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ARTHUR  LITTLE

PRISM

BIG THINKING,
IMAGINING WHAT
IS COMING NEXT

RETHINK,
REBALANCE,
RESTORE



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CONTENTS

RETHINK, REBALANCE, RESTORE



GROWTH IN A NET ZERO WORLD

8

How can CEOs balance the need to be more sustainable with the priority of driving revenue growth? Does being green prevent you from increasing revenues? Our lead article sets out a framework to achieve green growth based on innovation, customer collaboration, new business models and greater internal alignment.

Hasan Shafi, Eddy Ghanem, Kana Suzuki,
Lucas Pedevilla, Amit Maheshwari,
Stefanus Neil, Amaury Klossa

ACTIVELY SHAPING THE FUTURE – THE NEW IMPERATIVE FOR FINANCIAL SERVICES

24

Despite the growth of sustainability, the majority of financial institutions still take a passive, reactive approach to ESG. The authors explain why it is vital to grasp the opportunities and actively shape a sustainable future if banks are to remain relevant.

Andreas Buelow, Florian Forst, Raffaella Ritter, Georg von Pförtl



WALKING THE TALK ON CORPORATE SUSTAINABILITY

36

Despite some progress on sustainability, new ADL research finds that the majority of companies still have a way to go to embed it within their business. Building on this evidence, this article highlights the key challenges to sustainability and approaches that can be used to overcome them.

Stefano Milanese, Stephano Decadri, Martijn Eikelenboom,
Frederik van Oene



**COVID-19 – FOCUSING
ATTENTION ON THE NEXT
TRANSFORMATION IN
HEALTHCARE**

50

The pandemic has further highlighted the disparities in healthcare access between the developed and developing world. As our fourth article outlines, bridging this gap will bring

benefits to all, improving global healthcare and opening new opportunities and markets for the entire healthcare ecosystem.

Dr. Franziska Thomas, Dr. Ulrica Sehlstedt, Ben van der Schaaf, Dhiraj Joshi, Trung Ghi, Barnik Chitran Maitra, Dr. James Miller, Claudia Nichterlein

**METaverse – THE NEXT DIGITAL
REVOLUTION FOR BUSINESS?**

66

When Facebook changed its name to META in October 2021, the metaverse suddenly appeared in the public consciousness. However, looking beyond the hype, what does it mean for traditional businesses? The authors explain what the metaverse is, the opportunities it could provide, and how companies can be ready for it.



Albert Meige, Michael Papadopoulos, Rick Eagar



**SELLING CUSTOMER OUTCOMES –
A BUSINESS MODEL TRANSFORMED**

80

Organizations are increasingly offering ongoing services to their customers, rather than one-off product sales. While this has unlocked some value, it only goes so far. Moving to guaranteeing outcomes promises to transform customer value and increase revenues. Our final article explains these outcome-based business models and how they can be achieved.

Johan Treutiger, Åsa Ahlgren, Erik Thure, Erik Tengblad

EDITORIAL

DEAR READER

Not so many years ago, the popular idea of a business leader was someone who spent most of their time barking out commands and firing people. Fortunately, this stereotype has now largely disappeared. It's a measure of how far business has come – but also how far it still needs to go – that today we feel it is appropriate to dedicate this issue of Prism to the theme of Rethink, Rebalance and Restore, words that would not be out of place in an advertisement for a wellness retreat.

Don't worry, we're not suggesting that our readers take a couple of weeks out in a monastery in the Himalayas. But we do feel that in today's post-COVID-19, climate-challenged and increasingly uncertain environment, leaders do need to step back and reflect on the future of their business in a more profound way: rethinking their purpose and 'raison d'être', rebalancing priorities and business models to suit changing stakeholder needs, and playing their part in restoring a thriving and sustainable future for society as well as business.

Our first three articles look at different aspects of this. First, how do you go about continuing to grow your business, especially in energy-intensive industrial sectors, while at the same time achieving Net Zero carbon impacts? We propose a framework to assist. Second, we focus on the critically important financial sector, and set out how financial services companies can rebalance their businesses to deliver on their commitments towards better environmental and social governance. And third, we zero in on the endemic challenge faced by businesses today: having made our long-term commitment towards sustainability, how do we actually deliver against our promises? Based on a recent survey, we show how significant the challenges of "walking the talk" are today, and suggest some good practices to accelerate progress.

As well as driving some spectacular healthcare achievements, the pandemic has also highlighted painfully the huge disparities in healthcare access between developed and developing countries. In our next article we analyze the problems and examine what industry and governments need to do to tackle this vital challenge for the future, including some key lessons to be learned from the developing markets themselves that could benefit all of us.

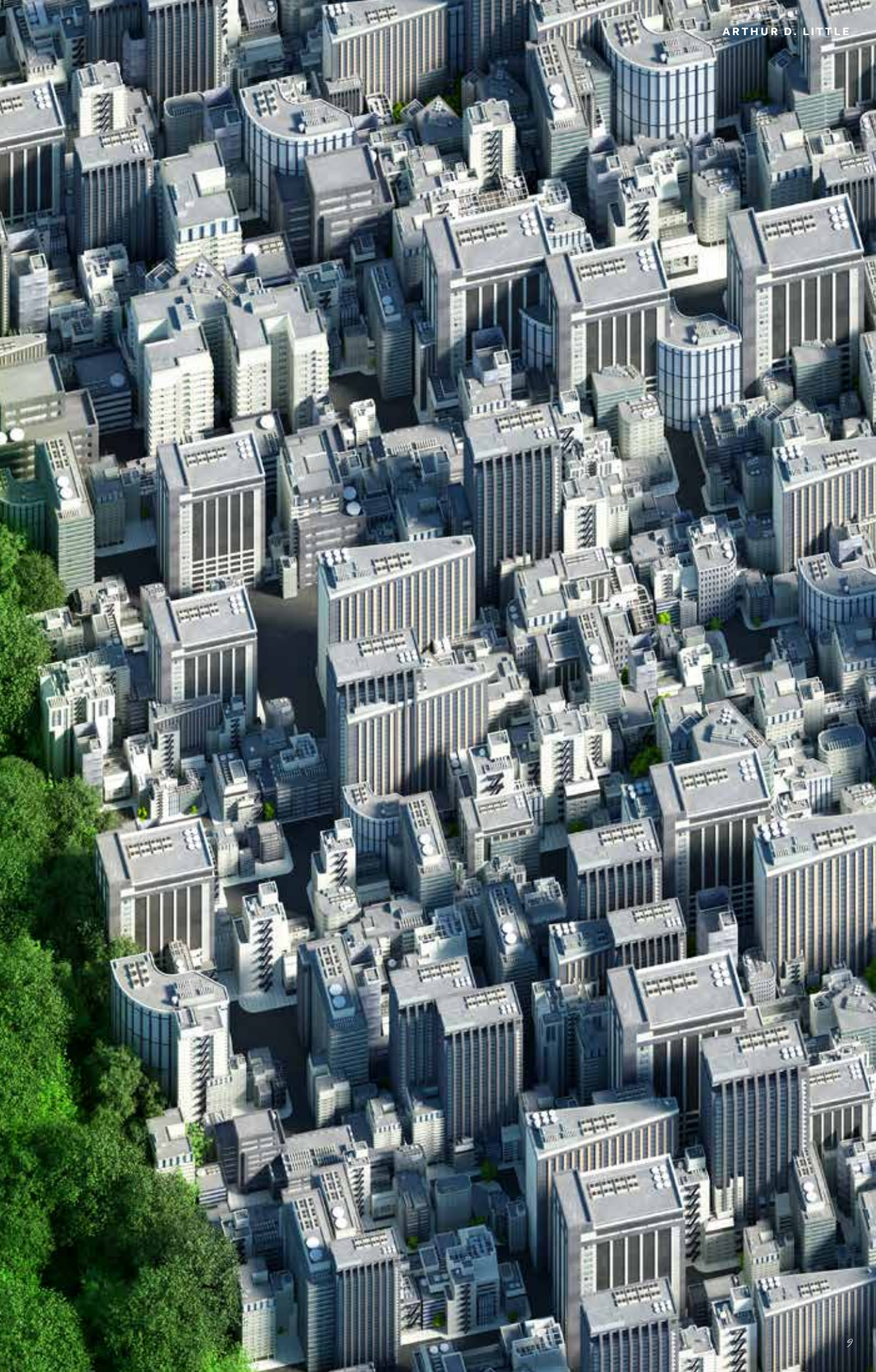
Finally, we turn to two other aspects of our technology-disrupted future. The metaverse is one of the most hyped topics in the business world at the moment. We give our perspective on the likely possibilities for business. In our final article on outcome-based business models, we look at how new technology, together with renewed impetus from sustainability concerns, is taking the shift from products to services to a new level.

We hope you enjoy the issue!

A handwritten signature in blue ink, appearing to read 'Rick Eagar', with a stylized flourish at the end.

Rick Eagar
Chief Editor, Prism
Arthur D. Little

GROWTH IN A NET ZERO WORLD



AUTHORS

Hasan Shafi, Eddy Ghanem, Kana Suzuki, Lucas Pedevilla,
Amit Maheshwari, Stefanus Nel, Amaury Klossa

The need to decarbonize has now moved center stage for us all. By the end of COP26, over 200 countries had announced decarbonization commitments and plans, along with a range of pledges around funding clean technology, decreasing reliance on coal, phasing out fuel subsidies and stopping deforestation.

Government action, at both a national and international level, has therefore set the playing field for companies, in many cases radically transforming the landscape they currently operate in.

The onus is now on companies, particularly in asset-intensive industries such as energy, oil & gas, chemicals, industrials, construction, steel and cement, to transform their business models and operations if every country's Net Zero pledges are to be delivered on. For example:

- The UK is focusing on sector-specific policies, and emphasizes the role of business in delivering its targets.
- Germany will need to significantly restructure its industrial economy while ensuring that its citizens don't have to bear the economic cost of transition.
- The French government has announced plans to expand nuclear power to support its Net Zero targets.
- Japan's Net Zero ambition has decarbonization of the power sector and electrification of other industries at its core, as well as commitments to hydrogen and ammonia to build on its automotive sector strengths.

Major oil companies, from Shell and ENI to BP and Equinor, have made significant decarbonization commitments. Total Energies has committed to reaching Net Zero by 2050 in its operations (Scope 1 & 2) and decreasing the greenhouse gas (GHG) intensity of its products (Scope 1, 2 and 3) by 60%, while also setting several intermediate key milestones.

Many may be cynical and view these commitments as greenwashing that will not have a lasting impact. However, shareholders, stakeholders, citizens and regulators will be carefully watching to ensure real progress against these lofty commitments. They will hold companies to account. Company CEOs and management teams need to demonstrate a real commitment to the cause, and have well-thought-through plans to ensure they are able to deliver on their promises. They need to do it now, fast.


Collaboration will be essential, between a complex ecosystem of governments, regulators, civil society, and the private sector. Achieving Net Zero ambitions will require companies from across industries to work together, converging to deliver innovative and scalable solutions to decarbonization issues.

On one hand, in a rapidly changing world, Net Zero represents a new paradigm for companies, bringing both threats and opportunities. They need to work to shape this new reality, rather than reacting to it. Timing is key and first-mover advantage may prove to be vital in

order to avoid being left behind. However, company CEOs are charged by shareholders and boards to deliver short- and long-term value-building growth. How can companies balance these two potentially conflicting targets? What new business opportunities

are there alongside simply driving down emissions associated with the current core business? What sort of transformation is needed for business models, operations, supply chains and customer value propositions? What role should technology play? How can all the key stakeholders be engaged on the journey?

This article sets out a framework approach to help address these questions and create sustainable value for all stakeholders.



***ACHIEVING NET ZERO AMBITIONS
WILL REQUIRE COMPANIES
FROM ACROSS INDUSTRIES TO
WORK TOGETHER, CONVERGING
TO DELIVER INNOVATIVE AND
SCALABLE SOLUTIONS TO
DECARBONIZATION ISSUES.***

IS PROGRESS POSSIBLE?

Research into the performance of companies confirms that delivering growth while reducing emissions is certainly achievable. We looked at the performance of selected listed companies from asset-intensive sectors (such as chemicals, oil & gas, energy, industrials, construction, steel, and cement) by comparing revenue growth rates and emissions reduction rates for the same duration (where both results were publicly available pre-COVID-19).

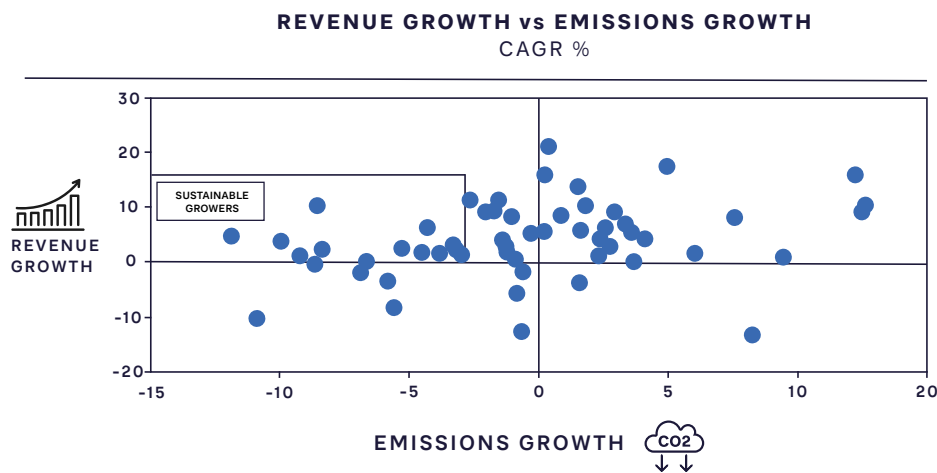


FIGURE 1: REVENUE GROWTH VERSUS EMISSIONS GROWTH IN CAGR (%)

Our analysis shows that there are many companies that have been able to grow their revenue while reducing emissions by at least 3 percent CAGR. What stood out with these “sustainable growers” was that they took the issue of emissions reduction seriously, made it a core part of their corporate objectives, focused on activities to reduce emissions, and invested in key technology and innovations. They used their existing capabilities, such as scale and ability to manage large capital-intensive projects, to diversify successfully.

However, this in itself may not be enough. It remains to be seen whether these rates of emissions reduction will be sufficient to deliver on future Net Zero objectives.

While some leaders have been able to improve both metrics, the majority (i.e., over 78 percent of companies) have not. Some companies pursuing organic growth seem to have lost sight of the emissions implications of increasing production and sales of their (emission-intensive) products. These companies have not allocated sufficient Capex to more sustainable projects to balance their strategies. Others have simply sold off “bad assets”, leading to emissions reduction (for them) but lower growth.

Pursuing M&A growth strategies without understanding the full implication for a company’s emissions profile is another area to watch out for. Businesses must apply a sustainability-led lens to the target’s product mix (see ADL’s Viewpoint on [sustainable portfolio steering](#)), assess the risk of future stranded assets, and make “emissions diligence” a core part of the investment process.

Going forward, post-pandemic, companies will need to double down on delivering both growth objectives and Net Zero commitments.

DELIVERING NET ZERO GROWTH

Many companies are still at early stages of their Net Zero journey and trying to figure out how to “move the dial” quickly. While companies may have made public commitments to Net Zero, it often doesn’t receive the same level of priority at investor presentations where, for example, the CEO talks about performance, growth, and finance, and delegates emissions and decarbonization details to others (such as the Chief Strategy Officer or Chief Sustainability Officer). There is often little alignment between financial and sustainability performance metrics, demonstrating a lack of parity between objectives.

Achieving the dual objectives of growth and emissions reduction in asset-intensive sectors requires corporate leaders to focus on four key areas, as shown in Figure 2.

