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FUTUREVISION

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*For Napier Collyns, co-founder of the Global Business Network,
without whom we would never have met and our futures would
have been quite different.*

*For Wayde Bull and Sandy Belford,
who worked with us on the first version of the Worldview Scenarios.*

*For Richard Bawden, whose expertise and words on systems
thinking and scenario learning have been so critical to us.*

And for Georgie and Susie, for everything else.



FUTUREVISION

scenarios for the world in 2040

Richard Watson & Oliver Freeman



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'Call it the resilience gap. The world is becoming turbulent faster than organizations are becoming resilient.'

Gary Hamel and Liisa Välikangas

Introduction

People have always been curious about what lies over the horizon or around the next corner. Books that speculate about the shape of things to come, especially those that make precise or easily digestible predictions, are consistently popular. But lately, the number of books seeking to uncover or explain the future has exploded. The reason for this — which, ironically, no futurist appears to have foreseen — is that rapid technological change and historic political and economic events have combined to create a climate that is characterised by uncertainty, and there is much anxiety about how civilisation may develop.

The world today offers more promise than ever before, but there are also more threats to our continued existence. During the writing of this book, for example, we saw the sudden collapse of Egypt's Mubarak regime, and the domino effect it had on the Middle East; the emerging recession in parts of the United Kingdom; the economic plights of the PIIGS (Portugal, Italy, Ireland, Greece, and Spain); the perpetration of medieval atrocities in Syria; and the explosive success of the iPad, which sold almost 12 million units in the first economic quarter of 2012.

That's not to mention attacks on confidential government and commercial data, the discovery of a Higgs boson-like particle, and the alleged detection of particles travelling faster than light, which is supposedly impossible (it was later revealed to be an error, but you never know what else may be found with time).

In short, the future is not what it used to be, and it needs rescuing. There is now a high degree of volatility in everything from politics and financial markets to food prices, sport, and weather, and this is creating unease — especially among generations that grew up in an era which was characterised, with hindsight, by relative stability and simplicity; in a world that was more like *Downton Abbey* than *Cowboys & Aliens*.

There is a problem with most books about the future — and indeed, there is a fatal flaw with almost all of our thinking about what will happen next. This is because of a simple point. The fact is, there is no single future, regardless of our deepest desire that it be so, and there is no heavenly salvation in sight.

Our views about the world change regularly. We know that the present is highly uncertain, and we are even starting to question what happened in the past (at a recent futures summit in Provence, France, Grigory Yavlinsky, the former presidential candidate, admitted to us that the most uncertain thing about Russia was its past). Logically, if the past and present are uncertain, the future will be, too. And if the future is uncertain, there must be more than one possible future.

There are always many different ways in which a series of events might unfold, so suggesting, as many futurists and technologists do, that there is one specific, inevitable future to come is not only inaccurate — it is also dangerously misleading. What is even worse is when the two of us, as futurists, are presented with several possible futures and asked to decide which is more likely to occur. Linear analysis — the extrapolation of current events to the future — is a very straight road that doesn't

allow for the unforeseen shocks that come from all sides. As the historian Niall Ferguson has observed: 'It is an axiom among those who study science fiction and other literature concerned with the future that those who write it are, consciously or unconsciously, reflecting on the present.' Or, as we like to say: all futures are contemporary futures, in the same way that all prediction is based upon past experience.

This is one reason why so many predictions about the future go so horribly and hilariously wrong. For example, an article in *The Times* in 1894 suggested that every street in London would eventually be buried under nine feet of horse manure. Why? London was rapidly expanding, and so was the amount of horse-drawn transport. Londoners would, it seemed at the time, soon be up horse-manure creek without a paddle. What the author of this prediction didn't foresee, of course, was that at exactly this time engineer Karl Benz was developing the horseless carriage in Germany, and the new invention would change everything.

Four years later, in 1898, Benz made exactly the same mistake of extrapolating from the present. He predicted that the global demand for automobiles would not surpass one million. Why? Because of a lack of chauffeurs! The automobile had been invented, but the idea of driving by oneself had not. Thus it seemed inevitable that the world would eventually run out of chauffeurs, meaning that the manufacture of the automobile would come to the end of the road.

It is also misleading to analyse trends in order to predict the future. Not only must trends be lined up with 'discontinuities', counter-trends, anomalies, and wildcards (which have a nasty habit of jumping into view suddenly, from left field), but also they are retrospective — not 'futuristic' at all. A trend is an unfolding event or disposition that we trace back to its initiation, so trends tell us next to nothing about the direction or velocity of future events.

Trend analysis is not foolproof because the world is not binary — it is systemic, and influences interact with each other in complex and surprising ways, leading to change. It is rare for a new idea to extinguish an old one, especially if it has been in circulation for a long time. For instance, despite the facility with which mobile technology can deliver media content, there's still something reassuring about listening to the radio in the car or reading a daily newspaper, whether that be in print or online. And while e-payments have transformed the banking industry, we still have physical branches and the number of channels through which to conduct banking is expanding, not shrinking. Change can happen rapidly, but in most instances it takes decades, often generations, for something new to cause something else to become extinct. Moreover, while means of delivery, business models, materials, competitors, profit margins, and even companies may change radically, deep human needs, such as the desire to tell or listen to stories, remain constant.

True, occasionally an idea or event occurs that is so significant that history is divided into 'before' and 'after'. Examples, arguably, include the development of the steam engine, the automobile, the microprocessor, the mobile phone, and the internet; the collapse of the Berlin Wall; 9/11; and the rise of Google, Facebook, and Amazon respectively. But even here there is not uniformity. We all have a particular lens through which we see the world, and no two individuals ever experience events in the same way. More often than not, different individuals and institutions will experience the present in slightly different ways depending on where they live, what they do, and how they have grown up. Therefore, there is always more than one reality (or worldview, as we like to call it). And if there is more than one present, there must certainly be more than one future.

This notion that there is no linear pathway is a good thing, as is the level of uncertainty that surrounds the future. Indeed, in

many respects this is one of the most interesting times ever to be alive because almost everything that we think we know, or take for granted, is capable of being challenged or changed, often at a fundamental level — even human nature, if Joel Garreau, the author of bestseller *Radical Evolution: the promise and peril of enhancing our minds, our bodies — and what it means to be human*, is to be believed.

