit the go green trend

In 2016, Adidas, having partnered with Parley for the Oceans, an organisation promoting environmental protection of the oceans, launched its first recycled ocean plastic shoes branded as UltraBoots Parley. It was a limited edition of 7,000 pairs. According to Adidas, it takes 11 plastic bottles to make one pair of Parley shoes. Supported by an effective campaign, the ‘eco’ shoes soon became a great marketing and sales success. Today, shoes of the first limited line (initially sold for EUR 200) are the most expensive sports footwear on the market (selling for up to several thousand dollars a pair), and sales of shoes made from recycled plastic bottles are growing at unheard-of rates. In 2017, i.e. one year after they were first introduced on the market, Adidas had already sold more than 1 million pairs. In 2018, the company expects to sell another 5 million pairs, and in 2019 – 11 million. Today, i.e. two years after the launch of the first model, the company offers more than 100 products made from recycled plastic. While this may not seem much on the global scale, the very sales growth momentum is impressive. And there is one more important thing.

Shoes made from plastic bottles have become a potent symbol, as the company managed to attract customer attention to the new line. The success of Parley sales encouraged Adidas to announce its new long-term development strategy focused on reducing the use of virgin raw materials. Its key point is to stop using virgin plastic altogether by 2024. To accomplish that, the company will have to completely rearrange its global manufacturing chain, as today polyester represents 50% of all material used in the production of sports equipment and clothing sold by Adidas.

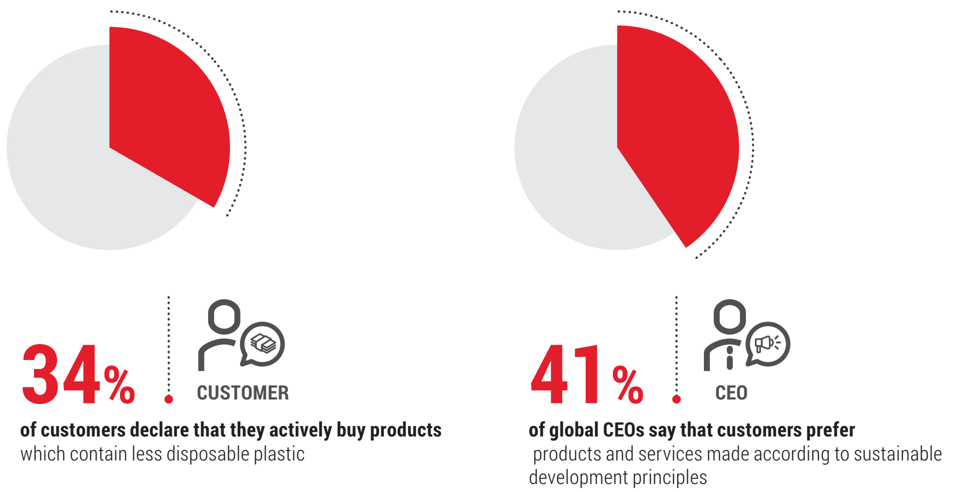
Experts estimate that recycled polyester is still about 10–20% more expensive than when it is made with traditional methods. In this context, despite the great marketing success of Parley shoes, it is very clear that the new raw material strategy should be viewed as a long-term project[44].

42 A survey carried out by McKinsey & Company in 2017 shows that customer expectations are the third most important driver for managers to take a sustainable development approach. Moreover, they have been gaining prominence in recent years (2012 – 20%, 2014 – 19%, 2017 – 24%). *Sustainability’s deepening imprint,* 2017, p. 2.

43 *Iceland supermarket pledges to go ‘plastic-free’*, “The Telegraph”, 16.01.2018, *https://www.telegraph.co.uk/news/2018/01/16/iceland-pledges-go-plastic-free/* [September 10th 2018].

44 Despite a temporary increase in the cost of recycling bottles, the price gap is expected to close in the coming years, as many companies, forced by customers and investors, will switch to using recycled plastic in their manufacturing processes. This, in turn, will contribute to a capacity increase and economies of scale leading to a reduction of recycled plastic prices.

Figure 13. Customers and CEOs alike are aware of the benefits of implementing sustainable development models



Source: AlphaWise, Morgan Stanley Research, MIT Sloan Management Review

The example of Adidas shows that the implementation of raw material strategies is a long-haul effort. A company cannot switch over to new methods and operational habits during a single strategic cycle. Eric Liedtke, the head of Adidas' global brands, argues that because of the annual production scale such shift must be planned well in advance and its financial costs spread over the years: "we have to make sure we take right-sized bites so that we can maintain our current margin structure [...]. We can absorb some costs every year, but we could not absorb it all in one year [...]. With those kind of [production] volumes, we cannot make the transition overnight"[45].

The 'do more with less' innovative approach to resource saving requires reflection, a new vision for raw material supplies and bold (often costly) investments to completely reshape the value chain.

In the world of fluid reality, rising raw material prices and growing customer expectations, it is often necessary to take radical action to build resilience to inevitable shocks and turbulence that lie ahead.

45 O. Storbeck, *Adidas vows to use only recycled plastics by 2024*, "Financial Times", 15.07.2018, *www.ft.com/content/73ca70d8-84e1-11e8-96dd-fa565ec55929* [September 10th 2018].