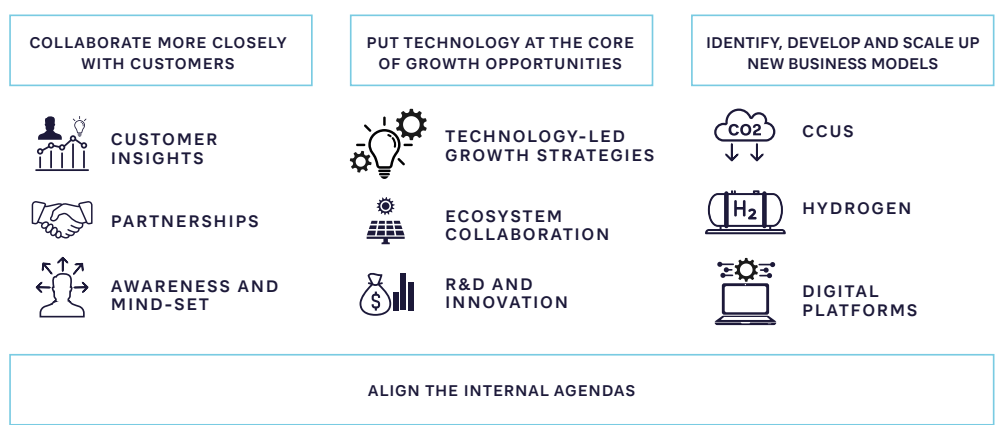


FIGURE 2: A FRAMEWORK FOR GROWTH UNDER NET ZERO

1. COLLABORATE MORE CLOSELY WITH CUSTOMERS

Companies need to build deeper relationships with customers. They will have to leverage their extensive, long-established understanding of their customers and supply chains, and work jointly to solve their emissions issues.

Leverage customer insights

Many companies have been following a well-trodden path of investing heavily to capture, analyze, and generate deep, privileged insights about customer needs and requirements. Such capabilities have helped to strengthen competitive advantage. During the pandemic,

many companies also started to invest into end-to-end supply chain transparency.

NOW IS THE TIME TO FIND SYNERGIES BETWEEN CUSTOMER AND SUPPLY CHAIN INSIGHTS AND USE THESE TO DEVELOP NEW TECHNOLOGY SOLUTIONS FOR THE CUSTOMER THAT WILL ALSO HELP REDUCE EMISSIONS.

Now is the time to find synergies between customer and supply chain insights and use these to develop new technology solutions for the customer that will also help reduce emissions. For example, by investigating up and down the supply chain to evaluate emissions created by its own products, Honeywell realized

a significant opportunity in the refrigerants, propellants, and solvents space. Through a new line of low global warming products, Honeywell is helping its customers to reduce their carbon footprint and increase energy efficiency without sacrificing product performance. As a result of this, Honeywell estimates that its customers have potentially avoided over 263 million metric tons of carbon dioxide.

Partner to solve customers' problems

Traditional approaches of finding the optimal "go to market" strategies for products and services will not be sufficient, and will require a rethink and revamp. Leading companies are already starting to find ways to partner with their key customers and develop solutions (often jointly) to help them reduce their emissions. For example, new growth partnership models are emerging in the area of sustainable air fuel, in which companies are teaming up to find alternatives to jet fuel – such as Johnson Matthey's partnership with United Airlines and PETRONAS' downstream retail business (PDB) partnership with Malaysia Airlines and Neste. Delta Airlines is going even further – helping its suppliers and corporate customers decarbonize by introducing sustainable aviation fuels and selling them to business-travel clients such as Nike.

Increase awareness, influence mind-set

Companies will not succeed unless there is increased, widespread demand for their new products. The key question is how quickly customers will change their buying behavior in favor of more sustainable products and services. While legislation is expected to play a role in driving both consumer and customer demand, a “wait and see” approach risks companies falling behind. Rather than holding off until regulations are in place, companies should work swiftly to educate their customers, in order to influence their mind-sets and collaborate to generate demand early on.

Siemens has made an aggressive commitment – to be the first global industrial company to be Net Zero in its operations by 2030 and have a Net Zero supply chain by 2050. By leveraging its industrial know-how, customer and supply chain understanding, and decentralized technology, it has launched a collaborative solutions platform for its customers, thus creating growth opportunities for the business. From its position as a global industrial company, Siemens is now pursuing its journey as a focused technology company.

2. PUT TECHNOLOGY AT THE CORE OF GROWTH OPPORTUNITIES

Companies will also need to increase their focus on the role of technology, not just as an enabler for pursuing growth strategies and reducing emissions, but also as a driver at the core of future growth platforms.

Identify technology-led growth strategies

When exploring the question of “where to play”, company strategists and corporate planners typically look for attractive market segments. Technology is often an afterthought or considered solely an enabler. Many companies have developed their own marginal cost curves to decide on optimal technologies that can reduce emissions.

These only go so far. Companies now need to shift the lens on technology by making it central to uncovering growth opportunities. They need to look beyond mere cost and extend their time frames to identify where technologies can drive business growth and new opportunities. With low-carbon/negative-carbon technologies now at various stages of maturity and development, companies need to explore, understand, and assess them for future growth and value

creation potential. In a fast-moving market, it is essential to have all opportunities on your radar and be prepared to accelerate those that demonstrate the greatest potential.

Collaborate in an ecosystem

In their search for technology solutions, companies will need to collaborate more intensively and comprehensively across sectors and beyond. This is beginning now. For example, the World Economic Forum’s Low-Carbon Emitting Technologies Initiative has brought together 10 global chemicals companies, with the joint aim of accelerating the development and upscaling of low-carbon emitting technologies for chemical production.

BASF has committed to Net Zero (Scope 1 and 2) by 2050 and plans \$4 billion of Capex investment by 2030. At the same time, it is committed to growth, for example, in opening a new site in South China. In order to achieve both objectives it is implementing continuous improvement processes for the short term, while exploring new technologies (e.g., its CO2-free, electrically heated steam cracker) for chemicals production and use of renewable energy for its electricity needs for the long term.

Reset the technology R&D and innovation portfolio for growth

Now is also the time to review the company’s portfolio of R&D and innovation projects with razor-sharp clarity around its strategic relevance and potential to create future distinctive capabilities in light of Net Zero and time to profit. There can be hidden gems from the past that did not make it to successful commercialization for many reasons (such as customers not being ready or the product not being cost competitive); these can potentially be accelerated in a Net Zero world.

Boral, a leading Australian building and construction company, used innovative technology to develop cement products, which resulted in over 40 percent lower carbon emissions for concrete, while providing excellent performance benefits and finishing properties. This technology-led innovation has allowed Boral to partner with its customer, Lend Lease, to work on specific projects (e.g., primary schools) and help Lend Lease achieve its aim of securing carbon neutrality certification.

3. IDENTIFY, DEVELOP AND SCALE UP NEW BUSINESS MODELS

In the Net Zero world of the future, new business models will open up new growth opportunities. This includes providing sustainability/ Net Zero “as a service” to customers. Three examples of this are in Carbon Capture Utilization and Storage (CCUS), hydrogen and Net Zero platforms.

Carbon Capture Utilization and Storage

CCUS is a critical enabler of reduced emissions. A paradigm shift will be to look at CCUS from a business growth-opportunity perspective, in which companies take ownership of the infrastructure and provide carbon-related services (i.e., CCUS-as-a-Service).

For example, the concept of a CCUS hub is gaining traction. This captures CO₂ from different sources and provides shared CO₂ transport and storage infrastructure for multiple sectors. An example of this approach is the Northern Lights/Longship CCUS hub in Norway, an offshore facility with the capacity to store 1.5 million tons of CO₂ from cement, biomass, steel, waste incineration, and steel plants across Europe.

The hydrogen economy

The hydrogen economy, which is expected to see 500 to 800 million tons of hydrogen produced per year by 2050 (based on the Energy Transition Commissions estimate), is another fertile area for new business models. For this economy to materialize, new global ecosystems need to be created across generation, transport, and utilization in both end-user applications (such as transport) and industry. Our recent Viewpoint, “Paving the way for green hydrogen”, explains how a global green hydrogen ecosystem is likely to develop.

Digital platforms

Converging sustainability with digital will create opportunities for sustain-tech- or green-tech-type platform business models. Companies can explore creating digital platforms that bring together an ecosystem of buyers and sellers of Net Zero-related products and services, and through the network effect, continue to create and capture future value. Taking the valuation of tech and sustainability companies as a guide, launching such platforms has the potential to unlock substantial untapped shareholder value in the long run.

To embrace these (and many other) new opportunities, companies will need to shift their models and not be bound by existing value chain-/ industry-specific thinking. They will need to go beyond traditional business boundaries and bring a convergence-type mind-set to imagine, create, and take their share of future value pools.

In addition, CEOs will need to get used to running “two speed companies” – one that is tied to the core/legacy business and one that is much more agile, constantly innovating, and bringing out new-generation products and services (just as current digital/tech companies do). This requires “ambidextrous” operating models, as described in a previous Prism article, which allow CEOs to drive structural and emissions-related opportunities in the core business while developing and delivering innovative Net Zero services for customers.

4. ALIGN INTERNAL PRIORITIES

In order to succeed, Net Zero should be at the heart of the company’s business. This requires deep cultural transformation, particularly in traditional, asset-intensive organizations. ADL recently conducted a global sustainability survey across multiple sectors. One of the findings from that survey was that while 80 percent of companies had a sustainability strategy, just 29 percent believed its impact was clear to all employees. For more detail on the survey, read *Walking the talk on corporate sustainability* in this issue of Prism.

Achieving success starts by aligning priorities across the board, management and employees, which requires action on multiple fronts:

- Start with compelling strategic logic, with the board, CEO and management team clearly embracing the decarbonization mega-trend and understanding that their strategic initiatives and actions will strengthen the company’s competitive advantage and open up new avenues for growth.
- Armed with this strategic conviction, the CEO and senior management need to work hard to communicate and increase awareness of the new objectives across the organization. This should aim to remove skepticism, boost engagement, and ensure everyone is pushing in the same direction.
- Companies will then need to think through and act to set the type and time horizon of incentives and ensure that all employee objectives fit with company Net Zero aims.

A leading global electrical equipment manufacturer is currently developing a new business and growth strategy, based around carbon neutrality. Building on its existing lithium-ion (Li-ion) battery-based energy storage business line, the company identified a distributed energy resource management system (DERMS) as an attractive future growth opportunity. Developing the overall growth strategy required a deep understanding of the technology landscape (the second pillar of the framework), the associated strategic choices, the customers, and their needs, as well as a new Energy-as-a-Service (EaaS)-type revenue model (the third pillar of the framework).

One of Asia’s largest gas utility operators needed to balance its growth strategy and Net Zero commitments. The company set its commitment to Net Zero by 2050 and outlined a series of initiatives, including increased use of renewable energy, use of CCUS technologies, and development of decarbonization technologies. The company identified carbon-neutral methane as a new growth direction and developed a strategic roadmap (the second pillar of

the framework). The company is now exploring a feasibility study in collaboration with its strategic partners to establish a supply chain of carbon-neutral methane (produced using green hydrogen and carbon dioxide) to its end destination.

ADL RECENTLY CONDUCTED A GLOBAL SUSTAINABILITY SURVEY ACROSS MULTIPLE SECTORS. ONE OF THE FINDINGS FROM THAT SURVEY WAS THAT WHILE 80 PERCENT OF COMPANIES HAD A SUSTAINABILITY STRATEGY, JUST 29 PERCENT BELIEVED ITS IMPACT WAS CLEAR TO ALL EMPLOYEES.

INSIGHTS FOR THE EXECUTIVE

In successfully pursuing Net Zero growth under this four-pillar framework, there are some good practices that leading companies have found to be effective:

1. Set an ambition for the core business versus a new business mix.

Set a clear ambition on what mix of new businesses makes strategic sense (and by when), fits within the acceptable “risk appetite”, and meets all key company objectives (e.g., sustainable cash flow, returns, and science-based Net Zero targets).

Divesting “carbon-challenged” businesses is a common approach, but it only passes the buck to others to deal with, and doesn’t reduce emissions. Therefore, make the structural change/decline happen yourself, such as by retiring coal assets. Alternatively, if you have to divest part of your portfolio, ensure it goes to a new owner that will be able to reduce emissions through synergies with its own operations.

2. Embrace carbon pricing. If there are no carbon-pricing mechanisms yet available or implemented in your geography, use an internal value for business case assessment and making resource allocation decisions. Expect that the EU and others will move the world to applying a de facto carbon price by implementing taxes on imports that have not been subject to carbon pricing in their country of production.

3. Explore innovative funding models. Funding for “carbon-challenged” businesses is getting increasingly difficult – limiting options and raising funding costs. To unlock funding, such businesses need to have a concrete transition and decarbonization plan in place, and demonstrate real progress. Explore innovative funding models to support portfolio reshaping and the growth of new sustainable businesses. (See our Prism article, “Green Gambit”, on new sources of funding). There is also a major role for financial institutions to fund sustainability, as detailed in the *Actively shaping the future – The new imperative for financial services* article within this issue.

4. Integrate Net Zero into strategic planning. The company’s Net Zero program should not be under the custody of the Health, Safety & Environment (HS&E) team. These are strategic imperatives and should be part of the overall growth strategy development and strategic planning process led by the CEO. If there is sufficient scale across all decarbonization activities, consider creating a focused Net Zero unit reporting directly to the CEO.

5. Adopt effective Net Zero KPIs. Commit to and cascade the right KPIs. Make Net Zero everyone's business, not just the focus of senior management. Apply the same razor-sharp focus on measuring and reducing carbon as you would for revenue, costs and profits.

6. Rethink your partner ecosystem. In seeking to collaborate more intensively, take a fresh look at your partner ecosystem and think beyond traditional industry boundaries. As well as suppliers, customers, industry peers, research organizations and government, consider start-ups, specialist service providers, adjacent industry sectors and tech/digital innovators.

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The image features two hands, one at the top and one at the bottom, reaching towards each other. Between them is a glowing, ethereal, and somewhat abstract shape that resembles a flame or a piece of smoke. The background is a solid, vibrant blue. The hands are lit from below, creating a soft glow. The overall composition is symmetrical and evokes a sense of creation or shaping.

**ACTIVELY
SHAPING THE
THE FUTURE -**

**THE NEW
IMPERATIVE
FOR FINANCIAL
SERVICES**

AUTHORS

Andreas Buelow, Florian Forst, Raffaella Ritter, Georg von Pförtl

Each and every industry must become greener and more sustainable. However, as a key pillar of the global economy and wider society, the financial services sector is in a unique position. It not only must change how it operates to build sustainable business models, but it also has a crucial role to play in funding and de-risking the transition towards climate neutrality. The financial services sector can become the driver of green change.

Seizing the initiative around sustainability and demonstrating true leadership can transform how the sector is viewed – by consumers, regulators, and existing and potential employees. It provides the opportunity to fundamentally reposition financial services away from being seen as part of the problem, to leading the solution.

The stakes are high. Yet despite the enormous interest in environmental, social and governance (ESG) issues, the majority of financial services organizations are still in a passive, reactive mode. Many see growing green regulatory requirements as a cost to be met, not an opportunity to be grasped. While they trumpet their green credentials, often they achieve this through offsetting existing activities – planting trees, buying CO2 certificates and paying fines, rather than changing their business models.

To remain relevant and achieve competitive advantage, banks, insurers and asset managers need to move from a passive position to become active shapers of the green, sustainable future. Otherwise, traditional players risk being outflanked by new ESG-focused entrants, which is exactly what happened with fintech start-ups during digitization. Time is running out for financial services companies to make this fundamental shift.

How can players make this change and shape a sustainable future for themselves and the planet? In this article we look at how they can rebalance their capabilities, mobilize stakeholders, and move ESG from talk and commitments to concrete, positive action.