We believe that the only rigorous way to deal with a future so uneven and disjointed is to create a set of alternative futures that cover a number of possibilities. This technique — called scenario planning or scenario thinking — originated as a form of wargaming, or battle planning, in military circles, and was picked up by, among others, oil company Royal Dutch Shell, as a way of dealing with ambiguity and uncertainty. In Shell's case, scenarios correctly anticipated the 1973 oil crisis, which hiked prices dramatically, and the corresponding price falls almost a decade later. Other incidences where scenarios have foreseen what few others could include Adam Kahane's 1992 Mont Fleur Scenarios for South Africa, which helped to promote a peaceful transition to democratic rule, and two sets of scenarios created by the authors of this book, one in 2005 for a major bank and one in 2006–2007 for the future of the teaching profession, both of which identified futures around the global recession of 2007–2012.

This is a book about the future that offers a number of alternatives for discussion and dissection. It is not merely about trends, although we do look at key trends in demographics, technology, energy, the economy, the environment, food and water supplies, and geopolitics. In Part I, we present four detailed scenarios, the Worldview Scenarios, which show what it might be like to live in the world in 2040. These are not simply about where today's trends might take us, but about what the world in 2040 might be like. To formulate them, we took a

number of critical questions and used the robust, resilient process of scenario planning. In Part II, we take you through how we did this. We reflect on the key factors in today's world that helped to create our four future worlds, and examine what actions were taken, and by whom, to lead to them.

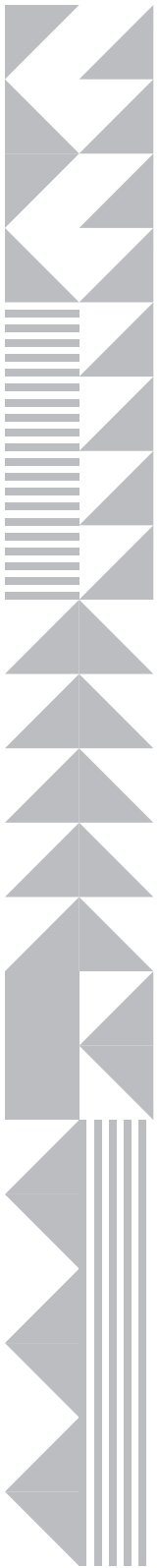
It is not our intention in this book to 'predict the future': we are not seeking to get it all right, as this is impossible. Rather, our aim is to prevent people from getting the future seriously wrong. This is possible, but only if individuals can think bravely and creatively. This book is intended to form part of a conversation, to open people's minds to what is happening now, and to create meaningful debate about some of the choices we face and where some of the actions that we are choosing to perform — or allowing to happen — may lead. It is intended to alert individuals and organisations to a broad range of longer-term questions, expectations, and decisions, and to place a few of them firmly on the long-range radar for monitoring and further analysis. It's really about challenging fundamental assumptions and reframing viewpoints, including establishing whether people are asking the right questions — as, in this context, disagreeing with and probing the received wisdom is a valuable skill.

Most of all, perhaps, we would like to liberate attitudes towards the future. In our scenario-planning projects, we have discovered that people from all kinds of professions and backgrounds want to make a difference — to generate change, as well as adapt to it. As Peter Senge, the director of the Center for Organizational Learning at the MIT Sloan School of Management, once remarked, 'Vision becomes a living thing only when most people believe they can shape their future.' Yes, people need to understand the opportunities and threats that lie ahead, but they can also consider the direction in which they would like to travel. For example, is mankind on the cusp of

another creative renaissance, characterised by radical new ideas, scientific and technological breakthroughs, material abundance, and extraordinary opportunities for a greater proportion of the world's people; or are we, in a sense, at the end of civilisation, facing a new world characterised by high levels of volatility, anxiety, and uncertainty? Are we entering a peaceful period where collective action will address abject poverty, infant mortality, adult literacy, physical security, and basic human rights; or are we moving towards an increasingly individualistic and selfish era, in which urban overcrowding, the high cost of energy and food, water shortages, social inequality, unemployment, nationalism, and increasingly authoritarian governments will combine to create a new age of misery and rage? Some urban economists and sociologists are predicting a future in which up to two billion people will be squatters in 'edge cities' attached to major conurbations such as Mexico City, Mumbai, and Beijing, while others believe in the concept of a smart planet, in which our expertise delivers a triumphal response to the drivers of change and we create local, inclusive, self-managed communities that resonate with traditional democratic values.

So just what does the future have in store for us? Where might we all be in 2040? Will life generally be better, worse, or weirder than we expect? Will we have adopted a broadly fatalistic approach to events, or will we be striving to shape the unfolding world in line with a well-defined and compellingly articulated objective? And in what ways are the seeds of this future already with us? Let's find out.





Part I

The Future Four-told

'It is now life and not art that requires the willing suspension of disbelief.'

Lionel Trilling



1

Forward, into the Unknown: why scenario planning?

Several years ago, an office worker in Tokyo dropped dead at his desk and wasn't discovered until five days later. This was despite the fact that his co-workers regularly walked past and said hello. In a similar incident, a 51-year-old had a heart attack in an open-plan office in New York on a Monday morning, but nobody noticed that he was dead until Saturday, when a cleaner attempted to wake him up. Apparently it wasn't unusual for the man to be there because, according to his boss — without any hint of irony — 'he was always the first to arrive and the last to leave'.

Is this the future? Is this how things will eventually end for many of the so-called free agents inhabiting anonymous desks inside vast corporations, or for the emerging class of digital nomads tethered electronically to virtual offices via a compote of Blackberries and Apples?

The answer is no; it is one possible future, but there are also many others. One future might be a cross between Terry Gilliam's *Brazil* and Fritz Lang's *Metropolis*: a dystopian world where people are forced to work longer hours for large bureaucracies in a futile attempt to earn more money to offset

rising food prices, higher energy bills, declining real wages, increasing debt, and disappearing retirement. Conversely, people might willingly choose to spend more time inside lifeless cubicles at work because, while the work is mind-numbing, they feel increasingly isolated and uncomfortable at home. This could be because the family, as a building block of society, has atomised, and more people are living alone; or because work offers more satisfaction and companionship than modern relationships. Add a pinch of ubiquitous media; autocratic, data-driven governments; CCTV; predictive modelling; brain-to-machine interfaces; genetic prophesy, to predict future health; and technologies such as global positioning systems (GPS), radio-frequency identification (RFID), and facial recognition, and, while it isn't quite George Orwell's *1984*, that world could be seen as getting closer, not further away.

