



ACCA

Business models of the future: Systems, convergence and characteristics

Think Ahead

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Business models of the future: Systems, convergence and characteristics

About this report

This report explores what lies behind business model innovation. It discusses a number of the key trends that are shaping the global economy that demand new approaches from organisations as they rethink their business models. It considers the importance of understanding the impact of systems when assessing how value is created. It examines common characteristics that are being combined in multiple ways by organisations as they reappraise their business models. And it urges professional accountants to adopt and develop mindsets – related to thinking systemically and creatively for the long-term – to assist them as they build new sources of value, now and into the future.





Foreword

Around the world new business models are emerging faster than ever. They are upending old ways of doing things as organisations unlock new sources of value by taking advantage of rapidly decreasing technology costs, the growth of networks, innovative ways of thinking and the emergence of new markets.

In many senses the possibilities of business model innovation today are infinite. And with greater experimentation becoming more common, business models are able to iterate and evolve better than ever. Organisations are using business model design to build unique approaches to delivering value that have the potential to radically disrupt industries.

Behind the innovative models and techniques being employed in many different industry settings and contexts around the world are a set of common characteristics – technology and values

led – that allow organisations of all kinds to set themselves up to thrive. This report identifies a set of 12 traits – from being platform-ready and data sensible, to being open and restorative – that organisations are combining as they construct business models that are ready for the challenges and opportunities of the future.

These characteristics driving the creation of business models of the future matter. The interlinked megatrends impacting our economies and societies, from technological change and the coming disruption from automation, to the growth


of cities and the urgency of environmental risks, demand transformational approaches to how value is created.

The accountancy profession is well placed to support the growth of business models of the future that help build resilient, inclusive and prosperous societies. The unique contribution that professional accountants can make to how a business model proposes, creates and captures value, means that they can play a meaningful, strategic role in building organisations that are ready for the future.

Maggie McGhee
Director of Professional Insights
ACCA

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Executive summary

Business model design has evolved from a conventional modelling exercise to a way of rethinking the entirety of how an organisation proposes, creates and captures value. New business models are emerging faster than ever, spurred on by access to technology and scaling infrastructure, different ways of thinking, new market opportunities and more routes to secure funding.

But business models of the future take business model innovation further. They go beyond thinking about deployment of the latest technology or seeking to scale up rapidly, to trying to become part of the building blocks that support economies and enable societies to thrive. Business models of the future are ones that will navigate the complexity of tomorrow's world to help build economic and social systems where ingenuity, creativity and inclusion come together to help people unlock their potential and live well.

GLOBAL CHALLENGES

While there have always been challenges throughout the course of modern economic development, as long waves of technology ebb and flow, societal issues outgrow their institutions and environmental limits are tested, today these challenges, for example the future of work, are now emerging in new spaces, or moving from peripheral spaces to central ones. At the same time longstanding socio-economic and environmental challenges, such as climate change, are becoming more intense in their impacts. Taken together, these are creating multiple contexts for organisations to understand as they seek to create value.

SYSTEMS

The way in which the world creates prosperity is set against this challenging backdrop that poses many new questions. The task today for building business models that will thrive in the future is to navigate these issues and in so doing articulate what meaningful, inclusive and enduring value looks like. In the past, a linear approach to business model design may have sufficed – inputs enter a logical process that creates outputs of value. Today, to truly deliver a value proposition that is able to flourish, an understanding of the way that complex adaptive systems come together to create both outputs and outcomes is required. A reshaping world is calling out for new business models that can navigate complexity, build resilience and make the most of opportunities to create new forms of value.

This report identifies 12 characteristics that business models of the future are putting together in different combinations.

THE ‘FULL STACK’ REVISITED

The 2017 ACCA report, *Business models of the future: Emerging value creation*, sets out a framework for assessing the potential of six business models (see Fig. 1). These layers remain useful for assessing the potential of businesses models.

However, both the back-end and the front-end require updating to reflect three cross cutting themes:

- the advances in the changing nature of work and the role of automation
- the social and ethical implications of artificial intelligence (AI), and
- the rising urgency of environmental risks that are reaching untested tipping points and materially impacting peoples’ daily lives.

As the scale of the impact of these issues comes into sharper focus, they are provoking more concrete responses from business, civil society and regulators.

FROM MODELS TO CHARACTERISTICS

ACCA’s report (2017) also looked at six business models which the report argued had the potential to be business models of the future. These were:

- Platform-based
- Mass customisation 2.0
- Frugal
- Pay-what-you-want
- Modern barter
- Mega-hyperlocal.

The report outlined some of the unique characteristics of each model that marked it out as ready for the future. In many instances more than one model was being used by one organisation. This multi-use was a common feature, happening in different industries and settings. The convergence of models was in part driven by technology but also by other factors. It pointed to the need to identify an underlying set of characteristics – technology and values

based – that are also being combined by organisations as they set out their 21st century value proposition.

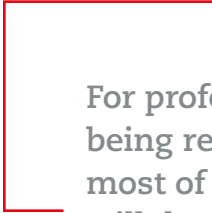
This report identifies 12 characteristics that business models of the future are putting together in different combinations. These characteristics behind the models – and their ‘plug and play’ nature – can be understood as the driving force behind business model design. The 12 characteristics are:

1. **Multi-layered** – possess the ability to have many different components come together and cooperate to create value.
2. **Participatory** – an expectation of participation, over transactional consumption alone, means that organisations can rethink how they interact with customers and other stakeholders.
3. **Platform-ready** – online platforms provide an opportunity to unlock value through building communities, empowering individuals and benefitting from network effects.
4. **Multi-capitalist** – understanding that value creation through a business model is not just composed of by financial capital but also includes other capitals, including intellectual, natural, relational and many others.

FIGURE 1: The ‘Full Stack’ Framework

BACK-END	FRONT-END
Waves	Growth
Disruption	Work
Networks	Deindustrialisation
Limits	Resources
Socio-productivity	Experience

Source: ACCA 2017



For professional accountants,
being ready to make the
most of these opportunities
will demand new skills.

5. **Purposeful** – engendering a sense of purpose – and communicating these sincerely to employees, customers and partners – builds resilience and long-term value.
6. **Data sensible** – recognising the importance of data, its sensitivity and its owners’ rights, including being portability ready, is key.
7. **Boundary-testers** – going beyond perceived natural boundaries to create enduring value in areas previously considered beyond an organisation’s domain.
8. **Open** – openness allows for more sharing and collaboration and the potential to benefit by contributing to an ecosystem and to build on knowledge and learning of others.
9. **Potential enhancing** – providing tools for people and places to realise their potential creates outsized returns for all.
10. **Fair players** – ethics is at the heart of organisations. The need for sound business ethics is even more acute in a digital environment where a lack of professional competence and due care can cause ethical issues to emerge in unexpected places.
11. **Convening** – convening groups in a virtual or physical space, or around an idea, and building a community that people value, contributes to social and civic systems.
12. **Restorative** – being able to fix, renew and repair is not only more efficient but has the potential to unlock new sources of value.

MINDSETS OF THE FUTURE

For professional accountants, being ready to make the most of these opportunities will demand new skills. Financial acumen, technical knowledge and ethical judgement are attributes that the accountancy profession can uniquely bring to support business model innovation across the three spheres of value proposition, value creation and value capture. But to navigate the contours of a changing economy, new mindsets are required. These include the ability to:

- Think like a system
- Understand how to capture and assess new sources of value
- Build creative capabilities to think differently and problem solve, and
- Adopt a long-term mindset.



Introduction

Why does business model innovation matter? What are the factors that influence business model design? What is a business model of the future and how can one be put together? These questions are becoming increasingly important, 'first principles' questions for organisations to consider as they configure how they propose, create and capture value.