THE CURRENT LANDSCAPE

While sustainability is not a new topic, it has gained significant traction in financial services over the last few years, which has moved it center stage, driven by a range of stakeholders including governments and regulators, investors, and clients themselves. At the COP26 conference, a range of initiatives and plans were announced. Over 90 percent of global emissions are now covered by Net Zero commitments. However, this needs to be backed by concrete short- and mid-term action to ensure long-term commitments are met.

This has led to a range of plans, agreements, and frameworks, including:

- **The UN Principles for Responsible Banking (PRB).** This was created in 2019, and 275 signatories now represent over 45 percent of the global banking system by assets, mobilizing \$2.3 trillion of sustainable finance. Similar sets of principles cover insurance and investment.
- **The Glasgow Financial Alliance for Net Zero (GFANZ),** which covers more than 400 financial institutions and includes the Net-Zero Banking Alliance (103 banks representing over 44 percent of global banking assets), the Net-Zero Asset Owner Alliance (70 institutional investors with \$10.4 trillion of assets under management) and the Net-Zero Insurance Alliance (over 20 insurers representing more than 11% of world premium volume globally).
- **The Global Alliance for Banking on Values (GABV),** a network of independent banks using finance to deliver sustainable economic, social and environmental development. It comprises 67 financial institutions operating in 40 countries across the world. Collectively, they serve more than 60 million customers and hold over USD 200 billion in combined assets under management.
- **The UN Environmental Program Finance Initiative (UNEPFI),** in which 4,000 businesses have committed to aligning their business model to Net Zero by 2050 and the lower 1.5 degree target for global warming.

These bodies all aim to accelerate change through a systemic, comprehensive, science-based, time-bound, measurable, transparent, and immediate approach.

Regulators and supervisory authorities are also increasingly active. For example, the Bank of England has become the first central bank to add green criteria to its corporate bond-buying program,

while the ECB has committed to including ESG considerations in its monetary policy, as well as making ESG a supervisory priority. This increases pressure on financial institutions.

OVER 90 PERCENT OF GLOBAL EMISSIONS ARE NOW COVERED BY NET ZERO COMMITMENTS. HOWEVER, THIS NEEDS TO BE BACKED BY CONCRETE SHORT- AND MID-TERM ACTION TO ENSURE LONG-TERM COMMITMENTS ARE MET.

Some progress has been made on both the debt and

equity sides. For example, EUR 358 billion of green bonds were issued between January and September 2021. There are now approximately 4,000 green bonds outstanding, with volume of EUR 1,084 billion – this is 0.9 percent of all outstanding bonds. On the private equity side, firms are increasingly incorporating ESG considerations into their investments, with many ranking it as a top factor in value creation.

However, overall ESG activities have not met targets:

- While 93 percent of PRB members are analyzing the impact of their activities, just 30 percent are setting targets to reduce the effects. Twelve percent have created processes to regularly consult stakeholders.
- Figures from Bloomberg show that in the first nine months of 2021, banks organized USD 459 billion of bonds and loans for the oil, gas and coal sectors, alongside USD 463 billion worth of green bonds and loans.
- While the availability of green finance has expanded, the sums required are immense. The UNEPFI estimates that an additional USD 60 trillion is needed to transition to low carbon, climate-resilient economies by 2050.

Communications and commitments are ahead of activities on the ground. This risks the credibility of financial institutions with stakeholders, and leaves them open to accusations of “greenwashing” and insufficient ESG focus. Additionally, there is a need to take immediate action if commitments are to be delivered – many changes required by 2030/2050 cannot be reached unless work begins now.

There are certainly key challenges that must be overcome:

- Uncertainty over the definition of key terms, leading to guesswork when setting and evaluating strategy.
- The unavailability of quality ESG data across the supply chain to underpin decision-making. For example, while the EBRD is exploring the digitization of green finance, a lack of comprehensive, reliable end-to-end ESG data may hold back progress.
- The absence of market standards when it comes to ESG ratings. For example, comparing the evaluations of different ESG rating providers across major banks shows wide variability between these different providers.
- Missing incentives for financial institutions to focus on ESG while delivering expected shareholder returns.
- A lack of knowledge and skills within banks, exacerbated by the need for a cultural shift to put ESG center stage.

Many of these challenges have been previously faced by other sectors on their ESG journey. However, unlike manufacturers or consumer goods companies, financial services companies don't provide physical products. While they can – and must – achieve Net Zero in terms of their operational footprint, true sustainability requires ensuring that clients and customers are also Net Zero. That means leveraging customer relationships and driving ESG impact by changing their behavior and becoming an internal sparring partner to drive transformation, rather than simply excluding certain industries or clients.

HARNESSING THE OPPORTUNITIES

Shaping the future requires financial services companies to take an ecosystem approach that brings together public, private and third-sector partners. In such a complex environment, everyone needs to

**SHAPING THE FUTURE
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play a complementary role; however, as in an orchestral performance, it needs to be conducted well for the duration of the concert, with all players displaying commitment and ongoing dedication.

Figure 1 highlights the complexity and diversity of the ecosystems that financial institutions need to play in. These broadly fit into four stakeholder groups, as classified by the UNEPFI:

- The financial institutions themselves, including employees and partners, as well as the wider financial sector
- The real economy, such as customers that access and benefit from financial institutions
- Policymakers and regulators, at both a national and supranational level
- Science and technology providers delivering solutions for sustainability

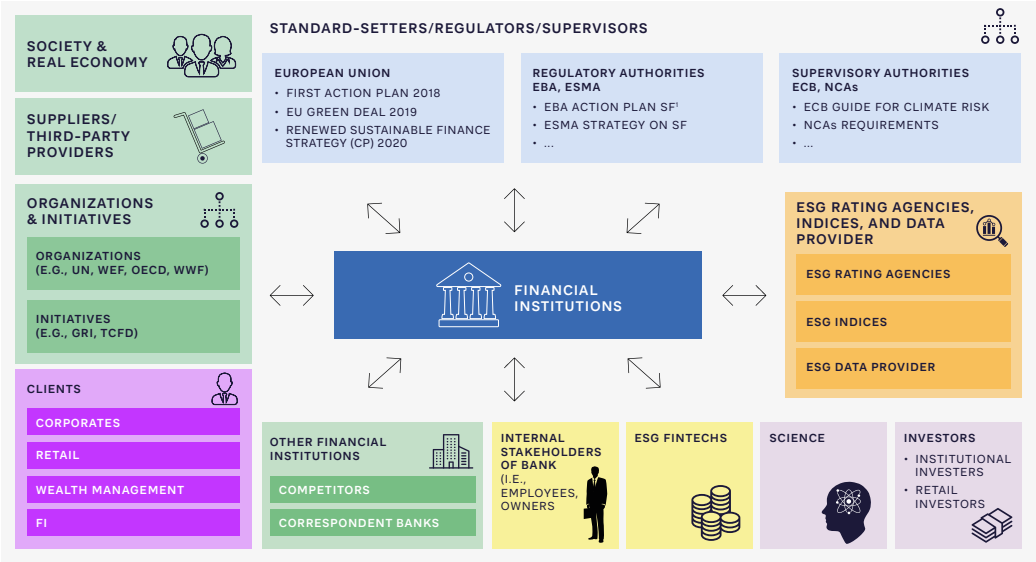


FIGURE 1: THE ECOSYSTEM OF FINANCIAL INSTITUTIONS

Achieving success is a long-term process. After the sprint of initial discussions and signing up to commitments, ESG transformation is a marathon.

Senior management in financial institutions therefore needs to focus on transformational change in key areas:

1. Make ESG the board’s top priority

ESG is not just an add-on, but also must be an integral part of the business model. It cannot be siloed or delegated to risk or marketing teams. Financial institutions need to build a clear, credible, and holistic sustainable finance strategy. Mind-sets, culture and conduct must change. Led from the top, this strategy needs to establish the business case and define how the organization will position itself from an ESG perspective. This should also set out risk options, as well as show how technology can be used to mitigate these risks. All of

this should be captured in long- and short-term roadmaps for transitioning to a desired ESG state.

2. Prioritize long-term value creation

Ensure that ESG and sustainable finance-oriented strategies and business models prioritize long-term value creation for shareholders and stakeholders, rather than focusing simply on short-term returns for the bank itself. Strategy must be based not on today’s worldview, but on one that will apply in five to 10 years.

It is vital to redefine what success means – moving from measures such as return on equity to look at the bigger picture. Institutions need to adopt a “shared value”-oriented philosophy that takes into account different stakeholders and their needs, as well as incorporating the wider economy and society, remodeling incentives. ESG strategies unlock value drivers that impact the top and bottom line, as Figure 2 demonstrates.

ESG & SUSTAINABLE VALUE DRIVERS (UNIVERSAL BANK)

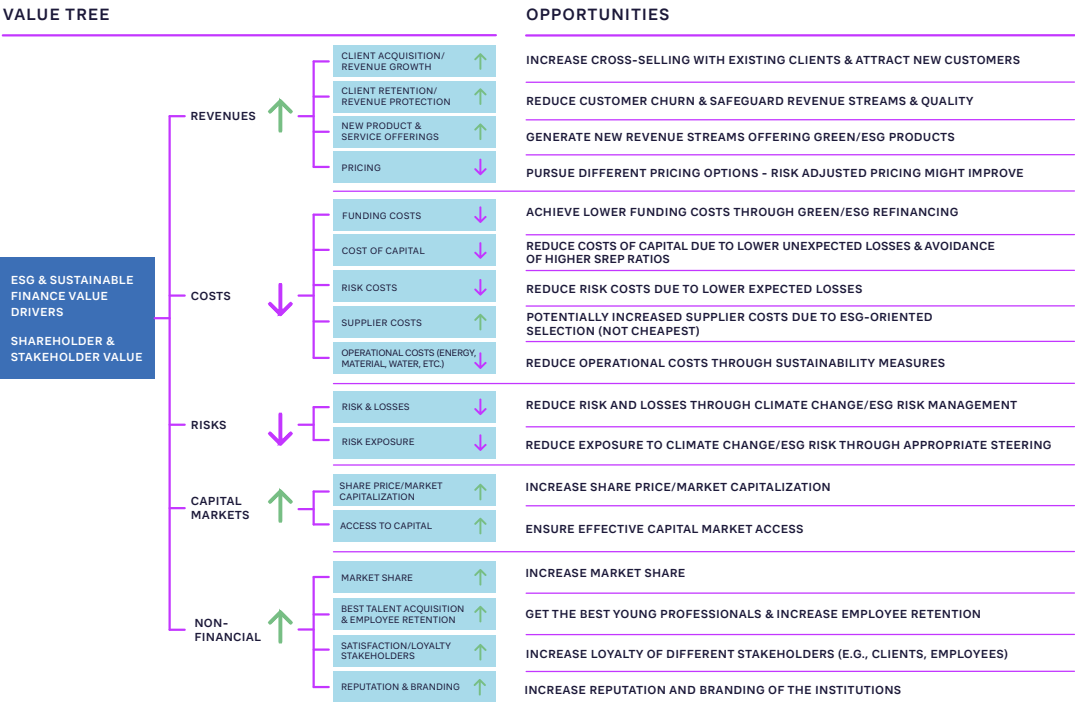


FIGURE 2: ESG AND SUSTAINABLE VALUE DRIVERS

3. Take real action now across your ecosystem

“Wait and see” is no longer a viable option, especially if you want to gain any kind of first-mover advantage. Differentiate by making real commitments that go beyond regulatory bare minimums, build well-resourced ESG capabilities, and put in place the frontline processes to ensure you take action to deliver on them. For example, leading banks are remodeling their relationship management programs to better serve client needs through ESG early-warning and opportunity detection systems that increase transparency over their portfolios.

The sheer volume of risk-tolerant, flexible capital required to drive change goes far beyond the capabilities of a single institution or government. New partnerships – in the public, private and philanthropic sectors – will be required, and all sides will need to work together to define sector-specific pathways to Net Zero. For example, HSBC has launched a Climate Solutions Partnership with the World Resources Institute and World Wildlife Fund to finance companies and projects tackling climate change, backed by USD 100 million of philanthropic funding over five years.

4. Actively drive change in corporate and consumer customers

Financial institutions have the opportunity to build a sustainable, diverse future by becoming a transformation partner of the businesses that they invest in and work with. Effective transformation requires close engagement with clients, to the extent of working alongside or inside companies to ensure they become greener and more sustainable. This approach works better than simply dropping certain types of customers because of their historic record on sustainability.

On the consumer side, banks need to educate customers, building their ESG financial literacy so they are actively seeking out and demanding sustainable financial products, and therefore driving change. Institutional investors are already setting strict targets for ESG compliance – banks need to ensure consumers are applying the same pressure if they are to be seen as relevant and on the side of sustainability. This is particularly important given current excess liquidity levels, high inflation and low interest rates, which are destroying monetary value in real terms. Educating consumers to reallocate their savings to ESG products unlocks major new funding opportunities.

5. Engage with regulators and policymakers early

The financial crisis and other misconduct led to not only greater regulation, but also an adversarial relationship between banks and regulators. Rather than fighting, financial institutions should demonstrate why they deserve to be involved in setting – and leading – new ways of driving sustainability forward. This requires openness and a change of mind-set. Taking an active role in shaping sustainability policies will allow banks and regulators to jointly define the future rules of the regulatory game, and help move the needle at a systemic level.

Process and pioneers

As discussed in this article, the vast majority of large financial services companies have made long-term commitments to increasing sustainability. Many have also launched specific initiatives:

- Citi's USD 200 million Impact Fund invests in companies addressing today's biggest societal challenges.
- JPMorgan Chase has set up a Green Economy team to provide dedicated banking services and expertise to companies that produce environmentally friendly goods and services.
- BNP Paribas has created a 250-person Low Carbon Transition Group to support corporate clients and investors in decarbonizing their exposures.
- Deutsche Bank has brought forward its target date for deploying EUR 200 billion in sustainable finance by two years to 2023.

However, as with digital disruption, ESG is providing opportunities for fintech start-ups to focus on specific areas and opportunities. Analyst company Medici lists over 150 ESG fintechs in its latest study, covering areas such as ESG-oriented products and services, impact investing, tech/ratings platforms, and inclusion initiatives such as mobile money.

Examples include:

- Aspiration – a US neobank that does not invest customer money into fossil fuel projects. It currently has over 1.5 million customers for its banking service.
- MioTech – an AI platform that empowers sustainable finance with ESG data and technology. Investors include Moody's and Horizon Ventures.

While currently there are no ESG gamechangers that have broken through, this state of affairs is unlikely to last. Traditional players that potentially underestimated the likes of trading and banking fintech Revolut (worth more than Deutsche Bank, Japan Post Bank or UniCredit based on its last fundraising), broker app Trade Republic (valued at over USD5 billion) and payment processing provider Stripe (the most valuable venture-backed private company in the US) should not make the same mistake again.