Chapter III
Agile organisations built around talent

"Ideas come from people. Therefore, people are more important than ideas."

Ed Catmull, Pixar

In order to be able to withstand shocks, an organisation must be flexible – it must quickly respond to change and have a long-term action plan in place to serve as a compass helping it stay on the strategic course amid external turbulence. This is best exemplified by numerous start-up success stories, but not only them. Large companies can create a right number of ideas and remodel their organisations with the aim of putting those ideas into practice.

The European and global economies are on the verge of a tectonic shift towards renewable raw materials and energy. No chemical or energy company can escape the shock. Products of the sustainable economy will be 'regenerative by design', that is programmed for scalability and recyclability at the time of production, to reach new consumers in developing countries. Without redesigning products and entire supply chains, we will not be able to move away from a linear economy that generates dump sites to a circular one that closes the materials and energy loop.

The revolution in energy and raw material flows will ultimately drive a change in the corporate culture and approach to design – not only in terms of work management but also new business models. The author of the acclaimed book 'Doughnut Economics' points out that sustainability is moving between the ring of basic human needs and the ring of environmental limitations, which form a 'doughnut' that all those who design sustainable business model must fit into.

Grow through budding

The example of Enel X demonstrates that even the conservative energy industry is capable of opening up to sustainable development. A challenge facing each capital-intensive industry is its expectation of strong and predictable returns on large-scale investments. A separate profit and loss account for innovative, long-term projects would help avoid the trap of excessive IRR and NPV targets that business-as-usual projects are shackled by, thus easing the tension between new and existing business lines. Enel X was founded in 2017 as a member of the Italian energy group Enel, but operating autonomously with an agile mindset. The company's objective is to develop a portfolio of new projects based on breakthrough technologies, such as smart city, distributed generation, green energy, electric mobility, and shared mobility. In addition to a separate budget and a licence to experiment, the company has its own innovation centre with over 1,000 staff working in similar conditions as those provided by high-tech research centres in Silicon Valley.

In line with the principle of antifragility, a term coined by American economist and philosopher Nassim Nicholas Taleb, such model of a strong business foundation that can support the financing of a portfolio of many smaller, experimental projects is very well suited to a digital and globalised world where the winner takes (almost) all. The scaling of digital robots is startlingly easy today, which means that only one entity has emerged as the winner. This being the case, broad-based experimentation on lesser budgets brings

Figure 14. The sustainability doughnut illustrates what part of human needs can be met without endangering the environment

Source: In-house analysis based on www.kateraworth.com

better results than a portfolio of mediocre projects that stand no chance of breaking above the average.

Growth through budding does not have to take place within an organisation. Companies operating in the physical world can also draw on the experience gained from IT projects and provide an open-source collaboration platforms (as evidenced by the USD 34bn acquisition of Linux provider Red Hat by IBM). This is how some start-ups operate, like OPEN MOTORS, which offers an open-source certified modular electric vehicle platform with underlying R&D documentation as a basis for others to create their own EV prototypes. Enabling universal access, the project helps firms seeking to develop their own vehicle design to achieve massive savings on R&D costs. The price per platform is USD 12,000 (battery not included) or USD 4,000 for a batch of 500 pieces. Digital CAD drawings are available for free. The modular car design increases the range of options to repurpose the platform, reducing raw material waste and facilitating economies of scale, so far available only to big manufacturing conglomerates. Modularity will not make the advantage of scale disappear, but it can make it easier to reach the minimum scale. The initiative could be dismissed as not entirely serious were it not for the original OPEN MOTORS project being followed by reports of Renault's plans to make its Twizy commercial vehicle platform accessible to the public[46]. Sound sales in a similar phone design field were reported by the manufacturer of Fairphone, a modular handset in which parts can be replaced (the company thus making

46 Open Motors, *The world's first open-source mass market vehicle platform, www.openmotors.co/renaultpomsignup/* [September 10th 2018].

up for the extended life cycle of the device), and the rare raw materials used to make it being reliably sourced from territories free of armed conflict[47].