At all scales, from micro-enterprise to multinational, operating in multiple settings and contexts, rethinking business models has become one of the surest ways of offering customers something truly better than what already exists. It has evolved from a conventional modelling exercise to a way of rethinking the entirety of an organisation's value proposition. And as technology costs keep coming down, challengers are emerging faster than ever that are doing things differently, spurred on by access to technology and scaling infrastructure, new ways of thinking, new market opportunities and new access to funding.

But business models of the future take business model innovation further. They go beyond thinking about deployment of the latest technology or seeking to scale-up rapidly, to becoming part of the building blocks that support economies and enable societies to thrive. Business models of the future are ones that will navigate the complexity of tomorrow's world to help build economic and social systems where ingenuity, creativity and inclusion come together to help people unlock their potential and live well.

In the 2017 report, *Business models of the future: Emerging value creation*, ACCA looked at six business models that at the time were considered to harbour disruptive potential. The six business

models were: platform-based, frugal, mass customisation 2.0, modern barter, pay-what-you-want, and mega-hyperlocal. Some had already been behind 'household name', billion-dollar businesses, others had supported organisations in successful niches and still others were embryonic ideas, yet to find their space but packed with potential.

The report scored these models against a framework, called the 'Full Stack', which brought together a set of lenses through which, when combined, it was possible to assess the models' potential.

This report will explore the factors that underlie the business models of the future. It will examine the structure and risks of the global economy of today, which suggest that not only are business models of the future sorely needed but that they also face legacy hurdles that they must overcome. It will identify why they have emerged in a world that, although often referred to as 'more interconnected than ever', is not becoming more homogenous, but full of many unique contexts and situations. This points to a multiplicity of viable new ways of doing things, which are being experimented with and have the potential to prosper.

The report will discuss the systems behind the models. What are these systems, how do they operate and how

do they contribute to the emergence of business models of the future? And how, in turn, can the new models work within these systems to rebuild them and allow us to rethink what value creation really is?

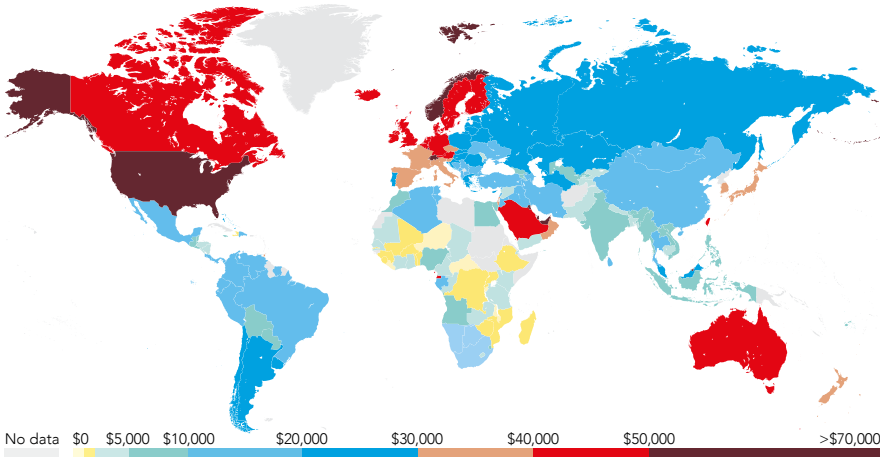
This report will revisit the 'Full Stack' framework, providing an update on the elements discussed in its layers, and go on to identify 12 defining characteristics of business models of the future. These will comprise a set of common traits that are being applied in multiple and hybrid ways by organisations that are redefining how organisations work, prosper and thrive in today's world.

It will provide examples of organisations that use different approaches and combine many of the characteristics outlined as they propose, create and capture value. These have been selected for their future-oriented approach. Their ideas, journeys and actions will provide meaningful steps for others to pursue and apply to their own contexts.

Finally, the report will outline a set of approaches for professional accountants to consider when they look to apply business model of the future characteristics to their own work as they look to build new value for their organisations, now and into the future.

Shape of the global economy

1. GDP PER CAPITA, 2014

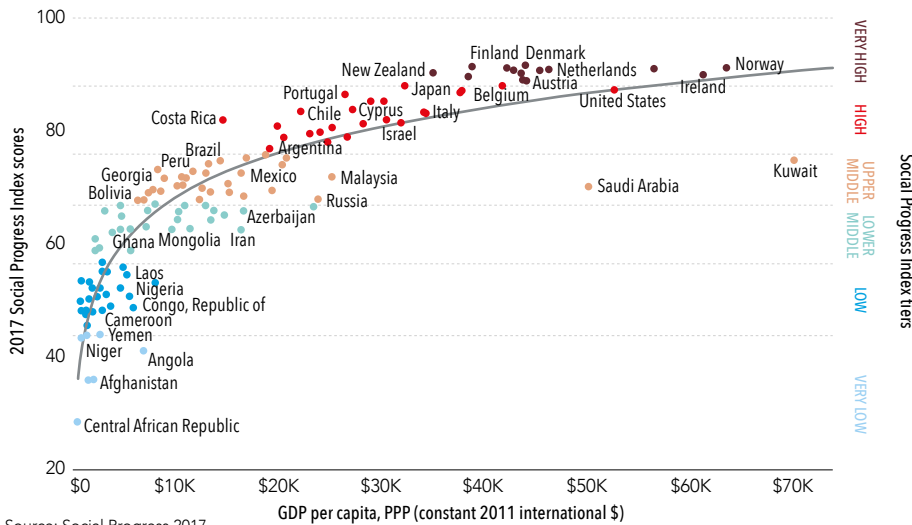


Source: Penn World Tables; OurWorldInData.org/economic-growth/ • CC BY-SA

Rising incomes, but many left behind

Incomes and standards of living have risen around the world, leading to the development of new markets for new types of products and services. However, many people are still locked out of growth. Finding ways to build more inclusive societies where gains are more evenly distributed means understanding the factors that limit a person's ability to prosper.

2. SOCIAL PROGRESS 2017 vs GDP PER CAPITA

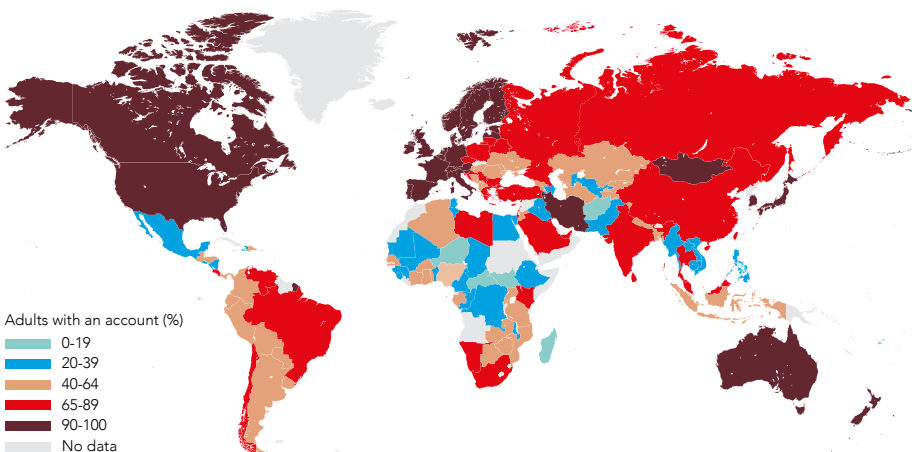


Source: Social Progress 2017

Prosperity and social progress

While at a global level GDP per capita growth does demonstrate that quality of life is improving, what factors are missing that could be relevant to building more prosperous economies and societies in the future? The Social Progress Index (SPI), which measures countries across a range of social and environmental indicators, demonstrates that some countries with high GDP levels diverge in terms of their SPI score. Furthermore, while SPI tracks GDP per capita at lower income levels, the rate of change slows as countries reach higher incomes.