INSIGHTS FOR THE EXECUTIVE

- **Make ESG real. Move from talk to action.** Only then will financial services organizations be able to lead the transformational change that is required to deliver a Net Zero, decarbonized economy and benefit from the opportunities it brings. Failure will open the door to being overtaken by the growing number of ESG start-ups and fintechs, just as slowness to embrace digitization spawned new, disruptive competitors.
- **Make ESG bonuses relevant.** Get buy-in from your people by ensuring that compensation and incentives from the board down have a substantial ESG component in order to support culture and behavior change. KPIs have to be clear, concrete and measurable – and focus on what individuals can actually influence through their daily actions. As well as changing incentives, clearly communicate what you expect of your people when it comes to ESG. Model the right behaviors yourself and roll out a code of conduct that makes a sustainable focus the norm.
- **Create an ESG unit with authority, reporting directly to the CEO.** Set up a dedicated, well-resourced ESG group, located in the CEO's office. It should be given sufficient power, cross-business scope and staffing to make a difference. Task this team with neutrally reviewing all ESG exposures with both existing clients and any new products that are launched or customers that are won. Go beyond external requirements with more detailed internal reporting to give multiple ESG lines of defense and position ESG as a differentiator with external stakeholders.
- **Create a clear plan to stop financing non-ESG-compliant business.** Turn strategy into practice by reviewing the tools, actions, communications and KPIs of all client-facing business units and ensure they reflect your green objectives. Adjust your investment vehicles to make them ESG led in order to gain early-mover advantage. Bring ESG criteria into know-your-customer requirements to minimize any exposure to uncompliant businesses.
- **Make ESG products part of every customer's portfolio.** Educate consumers and businesses that they need to make ESG products central to their financial strategies. Start young – offer products that let children and their parents invest to build and benefit from a greener world. Don't just rely on traditional bankers to create new ESG products and services. Bring in outsiders to work alongside them and drive innovative new products and services that will differentiate you going forward.

- **Stop hiding – be transparent.** There has been a lot of talk about ESG and a backlash against greenwashers (those that are not as green, but try to ride the bandwagon), transition-washers (less advanced in ESG than they communicate) and competency-washers (less expertise than they claim). Commit to full transparency beyond what is required by regulations and take the lead, backed by the right skills, processes and actions.
- **Become a transformation partner.** Ultimately, the only real ESG lever for financial services is to influence clients and their behavior. Move from being on the outside to become an effective internal transformation partner with clients. Only by effectively engaging will customers transform and real ESG impact be delivered.

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WALKING THE TALK



ON CORPORATE SUSTAINABILITY

AUTHORS

Stefano Milanese, Stefano Decadri, Martijn Eikelenboom, Frederik van Oene

The COP26 summit saw progress in some areas and disappointment in others. The agreement seeks to keep the hope of maintaining temperature rise within 1.5C alive by inviting countries to submit new plans. However, it seems clear that reliance on national governments and supranational organizations alone will not be enough. Business has a crucial role to play, accounting for some two-thirds of global greenhouse gas emissions¹. Most businesses in the developed economies have already taken at least some measures, however limited, to reduce carbon footprints in the last 20 to 30 years. Today the pace of action within businesses is rapidly accelerating – though some observers would criticize business for achieving too little, too late.

In the last edition of Prism (second semester 2021), we published an article on why corporate sustainability was now genuinely at the top of the business agenda, and how a partner ecosystem-based approach was key. (Refer to *Corporate sustainability – Using your ecosystem to sustain the ecosystem, Prism S2 2021*.) Undoubtedly, we are seeing a new level of activity, driven by a combination of increased customer awareness and demand, developing government policies, rising emission costs, technological progress and plentiful green finance².

1. World Resources Institute 2020, excluding agriculture, residential, waste

2. See also "Actively shaping the future – The new imperative for financial services" and "Growth in a Net Zero world" elsewhere in this issue

Yet despite the new impetus, skepticism about the ability of business to deliver on its promises remains. For example, Al Gore wrote in his 2021 Sustainability Trends Report that there “remains a yawning gap

NATIONAL CONSUMER PROTECTION AUTHORITIES (SOURCE: BLOOMBERG, GIM) ESTIMATE THAT 42 PERCENT OF ENVIRONMENTAL CLAIMS HAVE BEEN “EXAGGERATED, FALSE OR DECEPTIVE

between long-term climate goals and near-term action plans.” National consumer protection authorities (source: Bloomberg, GIM) estimate that 42 percent of environmental claims have been “exaggerated, false or deceptive,” and might even violate fair practice rules established by the European Union. Separately, data from Climate Action 100+ shows that about 53 percent of the 159 companies it tracks – which

include the world’s largest emitters of greenhouse gases – don’t have appropriate short-term targets for Net Zero emissions.

Is this criticism fair? Behind all the public messages, to what extent is business really “walking the talk” on sustainability? In this article we consider how companies are progressing in embedding sustainability into their strategy, governance and organization. Drawing on the results of a recent Arthur D. Little company survey on this topic, we look at some of the main challenges that companies are facing and how they can be best overcome.

HIGHLIGHTS AND LESSONS FROM THE SURVEY

In the third quarter of 2021, ADL conducted an anonymous questionnaire-based survey focusing on the degree of integration of sustainability into business models and organizations across more than 85 large and medium-sized companies. The coverage was pan-sector and pan-geography, although with a stronger focus on Europe-based organizations. Some 40 percent of companies come from the process industries (the chemicals, construction, industrial goods & services and oil & gas sectors).

1. COMPANY EMPLOYEES STILL DO NOT UNDERSTAND SUSTAINABILITY STRATEGIES WELL

By now there are few companies of any size that do not have any sustainability strategy at all. However, it’s one thing to have a strategy, and another to translate it into action. One of the most common challenges companies face is that sustainability strategies are not well understood by employees. For example, our survey indicated that less than one-third of companies had a sustainability strategy whose impact was clear to all employees. (See Figure 1.)

HOW MATURE IS YOUR COMPANY'S SUSTAINABILITY STRATEGY?



FIGURE 1: MATURITY OF SUSTAINABILITY STRATEGY

The main reason for this lack of understanding is that companies struggle to create a common language on sustainability across the entire organization, in a way that conveys to employees across different functions and levels what it means for the business day to day.

This is also evident in the fairly limited extent to which sustainability strategy has affected the core business of the companies in our survey (Figure 2).

HOW MUCH DOES THE SUSTAINABILITY STRATEGY AFFECT YOUR COMPANY?

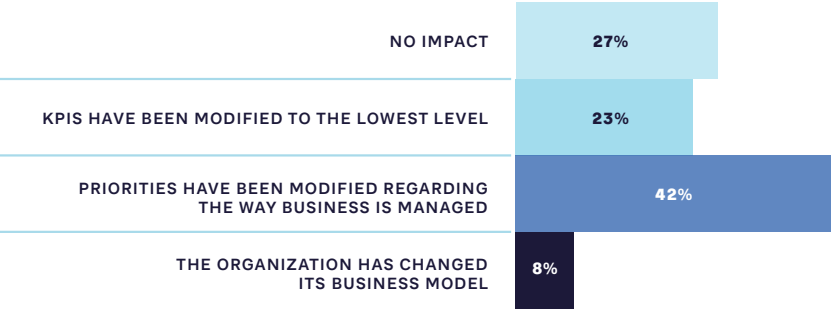


FIGURE 2: IMPACT OF SUSTAINABILITY STRATEGY

It can be seen that less than half (42 percent) of the companies have modified their ways of managing the business as a result of implementing a sustainability strategy, and only 8 percent have gone as far as actually changing their business model. Only one-quarter have modified their full range of key performance indicators (KPIs).

Lessons learned – Create a common language through adopting better tools to define sustainability performance

So, what approaches have companies taken to help create a common language that employees understand? Some sustainability leaders have tackled this problem by implementing approaches and tools to define and measure sustainability performance transparently at the product and portfolio level. For example, the chemicals and materials industry has created an accepted global industry standard for conducting portfolio sustainability assessments (PSAs), using a set

of tools developed by the World Business Council for Sustainable Development, with assistance from ADL. This approach allows an objective assessment of the sustainability performance of a product in a specific application and/or region. This is invaluable for creating alignment on sustainability in

LESS THAN HALF (42 PERCENT) OF THE COMPANIES HAVE MODIFIED THEIR WAYS OF MANAGING THE BUSINESS AS A RESULT OF IMPLEMENTING A SUSTAINABILITY STRATEGY.

very practical terms, both internally across the staff and externally to other stakeholders. It also forms the basis for focused dialogues with suppliers and customers on how to collaborate better to jointly improve sustainability performance. In this way it highlights potential risks, but also substantially contributes to innovation.

Once the language is understood and shared, it becomes much easier to demonstrate how good sustainability management creates business value, for example, through improved customer satisfaction, reduction of product portfolio risk, boosting of activities with an excellent sustainability rating, better focus of R&D and CAPEX investments, and timely adaptation of supply chains.

2. SUSTAINABILITY COMMITMENTS ARE NOT GETTING THE SAME PRIORITY AS OTHER BUSINESS OBJECTIVES

One of the clearest indicators of the extent to which sustainability is embedded into the business is how it is reflected in senior management incentives and bonuses. Our survey showed that nearly two-thirds (65 percent) of companies did not link sustainability performance to senior management incentives. A very small minority (6 percent) reflected sustainability in terms of 15 percent or more of the managerial bonus (Figure 3).

ARE SENIOR MANAGEMENT’S INCENTIVES LINKED TO SUSTAINABILITY PERFORMANCE?

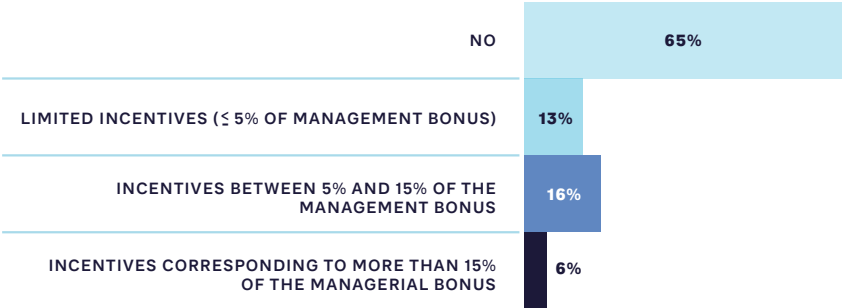


FIGURE 3: LINKAGE OF SUSTAINABILITY TO INCENTIVES

What’s more, many companies have a bonus system that involves some form of cascade from senior management down to employees. Influencing employees and changing culture, which is key for success, is not easy unless incentives are properly aligned across multiple levels in the hierarchy. Of course, not every company needs to have a significant part of executive bonuses linked to sustainability performance. Businesses are diverse, and some sectors have an innately bigger sustainability impact than others – for example, companies that offer services generally have a lower impact than those that make or process things.

The way in which sustainability performance is reported publicly is also an indicator of its perceived importance to the business (Figure 4).

IS YOUR COMPANY’S SUSTAINABILITY REPORT SUBJECTED TO THE SAME RIGOR AS YOUR FINANCIAL REPORTS?

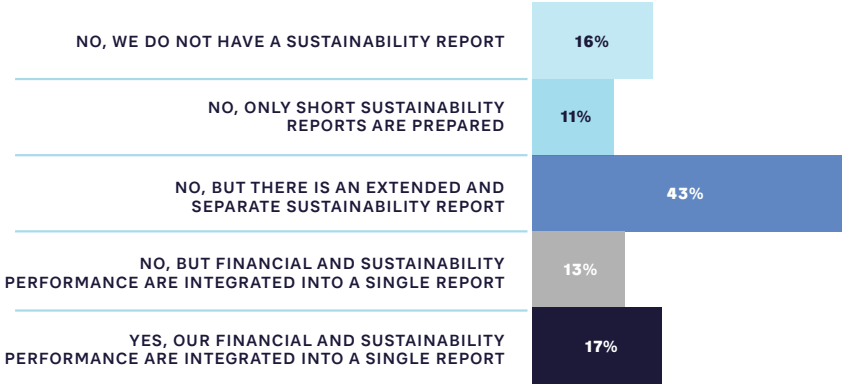


FIGURE 4: SUSTAINABILITY REPORTING

Figure 4 shows that although 84 percent of companies have a sustainability report, only 17 percent use the same reporting rigor as they do for financial performance and integrate it into a single report. This reflects the current reality that financial reporting of sustainability impacts is still in the development phase. For example, few corporations have yet properly adopted financial models that incorporate new ways of accounting for externalities, such as social return on investment (SROI) and creating shared value (CSV) models. This is starting to change as shareholders and investors become more sophisticated in their consideration of environmental and social governance (ESG) issues, but there is still some way to go. A further challenge is that financial results are generally reported monthly, quarterly and annually, yet the benefits of good sustainability often manifest themselves over a much longer period.

Lessons learned – Develop a carefully balanced set of sustainability indicators to be reflected in senior management incentives and external reports

The relatively limited adoption of linkages between sustainability performance and incentives shown in the survey is, to some degree, a reflection of the difficulty of selecting meaningful and appropriate indicators. For example, some ESG criteria, such as stakeholder impact or employee engagement, are difficult to measure in practice. Others, such as progress towards Net Zero impact, are not only hard to measure, but may also be too long term to be meaningful for an annual remuneration package. A recent study from the Executive Remuneration Center of the Vlerick Business School concluded that ESG criteria in board incentive structures were often poorly defined, with the result that targeted progress in sustainability performance was not achieved. Companies should therefore work towards developing and reporting on a balanced set of indicators suitable for their business, taking into account some important principles, for example:

- Reflect short-term ESG goals in incentives, not just over-arching long-term goals. (See also section 3 below.)
- Ensure that any ESG goals set for remuneration purposes are properly reflected in the corporate strategy, not just add-ons.
- Consider realistic sustainability impacts along the entire supply chain, not just within the company boundaries, taking a broad stakeholder view. (See also section 4 below.)
- Consider more than just one dimension of ESG impact, for example, not just climate change, but also waste, energy, diversity and inclusion, etc.
- Balance lagging impact measures (such as emissions) with leading proactive measures (such as controls implemented).

Corporate governance has an important role to play in this respect – the board is often in a better position to take a longer perspective in the broader interests of shareholders than the executive.

3. THERE IS OFTEN A LACK OF PRACTICAL PLANNING AROUND HOW TO ACHIEVE PUBLICLY DECLARED SUSTAINABILITY GOALS

While ambitious long-term targets and goals are often publicly declared, there is frequently a lack of practical planning around what these goals mean in the short- and medium term (Figure 5).

HAS YOUR COMPANY QUANTIFIED SUSTAINABILITY GOALS FOR THE FUTURE?

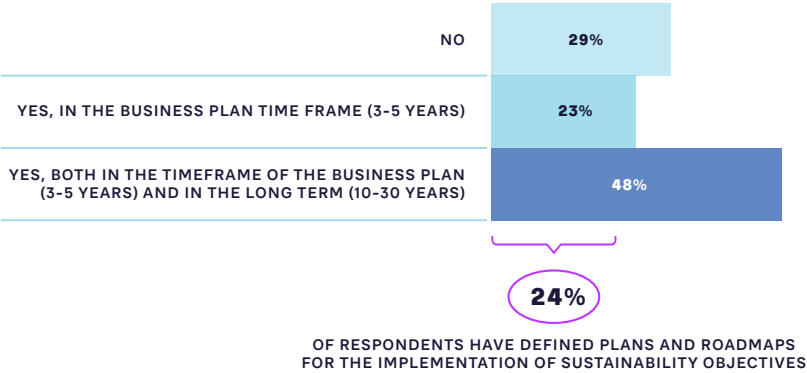


FIGURE 5: SUSTAINABILITY GOALS AND PLANNING

Less than half (48 percent) of the companies in the survey have set sustainability goals that include both the normal three-to-five-year planning horizon and the longer-term goal of 10–30 years. Only 24 percent have structured plans, roadmaps and milestones to achieve the goals. Nearly one-third have set no goals at all.

Setting ambitious sustainability goals and communicating these to stakeholders can be risky if not backed up by a robust strategy and implementation roadmap. There are many examples of companies having to rapidly implement painful internal processes – including divestments – to reassure stakeholders when previously declared targets are not met. At the other end of the scale, some companies adopt a policy of simply reflecting legal obligations, for example, “Net Zero by 2050” for Europe-based companies, which may not be enough to drive the necessary changes.