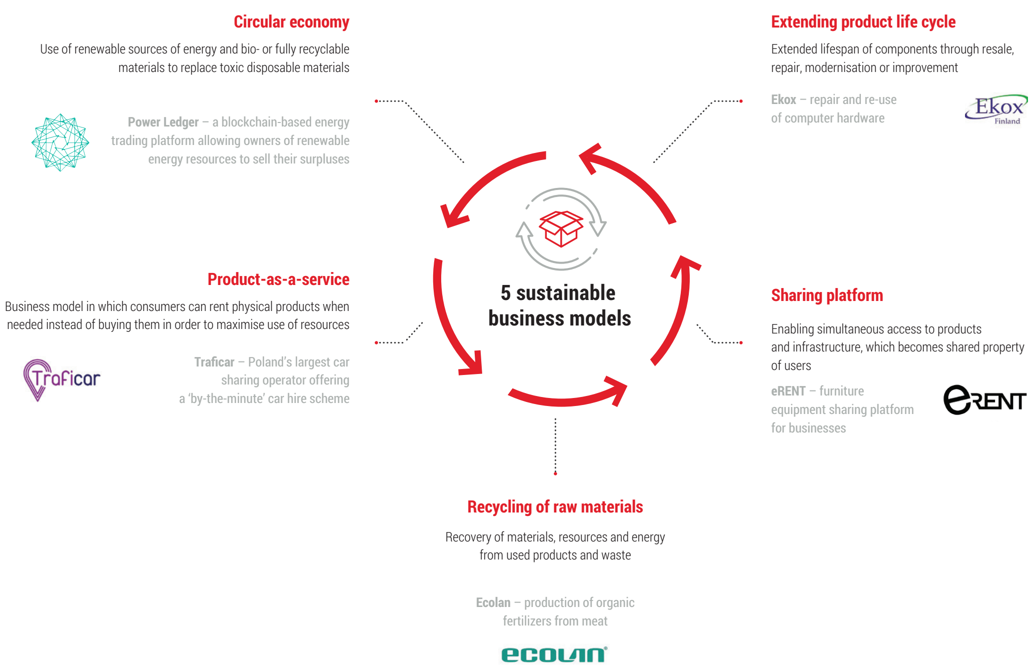
For designers of new business models, a circular economy implies the necessity to satisfy needs with a minimum amount of materials, both bio-regenerative and man-made. Systemic thinking about meeting needs with minimal resources may seem like idealism at the start-up level, but in the case of global market players it is already a harsh necessity. The world's population is growing at an explosive rate and so is demand for raw materials. Consumers live longer, taking on a longer perspective and developing an interest in the environment. The new game for the global market involves reducing material consumption and waste generation, because this is the only way to meet mass needs.

For these reasons, designers use five sustainable business models: extending the life cycle of products, creating service delivery platforms, reclaiming raw materials, offering products as services, and using renewable materials. To enhance a company's resilience to demographic transitions and stabilise its customer base, subscription and loyalty solutions are also developed.

In order to capture these five business models, designers often rely on design thinking methods, which focus on precise identification of needs, usually by observing customers' behaviour within specific contexts. This automatically leads to considering the impact that a product has on the user's environment. In this way, more environmentally and socially friendly solutions are created.

That is why chairs manufactured by IKEA are becoming lighter and the company itself gets involved in forest management. For the same reason, GE announced a crowdsourcing competition for 3D-printed aircraft engine components, and Airbus uses algorithmic design to create, through computer modelling, bionic cabin partitions to reduce the weight of an aircraft interior, so the weight of seats would go down 45% and the amount of raw material used would fall by as much as 95%, to ultimately reduce the carbon footprint caused by lifting such a large object into the air[48]. Referring to what F.G. Junger once said, it must be noted that technological advances help tackle poverty, which – from a sustainable economy perspective – follows from shortage of raw materials. To ensure that consequences of 'raw material poverty' are borne by all relatively fairly, the ever simpler products must retain their basic functionalities. This is in line with the frugal design trend, which focuses on simple functions

Figure 15. There are five sustainable business models already used by enterprises



Source: based on World Business Council for Sustainable Development, CEO Guide to the Circular Economy, www.wbcsd.org [October 25th 2018]

47 Fairphone, *A better phone is a phone made better, www.fairphone.com/en/our-goals/?ref=header* [September 10th 2018].

48 Autodesk, *Airbus. Reimagining the future of air travel, www.autodesk.com/customer-stories/airbus* [September 10th 2018].

that can be scaled globally thanks to low material requirement and thus can generate extraordinary profits from placing a company at the centre of a design network[49].

These design strategies may be an enterprise's response to economic turbulence only if the business has already developed deep human competencies. Although Google's first principle of innovation has it that innovation comes from anywhere, its practice shows that innovations are not that common – a creative element must first be present in a company to be ultimately incorporated into a product. For this to happen, appropriate infrastructure is needed.

Foster talent and teamwork

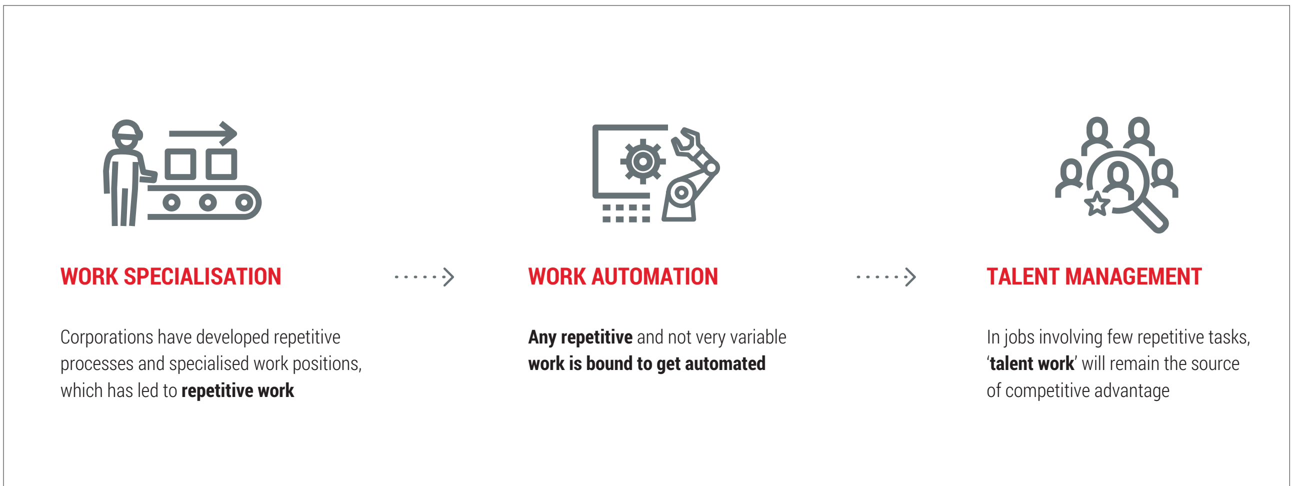
It takes courage, proper organisation and talented personnel championing the idea of change to be a visionary. However, the use of human potential is not about imposing more tasks on the same organisation, but about managing talent and introducing mechanisms of 'agile' work. Talented employees have extensive competencies that reduce the risk of collision with an iceberg, while agile methods make for a rapid response system within the corporate fabric. As a result, the company will not 'crash' if such collision does occur.