3. ADULTS WITH AN ACCOUNT (%), 2017

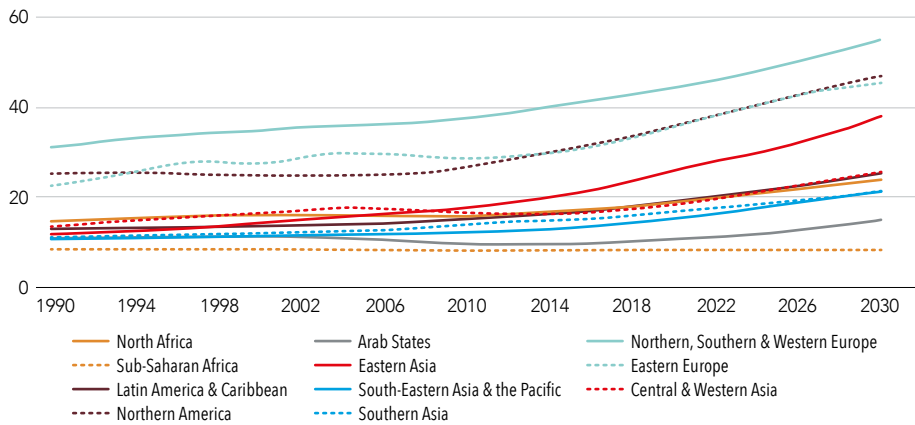


Source: Global Findex Report, 2017

Access to financial services

69% of adults now have access to a bank account. Digital financial services, provided through mobile phones, for example, have expanded access over recent years. However, 1.7 billion adults still don't have access to an account at a financial institution or mobile money provider (Global Findex Report, 2017). Finding ways to provide services and tools for people that suit their needs is still a global challenge that requires more than technology to solve.

4. OLD-AGE ECONOMIC DEPENDENCY RATIO, 1990-2030 (%)

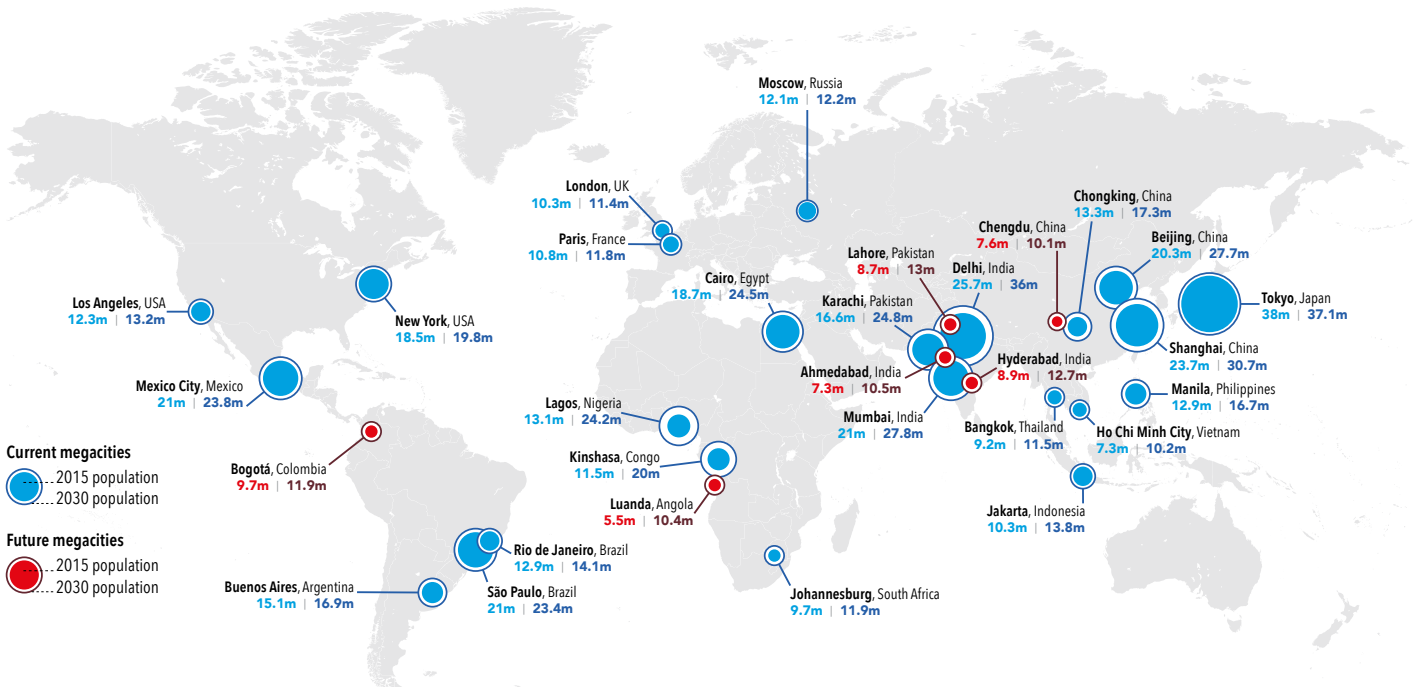


Note: The old-age economic dependency ratio is the ratio between the elderly population (+65) and people in the labour force.
Source: ILOSTAT, ILO Labour Force Estimates and Projections, 2017; UN World Population Prospects, 2017 Revision

Demographics shifting

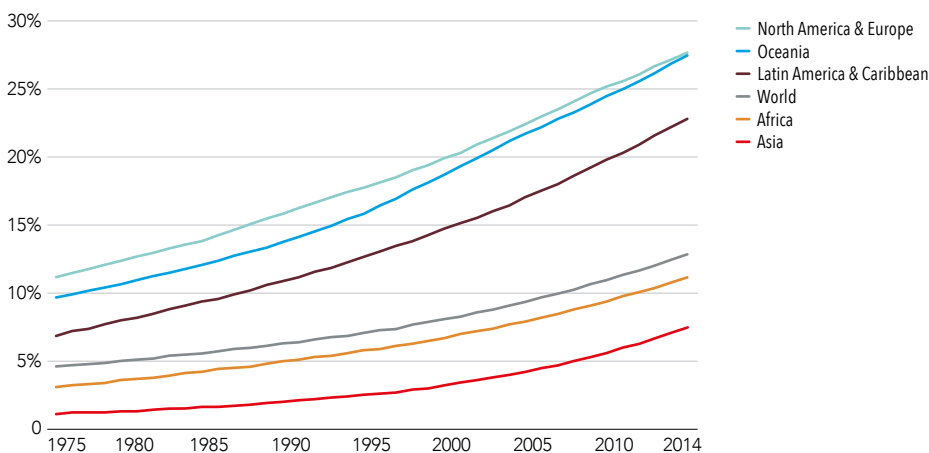
The world's population is still rising but in many countries fertility rates are dropping and people are living longer. The number of old age people relative to those in work is set to rise dramatically over the coming decades. And this is not a trend limited to advanced economies where this shift is happening at a faster rate. Questions about national economic planning and supporting all citizens to live well as demographics change are becoming urgent questions.

5. MEGACITY GROWTH 2015-2030



Source: World Urbanisation Prospects, 2014 Revision, https://progrss.com/wp-content/uploads/2016/08/UrbanMobility_pic3_medium.2016-06-28-16-34-47.jpg

6. PREVALENCE OF OBESITY IN ADULTS BY REGION 1975-2014



Source: UN FAO/WHO; OurWorldInData.org/obesity/ • CC BY-SA

Cities and health and climate

The world is becoming more urban. Thanks to climate change it is also becoming hotter, with extreme temperatures being normal occurrences. And many countries are also struggling with the rise of chronic diseases. Building environmentally safe, liveable cities with healthy populations will be defining challenges of coming decades.

Business models emerge and evolve in response to a number of criteria, including changes in supply and demand, customer preference decisions, technological change and regulatory shifts.

Business models emerge and evolve in response to a number of interlinked criteria, including changes in supply and demand, customer preference decisions, technological change and regulatory shifts. Not only do new business models converge in multiple ways, they also evolve at an ever-faster rate. Sometimes, organisations enter markets with new business models, upending old ways of doing things; at other times they add new methods to existing ways of proposing, creating and capturing value, combining elements of different models.