Lessons learned – Ensure that long-term goals are supported by meaningful roadmaps

To avoid these problems, companies need to ensure that five-year-plus goals are supported by meaningful roadmaps with intermediate short-term goals and actions. Just as importantly, there needs to be a defined and agreed process for monitoring progress versus these goals. This can be more complex than some companies expect.

Danone is a good example of a company that has a well-structured set of sustainability goals. Danone is committed to a sustainable shared value creation model: “One Planet. One Health.” Its set of nine long-term goals aligns with both this internal model and the United Nations 2030 Sustainable Development Goals. There is integration also with Danone’s broader business, brand and trust models. The

goals are monitored yearly by a company dashboard, with results also communicated externally.

Another example is IKEA, whose sustainability ambitions for 2030 are to become circular and climate positive, regenerate resources while growing the IKEA business, and create positive social impact for everyone across the company’s

value chain. These ambitions are supported by the IKEA People & Planet Positive strategy, which has a long-term roadmap for positive change entailing investments in new technologies, innovative materials, and ways of generating clean energy, as well as in social development.

A SURVEY CONFIRMED THAT VIRTUALLY ALL COMPANIES (APPROXIMATELY 80 PERCENT) BELIEVE THAT SUSTAINABILITY IS, AS WELL AS BEING CRITICAL FOR OUR SURVIVAL, GOOD BUSINESS.

4. NEARLY ALL COMPANIES BELIEVE GOOD SUSTAINABILITY IS BENEFICIAL TO THE BUSINESS, BUT MANY STILL STRUGGLE TO DRIVE CHANGE

Despite the patchy progress in dealing with the challenges of sustainability after many years, even decades, it would be wrong to conclude that business simply lacks true commitment. For the most part, company leaders are smart individuals who are strongly motivated to “do the right thing” for their stakeholders. For example, the survey confirmed that virtually all companies (approximately 80 percent) believe that sustainability is, as well as being critical for our survival, good business, providing competitive advantage and improving attractiveness to both employees and investors (Figure 6).

HOW MUCH DO YOU AGREE WITH THE FOLLOWING STATEMENTS



FIGURE 6: BENEFITS OF SUSTAINABILITY

However, the survey also showed that only 45 percent believe good sustainability improves financial results. This is very much connected with the difficulty of reporting the financial impact of sustainability in a meaningful way, as already discussed in point 2 above.

Lessons learned – Focus on people and take a broad stakeholder ecosystem view

There is no simple solution to the problem of translating motivation into change. It requires attention across all the aspects mentioned above, including strategy, governance, planning, organization, monitoring and reporting. However, one underlying priority that helps ensure success is to focus on people, not just inside the company, but across the whole stakeholder ecosystem.

As with any major change, it is ultimately the behaviors of people that will determine what actually happens. This requires not only implementing new systems and processes, but also providing the right training and coaching in what sustainability means for business managers and winning “hearts and minds” through inspiring initiatives, clear communication and leadership by example. As we have said, one of the keys to inspiring employees is to deal with sustainability in an open way as an integral part of the success of the business, rather than as an obligatory set of attitudes or form of corporate political correctness. As with all forms of change, approaches that “pull” people to behave differently, for example, through shared beliefs and values and aligned incentives, are much more effective than those that seek only to “push” them through imposing new rules and restrictions.

In working on changing people, it is critically important to take a broad “partner ecosystem” perspective. This was covered in depth in our previous article, “Corporate sustainability – Using your ecosystem to sustain the ecosystem”. The ecosystem approach means engaging not just with employees and shareholders, but also with suppliers, customers, competitors, government, regulators, communities and

THE ECOSYSTEM APPROACH MEANS ENGAGING NOT JUST WITH EMPLOYEES AND SHAREHOLDERS, BUT ALSO WITH SUPPLIERS, CUSTOMERS, COMPETITORS, GOVERNMENT, REGULATORS, COMMUNITIES AND START-UPS, AMONG OTHERS.

start-ups, among others. Sustainability is only meaningful when considered in terms of overall impact, which is also key for effective external sustainability measuring and reporting. Companies need to do more than

simply adopt one of the many publicly available reporting protocols. Instead, they need to understand better how their impacts take place within the ecosystem, learn from their partners, and design a monitoring and reporting system that is feasible and realistic. Employees who understand the position of their company in the ecosystem, and who are surrounded by like-minded individuals both inside and outside the company, are more likely to buy into sustainability goals and contribute positively.

The ecosystem approach also helps to leverage innovation in sustainability. One typical example among many is the Italian start-up ACBC (standing for “Anything Can Be Changed”), which collaborates with global brands such as Emporio Armani, Save the Duck, Philippe Model and Missoni to produce sneakers designed for the lowest-possible carbon footprint using bio-based or 100 percent recycled materials.

Small companies, especially, often struggle on their own to make the necessary investment of time and money to embed sustainability, yet collectively their impact is significant. Being part of a partner ecosystem, either through direct links to larger corporates or through industry or professional associations, can make a big difference.

INSIGHTS FOR THE EXECUTIVE

Despite the progress that has been made in many parts of the business world, the evidence from the survey confirms that many companies still have some way to go before they can properly “walk the talk” on sustainability.

Yet, in most cases, this is not simply due to a lack of motivation or sincerity on the part of company leadership teams. Rather, it is due to the inherent challenges of truly embedding sustainability into core business. These are, for the most part, practical challenges, such as how to measure and account for sustainability impacts and benefits (i.e., externalities) on equal terms with financial impacts and benefits, how to properly assess overall impacts both downstream and upstream, how to connect long-term goals with short-term targets, and how to engage properly with people both internally and across a wide stakeholder ecosystem.

However, in all these areas there is recent progress. Increasingly, the legal framework is providing the necessary underpinning for companies to make the sometimes-drastic transformations that are required. The financial sector is already being transformed in terms of growing insistence on responsible investment, and green funding is available at levels never seen before. Advances in green technology continue apace, and there is finally evidence of a genuine shift in consumer demand for sustainable products and services.

The need for embedding sustainability is therefore increasingly urgent. Companies should take heed of the key lessons learned from the leaders, including finding a common and transparent language, adopting the right indicators and making them really count, adopting realistic goals and effective ways to measure progress against them, and above all, focusing on people and adopting a stakeholder ecosystem perspective.

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COVID-19 – FOCUSING ATTENTION



**ON THE NEXT
TRANSFORMATION
IN HEALTHCARE**

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The lightning-fast global spread of the Omicron variant of COVID-19 was a painful reminder that the only way to protect against the spread of the disease is vaccination on a global level. At the same time, South African researchers' quick identification and analysis of Omicron demonstrated the strength and interconnectedness of the international science community, with critical data rapidly passed to those who were best able to mount a response.

Essentially the pandemic has shown the strengths and weaknesses of the global healthcare sector – and the opportunities that exist for improvement and transformation. While demonstrating what can be

THE LIGHTNING-FAST GLOBAL SPREAD OF THE OMICRON VARIANT OF COVID-19 WAS A PAINFUL REMINDER THAT THE ONLY WAY TO PROTECT AGAINST THE SPREAD OF THE DISEASE IS VACCINATION ON A GLOBAL LEVEL.

achieved through global collaboration, COVID-19 has also shone a harsh light on the disparities in healthcare access between developed and developing countries. To date, Africa, a continent with 1.4 billion people, has had to import 99

percent of its vaccines, resulting in low vaccination rates among its population (currently below 20 percent, or even 10 percent, in many countries¹) and putting additional stress on an already-stretched healthcare system struggling with HIV and malaria.

The lack of access to innovative medicines goes far beyond vaccines, for example, to biologics such as insulin. While the discovery of insulin was made 100 years ago, access to this drug for the treatment of diabetes is still limited in many parts of the world – often where the disease is now becoming most prevalent. Only one in 10 patients in low- and middle-income countries receive comprehensive diabetic care, and even in the US, 30 percent of patients with type 1 or 2 diabetes engage in “cost-related insulin underuse”.

At the same time, governments across the world, including low- and middle-income countries, are increasingly held responsible for their populations’ health and access to relevant medicines. This pressure has been further increased by the pandemic and its focus on the performance of different healthcare systems.

These needs are driving a requirement to expand capabilities around innovation and access in low- and middle-income countries, which potentially will have transformative impact on the wider global healthcare ecosystem, including pharmaceutical companies, governments and other stakeholders. The wider industry should therefore look to understand and answer these five key questions:

- How can low- to middle-income countries improve access to innovative medicines for their citizens?
- What capabilities are required to rebalance the current supply chain and bring production to these countries?
- How would an increasingly local production of vaccines and biologics change the global supply chain?
- Are there faster and easier ways to develop, produce and distribute not only vaccines, but also other innovative drugs, in and for developing markets?
- What new and innovative approaches are already in place, and how will this change the market, in both the developing and developed world?

COVID-19 - FOCUSING ATTENTION ON THE NEXT TRANSFORMATION IN LOCAL AND GLOBAL HEALTHCARE

The pandemic has highlighted what the global life sciences industry can achieve in a remarkably short time, with the development of a multitude of novel (and successful) vaccine approaches that were quickly rolled out around the globe.

On the negative side, the question is why it took a pandemic to enable all of those technologies at a large scale. Additionally, we have seen huge disparities in vaccine distribution. Access to vaccines and the materials required for their production and distribution have become political issues. Suddenly, governments are being judged by their citizens on their abilities to produce and/or procure and distribute

vaccines, while providing access to particular vaccines has become a tool of foreign policy for countries as diverse as China, Egypt, India and Russia.

Moving beyond COVID-19, bringing innovative medicines to developing markets, and using the lessons learned to improve healthcare outcomes in the rest of the world, targets two key areas for innovation – access and manufacturing – while also considering R&D and enabling a different kind of innovation.

1. INCREASING ACCESS FOR WIDER POPULATIONS

Access to medication, whether produced locally or internationally, is a key challenge, based on factors such as cost, availability, healthcare systems, reimbursement models, and the potential difficulties of physical distribution, especially when this involves cold-chain logistics and delivery in sparsely populated areas.

The required ecosystem thinking to establish even clinical trials in these regions has recently been demonstrated through the first malaria vaccine, which was approved and recommended by the WHO. (See the box-out below.)

MALARIA

Malaria is a typical example of a disease that not only is very complex, but also mainly affects low-income and developing countries. According to the Malaria Alliance, 250,000 children die each year of the disease. Development and testing of vaccines in this space are usually supported by donations, alongside commitments by pharma companies and organizations such as the WHO and Gavi.

A new vaccine, RTS,S, developed by GSK, has recently been recommended by the WHO for use in children, following a pilot study that showed significant reduction (30 percent) in deadly severe malaria, even when introduced in areas where insecticide-treated nets are widely used and there is good access to diagnosis and treatment.

For this vaccine, the pilot study required the joint efforts of local health ministries and the WHO; financial support through funds such as Gavi, the Global Fund, and Unitaids; and donations of the vaccine itself by GSK, which invested USD 700 million in its development. Following the WHO's recommendation, global stakeholders, including Gavi, are now considering whether and how to finance a new malaria vaccination program for countries in sub-Saharan Africa. Ahead of this decision, an innovative financing agreement has been reached between Gavi, MedAccess and GSK to guarantee continued production of the RTS,S antigen, which will be essential to ensure ongoing vaccine supply.

However, this access challenge is also driving very different innovation – for example, Zipline, a US-based drone company, recently completed the first long-range drone delivery of authorized mRNA COVID-19 vaccines requiring an ultra-cold chain in Ghana. The collaboration will allow the distribution of approximately 50,000 doses of the Pfizer-BioNTech COVID-19 vaccine in the country, pioneering a new distribution model that overcomes the twin issues of limited infrastructure and widely spread populations. This approach could ultimately be rolled out in Europe, Asia-Pacific and the Americas, especially in areas of low population density.

Availability, particularly of vaccines, has become a key consideration for national security, with the allied consideration of using healthcare as a tool for managing foreign policy. The former relates to ensuring that key medicines are available on call for all, and the latter to the possibility of substituting capital with healthcare.

Illustrating this second point, richer Middle Eastern countries – especially those within the Gulf Cooperation Council (GCC) – are large aid donors to many countries around the world, especially in Africa. They are already developing advanced healthcare infrastructure within the region to stem the loss of income if local patients fly elsewhere for treatment. This infrastructure can be used effectively as a tool of foreign policy, supplementing financial aid by providing treatment to patients from recipient countries. This emerging approach has distinct advantages for both recipients and donors. It ensures that aid reaches the person it is intended for, the efficiency of the facility increases, the case mix becomes wider and better, the possibility of diverse clinical trials increases, and it removes any inefficiencies that might result from a simple capital or goods donation.

2. BRIDGING THE PRODUCTION GAP BY THINKING LOCALLY AND GLOBALLY

The pandemic has accelerated the push for local, high-quality production of patented medications, supported by their originators, alongside open business and operating models that include partnerships with international organizations.

Production capabilities and ecosystems clearly vary widely – India is increasingly becoming the “pharmacy of the world”, introducing innovative new approaches. Yet there are currently fewer than 10 vaccine manufacturers in Africa, most of which are in Egypt, Morocco, Tunisia, Senegal, and South Africa. Steps are being taken to expand this capacity. For example, BioNTech has recently assumed a very active role in supporting Rwanda and Senegal in setting up a “vaccine hub” in the region specifically to produce malaria and tuberculosis vaccines.

Shifting the focus to South-East Asia, countries such as Thailand have long realized that their healthcare systems are being put under significant stress by:

1. High pharmaceutical spending due to a preference for imported patented drugs and branded generic drugs
2. Reliance on imported active pharmaceutical ingredients (APIs) (making up 90 percent of local API consumption) and drugs (64 percent of local drug consumption) due to the lack of local development and manufacturing capabilities and capacity
3. A lack of a pharmaceutical ecosystem in the region, with gaps in the value chain, specifically in research and development

SOLVING THE MEDICINE BOTTLENECK IN SOUTH-EAST ASIA

Thailand has identified local production as an area of both potential economic growth and a lever to reduce healthcare costs. It has made the manufacture of APIs and biosimilars part of a government initiative, working with major government-owned industry players in adjacent sectors (such as chemicals) to enable local capacity and capability for drug manufacture, which also creates new revenue streams.

This is being driven by the creation of a Thai contract development and manufacturing company (CDMO), which addresses three important areas:

1. Drug development capabilities

- Process and scale up development, APIs, and drug formulation
- Capability to develop large-molecule drugs (biologics)

2. Centralization of manufacturing to achieve required scale

- Production consolidation at a single manufacturing facility to distribute overhead costs and produce in a more cost-effective manner

3. Leading manufacturing capabilities and technologies

- State-of-the-art API and drug manufacturing technologies, compliant with key regulations
- Bioreactors to manufacture large-molecule drugs

This Thai CDMO aims to accelerate the creation of a local pharma ecosystem and enable local companies without competing with them, which benefits researchers, the wider sector, healthcare providers, and ultimately patients.

In South-East Asia, these factors are exacerbated by the changing dynamics of a market that is rapidly growing economically, driving significant growth and change in the population. This has led to various chronic health issues that are now aggravated by the uncertainty caused by the current pandemic.