In 2019, it will be 20 years since Steve Jobs changed the layout of the Pixar office from a one reflecting the team hierarchy to a shared space supporting the cross-pollination of ideas, thus creating one of the most innovative film studios in the world[50]. This has changed the way talents work together and caused old ways of thinking to be replaced by more creative communication. Thanks to its redesigned organisational culture, Pixar started to fully capitalise on opportunities offered by the digital revolution, releasing its animated box-office hits such as 'Toy Story' and 'The Incredibles.' This is what 'antifragile' is all about. As emphasised by N.N. Taleb in his book, antifragile organisations merit that name if they are not only immune to changes in the environment (which is simply neutral), but can also gain from disorder to build up business. This is what Pixar did.

Firms seeking to develop a shock resilient organisational fabric need to manage talents who arrange their own work positions. Why? Ed Catmull of Pixar put it this way: "Smart people are more important than good ideas"[51]. In the logic of a traditional corporation, a candidate is selected to fit the position. A very good example of this approach are multi-stage recruitment processes, which aim to maximise the probability that the selected candidate would best meet the requirements. This no longer makes sense when the business environment is in a state of flux and talents are rare – it is better to first find a talent and then adapt the position accordingly. In a rapidly changing economy, it is necessary to delegate more responsibility to employees, but because of the pace of the change, the limits of such responsibility tend to get blurred. It is more difficult to assign candidates to a not fully formatted position, as each employee has different capabilities.

In the case of talent management, it is a job position that is adapted to the employee profile, including his or her strengths and skills.

Figure 16. Talent management is becoming a key HR challenge as work positions get specialised and automated



Source: In-house analysis

49 N. Radjou, J. Prabhu, *What frugal innovators do, "Harvard Business Review"*, December 2014, *hbr.org/2014/12/what-frugal-innovators-do* [September 10th 2018].

50 AIB, *Fostering teamwork: how four leading companies get it right*, October 2017, *www.aib.edu.au/blog/teamwork/fostering-teamwork/* [September 10th 2018].

51 E. Catmull, *How Pixar fosters collective creativity,* "Harvard Business Review", September 2008, *www.hbr.org/2008/09/how-pixar-fosters-collective-creativity* [September 10th 2018].

Direct instead of controlling

An organisation adapted to specific employees is difficult to control in a standardised way. Talent management can be explained by an analogy with football. It shows that talent, being the rarest resource competed for by global companies, can be controlled only to a limited extent. Rather, it should be directed. Leading football clubs (such as Manchester City or Juventus Turin) and their coaches (Pep Guardiola and Massimiliano Allegri) do not build rigid playing systems for the formation on the pitch – the number of defenders or strikers. Instead, they focus more on each player's role in the team, situational play, and how the players use their talents. The coaches build their systems based on strong, complementary personalities. Each player's capabilities and style in a given position differ, even in comparison with another player in nominally the same position. On the other hand, they must be complementary to those of the other players. Similarly, a position in a talent-oriented organisation is shaped by the person holding it. How the position develops will depend on that person's skills. As in football, working with talents is done as teamwork, in which tasks can be spontaneously coordinated between positions with somewhat blurred scopes of responsibilities, previously inscribed into the corporate structure and a strict division of roles. The leading companies have realised that. Several years ago, PepsiCo based its annual bonus not only on individual performance but also on teamwork and how well each employee supported colleagues in their development. In this way, internal competition between employees was reduced, as they focused more on shared objectives rather than pursuing their own goals[52]. Just like football players move from club to club, changing positions from those requiring sheer physical strength to those where tactical acumen is more in order, so most employees today think about and plan their own career paths independently of employers. As in professional sport, there is more money than real talent in the world of start-ups. This is why employers need to recruit talent 'in advance'. According to Glassdoor, a labour market research agency, 35% of hiring decisions in the US and UK in 2018 were made in expectation of employees quitting their jobs[53]. Also in Poland, the acceleration of economic growth after 2015 made many companies realise how important talent management was in the long run. The labour market short on work supply, with the unemployment rate down from 10% in July 2015 to less than 6% in 2018, quickly saw numerous transfers, pay rises, horizontal and vertical promotions as well as a significant inflow of foreign workers to Poland, the first one in decades.