Over the last century, it is possible to see that technology convergence and new approaches to product and service design regularly build businesses of the future that then lead new industries to come to the fore (see Fig. 2). For example, a handheld web browser,

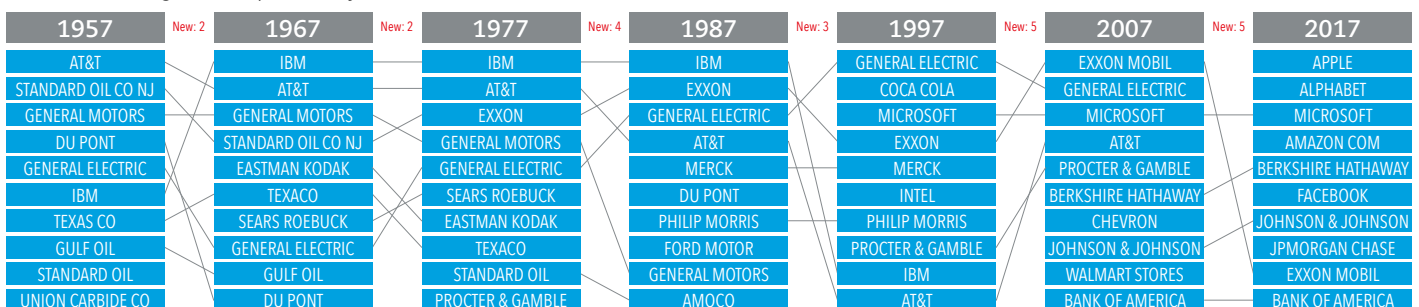
music player and messaging device that includes a GPS mapping service – and also makes calls – paid for by subscription, did not exist until the iPhone came along, building Apple into one of the world’s most valuable companies of the last two decades.

But these organisational design disruptions do not occur in a vacuum. They play out across the complex landscape of economies and societies. While there have always been challenges throughout the course of modern economic development, as long waves of technology ebb and flow, social institutions underperform and environmental limits are tested, today these challenges are now emerging in new spaces, or moving from occupying previously peripheral spaces to central ones.

Longstanding socio-economic and environmental challenges are becoming more intense in some parts of the world than in others and adversely affecting some groups of people more than others. For example, although rising incomes at a global level are a testament to the possibilities of modern economic development, the issue of wage stagnation has become a decades-long problem for large swathes of populations in advanced economies and the negative effects of in-country income inequality are posing serious challenges around the world.

And today, as the nature of work changes, this is being joined by related problems. For example, ‘gig work’ – where employment is being created typically (for now) in lower-value sectors of the economy is seeing work becoming more

FIGURE 2: Largest companies by decade



Source: <http://neuvc.com/labs/top500/> (adapted by author)

Social fabrics are being tested as never before as economies fail to perform adequately and environmental systems become irreversibly degraded by human activities, reaching tipping points.

contingent and task-based, more service oriented, less protected by government guarantee and unsupported by collective bargaining. According to McKinsey, up to 162 million people across the USA and EU engage in independent work (MGI, 2016). Taken together, this is making earning enough to cover living expenses, let alone plan for the future, unachievable for many on lower incomes in employment in advanced economies. Or, consider the liveability challenges for millions in the over-polluted and densely populated megacities of the Global South. These cities are unable to support all of their populations with basic public goods or environmentally safe living conditions, let alone provide enough employment opportunities to provide quality livelihoods. Yet it is often the desire for such employment that attracts rural newcomers in the first place. This problem is likely to worsen. It is estimated that by 2030, climate change and natural disasters will push up to 77 million more urban residents into poverty (World Bank, 2017).

To some extent, this is a story about the continuing impact of globalisation, its positive and negative sides, the shifting nature of finance, the value of capital in relation to labour and the structural change in many economies from manufacturing to services. Globalisation has allowed for the spread of knowledge and convergence of incomes between richer and poorer countries. But it has also caused in-country inequality to rise

as income growth for top earners far outpaces income growth at the bottom of the distribution (WIR, 2018). And as globalisation draws in more places, more often, these issues are surfacing more regularly that, paradoxically, cannot be solved by approaches that are not locally led. The different shapes of economies that emerge are, hence, complex; each has its own unique historical contexts demanding its own response to the issues it faces. Set against this backdrop, new business models are emerging in different configurations to meet these myriad circumstances. What emerges from this diversity is that a one-size-fits-all model no longer works. The world is no longer West or East, North or South, advanced, emerging, centre or periphery. Employees are no longer just 'blue collar' or 'white collar', young or old. Different paradigms are emerging in different places and economies are operating at different speeds. At the same time, in many parts of the world a series of negative megatrends are imperilling the future of the world's expanding population. Technology, while opening up opportunities, is driving inequality in many countries and regions and changing the nature of work and how people earn a living. Social fabrics are being tested as never before as economies fail to perform as hoped and environmental systems are becoming irreversibly degraded by human activities, reaching potentially irreversible tipping points.

While in many parts of the world, a winner-takes-all approach that favours the few is increasing, in others, groups of actors are finding opportunities in newly carved-out sectors of economic activity. This diversity is powered in part by historic social factors but also by new models powered by underlying characteristics that make them ready for the future. Business models that will thrive in the future are ones that combine characteristics to support broad-based flourishing and engage with three core components of today's world: technology, institutional deficiencies and environmental limits, to create enduring, inclusive prosperity.

There are three areas to consider:

- i. technology**
- ii. institutional deficiencies and inequality, and**
- iii environmental risks.**

i. TECHNOLOGY

Technology is the connecting thread of global economic innovation and progress. Uneven access to technology adversely affects some while greatly empowering others. Technology can mean reliable power supplies or access to basic infrastructure. But it can also be 5G data connections and access to on-demand services. Behind the latest technology wave, enabled by ever-greater processing

At a global level, international governance institutions face even more daunting prospects as they attempt to deal with cross-border issues ranging from climate change to migration, economic stability and international trade.

power, is data. From hyper-efficient, platform-based preference matching, to productivity enhancing AI, data is being seen as new source of potential value in the global economy. Data creation is set to reach 163 zettabytes (ZB) by 2025 (IDC 2017). In some cases, technology and data have created space for the emergence of business models that enhance quality of life. Alongside this potential are a range of social and ethical questions that are in the process of being dealt with related to data ownership, quality, privacy, and algorithmic biases.

ii. INSTITUTIONAL DEFICIENCIES AND INEQUALITY

Institutions have been defined as 'structuring incentives in human exchange, whether political, social, or economic' (North, 1991). Today, in light of multiple, simultaneous challenges, many institutions are struggling to align their activities and incentives to create meaningful value for their stakeholders. This is an institutional inflection point. Frameworks created to address the challenges of the 20th century

are struggling to be repurposed for the 21st. At a global level, international governance institutions face even more daunting prospects as they attempt to deal with cross-border issues ranging from climate change to migration, economic stability and international trade.


These deficiencies are apparent at a national and international level in interconnected areas including:

- regulating and enabling productive, sustainable and inclusive growth of emerging sectors of economic activity
- accounting for the role and impact of intangible capital, and
- the organisation of social support systems.

Ultimately, the inability to address these issues reduces the ability of governments to provide their citizens with the tools they need to prosper and live well. Support for business model innovation can be part of the answer to this challenge.

iii. ENVIRONMENTAL RISKS

Environmental issues are becoming more pronounced and tipping points are being breached that have the potential to move the planet into a less hospitable state (Steffen et al., 2015). This affects the daily lives of millions in a number of ways, from air quality in cities, to threats rising sea levels and the ability to produce food (WHO, 2016). According to the IMF, 'climate change is a negative global externality of potentially catastrophic proportions' with rising temperatures having 'vastly unequal effects across the world, with the brunt of adverse consequences borne by those who can least afford it' (IMF, 2017). While carbon-based resource inputs such as oil are being replaced by renewables such as solar energy, the scale of change is not fast enough to outpace serious cross-cutting risks presented by rapid environmental degradation.