While there is currently an intense discussion on releasing patents for vaccines, it is important to look at the broader question of what it will take to enable the local production and supply of innovative medicines. Beyond IP, countries looking to build local production (and local R&D) need to develop multiple capabilities alongside the investment and time required to build production facilities:

- Universities with the freedom and resources to carry out research
- Trained people who are able to master complex production technologies
- Infrastructure that ensures a steady and uninterrupted supply of water and energy to run production facilities
- Sterile production processes with extremely high-quality standards and, in many cases, a cold chain
- Legal and regulatory frameworks to ensure that quality and liability are covered adequately

3. THE OPPORTUNITY FOR INNOVATIVE MANUFACTURING AND R&D APPROACHES TO IMPROVE ACCESS FOR ALL

When it comes to the development of home-grown pharmaceutical industries, China and India have both been through a remarkable journey in recent years. To build its capabilities, China has combined a strong push across multiple dimensions, including education in both data science and life sciences, which has created industrial

infrastructure and improved regulatory frameworks. For example, the Chinese FDA used to be known for extremely slow processes in which it took several years to set up a clinical trial, but it has completely turned that around. In parallel, Chinese companies such as WuXi (a biologics contract manufacturer)

THE INDIAN PHARMA SECTOR HAS BEEN MUCH MORE FOCUSED ON DELIVERING INNOVATION THAT UNDERPINS ROBUST AND EFFICIENT PRODUCTION THAN ON SPEED TO MARKET.

and BGI Genomics (a large biotech player that was instrumental in the early sequencing of SARS-CoV-2), as well as data giant Tencent, enabled an ecosystem that allowed China to be among the first countries to develop a vaccine that could then be used both at home and as an instrument of foreign policy.

India has long been recognized as a hub for production of cheap APIs and generics, with companies such as Dr. Reddy and Ranbaxy initially leading the way. However, this should not mask the amount of innovation happening in the country, addressing areas of technological advancement that are untapped in mature and high-income markets such as Europe and North America.

With its focus on generics, vaccines (India supplies about 50 percent of vaccines globally), bio-similars, and biologics, the Indian pharma sector has been much more focused on delivering innovation that underpins robust and efficient production than on speed to market. More efficient processes mean lower prices, which in turn makes these drugs and vaccines accessible to broader populations across the world (as highlighted in the box-out below).

BIOLOGICAL E – AN INDIAN INNOVATOR

Innovation in India often focuses on drugs that are accessible from price and technological standpoints. This is demonstrated by Biological E, an innovative vaccine and pharmaceutical player that concentrates on “providing equitable access to quality vaccines and pharmaceutical products” with a clear focus on producing vaccines that are then recommended by the WHO. For the development of a COVID-19 vaccine, it looked to create a low-cost, open-source alternative to expensive and limited-supply mRNA vaccines for low-to middle-income and under-vaccinated countries. Its CORBEVAX™ vaccine was originally developed by US academics at Baylor College of Medicine and the Texas Children’s Center for Vaccine Development and provided without licensing costs/IP. The subunit vaccine only requires standard refrigeration and comes at a price as low as USD 2.50 per dose. It has received approval for emergency use in India, and Biological E is now in discussion with the WHO for recommendations. The progress of CORBEVAX™ illustrates how effective international collaboration can drive development.*

INDIA’S PHARMACEUTICAL EXPORTS WERE VALUED AT 16.8 BN USD IN 2019, WITH THE US BEING THE LARGEST IMPORTER FROM INDIA

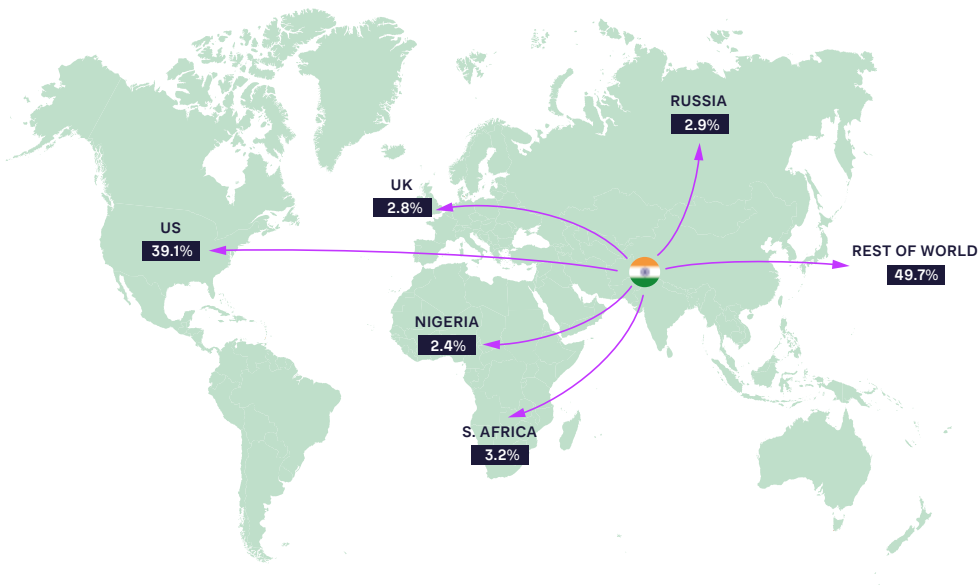


FIGURE 1: PHARMACEUTICAL EXPORTS FROM INDIA TO THE REST OF THE WORLD 2019
SOURCE: GLOBAL DATA, ARTHUR D. LITTLE ANALYSIS

Indian production innovation is also driving benefits around insulin, used for the treatment of type 1 and type 2 diabetes. The number of people with diabetes globally rose from 108 million in 1980 to 422 million in 2014, with prevalence growing more rapidly in low- and middle-income countries than in high-income ones. Overall, in 2019, diabetes was the ninth leading global cause of death, with an estimated 1.5 million deaths directly caused by the disease.

Indian company Biocon has created its “10 cents” initiative for insulin, bringing the price down from about USD 5 to just 10 cents per day for treatment in India. As part of this initiative, Biocon is the first company to develop and market insulin produced by the *Pichia pastoris* yeast, which allows for faster and more efficient production compared to current methods.

As can be seen from Figure 2, the cost of insulin, which is a necessity for type 1 diabetes (T1D) patients to survive and highly relevant for many type 2 diabetes patients to control blood sugar levels and avoid long-term side effects, is still high in many markets. This includes the US, which has out-of-pocket treatment costs close to USD 1,000 a month for T1D patients.

INSULIN PRICES ARE HIGH, ESPECIALLY
IN THE US MARKET

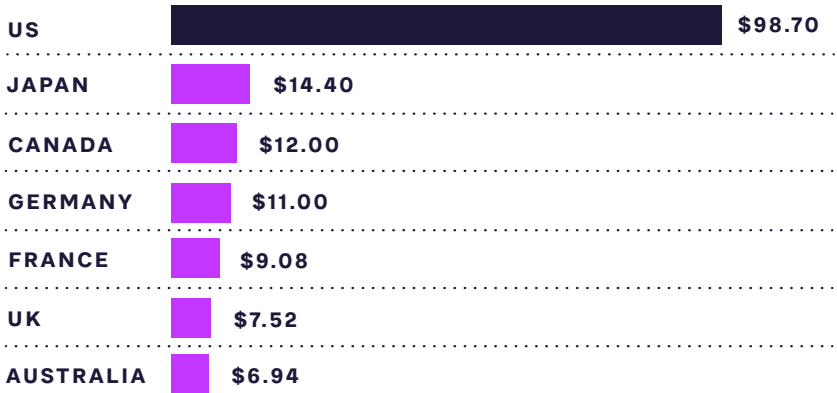


FIGURE 2: AVERAGE INSULIN PRICE PER STANDARD UNIT, 2018
SOURCE: RAND CORPORATION

Innovation is not limited to insulin - a recent Arthur D. Little study on biologics production shows that new methods have a much higher chance of adoption in countries such as India. These less “settled” markets are proving more open to innovation, as they are often still building new production systems and less bound by existing facilities and preconceptions in the market. Additionally, the fear of using a new system that might not yet have regulatory approval is much lower, meaning companies are more likely to take risks. Once proven, these approaches can then be applied within developed countries, bringing benefits in terms of decreased manufacturing costs and lower supply chain risk.

4. THE BENEFITS AND OPPORTUNITIES
OF REBALANCING FOR ALL PLAYERS
– THE NEXT TRANSFORMATION IN
HEALTHCARE

Transforming access to innovative medicines requires a joined-up approach that shares best practice and develops new capabilities in low- and middle-income countries. As the experiences of India, China and other countries demonstrate, this rebalancing is already happening and likely to accelerate post-pandemic.

Given these trends, should established global life science companies, policymakers and governments fear this global shift led by low-cost production and innovation and new access methods across the developing world?

The answer is a resounding no. In addition to considering risk, all players should look at the value and opportunities provided to global and local healthcare by initiatives targeting, for example, the reuse of existing drugs, innovative approaches to generics and biosimilars,

SUPPORTING LOCAL PRODUCTION AND INNOVATION FOR MORE PATIENT-CENTRIC, BUT ALSO CHEAPER AND MORE ACCESSIBLE, MEDICATIONS WILL ULTIMATELY BE A GLOBAL BENEFIT.

and even innovative distribution models such as drone delivery. Different regions bring value to different parts of the healthcare system; supporting local production and innovation for more patient-centric, but also cheaper and more accessible, medications will ultimately be a global benefit. Lessons can be learned, and innovative approaches adopted, that can be applied within the developed world. It is a two-way street – established players will be able to tap into a wider pool of

talent, access new markets, lower supply chain risks and bring down manufacturing costs. This next transformation in healthcare will therefore likely be beneficial to patients globally.

INSIGHTS FOR THE EXECUTIVE

Achieving the benefits of a truly global healthcare ecosystem requires innovation from companies, policy makers and governments in three key areas:

1. Accelerate open collaboration and risk sharing across nations and companies:
 - a. Enable open collaboration between nation states and pharmaceutical companies and other industry players to justify investments. This includes solid legal frameworks, alignment on how IP is treated and action to crack down on counterfeit/black/grey market drugs. These frameworks should be driven and overseen by global organizations (such as the WHO) to avoid the need for individual pharma companies to align with each nation state.
 - b. New risk-sharing models to protect companies from the inevitable challenges that will arise when building new manufacturing capability and supply chains and transferring tech and IP, while ensuring the highest quality levels are maintained. This will lower risks and costs over time as capabilities scale.
2. A shift in how technologically advanced companies share knowledge and train local populations to do advanced technical work. This requires collaboration with governments, universities and NGOs to build talent pools and put safeguards in place to protect investment in training and development. Ultimately this will create a larger, more diverse global talent pool.
3. Innovating and operating in new countries and markets will require governments and policymakers to invest in local education and regulations to stimulate the right ecosystem capabilities to drive local R&D, manufacturing and business model innovation. Companies, in turn, can leverage this as they seek to develop new approaches to drug development, market access and distribution in developed markets.

Ultimately, rebalancing global supply chains and bringing innovative medicines and advanced manufacturing capabilities to developing regions will transform global healthcare in five key ways:

1. Improving local and global health
2. Improving the economies of developing nations
3. Improving the trust of citizens in their governments and ability to deliver quality healthcare
4. De-risking the pharmaceutical supply chain and therefore access around the world, providing better resilience globally
5. Opening new opportunities through access to a wider, more diverse talent pool, innovative manufacturing and distribution approaches, and the ability to effectively target new markets and patient populations

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METAVERSE

A digital landscape with binary code (0s and 1s) falling like rain. The background is a gradient of blue and purple, with a bright, glowing horizon line. The word "METAVERSE" is written in large, white, bold, sans-serif capital letters across the center.

THE NEXT DIGITAL REVOLUTION FOR BUSINESS?

AUTHORS

Albert Meige, Michael Papadopoulos, Rick Eagar

Unless you are a science-fiction fan, a gaming nerd or a designer, virtual reality (VR) may not have played a big part in your life up to now. However, since Facebook changed its name to Meta in October 2021 and announced the creation of 10,000 new jobs in Europe to create the metaverse, it's fair to assume that this could be about to change.

A revolution powered by VR has been promised for decades, but it's only recently that improvements in hardware and software, together with a new level of consumer

EPIC GAMES RELEASED THE ONLINE GAME FORTNITE IN 2017, AND IT BECAME SOMETHING OF A CULTURAL PHENOMENON, GENERATING OVER \$5 BILLION IN REVENUES IN 2020.

engagement, have started to converge to create something that could be genuinely disruptive in the foreseeable future. If you are in the business of gaming or entertainment the potential is clear, but what could the metaverse mean for the rest of the business world,

and what are some of the challenges that will need to be overcome? Is it something that deserves your attention now, or will there be another stage in the "hype curve" before it has a major impact?

A LONG TIME COMING

The metaverse is most simply described as a VR space in which users can interact within a computer-generated environment, a description that reflects its initial application in gaming. As such, the metaverse is certainly nothing new. Attempts to create virtual worlds have been around for nearly two decades. (See Figure 1.)

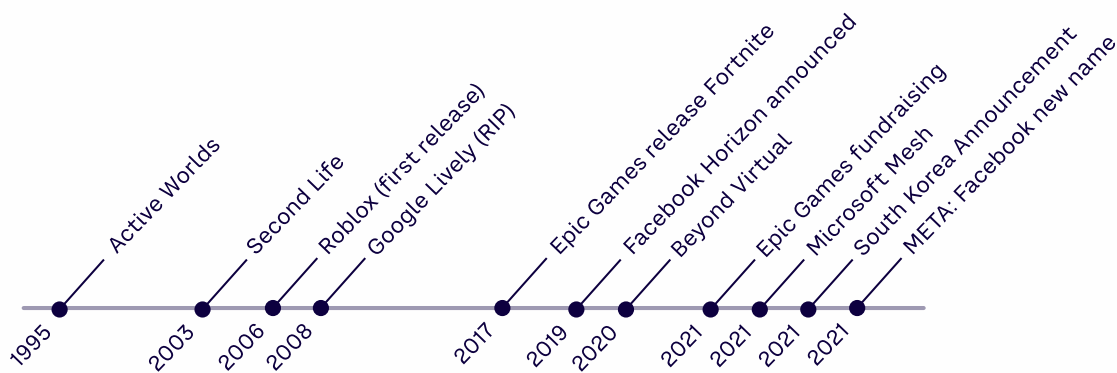


FIGURE 1: VIRTUAL WORLDS OVER THE LAST TWO DECADES

One of the first was Active Worlds, created in 1995 and still existing today, which allows users to own worlds and universes, and develop custom 3D content. Second Life followed in 2003, allowing people to create an avatar for themselves and have a second life in an online virtual world. It generated substantial hype and high expectations, but never managed more than 1 million users by 2013, followed by a gradual decline until the 2020 pandemic, when a large spike in new registrations was reported.

Roblox, established in 2006, is an online game platform and game creation system that allows users to program and play games, and is growing rapidly. Roblox, by making its development environment publicly available, allows anyone to develop games accessible in its virtual universe and players to purchase virtual assets, such as using Apple’s AppStore. Roblox is something like the YouTube of video games, bringing creators and consumers together. With daily users in excess of 40 million, revenues over USD1 billion and growth of some 500% per annum, Roblox has become a major player in the developing metaverse. This has also attracted the attention of brands, including luxury brands. For example, Gucci opened its Gucci Garden virtual space on Roblox for two weeks at the end of May 2021. Gucci also released a limited edition of in-game virtual bags that sold for USD4,115. Cosmetic brands have started to offer their own virtual beauty products. At the end of April 2020, for example, L’Oréal allowed Snapchatters to virtually try the products of several of their brands, such as Garnier and Lancôme.

Epic Games released the online game Fortnite in 2017, and it became something of a cultural phenomenon, generating over USD5 billion in revenues in 2020. This included an online concert by rapper Travis Scott for which 12 million people logged in. Young people, the consumers of tomorrow, already spend considerable sums of money to dress up their Fortnite avatar in a fashionable skin. In April 2020, Epic Games announced that it had completed a USD1 billion round of funding, which will allow the company to support future growth and pursue its long-term vision for the metaverse.



FIGURE 2: TRAVIS SCOTT PERFORMED LIVE AT FORTNITE “IN FRONT OF” AN AUDIENCE OF 12 MILLION PEOPLE.