Alternatively, we might see a move in a completely different, and much more utopian, direction. Maybe we'll start to realise that there's more to life than dropping dead at a desk, and people will begin to fight to rebalance their lives in their favour. Perhaps automation — especially robotics and artificial intelligence — will finally deliver on the promise of a leisure society, and people will spend more time reconnecting with their families and doing the things that really interest them. This could also be a world where the state limits freedom of choice in areas such as healthcare and pensions, and provides a higher degree of security in return for higher direct or indirect taxation. It could be a sustainable world driven as much by the heart as the head, where local forces start to push back against globalisation and where new technologies are carefully scrutinised for their long-term social impact and value; an ethically driven world, where physical community is rediscovered and corporations are restrained due to, among other things, skills shortages, the high cost of energy, and limited raw materials. Such a world would not be dissimilar,

in many ways, to the one described several decades ago in Ernst Schumacher's *Small is Beautiful: economics as if people mattered*.

And there are many other possibilities, many other paths and other futures, too. How, for example, might an oil price of US\$200 per barrel change the world? Perhaps people and products would move around less frequently, or the high price of food would lead to an unexpected decrease in obesity. What if we invented a new technology based upon photosynthesis that made energy almost free? What if a new ideology capable of challenging free-market capitalism were to appear? Or if the next Russian Empire decided to broaden its borders beyond their current limits? What could happen if the heavy use of mobile phones (of which there are already more than five billion worldwide) started to cause the deaths of tens of millions of young people through brain cancer, after a long and largely invisible gestation period?

Imagining the World We Want

There are many ways in which we can begin to think about the future, but looking backwards to see how we got to where we are today is a good place to start. This is partly because we can trace how what happened a long time ago has influenced our immediate past and our present. It is also because what has already happened can influence what happens next — in understanding the complexities of how we got to where we are, we will be better served in how we think about the future. For example, to understand the future of Greece properly, one might need to consider the impacts of the Ottoman Empire, German occupation during World War II, the civil war of the 1940s, and the influence of the junta that took power in 1967.

Of course, history is not always the most reliable guide to the future because nobody owns the facts. The way we interpret the past can cast a long shadow that hides other important details.

So looking at the past alone is not enough to allow us to imagine the future. The future is buried in the fringes of the present, which means that it can also pay dividends to know how to examine the world around us now: to know precisely where to look for emerging trends, or who to talk to about the way in which things are developing. This can give you a useful start compared to less creative and less curious thinkers. Whichever way you look at it, it's worth remembering that the future is always present, as well as having seeds in the past.

Let's get back to the two dead bodies. Both of the stories about workers dropping dead at their desks were featured in newspapers and on television stations around the world. They were widely circulated on the internet, too. But both were untrue — they were urban legends, pure fictions. So why did so many people believe them? One answer is that people were focused on other things and accepted the stories at face value. Another explanation is that these stories are fables or legends that tell us something about the way we live today. They confirmed to many people a particular point of view about the present and, especially, the future, which is the nagging doubt that perhaps we are spending too much time at work and that if we suddenly stopped doing whatever it is we do, nobody would really notice. They also expose a deep fear, which is either that we are not doing anything that makes a real difference, or that we will not be missed or remembered — possibly the element of the future that we care about the most, but think about the least.

Herein lies the problem. We all have different views about the future, what we hope to achieve, and the direction in which we are heading; but we are all susceptible to being hugely misled, not only about what is happening right now, but also about what is likely to happen next. Yet unless we can think coherently about the future, it is likely that we will be held hostage by a world not of our choosing, and that our current choices will be

restrained by events and situations that are either untrue or have not yet happened. Look, for example, at the way in which an increasing number of institutions and individuals adopt worst-case scenarios as the most likely outcomes. It creates large amounts of anxiety for them. But if these same people are given a choice of several outcomes, rather than assuming just one, such anxieties tend to evaporate.

So how can we all deal with this ambiguity and uncertainty effectively? How can we hedge against so many variables, ranging from the economy and politics to technology and nature? Furthermore, how can we challenge specific views about how the future will unfold? How can we stop ourselves from falling prey to ‘facts’ that appear to confirm seemingly self-evident truths? How can we restrain ourselves from conveniently extrapolating a future from an ephemeral trend, or from seeing the world as it is, or may soon become, through a narrowly focused — and at times rose-tinted — lens?

There is also the problem of what Harold Macmillan, the former British prime minister, referred to as, ‘Events, my dear boy, events.’ What are the greatest threats that we will face in the years ahead, and how can they be anticipated?

The answer is that we can’t anticipate every threat, and we cannot hedge against all of the variables or consistently distinguish truth from fiction — not precisely. But we can, nevertheless, dream up and play some useful games of ‘what if?’, and analyse in some detail what our reactions to certain events might be. This won’t always work, of course. We will still get caught out, but it’s better than not thinking about the future at all. The process of engaging with the future allows us to heighten our peripheral vision, so that the content of some new events no longer surprises us — even though their timing may be unexpected.

Seeing Tomorrow's Problems Today

It takes time — which is in very short supply nowadays — to think seriously about and plan for worlds to come. More often than not, especially in commercial organisations, the focus is on the next 12 weeks (the next financial quarter) or the next 12 months (annual results), figures that are compared to those of the year before. But thinking creatively beyond this, especially ahead 36 months or more, is relatively unusual. As a result, many organisations focus almost exclusively on short-term problems, which means that their reactions are often immediate, and 'management' consists of racing from handling one crisis to the next. And deep questions, along with longer-term opportunities and risks, tend to go unanswered or unexamined until too late.

This is not just a concern for businesses. For example, how many of us defer thinking about pensions and superannuation until way past the ideal start date? This sort of laxity occurs on a global level, too: the economic rise of China (one of the few nations that does think much further ahead) went largely unnoticed by many for years. In the 1990s, world economic forums would get excited by China, but would soon revert to the old concerns about NATO, Japan, and the tensions in Europe. While they're now slowly seeing the opportunity that the nation presents, the risk of a potential economic reversal in China, with associated bubbles and concentration risks, is not being seen. The same could perhaps be said for fertility rates, the effects of new technology on employment, or the impact of social media on democracy.

It is no wonder that so many individuals cling resolutely to the past — it's much easier that way. Similarly, it's hardly a surprise that so many institutions structure themselves to deal with the immediate present — it's much cheaper that way. Yet by the time the relevant strategies are in place, the horse has bolted and we are already somewhere new. Most organisations create strategies to

deal with yesterday's problems. But thinking about the longer-term future is fundamental if we, as individuals or organisations, are to take full advantage of the myriad opportunities that lie ahead. Unless we want to end up standing on the wrong side of history, it is essential for all of us to develop an awareness of emerging risks, and try to see tomorrow's problems today.