Systems and value creation

The global economy, the way in which the world creates prosperity, is set against this complex backdrop that poses many new questions. The challenge today for building business models that will thrive in the future is to navigate these issues and then articulate what meaningful value looks like. This requires an understanding of the way that complex systems come together to create outcomes.

In the past, a linear approach to business model design may have sufficed – inputs enter a logical process that creates outputs of value. Today, to truly deliver a value proposition that is able to flourish, an understanding of the way that complex systems come together to create outputs and outcomes is required. A reshaping world is calling out for new business models that can navigate complexity, maintain resilience and make the most of opportunities to create new forms of value.

The systems upon which societies depend to live well, interact at many different touchpoints to produce new, emergent and unanticipated outcomes. For example, we depend on natural systems for food, air and water; we need habitable land for our neighbourhoods and cities; but to maintain all this we need these systems to interact with others that regulate our business practices and marketplaces. To thrive, we also need systems for transport, for manufacturing

the goods and supplying the services we use in our businesses and personal lives. These varied, ever-changing but interdependent systems are the backbone of our economies and societies. They provide the environment and infrastructure in which organisations that are ready for the future emerge and operate. Given the scale of the challenges outlined in the previous chapter, how will organisations of the future interact with these evolving systems?

Being able to thrive will require having the versatility to think in a non-linear way and to anticipate emergent, unanticipated outcomes. This mindset shift demands a commitment to 'seeing interrelationships rather than things,' and 'patterns of change rather than static 'snapshots'' (Senge, 2006). Understanding that issues cannot simply be broken down to their constituent parts to be resolved at a micro level, but rather require deeper, systems-wide engagement, is vital.

NEW BUSINESS MODELS vs BUSINESS MODELS OF THE FUTURE

Hence, across the three phases of the business model – value proposition, value creation and value capture – these systems sit behind the models and exert their influences.

In different sectors, at different scales and in different territories, the footprint of the business model of the future is one that reaches beyond traditional frontiers, recognising that organisations will 'need to redraw their own boundaries' (Elkington and Johnson, 2018).

New business models are emerging with ever-greater frequency as new situations are exploited to find more effective ways of matching supply and demand. But business models of the future are ones that are substantively different. They are emerging value creators. They will endure because they reappraise fundamentally how things are done and find ways of

Business models of the future, operating at the edges, might also create new systems, enabling new ways of doing things.

interacting with natural and human systems in a mutually reinforcing way. This creates a surplus of value for those with whom the organisation interacts. And this can be at a variety of scales across a range of partners, from private to government, and over a range of time scales, from short to medium and from long to ultra-long term.

Business models of the future, operating at the edges, might also play a role in creating new systems, enabling new ways of doing things. Their value may not be immediately realisable, or may occur in other parts of a system, but their contribution could still be immense. By acknowledging that they are themselves parts of the systems they inhabit, new business models can unlock enhanced value.

Value creation and systems

Three 'dynamic capabilities' have been identified as being key to how organisations unlock new sources of value through business model innovation. They are the capacity to:

1. 'Sense and shape opportunities and threats
2. Seize opportunities, and
3. Maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets' (Teece).

Value creation through business models connects with thinking about systems in many ways. A business model contains a number of activities that come together to create value. And this process is dynamic, like a system, containing many interdependent activities that are likely to be complex and non-linear (Velu, 2016).

Business models require the agility to adapt that comes from recognising that they are parts of systems if they want to create value to is fit for the challenges of the future. The International Integrated Reporting Council (IIRC) highlighted ten themes that inform meaningful value creation. These ten themes, when combined with an understanding of dynamic capabilities and of the interdependence of systems, provide a useful guide for considering value creation that takes on the challenges of the future.

TEN THEMES THAT INFORM THE MEANING OF VALUE CREATION

- Value creation takes place within a context
- Financial value is relevant, but not sufficient, for assessing value creation
- Value is created from tangible and intangible assets
- Value is created from private and public/common resources
- Value is created for an organization and for others
- Value is created from the connectivity between a wide range of factors
- Value creation manifests itself in outcomes
- Innovation is central to value creation
- Values play a role in how and what type of value is created
- Measures of value creation are evolving

Source: IIRC, 2016

The 'Full Stack' revisited

The 2017 ACCA report, *Business models of the future: Emerging value creation*, sets out a framework for assessing the potential of six business models. The framework is revisited below to assess whether it remains relevant. The framework attempts to distil many of the challenges facing business and society, which organisations need to address to create value.



The 'Full Stack' framework

The 'Full Stack' is intended to be an end-to-end framework to support the understanding and assessment of the value creation potential of business models of the future. It is made up of two sections: a back-end and a front-end. The back-end comprises five layers, which, when taken together, combine to create the foundations for business models of the future. The front-end brings together some of the key socio-economic issues faced by businesses today and also comprises five layers.

Operating together, the back-end and front-end are intended to provide a tool for exploring the potential of the business models and the contexts in which they operate.

BACK-END	FRONT-END
Waves	Growth
Disruption	Work
Networks	Deindustrialisation
Limits	Resources
Socio-productivity	Experience

What is more clear now is that data, AI and future technological scenarios – particularly those related to data ownership, privacy and employment – are going to require a much greater understanding of social and ethical dimensions and boundaries that they intersect.

The five back-end layers are: waves, disruption, networks, limits and socio-productivity.

1. WAVES

- *'From the steam engine to electricity and the semi-conductor, technological innovation has been the driving force of a series of waves of economic growth.'*
- *'These "long waves" are made up of phases. They begin with a period of fast adoption and high growth, followed by a mature period of lower growth where the technology is in widespread use, then there is a decline that is quickly followed by fresh innovation, upending the previous wave and setting off another one.'*
- *'Waves matter because the current advances in technology could mean that we are on the cusp on a new technological era driven by artificial intelligence.'* (ACCA 2017)

Understanding these long-running processes makes it easier to create the right enabling conditions for waves to gather momentum and for reducing negative externalities. What is more clear now is that data, AI and future technological scenarios – particularly those related to data ownership, privacy and employment – are going to require a much greater understanding of social and ethical dimensions and boundaries that they intersect. ACCA research has identified that, for professional accountants,

professional competence and due care was the International Ethics Standards Board (IESBA) principle most under threat due to upcoming technological change (ACCA 2017a). This matters as an inability to understand the implications of the coming technological wave will result not only in its value creation potential being unfulfilled, but also it could increase the likelihood of serious breaches of ethics taking place with adverse societal impacts.

2. DISRUPTION

- *'Understanding disruptive innovation enables us to grasp a groundbreaking shift in why some companies are able to produce only incremental, sustaining innovation while others are able to disrupt the existing order and prosper.'*
- *'Incumbent companies, which may have grown up on the back of a ground-breaking innovation made some time ago, are unlikely to repeat the feat of producing the type of market-making, "disruptive" innovation that once propelled them to become large, dominant firms. Instead, they are stuck producing sustaining innovations.'*
- *'Unable to break free of the shackles that their success had bestowed upon them, they watch as new entrants reshape their industries with new ideas (Christensen, 1997).'* (ACCA 2017)

As tech-based entrepreneurship continues to grow, what passes as disruptive is still

often mislabelled. Truly value creating innovations with the potential to disrupt industries are rare and hard to create. Equally, today's corporate landscape is represented by a small number of technology companies whose scale and power have the potential to crowd out new innovators. Smaller organisations that were more typical of disruptors in the past, are increasingly unable to compete in areas such as processing power and the important network effects that scale brings. This advantage, conferred by size and resulting in market concentration, needs correcting not just through more effective regulation, which is currently being debated by administrators around the world, but also by a greater understanding of the type of value that is being created.