Entropia Universe, designed by the Swedish software company MindArk and released in 2003, is a virtual game environment in which players can buy in-game currency using real money. As long ago as 2010, a virtual club named “Club Neverdie” was sold for USD635,000. Virtual reality programs such as Decentraland use non-fungible tokens (NFT) as a form of property rights – tokens are tied to 3D plots of land, which can be bought and sold on the secondary market. In November 2021 a 500m2 plot of virtual real estate sold for a record USD2.43 million, purchased by virtual real estate company Metaverse Group. There is no doubt that virtual assets can have commercial value in the same way as physical assets.

On the hardware side also, technological progress on both digital infrastructure and consumer devices has been rapid. For example, Apple has filed multiple patents over the last 10 years related to VR headsets (Figure 3), and VR hiring and acquisitions have ramped up.

Rapid advances are also starting to be made in brain computer interfaces (BCIs). For example, NextMind, a start-up, is already offering a non-invasive BCI device which can read brain waves from the visual cortex of the brain to enable direct control of functions in games. It is no longer completely fanciful to imagine a virtual environment which is, superficially at least, close to being indistinguishable from a real one.

So, already the metaverse is going a long way beyond online game playing. A better definition for the metaverse might be **“a future version of the web in which immersive 3D virtual universes meet social networks, collaborative spaces, marketplaces and e-commerce”**. If we consider the metaverse the default on-line environment of the future, replacing the current web, then its potential importance for business needs no further explanation.



FIGURE 3: VIRTUAL REALITY HEADSET

However, the next important question is: when do we need to worry about it? Recent history is littered with examples of new technologies which have spent a long time in the “trough of disillusionment” in the so-called Gartner hype curve, perhaps the most recent example being autonomous vehicles. Fifteen years ago,

virtual worlds themselves were expected to have a much bigger impact than they have achieved so far. Is the publicity around the metaverse just another piece of hype?

Of course, it’s hard for anyone to make a confident prediction. But the recent examples above illustrate the convergence of three key factors that indicate we could possibly be at the inflection point in an exponential growth curve:

- **Software:** We are now seeing the creation of metaplatforms and standards, which allow for interoperability and enable the creation of multiple applications in a functioning value chain that is already starting to move well beyond gaming.
- **Hardware:** There are signs that accelerating advances in hardware, at both the infrastructure and consumer levels, will reduce some of the barriers to widespread adoption of VR, namely, the limited quality of the consumer experience and its relatively high cost.
- **Consumers:** The user base for VR is exploding, not only among younger consumers, but also across all demographics, thanks to the shared familiarity with virtual interaction brought about by the pandemic.

As with the worldwide web, an exponential growth curve means, in practice, a sudden and increasingly rapid acceleration of activity. Being adequately prepared before this happens makes good business sense. Bloomberg Intelligence recently estimated that the metaverse's market size would reach USD 800bn by 2024.

THE OPPORTUNITIES FOR BUSINESS

So, what are likely to be some of the opportunities for business, beyond the obvious areas of gaming and entertainment? There are some good short-term candidates: collaboration, problem solving, training and events. And these opportunities are relevant across a wide range of industries, including sectors such as healthcare, automotive and telecoms:

Collaboration: The pandemic has massively accelerated remote working, and we are unlikely to ever see a return to the same level of physical co-working that existed previously. However, remote workers complain that they are unable to communicate as effectively as they

A HIGH-QUALITY METAVERSE-TYPE ENVIRONMENT WILL ENABLE MEETINGS, WORKSHOPS AND COLLABORATIVE WORK SESSIONS TO MOVE FROM 2D SCREENS TO IMMERSIVE VIRTUAL WORKPLACES.

would in person because they can't read any body language. Also, prolonged absence of in-person interactions can lead to problems such as employee disengagement and lack of visibility over productivity. A high-quality metaverse-type environment will enable meetings,

workshops and collaborative work sessions to move from 2D screens to immersive virtual workplaces, using avatars to allow employees to work together similarly to in the real world. Facebook's Workrooms app is an early example, currently clunky but illustrative of the potential for the future. Microsoft Mesh is another current example of an immersive virtual environment for meeting and collaboration. We know from online gaming that people can become highly engaged with each other in 3D worlds, forming sometimes lifelong friendships.

Problem solving: 3D modeling is already well established as a key tool in fields such as architecture and industrial design. An advanced metaverse gives you space where anything can be 3D modeled virtually using digital twins. This enables smarter problem solving in numerous industries that do not traditionally use 3D models, such as healthcare and life sciences. A recent example relevant to the automotive and robotics sectors is NVIDIA's Omniverse Replicator, a synthetic data-generation engine that produces physically simulated synthetic data for training deep neural networks. Some of its early implementations include NVIDIA DRIVE Sim, a virtual world for hosting

the digital twin of autonomous vehicles, and NVIDIA Isaac Sim, a virtual world for the digital twin of manipulation robots.

Training: Virtual training has already existed for a long time, since the first flight simulators were created. It has already advanced significantly in other areas where highly specialized skill sets are needed, such as robotic surgery. One such innovative example is Osso VR, which offers training for advanced surgical procedures using virtual worlds. More recently, there has been an explosion in development of new virtual training offerings for a wide range of less specialized applications. Virtual training is especially powerful in situations requiring interaction with either physical objects or people, and where on-the-job physical learning is impractical, costly or hazardous. One good example is Strivr, which offers a suite of immersive training solutions covering areas such as health & safety, operational efficiency, customer service, soft skills and sports.

Events: For large organisations, the metaverse could offer significant efficiency benefits. A virtual workplace, equipped with virtual whiteboards, virtual screens and workstation equipment that transfers the employees' at-home keystrokes, can create a far more collaborative conferencing experience than a typical Teams or Zoom session of today. VR offers the opportunity of holding any major event, such as a conference or concert, as a fully virtual or hybrid event. Virtual events were reported to have grown tenfold during the pandemic (Forbes), with forecasts of future compound annual growth well over 20% in the next 5 years. One typical example is Party.Space, which already has a gallery of 11 venue spaces and offers a "metaverse-style" experience, including games and transactions using NFTs¹.

More broadly, the emerging metaverse value chain will offer other types of opportunity, for example:

Physical to virtual products: The metaverse environment provides a natural marketplace for businesses that already sell digital products, such as media, games and software. However, as mentioned earlier, there will be opportunities for consumer brands, especially luxury and designer brands, to extend their offerings from physical to virtual products. Another example of this is Louis Vuitton, who in 2019 released a range of some 40 different virtual clothes for the League of Legends game, including a USD5000 "leather" jacket. While this is still an online games application, we can easily imagine that as more daily activities start to take place in the metaverse – such as work, education, socializing, buying, selling, entertainment, sport and play – there could be a huge expansion of possibilities for other types of virtual product, from apparel and accessories through to virtual real estate. For companies that sell physical products, the ability to leverage virtual product capabilities to sell physical products will also be key.

1. NFT: Non-fungible token is a form of unique digital asset that cannot be duplicated, modified or deleted, and that is registered in a blockchain in a way that is unchanging and incorruptible.

New value chain roles: Whether the metaverse is essentially a monopoly (for example, with key infrastructure and access owned by a single giant such as Meta) or else fully public and accessible to all (or some combination of the two), there will be a developing value chain that provides new business opportunities. (See Figure 4.)

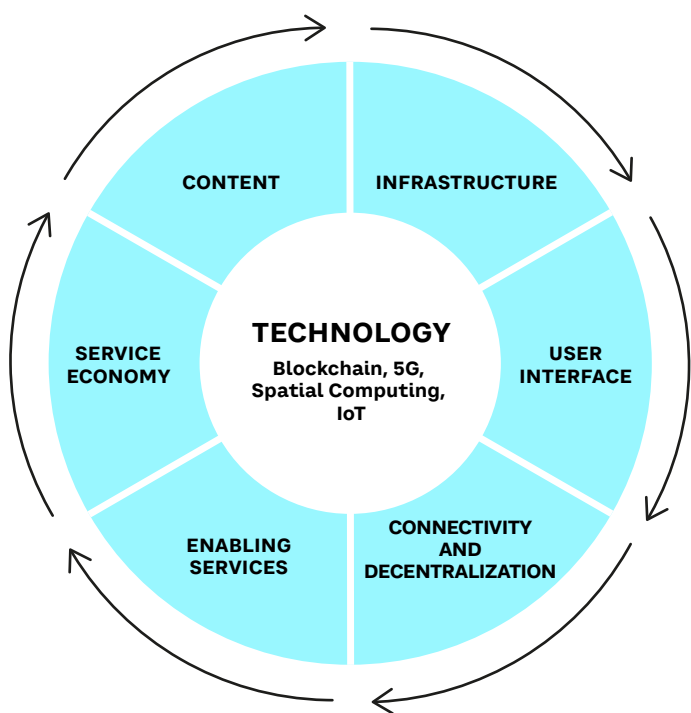


FIGURE 4: NEW VALUE CHAIN BUSINESS OPPORTUNITIES

For example, at the infrastructure level there will be new opportunities for hardware and software companies. The metaverse will require a plethora of new devices at the user interface, ranging from visors and haptic feedback devices to the more mundane smartphones and personal computers. Enabling services include, for example, e-commerce, entertainment, search and reference services, social media and cloud services. The service economy will give rise to new markets for payment, security, cryptocurrency, blockchain, asset management, financial and legal services, including crossovers between the virtual and physical worlds. There will be new content opportunities in the creative arts, design and innovation. YouTube is a helpful example in this respect. By bringing together creators and viewers it has enabled the emergence of thousands of new talents from the crowd and significantly disrupted established business models. The metaverse will blur the line further between professional and user-generated content, facilitated by the introduction of new tools and templates (e.g., video B-Roll, 3D assets). There will be new retail, marketing and sales opportunities. Once the metaverse has achieved a certain degree of scale and penetration, the list is almost endless.

NEW OPPORTUNITIES BRING NEW CHALLENGES

One thing we can be fairly certain about is that along with new opportunities there will be new risks and challenges. For example, few predicted the myriad social and ethical challenges that we already face today with the internet, and we could expect something similar – but different – when the metaverse revolution takes off. Focusing specifically on the business world, several challenges become immediately apparent:

- **Security and fraud:** The metaverse will be, at least initially, a largely unregulated environment based on cryptocurrency such as NFTs. There will be major challenges in terms of defending intellectual property, avoiding counterfeiting and protecting against other forms of criminal activity.
- **Enabling interoperability and agreeing standards:** One of the prerequisites for a functioning metaverse is that virtual assets purchased in one platform or world can also be used in another. It is not yet clear what sort of balance will be struck that will be in the interests of both platform operators such as Meta and business and private users, for which interoperability, transparency and low cost will be paramount.
- **Understanding consumer behaviors:** It is easy to make rash assumptions about consumer behaviors in the metaverse that may not be correct. For example, we have already seen a few examples of consumers paying a premium for virtual products based on what is essentially artificial scarcity. This is a carryover from the

physical world. But once the metaverse is more established, will such behaviors continue, or will different forms of customer value emerge? For example, we already know that Millennials and Generation X in general have different values to Baby Boomers. How will this translate to business in the metaverse?

THE SERVICE ECONOMY WILL GIVE RISE TO NEW MARKETS FOR PAYMENT, SECURITY, CRYPTOCURRENCY, BLOCKCHAIN, ASSET MANAGEMENT, FINANCIAL AND LEGAL SERVICES, INCLUDING CROSSOVERS BETWEEN THE VIRTUAL AND PHYSICAL WORLDS.

- **Accessing and leveraging new talent:** The metaverse will encourage the emergence of new talents, for example in design and experience creation, which will become critical for business success. This will be democratized and therefore hard to control. Companies will need to work out how to win the new war for talent.

- **Combining physical and virtual assets:** The new metaverse economy will not be 100 percent in the virtual world. It is likely that the most successful companies will be those that are able to exploit both the physical and the virtual worlds to cross-sell in both directions. This is somewhat analogous to how companies such as Amazon gained scale through a combination of digital and logistics know-how and innovation.
- **Countering digital native vertical brands (DNVBs)²:** For established historical brands with physical products today, one of the challenges will be how to counter the likely arrival of new DNVBs that may gain an early foothold in the metaverse and expand rapidly into the physical world, disrupting established markets. For this reason, being able to move fast when the metaverse takes off will be very important for established brands.

INSIGHTS FOR THE EXECUTIVE - WHAT TO DO NEXT

The metaverse is certainly the “flavor of the month” at present. Whether this will translate into major disruption and exponential growth in the short term, or whether we will go through a period of

***EXECUTIVES WOULD DO WELL
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extended disillusionment, is still hard to predict with any certainty. However, what is clear is that the risk of being slow off the mark is a very real one that businesses should take seriously. Executives would do well to start now,

considering what the metaverse could mean for the future of their businesses, for example:

- **New products and services:** What are the potential areas where your company’s products or services, or the underlying capabilities and know-how you possess to realize them, could translate into new virtual products or services? Are there ways that new virtual offerings could be developed to help sell physical products and services?
- **New business models:** Are there any opportunities for new or disrupted business models resulting from the emergence of the metaverse as a place to do business? For example, could you change your position in the value chain, change your relationships with partners, use assets differently or adopt a new pricing or cost model? What are the threats and opportunities for your current business?

2. DNVB: A highly customer-focused brand that starts online and controls its entire customer experience from factory to consumer

- **New applications and use cases:** In your own business operations, which aspects could benefit from the virtualization opportunities offered by the metaverse? For example, global collaboration, training or problem solving?
- **Monitoring developments:** Whose responsibility is it in your organization to monitor developments around the metaverse? Who might be possible partners and collaborators to help you extend your capabilities?

So, will the new virtual world provide new physical business opportunities? The clear answer is yes, and it might be happening sooner than you expect. The opportunity is immense – but so are the challenges. It will be interesting to see who emerges as the winners and losers.

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SELLING CUSTOMER OUTCOMES



A BUSINESS MODEL TRANSFORMED

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Over the past five years, organizations across most sectors have embraced the move from simply selling products to providing ongoing services to their B2B and B2C customers. The disruption of the pandemic has only accelerated this change. As we described in our previous article¹, this means you can now purchase almost anything “as a service”, from coffee to lighting or machine bearings.

However, for most organizations this transition has only gone so far. They may have added subscription services to their offerings, but have not yet gained full value by implementing outcome-based business models (OBMs), in which customers purchase a guaranteed outcome to meet their needs.

OBMs transform the customer relationship. Imagine signing up with an organization that guarantees that you won't be burgled or that you will consistently be sharply dressed. These are examples of the radical possibilities that OBMs offer to customers – and to organizations. A successful OBM typically provides deeper customer value, greater insights into individual requirements, and longer and more profitable customer relationships compared to traditional online or offline business models.

1. Turning customers into subscribers – How to successfully make the shift, Prism issue 1 2020
<https://www.adlittle.com/en/insights/prism/Customerstosubscribers>

Focusing on outcomes also increases company valuations – ADL research² shows that companies that rely on digital assets with recurring revenue sources and extensive data-based solutions are valued 2.4 times higher than companies with hard assets that focus on one-off sales.

Additionally, OBMs support greater sustainability. Rather than replacing (and disposing of) products, they focus on “getting the job done” and delivering a real outcome, whether washing laundry or making a call. This delivers lower environmental impact and higher customer satisfaction.

The building blocks of OBMs are now available. Connected products and services enable gathering of greater volumes of continuously generated data, which can be analyzed at scale using AI and machine learning to better understand individual customer preferences and launch transformative products and services. Automation and wider partner ecosystems can deliver these services at scale and with guaranteed outcomes. For example, California-based clothing

company Stitch Fix, instead of just selling clothes, delivers a curated selection of garments to customers based on AI analyses of their responses to style questionnaires and previous purchases.