All well and good, we can hear you saying, but how can one sell the idea of thinking about the future, or futures thinking, to an organisation run by someone who is focused on the set of numbers that will take shape over the next 12 weeks? The honest answer is that you can't. However, if you are fortunate to work for a company with an incoming or outgoing head, there is hope. These leaders tend to be concerned with creating a vision or leaving a legacy, both mindsets that fit well with futures thinking.

Furthermore, dark clouds sometimes have silver linings. In our view, a critical function of leadership is to embrace the plurality of opinions — of diverging worldviews — in order to have a better chance of making sense of the future. The recent history of reactions to climate change is a case in point. If an organisation is facing an extinction event (such as the advent of new technology, changes to government regulation, or a shift in customer mindsets that mean that current products, services, business models, or margins appear doomed), this is often precisely the time when closed minds can be opened up to new possibilities.

One of the features of good leaders is that they have an understanding of the past and the present. They comprehend the historical reasons for failure and success, but they also appreciate at least some of the challenges that lie ahead, both immediately and into the future. Outstanding leaders do something else, too: they have a vision for a longer future. More often than not, they see things that others can't and, while their vision may be partially obscured, they are often able to create and communicate compelling stories about why other people should follow them

down a particular road. Good leaders can play a role in encouraging others to think about the long-term future.

But a word of warning: there can be a fatal flaw, and that is when individuals and organisations end up being held hostage to a particular point of view or a fixed vision of the future. The more dominant a leader or organisational culture, the more people will be drawn into agreeing with the dominant view, and the less they will seek to challenge it or the hidden assumptions upon which it is built. The more credible or powerful a source, the less likely we are to think that something they say may be wrong. The more popular or widely circulated an idea, the more likely we are to agree with it, especially if we are busy. Be aware of this as we continue into the realm of futures thinking.

Planning Is Better Than Prediction

There is a danger at this point that many readers will be feeling a little lost, because we are heading away from a world of solid numbers and hard facts to worlds not yet dreamed up or perceived by most people. Some of you may be thinking that this all sounds too ethereal or theoretical. Well, remember that hard numbers are always historical (by the time they're produced, they're old, to some degree) and are usually open to interpretation. Remember, too, that for many people the pace of everyday life is accelerating. We have more to do, but we have less time to do it in. We are also more distracted, and systems are becoming more networked, so the number of opportunities to get things really wrong and to create cascading failures is increasing, not diminishing. It is necessary to look forward, especially when things are moving very fast. Indeed, one might argue that the faster things move, the further ahead we need to look so as to avoid nasty accidents. In our work with organisations across the world, we have also come to the conclusion that effective short-term strategies have the longer term embedded within.

Still somewhat sceptical? Then we'll start the ball rolling with a brief history of future gazing. We'll skip over a few thousand years of seers and instead focus on the doers, starting with the military. The idea of scenario planning has its origins in war-gaming, or battle planning, in the late 1800s. There are clear links to games such as chess, which almost certainly grew out of a sixth-century Indian game called Chaturanga, meaning 'having four divisions', and inspired Kriegsspiel, a German war game invented in 1812. Kriegsspiel is especially interesting in this context because the Prussian victory over the French in the Franco-Prussian War of 1870–1871 is sometimes credited to the Prussian officers using Kriegsspiel to train. Military war-gaming continues to this day, and is used to simulate unexpected enemy tactics or the unwelcome intrusion of factors such as weather.

All war-gaming was originally conducted in-house, but as needs grew so did a number of external consultants — such as the RAND Corporation in the United States, which was partly responsible for developing early game theory. Simulations were further developed by the Hudson Institute, notably by Herman Kahn, who resigned from RAND to create the Institute. It was he who popularised the term 'scenario', partly, we assume, because of its narrative flavour. As Kees van der Heijden points out in his book *Scenarios: the art of strategic thinking*, the term represented Kahn's belief that he did not make predictions, but instead created stories about the future for people to explore. It all sounds very Hollywood, and indeed it was: Kahn was among Stanley Kubrick's inspirations for a central character in the classic war film *Dr. Strangelove*.

The best-known example of scenario planning in business is probably Royal Dutch Shell, who used what were effectively sophisticated simulations to consider the impact of a number of external variables, including demographics, politics, resources, and technology, on long-term capital expenditures. The central

figure in this was Pierre Wack, who introduced the idea that while many things are unpredictable and uncontrollable, order can be brought to other uncertainties — at least in the sense that we can rigorously debate known unknowns. He also provided us with the essence of learning from the future when he described the benefit of scenario planning as ‘the gentle art of re-perception’. By going out and exploring the wilder shores of turbulent future environments, we suddenly see the present in a new light; we see the world differently and engage with it in innovative ways.

Whether it was skill, luck, or a mixture of both, the scenario team at Shell developed a set of scenarios, including one that foresaw the 1973 oil crisis when the other major oil companies did not. This obviously put Shell in a rather favourable position in terms of preparedness, but it was perhaps not the main point of the exercise. The aim of Shell’s early scenarios was largely to determine whether investment should be made in certain very expensive projects. The idea was not to forecast a variety of alternative futures, but rather to ensure that current strategic plans would hold up across all foreseeable scenarios.

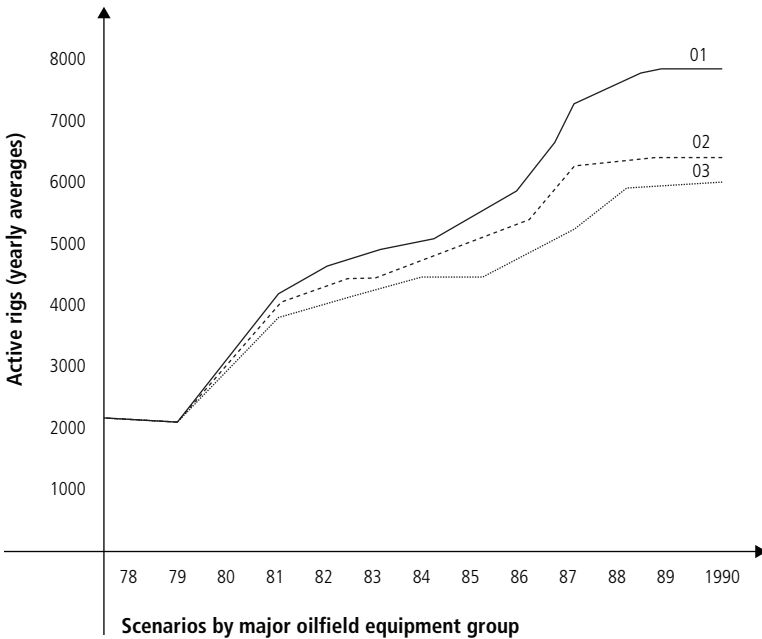
In other words, the purpose of scenario planning is, more often than not, to travel into the future so that we are able to re-perceive the present. Its role is disruption. With hindsight this may not sound all that dramatic, but it was a significant breakthrough at the time, much as the adoption of a scenario mindset still is today in many organisations.