3. NETWORKS

- *'Today, networks of peers are pooling their wisdom, sharing their experiences and learning from each other as never before.'*
- *'From committing programming code into a global free repository, Github, to taking part in challenges to solve some of the world's biggest problems at X-Prize, networks are finding ways to create more effective value outside traditional centralised structures.'*
- *'P2P networks have continued to grow as marketplaces have proliferated for services that cut out middle men across industries.'* (ACCA 2017)

While environmental limits are being stretched, the counter has been a deepening in the innovation potential for material redesign and use.

The power of network effects cannot be underestimated. Network effects refer to the increasing returns that scale brings to a network – the more participants, the greater the network's utility. As some networks have grown into global giants so has their potential use by network participants in manipulating behaviour. This has been seen both in social media and in other networks where herd-like activity can occur, driven by automated activities. For instance, trading algorithms or bots can distort views, shape opinions or abruptly move markets. This activity must be understood, deliberated over in transparent, public fora and curtailed while allowing networks to function. Marketplaces for work also need to be better understood. In one sense they are excellent for matching supply and demand. In another they are reducing work to task-based activities that make it hard for people to support themselves. Furthermore, while matching jobs with a persons experience alone is efficient, it adversely affects those without the requisite skills, reducing social mobility and widening gaps in society.

4. LIMITS

- *'Valuing the ability to work with limited resources and within constraints has moved into the mainstream in a number of interconnected spheres.*
- *'Firstly, lean and agile development has established itself as one of the de rigueur*

approaches to 21st century business model design. This favours fast deployment, iterative design and user feedback.

- *'Secondly, limits also involve valuing grassroots innovation that eschews the over-engineered and champions creativity. Inherent ingenuity employed to solve problems with what is available to hand has long been a commonplace, go-to practice by societies around the world lacking the means to pay for costly commercial applications.*
- *'Finally, "limits" concern planetary environmental buffers and product and service design. The rise of circular business models, lifecycle analysis and more accurate measurement of the environmental and social footprints of businesses is enhancing understanding of working within limits.'* (ACCA 2017)

The three limiting elements remain critically important. Grassroots economic activity is increasingly finding its place and recognition within national economies as fertile hubs to be supported thanks to the huge amounts of economic and social activity they embody. This appreciation of the local grassroots will continue as access to technology becomes more widespread and urban settings, conducive to ideas exchange permit more lower cost innovation to flourish. Finally, while environmental limits are being stretched, the counter has been a deepening in the innovation potential

for materials redesign and use. This radical frontier of redesign will be the source of truly innovative products and services of the future.

5. SOCIO-PRODUCTIVITY

- *'Better understanding of corporate performance and measurement of so-called "non- financial" returns are becoming mainstream.*
- *'With recognition of the limitations of the narrow metrics of financial returns to shareholders as the benchmark of success, there is a wider shift taking place in creation and measurement of value and returns to society.*
- *'Socio-productivity is about creating markets and industries where the least well off are made the most better off (Haque, 2011).'* (ACCA 2017)

Socio-productivity is becoming more widely understood in many fields – not least finance – where environmental, social and governance (ESG) issues have moved into the mainstream. This growing demand from finance is shifting corporate approaches and requiring higher quality, more precise non-financial data. Business model design questions also become governance questions. For example, as high employment growth sectors cluster around precarious and low-income work, the models used come under scrutiny for the type of value being created.

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The five layers of the front-end stack are: growth, work, deindustrialisation, resources and experience. They represent five key elements of the operating environment today. This is the world's 'user interface'.

1. GROWTH

- 'Has the global economy reached an inflection point where 20th-century growth rates are never coming back? Perhaps more pertinently, even if they could come back, is GDP growth an adequate proxy for the challenges of 21st-century prosperity creation?
- 'Is it an appropriate measure for faster-growing emerging economies? After all, though inequality, weakening social mobility and other factors are growing features of advanced economies, much of the world is playing catch-up: but catching up to what?
- 'New composite indicators are emerging to provide evidence for the claims that pursuit of GDP growth alone will not create an advanced economy.' (ACCA 2017)

As global growth rates experience an uptick, governments must turn to the questions of inclusion. While at a global level incomes are rising, in-country inequality in many regions remains a serious block on improving livelihoods. Hence, working to increase the share of income for lower income groups instead of the top 1% must be a priority for national governments (WIR, 2018). This can be achieved by

reviewing policies that structural disadvantage certain groups, improving educational outcomes and unblocking impediments to social mobility.

2. WORK

- 'Work is in the process of being redefined. According to one study, 162m people in Europe and the US, approximately 30% of the working age population, engage in some form of independent or "gig" work, usually mediated through a digital platform (McKinsey 2016).
- 'Work is more flexible but earnings are often lower, less predictable and offer fewer protections than traditional employment. This type of work can offer advantages if income is supplemental but presents a serious market imperfection if a broad swathe of society relies on this income to cover essential spending.
- 'A survey carried out in the USA found that more than half of "digital gig workers" use their earnings to cover basic needs (29%) or as an essential part of their overall budget (27%).' (ACCA 2017)

Labour markets have been described as being 'in the midst of a dramatic transition'. While automation is posing long-term existential questions for many countries, more near-term issues related to work concern both the growing role of online work marketplaces as de facto distributors of an increasing number of employment opportunities and the level

of accompanying social protections. The Oxford Online Labour Index found that over the course of 2016-2017 the online gig economy grew by 25.5% and that professional services was the fastest growing sector (OLI, 2017). As work status of 'gig' workers typically identifies individuals not as employees but as contractors or partners, risks that traditionally may have resided with an employer are now born by the individual. This is demanding attention by regulators to ensure that working standards, earnings and working hours are appropriate to create decent work.

3. DEINDUSTRIALISATION

- 'The reduction of traditional manufacturing has structurally transformed many advanced economies whose companies [have] moved production to lower-wage countries.
- 'Governments have struggled to redress the balance and successfully reskill workers and provide new opportunities of a similar calibre. This process is entering a new stage.
- 'A combination of automation of work, growth of the service sector and rising wages has meant that premature deindustrialisation is now happening in emerging economies too (Rodrik 2015). The export-led growth that famously powered Asian economies, such as South Korea, to middle-income status can no longer be emulated.' (ACCA 2017)

Deindustrialisation is coming into contact with automation and artificial intelligence at an increasingly fast pace.

Deindustrialisation is coming into contact with automation and artificial intelligence at an increasingly fast pace. An estimated 1.8 billion jobs are potentially susceptible to automation (Schogl and Sumner, 2018). Policy activity for mitigating negative externalities through job guarantees or universal basic income is not as advanced as it should be given the scale of the challenges ahead. Potential socio-political ramifications will likely be severe, from mass migration – both to cities and to other countries – to increases in human rights abuses, as large groups of people moving from work that is at high risk of automation seek out work in less regulated sectors to survive (Verisk Maplecroft, 2018). Worryingly, as 'unlimited supplies of artificial labor' become available, particularly in agricultural and industrial sectors, reskilling alone may not address the jobs gap. Approaches such as 'robot-substitution industrialisation' and other coping strategies will need to be explored and debated by societies at large (Schogl and Sumner, 2018).

4. RESOURCES

- *'Climate change and environmental degradation have been transformed from intangible, minority concerns, to real world problems. From unprecedented air pollution levels, to the rising incidence*

of extreme weather events, lives and livelihoods around the world are being put at risk by humankind's impact on the planet.

- *'National and local government action and global agreements, including the Paris Climate Accord and the UN's Global Goals for Sustainable Development, underpin an emerging institutional architecture for addressing the challenges posed.*
- *'The acceleration of a transition to a low-carbon economy is upending industries once reliant on fossil fuels for growth.'* (ACCA 2017)

Historic global agreements have so far proved no match for climate change. Global temperatures continue to break new ground and extreme weather events multiply in frequency and ferocity. For this reason, a revision of recent commitments made appears overdue. At a legislative level, the EU's Sustainable Finance Action Plan does build on the recent years' agreements (EC, 2018). Certain sectors are moving at pace in transitioning out of fossil fuels. The motor industry for example, is being upended by the shift to electric vehicles (EVs). Sales of EVs are projected to grow from 1.1 million in 2017 to 30 million by 2025 (BNEF, 2018).