Traditional staff retention tools must be reshaped with talent in mind. In order to bind talent to a company, expert career paths are needed for those responsible for key roles within the organisation. In Talent Wins, McKinsey & Company consultants argue, for instance, that key value creation positions need to be filled with talent empowered to make decisions. These include not only managerial posts within the organisational structure, but also many specialist and support roles that ensure teamwork, a strong organisational culture or reputation to the company[54]. Such an approach means that the company's operations should be arranged differently than its organisational structure or even core processes would imply. It also involves directing the development paths of staff not only to prepare them for promotion up the corporate ladder, but also to build stronger expert paths and support functions.

Experts will stay with the company if their careers are moving in the right direction. Motivation through promotion to managerial roles in a talent-oriented company is not always effective, unless it involves more interesting challenges. It would be like proposing the position of a club manager to a playmaker – although it might seem like a more important job, it is not what sport is all about. Promotion means the necessity to start managing a team, frequently leaving behind any previously gained specialist competencies. Effective companies engage their employees, invest in talent, introduce a lean hierarchy, increase the speed of decision making, improve the transparency of expectations, build leadership skills and treat employees like partners.

Another way to foster a strong relationship with employees is to partially decentralise and devolve the management function. This helps to streamline the decision-making process, enhance employee motivation and attract talent. An excellent case in point is the success story of the Brazilian company Semco and its leader Ricardo Semler in the 1980s[55]. Today Semco has a presence in multiple businesses, although it started off as a manufacturer of shipbuilding components. In addition to its manufacturing business, it also provides a range of specialist services. When Semler took it over from his father back in 1980, the company was teetering on the brink of bankruptcy, but a series of organisational changes transformed it into one of the most efficient businesses in Brazil. The transformation was underpinned by the three values on which Semco is building its future: democracy, profit sharing and free flow of information. One of the biggest reforms embarked on by Semler after he took over at the company's helm was to reorganise its structures towards participatory management. The traditional corporate pyramid was replaced by a new structure based on concentric circles: two operational and one corporate. The corporate layer consists of five people who coordinate work across the organisation. The second layer comprises division leaders and the third – all the other employees. The group also includes independent satellite units, fully empowered to plan, manage and organise their work. The idea behind the system is to reduce reporting

52 S. Dubois, *Internal competition at work: Worth the trouble?,* January 2012, *www.fortune.com/2012/01/25/internal-competition-at-work-worth-the-trouble/* [September 10th 2018].

53 Cision PR Newswire, *Glassdoor Survey finds more employees expected to quit in upcoming year, with salary cited as top reason,* January 2018, *www.prnewswire.com/news-releases/glassdoor-survey-finds-more-employees-expected-to-quit-in-upcoming-year-with-salary-cited-as-top-reason-300580749.html* [September 10th 2018].

54 R. Charan, D. Barton, D. Carey, *Talent wins: the new playbook for putting people first,* Harvard Business Review Press, Boston 2018.

55 R. Semler, *Managing without managers,* "Harvard Business Review", September–October 1989.

lines and ensure that decisions within each unit are made collectively through voting preceded by brainstorming. Interestingly, the company has on some occasions changed its investment direction by a decision of employees despite a contrary opinion of its leadership. The absence of a traditional hierarchy means that pay does not depend on the position held but on added value created by an employee. The sole form of employee control is monthly performance reporting. Apart from that, units are free to organise their work in the way they find optimal. Another important element of Semco's philosophy is profit sharing. Twenty-three per cent of net profit is always divided among units for employees to decide how the money will be applied (e.g. it can be reinvested in projects of their choice). Also, every month all employees receive a key information pack, including financials, relating to the company's operations. With the new management style in place, Semco was able to grow its revenue from USD 4m in 1982 to USD 212m in 2003. In conclusion, a combination of employee involvement in the decision-making process, free flow of information and appropriate financial incentives seems to be a viable method for creating a working environment where people want to work and where they want to be.

Delegating tasks requires trust, but it pays off, creating a sense of belonging among employees and enabling a unique user experience. Decentralised management also helped the Whole Foods chain. The stores were run by managers as separate enterprises, with no established standards for product range or merchandising. As a result, store staff built an offering perfectly tailored to local needs, e.g. original baked goods or bicycle courier service. The sense of having real influence on the store format increased staff commitment, which in turn fed through to financial performance. This is not a universal recipe though, because it is often in the interest of business upscaling to maintain uniform and consistent product standards (as in the case of McDonalds).

Delegating responsibility to employees and teams delivers the twofold benefits of increasing loyalty and innovation, both of which are key to building long-term resilience. But it requires a great deal of effort, vital parts of which are to overcome fear and instil the ability to handle failure in the corporate culture. The ideas for AirBnB, carsharing and e-hailing were all born in the minds of corporate staff members. In the cases of other innovations, corporate risk aversion and inability to implement new ideas forced talented minds to leave cramped meeting rooms and start their own business free of hierarchy, red tape and constraints stemming from investors' short-term expectations.