The problem with traditional forecasting, in a nutshell, is that it contains too many unchallenged assumptions. Why could this be the case? One reason is that strategy inside many organisations relies on convergent thinking: people look at an operating environment and immediately start to make a number of assumptions. The first assumption is that they can control more things than they actually can. The second is that

they need to focus most of their attention on internal concerns, to the exclusion of external forces. The third, and often most fatal, is that they look at the present and assume that things will progress in an orderly fashion or along a straight path more or less forever.

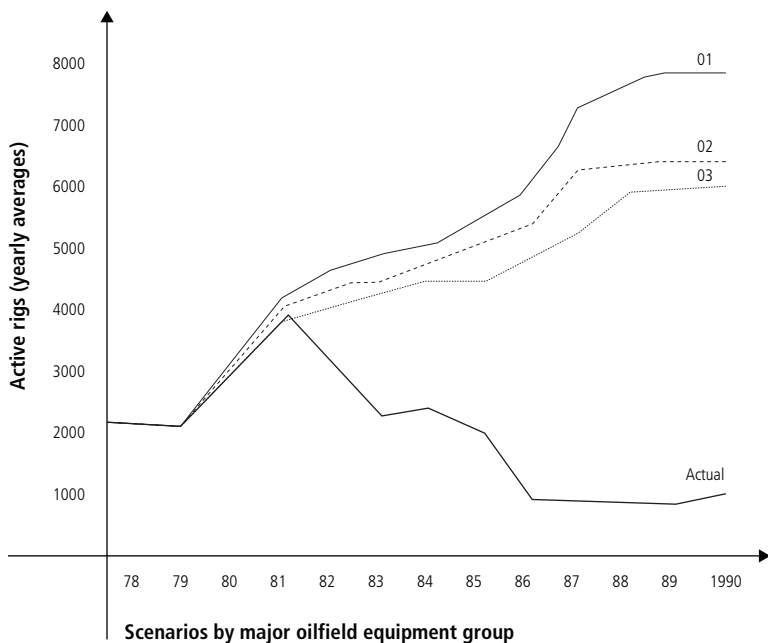
For example, when it comes to making forecasts for supply or demand, many people will take a high–low approach: they will draw a graph showing historical supply or demand and add two new lines, one higher and one lower. But this misses curve balls and paradigm shifts, caused either by the impact of new events or by unusual and sometimes even counter-intuitive combinations.

Look at the story behind figures one and two, for instance.



Source: Global Business Network and Peter Schwartz

Figure 1. Scenarios for the future of oil drilling in the United States, 1978–1990



Source: Global Business Network and Peter Schwartz

Figure 2. Scenarios for the future of oil drilling in the United States, 1978–1990 — as compared to the actual figures.

The graphs show a series of forecasts, up until 1990, for the number of active oil rigs, as predicted by an oilfield supplies company in the early 1980s. Three separate forecasts — high, medium, and low — are shown as lines 01, 02, and 03. The creators of these graphs saw these three outcomes as alternative scenarios, but they were not. They were, in effect, sensitivity analysis on one scenario. All three are essentially the same, and show orderly rises and falls.

Why did the forecasters get it so wrong? The answer is that all of these predictions were based on past experience. They were logical extrapolations; but what nobody foresaw at the time was that what looked like a long-term trend was in fact a short-term situation based upon a high oil price, low interest rates, and

government subsidies for drilling. When the US congress removed the tax incentive to drill for oil, the market collapsed. The oil-drilling planners failed to distinguish between an anomaly (a boom between 1980 and 1982) and normality, or to remember that while all of our knowledge is about the past, all of our most important decisions are about the future. In other words, they extrapolated from a series of short-lived trends without thinking about whether the trends were in fact a short-term response to deeper drivers of change. When the tax incentives for drilling were removed, reality changed direction.

This story underlines the major flaw in quantitative forecasting based on the past: it can only be wrong. The mind boggles at the number of executive hours wasted globally each year on creating forecast-based strategies and then searching for explanations as to why they did not eventuate, only to replace them with revised forecasts that repeat this fatal flaw.

History, as author and security and intelligence expert George Friedman has pointed out, 'can change with stunning rapidity'. While there are many trends and traits that at first glance look set to continue for the immediate future, nothing is ever certain. As the writer J.G. Ballard put it crisply: 'If enough people predict something, it won't happen.' If the Chinese economic miracle were to come to an abrupt end, for example, this would create a very different future than one in which it did not. Therefore, probability is of limited value when engaging with the future. The future is not at the end of a trend line.

The history of prediction is interesting in this context. It is littered with false prophets, much as it's strewn with false profits, and it is important to distinguish between what is probable and what is possible. The best way of doing this, as the fictional detective Sherlock Holmes once pointed out, is to start by removing whatever is impossible, and whatever is left, no matter how improbable, must be considered possible.

So what can we do to address this problem? Is there any point in trying to predict the future, or is it best to just sit back and let it unfold?

Letting the future happen is actually not a bad option, but only if you are nimble and open-minded — if you are a quick thinker and can react speedily, then a fast-follower strategy can work well. But most individuals and organisations are not especially nimble, nor open. They tend to be closed to the outside world mentally, and stuck with a set of beliefs that were created by relying on past experience. Organisations, in particular, are constrained by legacy issues, systems, and assets that make it extremely difficult to change direction in a hurry. Much better then, surely, to have some advance warning and to be able to discuss what could be done should conditions change. To use a military saying, to be forewarned is to be forearmed.