5. EXPERIENCE

- *'People value experiences, from well-judged retail customer service to the user interface with which they engage through an app on their phones.*
- *'The rise of the value of experience over, for example, volume of material possessions is as much about the appreciation of how design matters as it is about a desire for authenticity, connection and meaning.*
- *'Experiences can also be shared with others in a way that many objects cannot. In the digital world, the quality and application of a service is only as good as the quality and usability of its user experience (UX).'* (ACCA 2017)

Experience and design are reaching out across new digital landscapes. The growing reach of design thinking principles into algorithm creation and, more broadly, a diffusion of a human-centred perspective on designing automated processes will be critical to build less brittle human-machine interactions. The demand for transparency around algorithm design and consideration of ethical and societal dimensions will become a key part of our understanding and appreciation of experience design over the coming years.



From models to characteristics

ACCA's report (2017), *Business models of the future: Emerging value creation*, looked at six business models which the report argued had the potential to be business models of the future. These were:

- Platform-based
- Mass customisation 2.0
- Frugal
- Pay-what-you-want
- Modern barter
- Mega-hyperlocal.

The report outlined some of the unique characteristics of each model that set it out as ready for the future. In many instances more than one model was being used by one organisation. This multi-use was happening in different industries and settings. For example, by 2017 online platforms were becoming near-ubiquitous; many companies employed an element of the 'frugal' model; different types of payment form were becoming more commonplace; and local services were being connected in a growing number of configurations.

For example, the report referred to furniture marketplace Opendesk as a proponent of mass customisation 2.0. Opendesk is also a platform-based business – connecting designers makers and customers to build a global network. It is also motivated by frugal principles – using easily accessible material as its main source of input and also reducing delivery and inventory needs thanks to its

digitally enabled manufacturing process. And finally, it is also megahyperlocal – supporting the growth of local ecosystems of production (www.opendesk.cc).

This convergence points to a greater hybridity in business models and to the value of identifying an underlying set of characteristics that are being compiled by organisations as they set out how they propose, create and capture value. As business models are deconstructed and reconstructed at an increasing pace, the characteristics behind the models – and their 'plug and play' nature – is driving business model design today.

Hence as organisations combine certain characteristics, they find ways of responding to the risks and opportunities of the global economy and the complex nature of the systems that underpin it. While uniquely applied by each model and dependent on a set of contexts, they have shared traits worth harnessing across the three core spheres of value proposition, value creation and value capture.

The 'plug and play' nature of business model innovation today means that these characteristics can be combined to assemble a unique value creation proposition that is relevant for the market in which the model is intended to operate. In some cases, the use of these characteristics in this flexible way is a result of the ongoing reduction of technology costs, allowing for new technologies to

be adopted faster than before without associated legacy issues. In other ways, this is not about technology at all – organisations are navigating a complex world of risks and opportunities and improving on 20th-century models that are reaching expiry as businesses models face new realities that require new responses.

All these factors, in some part, are the characteristics behind business models of the future. This is a 12-point set of characteristics being combined in different ways as they seek to create new sources of value:

1. **Multi-layered** – possess the ability to have many different components come together and cooperate to create value. From allowing digital access via application programming interfaces (APIs), to more ability and willingness to collaborate through open structures, multilayer organisations can take partnership, and therefore impact, to a new level.
2. **Participatory** – an expectation of participation, over transactional consumption alone, means that organisations can rethink how they interact with customers and other stakeholders. Across a spectrum, from 'light touch' to co-delivery, products and services are emerging that are built for participation through positive points of friction to foster long-term relationships.

The 'plug and play' nature of business model innovation today means that these characteristics can be combined to assemble a unique value-creation proposition that is relevant for the market in which the model is intended to operate.

3. **Platform-ready** – online platforms provide an opportunity to unlock networked value. In some cases the platform may provide a multi-sided marketplace, in others it may facilitate assembling a team for a project. Platforms provide a way to build communities, empower individuals and to benefit from network effects.
4. **Multi-capitalist** – understanding that value creation through a business model is not just composed of by financial capital but also includes other capitals, including societal, intellectual, natural, relational and many others, is fundamental (IIRC, 2018). It requires a recognition of the value of non-financial capital used and created and hence a commitment to transparent, holistic and robust reporting.
5. **Purposeful** – being values-led and engendering a sense of purpose – and communicating these sincerely to employees, customers and partners – builds resilience. This can range from purpose oriented governance manifestos to being truly mission driven, with social impact aligned to generating profit. Sometimes this can be achieved with a distinct legal business form, meaning that social outcomes are constitutionally defined goals (ACCA, 2018).
6. **Data sensible** – recognising the importance of data, its sensitivity and its owners' rights, including where appropriate, being portability ready, is key. Personal data custodianship by organisations must be secure, transparent and fair in the eyes of data owners. Regarding the growing interest in data portability, while at present there is a challenge in judging the equivalence and provenance of certain data, including ratings and reputation scores, owner data portability must be built into business models as standard.
7. **Boundary-testers** – models that go beyond their perceived natural organisational boundaries are able to create enduring value in areas that the might previously have been considered beyond their domain. This means reaching down supply and value chains, offering up services as a node in a system and taking on a role in a multi-layered coalitions and associations.
8. **Open** – openness allows for more sharing and collaboration and the potential to benefit by contributing to an ecosystem and to build on knowledge and learning of others. Openness is also about experimentation and comfort with alternatives, for example, different forms of payment, or record keeping.
9. **Potential enhancing** – providing tools for people and places to realise their potential creates outsized returns for society. From formal learning pathways to providing the means for those without traditional educational attainment to tap into their potential and thrive, being motivated to enhance potential builds capacity and agency, helping societies as a whole become resilient to shocks and able to prosper.
10. **Fair players** – ethics is at the heart of organisations. The need for sound business ethics is ever more acute in a digital environment where a lack professional competence and due care can cause ethical issues to erupt. Fair play is about equitable distribution of gains –from pay ratios to transparent recording of recognition. Allowing diverse voices to lead and to be heard is also a key mark of fairness.
11. **Convening** – convening groups in a virtual or physical location, or around an idea, and building a community that people value contributes to the regeneration and renewal of social and civic systems. This is achieved through meaningful engagement that builds value through dialogue
12. **Restorative** – being able to fix, renew and repair is not only more efficient but has the potential to unlock new sources of value. From closed loop processes, to circular and net positive approaches, being restorative means actively setting out to improve depleted environments – natural, social and economic.

Models and characteristics in action



WORKBENCH PROJECTS, BANGALORE, INDIA – FROM MAKERSPACE TO HYPERSPACE

In the heart of the city, occupying a formerly unused 5000 sq ft. space below the Halasuru Metro station, Workbench Projects is a makerspace, fablab and co-working hub. Over the years it has become a place for people to design, prototype and make things using high quality machinery; to learn new skills and to come together with others, including major corporates, looking to build real things and rediscover their creative and crafting abilities.

As more and more people, projects and innovators with ideas pass through Workbench Projects, its value proposition has evolved as it becomes a unique convener, connector and ideation and realisation space both for Bangalore and for India.

In this way, according to its founders, it is iterating from being a makerspace to becoming a hyperspace. In practice, this means it is moving from a place where someone goes to literally make things, to a community that can assist someone develop their idea into a reality with the support required – from physical tools to intangible underpinnings. This shift to a hyperspace is designed to allow Workbench Projects to capitalise on the strength of its networks and the depth of its knowledge of new areas of value creation to build a business model that empowers people to unlock truly enduring outcomes.

www.workbenchprojects.com

PROVENANCE, LONDON, UK – BLOCKCHAIN AND TRANSPARENCY

Where products come from, what they are made of and by whom, are becoming growing concerns as issues such as human rights, modern slavery and environmental degradation move from niche to the mainstream. Emerging out of a desire to give customers answers to these questions, Provenance provides the tools to make transparency happen. For businesses, this comes in the form of tools that they can use to verify their products and a platform to tell their stories. The information is collected in a range of methods to suit a variety of products along supply chains and then stored securely in a tamper-proof, distributed ledger.