There are examples of circular economy start-ups building strategies that look far into the future. Can you imagine a corporation that would take seriously a nascent project of floating ocean trash collectors? The case in point is The Ocean Cleanup initiative created by a 21-year-old Dutch entrepreneur Boyan Slat[56]. Its aim is to develop a technology that would remove plastic from the oceans and prevent more from entering. This is to be achieved by means of 600-metre systems consisting of a floater and skirt, which capture and concentrate plastic so it can be collected by ships. The systems will free float on the oceans carried by currents, with no external power supply required[57]. The first such system was launched on September 20th 2018, with the project to be fully implemented in 2020. According to the Ocean Cleanup estimates, the systems will by then be able to remove up to 50% of the Great Pacific Garbage patch. The project has attracted massive public interest and numerous sponsors, including the founder of PayPal Peter Thiel.

Talented people enable companies to adapt in the fast-changing world where know-how is a precious asset. They provide a greater knowledge input and innovation capability. The knowledge embedded in a product works like a cushion in the event of a market shock – a company with profound competence can quite easily remodel this 'tacit knowledge product', creating innovations. To make it in time, it needs appropriate project management methods.

Create an agile organisation

New working methods and practices are needed to develop sustainable business models. Methodologies such as agile management, lean start-up and design thinking focus on working in interdisciplinary teams to quickly arrive at a minimum viable product (MVP) and thus contribute to building resource-efficient solutions. Being experiment-oriented, they also help avoid situations in which resources are wasted on dragging a failed project for too long. Their focus on usefulness, customer feedback and even ethnographic customer insight helps to accurately identify existing needs. Agile is a practice of working with projects in a fast-changing environment that involves systematic iterative development of products in short production cycles by interdisciplinary teams with their own budgets and discretion to select team members, which basically makes them start-ups. A strict division of work expediting the adaptation of products to changing customer expectations contributes to building a resilient organisation. Agile emerged as an alternative to traditional project management methods such as PMBOK and PRINCE, but in practice many of its principles can be integrated into an organisation not by dogmatic observance of the methodology as a whole but by implementing its key elements.

Agile helps an organisation to deliver projects faster by allowing flexibility in technical development, while keeping a tight rein on time and costs. A base plan is built around a 60% delivery target, 80% is expected to be accomplished and 100% is an extraordinary target. This framework makes an organisation less 'fragile' and more resilient to shocks, as it shortens the time it needs to respond to changes in its external environment. According to BCG, the agile methodology is capable of

56 *www.theoceancleanup.com* [September 10th 2018].

57 Business Insider, *Ten 20-letni wynalazca chce oczyścić ocean ze śmieci [This 20-year old inventor wants to clean up the oceans]*, October 2016, *www.businessinsider.com.pl/technologie/zanieczyszczenie-oceanu-i-the-ocean-clean-up/75b81rh* [September 10th 2018].

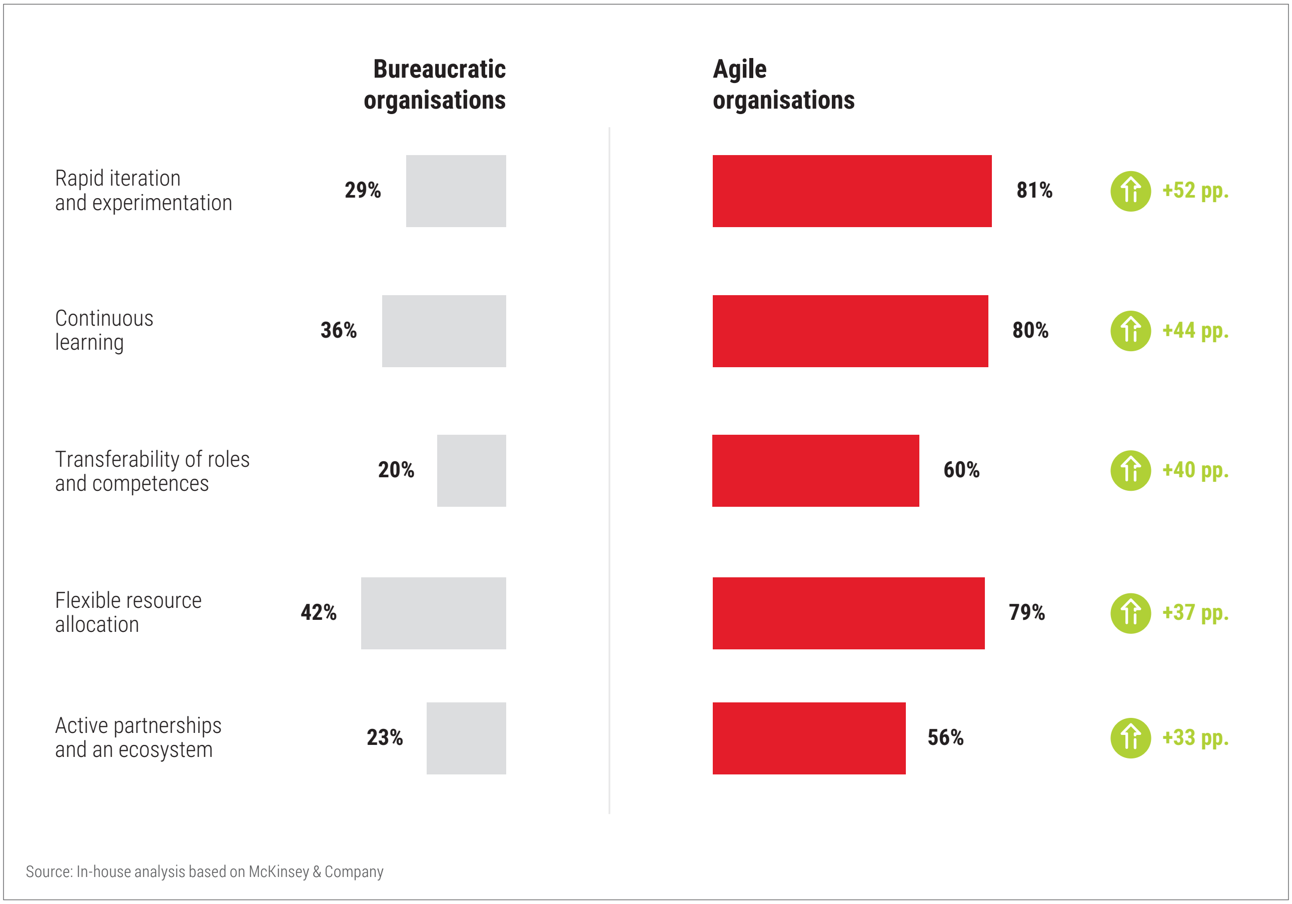
delivering a three-fold improvement in productivity (provided the focus is on essentials and not on fantasies), fewer defects and do-overs, shorter project implementation times and accelerated innovation rates – which goals are truly worth pursuing[58]. Particularly notable are improvements in the time to market, productivity and morale, largely as a result of a shift from routine update and coordination meetings to workshops and customer involvement. BCG cites the example of Schneider Electric, whose CEO Jean Pascal Tricoire said that the company's prevailing practice had been to develop a product over two to three years according to predetermined specifications, but then the company had adopted a different practice of releasing its minimum viable products (MVPs) as early as possible.