More than that, organisations need to learn to adapt to an increasingly turbulent external environment. Making a series of well-informed guesses — questioning what is happening and why this could be so, and then questioning where things may go next — is an excellent way to engage with the future; so too is tracking a series of alternative scenarios, in case one alternative becomes reality. However, well-prepared organisations can still be vulnerable to fast-changing events. An essential skill for organisations is to learn when to change practices and behaviours, and to have contingency plans in place.

Organisations can do more than respond to the world around them — they can also seek to change it. Leaders should lead. Every senior executive we have engaged with over the last 20 or so years wants not only to be quick, rather than dead; they also want to make a difference, to change the world in which they find themselves. And in order to make a difference, to generate change and not just respond to it, there is nothing better than foresight to create a clear vision of what can be achieved. The best

way to do this is to tell a compelling story about what the future could look like if we take a certain path.

In other words, while prediction is impossible, invention is not. Leaders and their organisations need to pick a future that they passionately believe in and start building it. This is not easy. Things of substance never are. But if we, as individuals, households, corporations, countries — even the whole planet — could agree on where we want to be in the future, while at the same time being prepared for other eventualities, we would soon start to re-perceive the present, and the future would be a much better place for all concerned to live.

The Scenario-planning Sales Pitch

Many people, including both of us, are concerned about what might happen in the future. The continued success of most businesses or organisations depends on what might change. Let's imagine that you are trying to persuade your colleagues of the virtues of scenario planning.

What is scenario planning? It is a unique and rigorous method of thinking that allows people to see into the future logically, systematically, and realistically. It involves several stages, in which research, interviews, reports, analysis, brainstorming, and strategy all play a role. Scenario planning is primarily used as a resilience test for strategy, but it can also provide a framework for innovation and risk analysis. It has benefits for both creative and analytical thinkers because it draws on imagination and visualisation as well as a range of logical-, lateral-, and numerical-thinking skills.

The process is generally undertaken by a hand-selected group from within an organisation, and it's an excellent way to build relationships between team members. It also ensures that everyone — whether they are directly part of the planning process or not — can be on the same page when it comes to

what the organisation represents, where it may be going in the future, and what might need to be done to prepare for a range of possible futures.

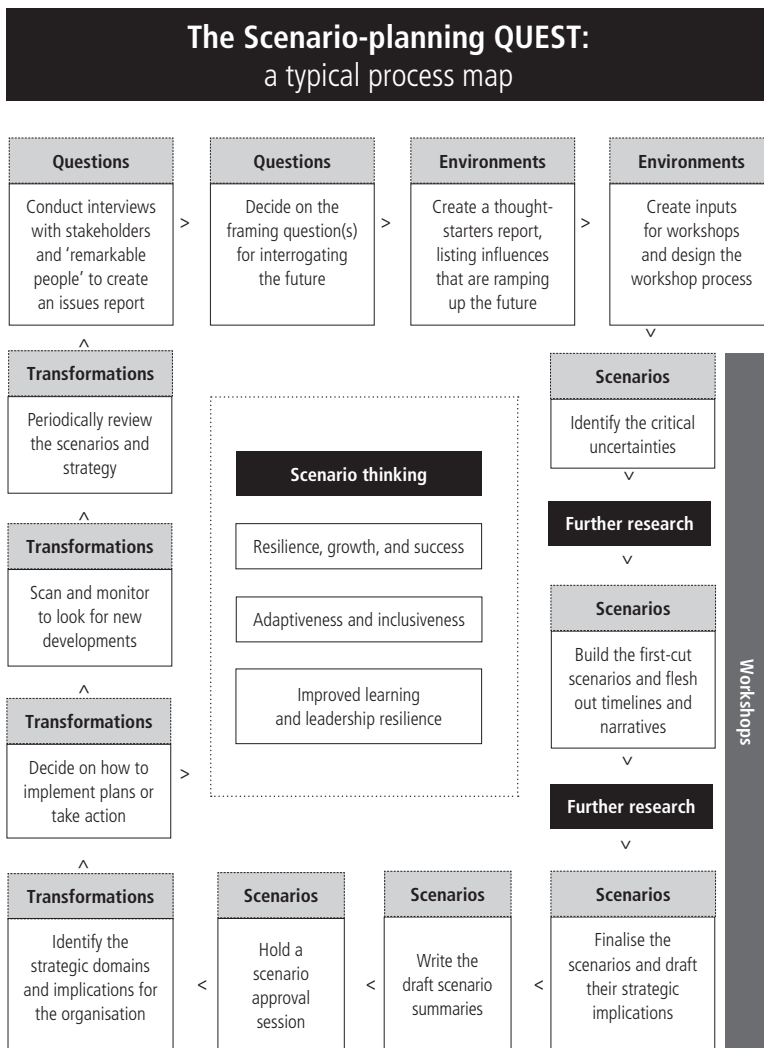


Figure 3. Scenario planning is a rigorous process that involves several logical and detailed steps, which are outlined in Part II of this book.

Scenario planning is valuable because it provides a conceptual framework, within which anyone can evaluate complex strategic concerns that they feel unsure about. Most people are trained to be decisive in the way that they approach business problems, and they often reject uncertainty by relying on the past as a guide. Scenarios, in contrast, embrace uncertainty. And in doing so, they promote open-minded and rich discussion. This, in turn, can give rise to practical suggestions for action from the diverse group of multi-skilled individuals who have been chosen to take part.

Scenarios are also valuable in setting the context for strategic planning and decision-making. As business and organisational futures seem so difficult to predict, you can employ scenario planning to make as much sense as you can of the forces for change, the trends and critical uncertainties ahead, and the likely responses of competitors, customers, and policy-makers. Scenarios are a wonderful mapping tool.

Who Should Be Involved?

Most scenario-planning work is focused on the needs of specific organisations — a government department or a public company, a charity or a utility, an educational establishment or a profession, and so on. In order to make the content of this book relevant to the widest possible readership, we have used generic stakeholders and generic questions about the world in 2040. Were our topic the future of financial services or the future of the fashion industry, for instance, the range of people who would derive direct value from our study would be more limited, and our questions would be more targeted. But the big-picture approach disguises some of the critical decisions anyone will need to make if they are applying scenario thinking in their organisation. And one of those is who should be involved in the process.

The most important first step is finding a champion with real power in the organisation: a CEO or C-suite executive, a head of

department or the top strategist, or members of the organisation's leadership team. It's difficult to 'sell' the idea of scenario planning to a hostile audience. You need someone, somewhere, who already believes in the power of scenarios, either because a peer has raved about it, they've done it before, or they've studied it.