By using accessible techniques – from mobile phone images, to physical RFID tags and smart labels – and blockchain technology, to capture and store information about a product's history, companies are able to use the platform to tell unique stories, at point of sale, on packaging or online, that are backed up with verified information.

As part of its offering, Provenance works as a technology partner with existing certification initiatives engaging in supply chain monitoring, to help them digitise their processes to build robust systems fit for the 21st century. By allowing different data sources to be brought together and held in a secure data commons, they allow these schemes to unlock additional value for members.

www.provenance.org

STUDIO D LUX, SÃO PAULO, BRAZIL – OPEN MAKING AND LEARNING

For design practice Studio D Lux, it started with a brief from a client. Build a chair that is lightweight and easy to put together and disassemble. This led to the 'Valovi' chair, designed to be made on a computer controlled, automatic saw, called a CNC machine. The design for the chair was then submitted to Opendesk, an online platform for products made by CNC machines. The platform allows designs to be downloaded anywhere and 'printed' on CNC machines, either for free, or, made for a fee by a local producer. The 'Valovi' chair has been downloaded and made thousands of times across the world by amateurs, enthusiasts and professionals. Thanks to the reach of the platform, and the open sourcing of the digital designs, Studio D Lux designer, Denis Fuzii, created an iconic piece of design that became a global reference. To master their craft, Studio D Lux moved itself into a CNC workshop and built up its expertise in this emerging design and manufacture technique, becoming pioneers behind the growth of a network of designers and makers in São Paulo. From there, the design practice has been sought out for projects that use the same low cost, easy to assemble, CNC-led techniques for developing learning spaces that are set up for making and prototyping, collaboration and experimentation. Currently, as Opendesk's certified distributor for Brazil, they lead the emergence of an open-making, local manufacturing movement in this megacity and across the country.

www.studiodlux.com.br

Making diagnosis accessible means that hospitals and clinics can address resource issues and meet growing demand with a high-quality service for people for whom this would have been previously out of reach.

CHAMAPESA, NAIROBI, KENYA – SOCIAL SAVING FOR A DIGITAL AGE

A chama in Kenya is the name given to a savings clubs, where a group of savers come together and meet to share pooled funds with other group members. Chamas give people a means to save and access low-cost loans which are used to start or grow businesses, to improve community infrastructure (by saving to build or equip a health centre, for instance) or to support members in temporary financial difficulty. In Kenya there are over 1 million chamas, but they exist in many other parts of the world. Chamapesa is an application designed to provide people with a better way to manage their groups. By providing digitised bookkeeping via the app, Chamapesa provides greater security to chamas. All transactions are recorded to an immutable ledger, visible to group members but unchangeable, virtually eliminating fraud. Describing itself as 'the distributed table-banking app for the last billion', Chamapesa provides a high quality service to groups who already have well developed systems for pooling risk and raising capital. The app enables each group to use a type of permissioned blockchain to securely monitor their flow of transactions.

Using the Chamapesa app, people can create and manage savings groups through their phones. Membership, book-keeping, share issuance, payments, and loans between members can be organised from a mobile. Members can see what the Treasurer is doing with group assets and check on the performance of individual loans. There is also multiple signature (Multi-sig) functionality for larger transactions. Each member's identity and performance history builds a 'Persona' within the app. Personas can act in a similar way to credit records, and can be shared with other users and chamas.

www.chamapesa.com

LIFETRACK MEDICAL SYSTEMS, BONIFACIO, PHILIPPINES – DISTRIBUTED RADIOLOGY DIAGNOSIS

In many parts of the world, a lack of trained medical professionals means that affordable access to efficient diagnosis – a central tenet to a functioning healthcare system – can be difficult. Based in the Philippines, Lifetrack Medical Systems provides a cloud based digital radiology service that allows scans to be securely accessed and assessed by trained radiologists wherever they are, all through a web browser. The service can also be localised into different languages, widening its global reach.

Radiologists can view high quality images and use templates to make an efficient diagnosis and speed up reporting times. Making diagnosis accessible means that hospitals and clinics can address issues related to lack of trained staff and meet growing demand with a high-quality service for people for whom this would have been previously out of reach.

Hospitals and clinics can avoid having to spend large sums on expensive IT infrastructure and in so doing, they can allocate critical resources to other areas. In addition to FDA approval allowing the company to offer their service to US hospitals, clinics and imaging centres, they recently gained approval to work across the EU. In this way they hope to permit hospitals with large banks of radiologists to also support patients around the world.

The platform also acts as a learning service. It can be used as an effective training tool and offers 'context sensitive decision support' to help medical professionals and students build skills in this discipline.

www.lifetrackmed.com

CROWDO, SINGAPORE – UNLOCKING SME POTENTIAL

SMEs are the driving force of South East Asia. Despite their importance, access to traditional financing remains challenging. Crowdo is a 30000+ member strong fintech platform offering a portfolio of alternative financing solutions across peer-to-business lending and equity crowdfunding across Singapore, Malaysia and Indonesia. The platform provides a standardised way for companies, coming from a range of backgrounds and with a variety of financial literacy skills and access to resources, to make loan applications on the platform.

This simplification opens up a range of investment opportunities to a global community who can track their investments via a web portal and mobile app. Their multi-country presence allows them to provide access to both established and high growth markets to their community so that they can build diverse portfolios of investments. SMEs can also raise money through equity crowdfunding and use the platform to set out their offer in a standardised way, providing information in a transparent manner.

The team at Crowdo offer support services to SMEs so that they can prepare quality offerings for the platform, building business skills across the region, driving growth and allowing a global community for whom access to these markets would have previously been off-limits, to participate in investment opportunities.

www.crowdo.com



For professional accountants, being ready to make the most of these opportunities will demand new skills. Financial acumen, technical knowledge and ethical judgement are attributes that the accountancy profession can uniquely bring to support business model innovation across the three spheres of value proposition, value creation and value capture.

But to navigate the contours of a changing economy, new mindsets are required. ACCA research has identified 7 quotients that professional accountants must develop to be prepared to be strategic business leaders of the future (ACCA 2016). These four approaches add to the quotients, building further capabilities. Enabling business model innovation, over strategic or operational change alone, is a challenge that the profession can embrace. It requires an ability to source, structure and communicate the type of information and knowledge that permits whole organisations to change. The four mindsets to consider are:

1. Thinking like a system

The role played by the interactions of actors in these dynamic ecosystems will be increasingly important. According to the RSA, 'thinking like a system means taking a holistic view' and considering issues 'as made up of a set of interacting components that continuously produce feedback' (RSA, 2017). As distributed tools are experimented with further, understanding how to operate in a network and how to create value as part of a system will matter.

2. Understanding how to capture and assess new sources of value

The growing awareness of new types of value is a growing core competency where skills and approaches are constantly evolving and becoming more precise. The ability to measure, report, monitor and evaluate these new types of value that are being created is key.

3. Building creative capabilities to think differently and problem solve

How to assess a new problem differently? Techniques like design thinking and human centred design have radically redrawn the boundaries for solving real world problems. At present, new technologies like algorithms and artificial intelligence are growing in use. In order for them to be truly trusted, ethically deployed and designed, their potential and implications need to be better understood by all stakeholders. Creative thinking trumps technical prowess in addressing these questions. Truly value creating, problem solving of the future will be more centered on human and societal factors.

4. Adopting a long-term mindset

Taking a wider view and a longer term approach is challenging given the near term issues that exacerbate uncertainty. But the core to navigating uncertainty is to maintain adaptability while building resilience and ability to absorb shocks. Long-term thinking can also unlock hidden value by opening up previously unseen opportunities beyond traditional boundaries.

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