However, OBM adoption is currently in its early stages due to its complexity and the risks it brings. Achieving this level of servitization maturity demands a fundamental shift in business models and operations – it goes far

deeper than simply launching a service to customers. Organizations need to transform themselves internally, build strong data skills and competencies, handle changing risks and liabilities, and recruit a wider ecosystem of partners. Most businesses therefore remain at the stage of providing subscription-based services, unlocking limited additional value.

This article outlines how organizations can start to transform themselves, overcoming the challenges to build deeper, data-driven customer relationships, achieve higher revenues, and reshape their operations around OBMs.

ORGANIZATIONS NEED TO TRANSFORM THEMSELVES INTERNALLY, BUILD STRONG DATA SKILLS AND COMPETENCIES, HANDLE CHANGING RISKS AND LIABILITIES, AND RECRUIT A WIDER ECOSYSTEM OF PARTNERS.

THE BURGLAR-FREE RESIDENCE

The US market for home alarm systems is worth USD34.9 bn³. However, the majority of security companies have a similar business model focused on installing, maintaining, monitoring, and responding to alarms when someone breaks into the residence.

Imagine instead if a company offered a “burglar-free house”, guaranteeing the customer’s desired outcome, which is protecting their home and family. This would directly steer the company efforts, innovation, and pricing model in new directions.

By leveraging both historical and current data (such as the area, type of residence, time, historical burglaries, whether the residence is empty, and external events), the company can fine-tune predictions of when and where a burglary could be attempted and develop appropriate preventive measures.

Innovation would switch to these preventive actions rather than incrementally improving an alarm system to signal when a break-in happens. Areas such as outdoor surveillance, vehicle/facial recognition, body detection, automatic lighting, robotic patrols, and a “systems thinking” approach that leverages and analyzes data and insights from all connected residences would provide potential innovation.

Partner firms could be leveraged for increased security, such as delivery companies visiting the premises, while virtual assistants such as Alexa or Google could support consumer communication. Robotic lawn mowers could even be turned into “robo-guards” as a first line of surveillance. By leveraging data, AI, and digital technologies and creating the right partnerships, outcomes could be guaranteed and the trauma of burglary removed. Given the obvious advantages, there would be a strong incentive for the consumer to continuously share data to improve the service, which would create the basis for long, profitable relationships.

THE JOURNEY TO OUTCOME-BASED BUSINESS MODELS

The first step in the OBM journey is to evaluate whether, where, and how it can be applied. The three key questions to ask are:

- Could additional services be bundled into our offering to increase customer value?
- Could our existing and new services be turned into a continuous service offering?
- Could we offer a guaranteed outcome to address current inefficiencies, and how could this change our innovation and business efforts?

If the answer to one or more of these questions is yes, the next step is to detail how the shift can begin and how to leverage data and technology to achieve transformation. Academic research⁴ and real-world experience identify three major sequential steps that organizations must take to successfully embrace OBMs, as shown in Figure 1:

- 1) Scope extension: Adding new services or increasing the scope of services. Initially, these are typically basic services (such as ad hoc maintenance), with a gradual shift towards a more complete and advanced offering.
- 2) Time-frame extension: Building on step one by extending the time frame of services, such as adding an ongoing support contract. This moves from a transactional to a relational model, with a deepened relationship with the customer.
- 3) Guaranteed outcomes: Rather than simply delivering services, the provider guarantees the outcome to the customer. This calls for internal transformation, closer collaboration and innovation with partners, and higher accountability.

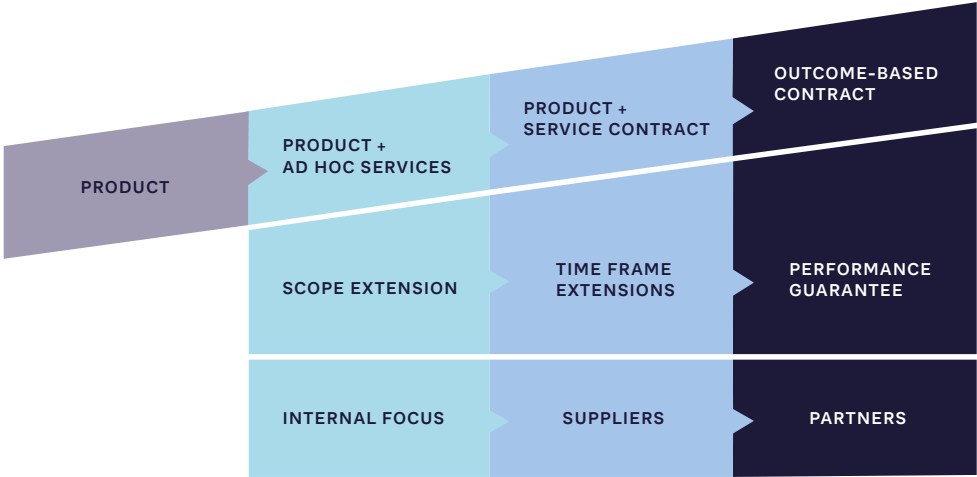


FIGURE 1: THE JOURNEY TO OUTCOME-BASED BUSINESS MODELS

4. Visnjic, I., Neely, A., & Jovanovic, M. (2018). The path to outcome delivery: Interplay of service market strategy and open business models. *Technovation*, 72, 46–59

Companies tend to approach this shift gradually, building on each step, which provides learning and evaluation opportunities. However, it is vital to understand that moving to an OBM is not simply a question of continuing the journey – it requires a radical reshaping of the organization, customer relationships and partner ecosystem.

THE CHALLENGES TO OUTCOME-BASED BUSINESS MODELS

While most organizations recognize the transformative power of OBMs, the majority have currently reached step one or two on their servitization journey. For example, car manufacturers such as Volvo and Land Rover now offer certain vehicles through subscription models, including previously additional costs such as insurance and maintenance in the monthly charge⁵. However, these incumbents face competition from pure outcome-based platform players, such as Uber and Lyft, which are vehicle-brand agnostic but solve the end customer's "job to be done", namely, to transport them from one point to another.

Successfully moving to an OBM requires overcoming a range of key challenges:

1. ORGANIZATIONAL MIND-SET SHIFT

Extending the customer relationship to focus on outcomes requires the entire business model and mind-set to be re-engineered – all at the same time. Capabilities have to be developed around collecting and effectively processing data throughout the customer lifetime,

building deeper customer relationships and managing a larger, more complex partner ecosystem. The typical number of customer interactions in B2C OBMs grows tremendously, requiring automation of both interfaces and data communication.

Changing everything from organizational design to customer touchpoints and employee incentives would be a major challenge if carried

out separately. However, the shift to OBMs necessitates them all happening simultaneously, either in a separate business area or for the whole company.

Additionally, customers themselves may be suspicious of change and need to see a concrete demonstration of the ongoing value it will bring. Some may enjoy the experience of completing a job themselves – such as driving to a destination or browsing through a physical clothing store.

MOVING FORWARD, WHILE REVENUE STREAMS WILL BE MORE CONSTANT, THE RISK OF PENALTIES NEED TO BE FACTORED INTO MODELS TO DELIVER A REALISTIC MARKET FORECAST.

5. For more automotive examples see <https://www.adlittle.com/en/insights/viewpoints/car-subscription-schemes>

2. CUSTOMER DATA AND ANALYTICS SKILLS

Effective collection and analysis of data is at the heart of delivering successful outcomes. However, for customers to share this data they must see the benefits and be assured information is being used responsibly and securely.

These new data skills and competencies, including AI and robotization, may not currently be available within an organization – and may be difficult to find in the wider market. Almost half (46 percent) of UK businesses say they struggle to recruit for roles that needed data skills, and this picture is likely to be similar in other countries and regions.

3. HIGHER FINANCIAL RISK AND NEW LIABILITIES

By guaranteeing outcomes to customers, it will be crystal clear to all parties if these have not been fulfilled. Companies are selling a promise, not a product. This greater accountability increases the pressure on organizations to constantly deliver.

Organizations therefore need to achieve a balance – promising realistic outcomes that are attractive for customers while guaranteeing that they have the internal resources and structures to meet them.

OBTs also demand a new approach to predicting and communicating revenue targets. Initially, they can negatively impact profitability and cash flow due to the costs of developing new services, lower initial payments, and the risk of penalties. Moving forward, while revenue streams will be more constant, the risk of penalties need to be factored into models to deliver a realistic market forecast. The shift from an upfront product sale to a model in which payments are made in arrears demands excess cash to smooth over the transition, as well as careful management and investor communication for listed businesses.

However, once the company has fine-tuned its promised delivery levels and accounted for development costs, additional sales have an incremental cost. The recurring-revenue nature of outcome-based sales and greater customer lifetime value compensate many times for lower initial profitability.

THE SUCCESS FACTORS FOR OUTCOME-BASED BUSINESS MODELS

Achieving a successful transition to an OBM involves businesses overcoming these key challenges and fundamentally changing their culture and operations, based on five areas:

1. GENERATE ONGOING SENIOR LEADERSHIP SUPPORT AND BUSINESS MODEL AUTONOMY

Given the complexity – and scope – of the necessary business changes, it is crucial that senior management leads and supports the shift. Transformation must begin with a shift in organizational mind-set focused on the business logic of moving to outcomes and recurring customer relationships.

Everyone must be aligned to ensure there is a consensus of where the company is heading and why. Governance structures and roles and responsibilities will need to adapt to fit with the new model. Strong communication is necessary to explain the benefits of an OBM to all employees throughout the change process.

For an incumbent player, an OBM should typically be piloted and nurtured separately from traditional product or product-and-service business models. This allows organizations to test and learn together with customers. When the OBM is fine-tuned, it can be scaled to replace traditional business models.

2. EFFECTIVELY HARNESS DATA AND BECOME DATA DRIVEN

Every organization now generates increasing volumes of data, but to unlock its value this data must be collected, stored, and made available for timely, detailed analysis, with the results shared with the right stakeholders. This requires both new technology capabilities and a broad range of human skills. Data must first be collected, either through Internet of Things (IoT) sensors or new software capabilities, and then provided for analysis that can underpin monitoring and decision-making. AI and machine learning provide more precise, faster analysis to optimize OBMs, something that was unnecessary in a traditional product sales environment or even earlier in the servitization journey.

Technology must span the entire ecosystem – for example, integrating with partner and customer systems across the supply chain to provide a complete view of all data and factors involved in delivering a successful outcome. Digital twins of products are needed in many OBMs to keep track of performance and take proactive steps to ensure service levels are met. Automation and robotization enable delivery of guaranteed outcomes at scale, removing the need for constant human involvement.

Employees must be trained and skilled in using analysis tools and AI techniques, such as predictive analytics, to turn data into valuable business information. This often demands large-scale recruitment, which puts the onus on organizations to appeal to data scientists to attract and retain their talents. The founder of Stitch Fix, Katrina

EMPLOYEES MUST BE TRAINED AND SKILLED IN USING ANALYSIS TOOLS AND AI TECHNIQUES, SUCH AS PREDICTIVE ANALYTICS, TO TURN DATA INTO VALUABLE BUSINESS INFORMATION.

Lake, stresses how data science is the company culture – the business is dependent on data for its very existence.

Elevator company Kone has incorporated IoT sensors into its connected elevators, which enables it to utilize predictive analysis to highlight when maintenance is needed.

This has led to a 40 percent drop in unforeseen faults. Downtime can then be scheduled for optimal times to avoid disruption, based on passenger usage data. Building on this, it would be possible to implement an outcome-based model, with charging based on actual elevator use.

3. BUILDING A HIGHLY CUSTOMER-CENTRIC VIEW IS A NECESSITY

With an OBM, the interface with the customer changes. Indeed, in the case of companies previously selling products through indirect channels, it creates completely new requirements. Customer service and customer experience capabilities need to be created or transformed, with an accompanying shift in metrics, to focus on long-term, outcome-based KPIs. Employees who work close to the customer must demonstrate skills and behaviors such as flexibility, relationship building, service centricity, authenticity, technical adeptness, and resilience, which may not have previously been needed.

Ensuring customer buy-in to the OBM is critical. Achieving this requires not just delivering on contracted outcomes, but also constantly showcasing additional problems or “jobs” that can be solved to ensure the relationship is maintained and improved.

Toyota’s Kinto mobility solution provides customers with vehicle usage paid for and accessed on demand. It is extending this solution towards an OBM by collecting customer driving data and using it to personalize the experience, with the goal of offering “cars that evolve in tune with people”. In addition, Kinto’s brand promise focuses on “ever better mobility for all”, going beyond simply cars and focusing on Transportation-as-a-Service.

4. NEW CAPABILITIES AND A CLOSER PARTNER ECOSYSTEM

Delivering outcomes requires new capabilities, which necessitates greater involvement of partners throughout the business model. This may not simply be in specific areas (such as delivering on-site support), but intertwined throughout the organization. These open business models bring risks through an increased reliance on partners outside a company's direct control, but add essential skills, capabilities, and innovation to achieve outcome-based success. Software partners or vendors play a particularly important role in gaining access to required technologies, digital assets, and platforms to drive transformation and change.

5. RAPID, CUSTOMER-DRIVEN INNOVATION AND AGILE PROCESSES

Existing processes and incentives are normally based on current business models. For example, a truck manufacturer may have a maintenance arm that is tasked to maximize its revenues, incentivizing teams to carry out lengthy and expensive repairs on customer vehicles. If, instead, the business provides a guaranteed level of vehicle availability to the customer, processes must shift to completing repairs as quickly as possible to meet contractual obligations. Innovation processes must also change to involve co-creation with customers and partners to accelerate the pace of innovation and ensure improvements fit with their demands and needs. An agile mind-set and working methods underpin a successful shift to an OBM, focusing on high responsiveness to customer demands while ensuring all new features deliver true customer value. Few companies have totally shifted to OBMs, but many are benefiting by tapping into specific elements.

EINRIDE

Many start-ups have focused on electric and even autonomous vehicles. Swedish freight technology company Einride is going a step further. Its electrified, self-driving trucks, or "Einride Pods", are not for direct sale – instead, customers pay a monthly fee for a complete Capacity-as-a-Service solution. Equipment such as connected electric and autonomous trucks, charging solutions, and connectivity services are an integrated part of that offering, with all assets planned and orchestrated by an intelligent operating system. This shift from a reactive approach (selling a product) to proactively delivering an outcome demonstrates the possibilities in even the most traditional sectors, such as transport and logistics.

INSIGHTS FOR THE EXECUTIVE

OBM's promise a revolution in the customer relationship that delivers greater value for organizations, whether measured in higher and more predictable revenues, stronger relationships, sustainability, or higher valuations. Achieving this requires a substantial company transformation, which needs to start now and focus on:

- Begin with ideation and definition. An OBM requires you to deeply understand the outcome the customer is ultimately looking to achieve. The successful OBM must start with an ideation process to define the outcome and the main levers to get there.
- Ring-fence shift and investment. A shift to an OBM should initially be ring-fenced to ensure it is not killed by traditional business models and incentives. When proven and fine-tuned, it can be broadened to replace parts (or all) of the legacy model.
- Invest to become "data-first". Successful OBM's rely on mastering data. Consequently, investments and change efforts are needed to develop and recruit the right skills and change the culture and behavior within the organization to become "data-first".
- Understand and begin transformation. Refocusing away from product sales demands new processes, incentives, customer interactions and structures throughout the customer lifecycle aligned with the OBM. This change must be led from the top, with buy-in from all. Short feedback loops and rapid, customer-driven innovation processes are required to continuously enhance outcomes and create long-term customer relationships.
- Broaden partnerships across the value chain. Investment in the right infrastructure and tools (e.g., AI/ML, predictive analytics, IoT, consumption monitoring and digital twins) must be combined with a more open approach to partnerships to drive innovation and successful outcomes. M&As and alliances are required for specific technologies and capabilities to gain and sustain competitive advantage.

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