In traditional organisations, a corporation's vision of a project is expected to be accomplished in 100%, but this happens at the expense of small, seemingly insignificant delays related to product improvement (usually with no customer interaction involved). They are tolerated in the belief that employees demonstrate capacity gaps and that no objective critical path exists. Indeed, the latter is difficult to define when we are only racing against the clock and the market to introduce an innovation nobody yet knows. The time between 60% and 100% excellence is the time which the most determined and active competitors will use to work with the market, deliberately planning for losses in the initial phase of the product implementation, instead of debating them at length in meeting after meeting with a view to creating a product that would be profitable in its first year.

Leading technology entrepreneurs, such as Amazon boss Jeff Bezos, realise that benefits from a development project may take as long as five to seven years to materialise. Is it better to spend that time fighting shadows on one's own or engage in a series of sparring matches with customers and learn from the experience?

Hence a second advantage of the agile method – learning by doing or, put differently, provoking learning opportunities based on imperfect prototypes, even if they only meet 60% of the functional expectations. The emphasis on iterative learning has a lot in common with

Figure 17. **Agile organisations are more likely to develop sustainably because they are open to experimentation and learning from mistakes**



58 BCG, *Five secrets to scaling up agile, www.bcg.com/publications/2016/five-secrets-to-scaling-up-agile.aspx* [September 10th 2018].

Toyota's corporate philosophy, which is widely popular in Poland, and the carmaker's lean management practice of working relentlessly to reduce waste in time, energy and materials. Past experience with lean management demonstrates that an organisation able to continuously self-improve and respond to every customer wish is better off than a pre-programmed organisation blindly reproducing a set sequence of events. Lean management is widely used by start-ups, creating a blend of methods called 'lean start-up'.

Eric Ries, a start-up guru who sparked the lean start-up movement combining lean practices with experiences of early-stage companies, summarises the concept as follows: "The lean start-up method is not about cost, it is about speed. (…) The only way to win is to learn faster than anyone else. (…) As you consider building your own minimum viable product, let this simple rule suffice: remove any feature, process, or effort that does not contribute directly to the learning you seek"[59].

The most compelling proof that agile is a legitimate management method is that it has spread beyond the confines of IT. The leading industry that has embraced agile is the banking sector. Leading European banks offering consumer services, like ING and Santander, have implemented agile methods, particularly in the fields in fintech and mobile finance, building their product development around the principles of agile teamwork. The transformation of a large, ponderous corporation towards agile management can be illustrated by a metaphor of elephants and greyhounds. In the world of finance, traditional banks are elephants and fintech companies are greyhounds. Nick Jue, CEO of ING Germany, noted: "What we tried to do (in the Netherlands) was train our organisation, the elephant, to be as fast and as flexible as a greyhound. I don't want to be a greyhound. I want to remain an elephant, because I want to keep the power of the elephant. But I also want to be fast and flexible"[60].

The risk is worth taking. Agile, design thinking and lean start-up are foreign genes in a corporation. They cannot be transplanted smoothly, but changing the management style helps to release the creativity of talented personnel, unblock decision-making paths and respond to changes in the external environment, not only the immediate ones, like digitalisation, but also those of a longer-term nature, for instance the transition to circular raw materials and energy management.

59 E. Ries, *The lean startup: how today's entrepreneurs use continuous innovation to create radically successful businesses*, Crown Publishing Group, New York 2011.