Once you have buy-in at the top, you then want to populate the foresight team on a non-hierarchical basis, with a strong emphasis on people who have a passion for the future and will want to be involved. Both left-brain and right-brain thinkers should ideally be included. In one project, in which we studied the future of the school-teaching profession for a government agency, we invited teachers and principals to write us a short statement as to why they wanted to participate. This deliberative approach tends to yield much stronger results than a hierarchical process, in which people come on board because of their status as representatives of this group or that.

Ideally, some degree of external assistance should also be sought — not because scenario planning requires any unique insight from a professional, but because a degree of objectivity is required to maintain the correct distance between woods and trees.

How Long Does It Take?

A complete process will take a minimum of three months, and we like to have up to 12 months to do it really well. And, of course, once the initial process has been completed, you are ready to implement plans for continual review and revision.

This might sound like a big commitment in terms of time and money, and of course it is. But the benefits of good scenario planning far outweigh the resources spent. If the future of your business or organisation depends on staying ahead of the competition, as it does for many of us, then what more sensible investment could there be than spending time to plot out the likely future directions of the world, and working out how to

prepare for and respond to certain events? In one sense, the questions for an organisation or business to ask themselves are really whether they can afford not to undertake some form of scenario planning, and whether they could cope if they were taken by surprise by a sudden shift.

When you have created your scenarios, you will see how to plan your future much more clearly. This new understanding might feel simple and obvious. But do not be fooled. No-one cannot reach a meaningful destination without struggling with the incredible messiness of pre-scenario reality, and that is why the process takes time. There are no shortcuts in scenario planning. But a scenario-planning process that does not lead to a dynamic, ongoing, and heightened awareness of alternative futures will have failed in its objective to improve the quality of thinking in the business or organisation.

A good set of scenarios, providing that their outlook extends at least ten years into the future, will be valid for two or three years, as long as they are revised periodically. Thereafter, it is wise to think of preparing a 'new edition' from a zero base.

How Far into the Future Do We Need to Go?

Before you establish a question to investigate in relation to the future — or, indeed, questions, as there is no limit to the set of concerns you might wish to bundle together — you need to lock down the scope and timeframe of the inquiry. The scope is usually determined by the 'system of interest' that is running the scenario-building exercise. We use this phrase, which possibly originated in the work of American philosopher C. West Churchman, to recognise that the group who undertakes the task of thinking about the future is itself bound by an external environment, which both impacts on the organisation and on which the organisation exerts some influence. This relationship is systemic rather than mechanistic, as the cluster of connections

creates some predictable, but many surprising, outcomes.

In the work we have done over the last 20 years, our clients have ranged from individual corporations to distinctive social groups to nations. The type of organisation also necessarily influences the scope of the project. If, for example, you work for a retail bank interested in the future of financial services, the scope of the inquiry will be very different than that for a central bank, let alone for a customer of a retail company. The current concerns with the future of the euro prompt very different foresight practices for NatWest in the United Kingdom than for the European Central Bank or the Bank of Italy, or even for the Icelandic local council in Reykjavik.

The timeframe for a scenario-planning project is also critical. There is no 'one-size fits all' answer to how far out we need to go; it depends on the concerns of the client system of interest and the volatility of the environment in which it operates. Power generators and city planners, for example, need to take a much longer view, as their infrastructures are so slow to change. People in information and communications technology or pharmaceuticals are confounded by much shorter timeframes, as technological innovation and macro-economics conspire to reduce the life cycle of new products to increasingly shorter time periods. And if your interest is the future of foreign exchange markets or interest rates, you might well find it difficult to go out beyond five years.

As a general guide, it is often questionable whether going out less than three years into the future is really worthwhile because it's unlikely to take your thinking anywhere different. Moreover, traditional planning and forecasts should be covering this timeframe already. While clients sometimes question going out more than 30 years on the grounds of practicality, it's often the case that the further you travel the more you will see. In our experience, in order to get people to think rigorously about the future, you need to push the timeframe out quite a bit.

This could become a pointless exercise if the scenario-planning group's thinking remained concentrated on the future, but remember that the final stage is always to bring things back to the present day by mapping future scenarios against current strategy to explore strategic options in the here and now. In addition, the further out the thinking goes in terms of time, the more radical and probing the thoughts about the present can become, and you can often end up with an epiphany about strategy that logic or trend analysis alone would not have led to.

What Are the Benefits?

Scenario planning offers several rewards. One of its aims is to improve the quality of thinking in a business or organisation so that it develops better, more adaptable strategies. A good scenario-planning process is designed to give an organisation a heightened awareness of the future, and to increase the ability to see how its reason for being, or 'business idea', is aligned to the logic of the potential futures. The process can also help to sweep away old, irrelevant perceptions that are nevertheless often very 'sticky'. In addition, it is designed to build the strategic competence of teams throughout the business or organisation, fostering a shared understanding of the challenges facing the company in the future. It will help to identify new skills that will be required in the future, and will reveal how sustainable the existing competitive advantage of the business might be.

By building scenarios, you can:

- » explore the strategic options available to you, as individuals and as organisations
- » develop new understandings about the future
- » design strategies that are robust enough to withstand future shocks and surprises
- » envision a wider range of possibilities for coping with change

- » learn to embrace uncertainty as part of the planning process
- » acknowledge the worldviews of colleagues and adversaries.

By completing scenarios, you can:

- » learn to research ‘change’ in the business environment and to think systemically about business or organisational concerns
- » understand the power of storytelling
- » apply new research techniques to the company’s strategic-planning process
- » provide leadership in thinking about the future
- » plan the organisational strategy effectively.

By moving from scenarios to strategy, we can:

- » learn to determine the factors that may impact on your organisation now and in the future
- » develop strategic and business plans that are relevant, substantial, and robust
- » prepare your organisation for change
- » update your organisation’s reason for being so that it is aligned to alternative futures.

We used scenario planning to develop four scenarios for this book, which we’ll present to you in the next five chapters. Part II explains the process that we used to develop these worlds and the chain of events that could make them possible in reality, as well as some implications for specific industries and professions. It also explores the methodology of scenario planning, detailing the steps involved.

So now, come with us as we introduce to you the four futures — four ways in which the world could end up looking in 2040.

2

The Theatre of the Future:

introducing the four futures

It is all very well to speak in theoretical terms about the future and what it may bring. But that's not enough. What we really need to make sense of the future are stories — words that transport us to that future world, yet shine a light on questions about the present and on our actions right now.