60 BCG, *Agile ways of working at ING, www.bcg.com/digital-bcg/agile/ing-agile-transformation.aspx* [September 10th 2018].

Summary

Business models today are dominated by solutions built around three goals: increase sales, reduce expenditures, and comply with regulatory requirements at the lowest cost possible. These business models are facilitated by innovative technologies that allow producers to quickly modify standard products (by adding utility functions) and drive consumer choices through aggressive marketing (by offering more options with the purchase of a new product). The strategy to accelerate product obsolescence entails shorter service lives, as durable products ruin replacement demand. But this trend to stimulate consumption reinforces certain negative externalities. In addition to spurring price increases, rising demand for energy and materials causes an accumulation of emissions and waste, including used products. Coupled with demographic forecasts, this warrants only one conclusion: development based on the linear economy model of take-make-dispose can no longer be continued. Closing the loop is a prerequisite for business sustainability.

For the past few years, circular economy action plans have topped the agendas for sustainable development in a growing number of countries across the European Union and beyond. Social pressures, ever more stringent environmental requirements and increasingly heavy fines for non-compliance are being felt by companies, often making them rethink their strategic development directions. It has simply become economically viable to eliminate or significantly reduce this operating cost category. Companies putting sustainability strategies into practice are forward-looking – instead of merely adapting to existing regulations they strive to build resilience to inescapable regulatory tightening.

In the short term, given the current regulatory landscape, designing new business models to close the raw material/waste loops does not yet look attractive. It still makes more economic sense to pursue a linear model of production and bear any adjustment costs.

But as the strategic planning horizon is extended, the advantages of linear models shrink and turn into permanent losses, to finally become stranded assets.

Looking further ahead, raw material prices and costs of adapting to increasingly strict climate change and environmental standards are almost certain to go up. The world's population is growing exponentially and the earth's resources necessary to meet consumer needs are limited and exhaustible.

There is only one path to follow: design your business so that customer needs can be met with raw materials consumption brought down to a minimum. And this is not only about recycling, although recycling can deliver tangible gains for a business, or about reducing emissions and other manufacturing waste, although such reduction is also extremely important. The vital thing is not to manufacture products that consumers will quickly use, discard and replace with new ones.

Companies strive to reduce waste by designing products for reuse in future production. To that end, they organise their sales and customer relations so that products no longer fit for use (because they have become obsolete or worn out) can be recovered. The benefits are manifold, including reduced procurement volumes, lower regulatory costs of waste disposal, improved efficiency, stronger customer relations, investor satisfaction, and better access to long-term capital. This is strongly encouraged by the sharing megatrend, already seen in mobility, that could be replicated for all durable goods.

In this report, we have analysed companies that have already started building resilience through closed-loop business models, by looking at why and how they are working toward that goal. Below we present our main conclusions.

The companies within our subjectively selected sample have similar planning horizons measured in decades rather than years, which manifest themselves in a vision of growth that serves as a compass to navigate the uncertain waters of technology and regulation.

Research shows that such development path pays off for businesses. Companies that prioritise long-term goals over short-term targets generate almost 50% more in revenue and 80% more in profits than their peers. How do they achieve that?

Firstly, they root out short-termism within the organisation by devising strategies expected to deliver results over a few decades, depending on the industry. They also have concrete operational plans underpinning their long-term vision that are actioned step by step starting today.

Secondly, they effectively rein in the expectations of shareholders, who seek quarterly earnings growth at the expense of building long-term advantage.

Long-term visions are implemented through budding, that is by successively developing small-scale, regenerative-by-design and innovative projects.

In order to create an organisation able to withstand any short-term turbulence and resist temptations, you need talent, i.e. personnel not limited by any rigid rules of the corporate game.

– Such organisations employ talent in key positions within their corporate fabric, which does not necessarily mean they are promoted to managerial roles. What matters, instead, is expert development.
– In order to coordinate the work of such teams, agile project work methods are used, geared towards swift gathering of knowledge and flexible adaptation to a changing landscape.

How to build long-term resilience to shocks from costs of raw materials and regulatory compliance? Solutions proposed by the heads of companies from our examples include:

• adopting a long-term strategy, spanning the next 5, 10, 15 years and beyond;

• watching megatrends, such as those in demography or urbanisation, and their negative impacts on the environment, in order to predict how raw material prices will increase and what an effective regulatory regime should look like;

• taking a look at the business and thinking what adjustment costs will have to be borne and what should be done at the end of the day with stranded assets (which you probably have in your portfolio);

• remembering that financial investors are more flexible than you are – they leave at the first signs of a risk materialising;

• thinking about how to take the company (not the current business, as this will not be possible) from level 0, where you are now, to level 1, where you will be operating within a closed circle of raw materials and waste;

• drawing on human resources available within and outside your company (as visions are created and put into practice by people);

• fostering talent, i.e. having an R&D budget corresponding to the strategic objectives you want to achieve (as a vision without capital will remain just a vision);

• developing fund raising mechanisms, which involves talking them over with investors and shareholders, and testing your ideas on them (as more than one-third of all funds invested all over the world every year is long-term capital);

• not wasting time, as the clock is ticking away.

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