In this chapter, we will introduce four future worlds that we have created through a careful examination of the present. These futures are not presented as a list of predictions or as a series of suppositions, but as narratives, exploring what the world could be in the year 2040. They are visions of what tomorrow may look like, based upon observations of today.

What's It All About?

Scenarios are never created in a vacuum. Conversations about the future are always *about* something: they address concerns about, for example, whether investment should be made in this oil field rather than that gas field, or whether the decline in the reading of physical books necessarily means a decline in physical libraries. And they are often told as stories. It is this fascination

with storytelling, and this curiosity about how the world might turn out, that marks human beings apart from other forms of intelligent life. From Cassandra to Nostradamus, from H.G. Wells to James Cameron, from Queen Elizabeth I to Barack Obama, the underlying needs and themes are the same: what does the future have in store for us, and what might we want to do about it?

The four scenarios we'll present in this book were created in response to the impact of the global economic crises of 2007–2012. The economic shock that had its epicentre in the period of 2007–2009 was spawned, to a degree, by the sub-prime mortgage disaster in the United States, which spiralled out of control to become what has been called the Global Financial Crisis. The GFC was sparked by the dramatic loss of liquidity ratios in the leading national banks in Europe and the United States. The exposure of national debts sank the Irish and Icelandic economies and brought Italy, Portugal, Greece, and Spain to the brink. Economic managers worldwide dragged out books by John Maynard Keynes, dusting them off as they looked for clues as to how best to kickstart these ailing economies. The stimulus packages that were implemented as a result were based on Keynes' multiplier economics — the idea that if you invest in *any* infrastructure development (ironically, it doesn't matter whether you need the stuff or not), even using debt funding, it will create jobs, which in turn will stimulate spending and help the economy to move out of recession. Each round of expenditure provides wages for suppliers, who in turn spend the money.

The irony of this Keynesian solution is, of course, that it promotes consumer spending — which, when unfettered, creates the very problem it is seeking to alleviate. That's unless you live in the United Kingdom or in certain parts of Continental Europe, in which case the solution to the crisis appears to be

imposing austerity packages and financial constraints, which have the very opposite effect: killing off demand for goods and services, which leads to job losses, which leads to more debt and a further crisis of confidence. In short, nobody has much of a clue what to do.

Faced with the consumer-spending paradox and the assumption that we are not always victims of the future, we asked ourselves a simple question: what underlying social attitudes to consumerism might prevail in 2040, and how might we respond to them in the perennial search for a better tomorrow? This became the framing question to drive our investigation of the future.

The Worldview Scenarios

As a result of our investigation, we developed four future worlds, or four scenarios. We've called them the Worldview Scenarios, as they each focus on a different social mindset, or worldview. Set in 2040, they are based on the future of Earth from a Western viewpoint, and so are necessarily generic — they will be relevant to all readers, without being specific to this industry or that.

The 'clients' for these Worldview Scenarios are the national governments of democratic countries, but the scenarios could also be applicable to those responsible for the development of multitudinous brands for goods and services. And who do these scenarios affect? The governments and brands, of course, but also their stakeholders, which includes the citizenry of the democratic Western world. Their patterns of consumption are rapidly depleting the world's natural resources, which is deepening the divide between the haves and the have-nots. Add to this the observation that the political mechanics by which power is distributed are increasingly favouring owners and incumbents, as opposed to renters and users, and the recipe for a tumultuous and unpredictable future is at hand.

You might ask, why look for more than one future? Why don't we do a typical political job on the topic and seek out some experts to put together a government report, with recommendations on what they think the future will be like? The reason is simple. As we said in the introduction, the future is uncertain and therefore there must be more than one future. And if we try to predict or apply probability to the future, we have only one probable outcome — we'd almost certainly get it wrong.

Government policies worldwide are steeped in faulty forecasts. The United States' economic health has been dependent, to no small degree, on the rapid influx of unofficial and illegal migrants to the west coast, which has blitzed forecasts made only a decade or so before about the need for such things as hospital beds and school places. In Australia, the government demographic forecast was raised in 2010 from 29.5 million people in 2040 to 35.9 million — an increase of 15 per cent on a number you would have thought was predictable. David Schwartz, a UK financial historian, said recently that for the first time in 20 years he is unable to make a prediction for the economy in the year ahead. He suggested that the United Kingdom finds itself caught between a slowly improving US market across the pond and increasing uncertainty across the Channel. Psychologist Daniel Kahneman asks why Wall Street traders have such faith in their powers of prediction, when their success is largely down to chance.

Predictions about the future usually suffer the same fate. Probability mixed with complexity plus chance would suggest that most will prove to be wrong. A better approach would be to make numerous predictions, which would mean that, hopefully, you had thought through multiple potential outcomes. Even better, do not focus on what is deemed reasonably certain, but focus instead on the factors that are highly uncertain, and use these to create multiple coherent narratives about what the future might look like, which in turn can be used to expose the

strengths and weaknesses of current strategy and to create a meaningful conversation about potential strategic options.

Good futurists understand why forecasters run into deep water at every turn. The world we inhabit is the product of thousands of influences that commingle in a continuous process of creation that is deeply uncertain. When former mayor of London Ken Livingstone introduced the congestion tax to inhibit cars from driving in the centre of the city, the surprise was the unintended impact of fewer cars on traffic-meter revenues, and then the reduction of the retail sales in the city, as people had to reduce purchases to what they could carry. Have you ever wondered why Venice is a city of small shops? No cars, no big supermarkets.

The next four chapters outline our four alternative scenarios as to how the future may unfold, and how the world may look in 2040. Each scenario is dynamic: in their weakest states, they tend to converge with each other because the present is a conduit to all futures; and in their strongest states, they are at the point of collapse into different scenarios, as the complexity of the history of the future takes hold.

Here are the four futures.

Imagine: a world of intelligence

This is a society where people are fully aware of the threats to the future, such as climate change, but have an unshakeable belief in the power of science, technology, and free markets to make life better. It is a mind-blowing new world of technical challenges and radical inventiveness and re-engineering, where everything is connected to everything else; a fast-paced, sci-fi future of genetic manipulation, avatar assistants, virtual buildings, robotic soldiers, artificial intelligence, quantum computing, hotels on the Moon, nanotechnology, and geoengineering, all ultimately driven by, and reliant on, free-market capitalism. Fundamentally, it is a world driven by human imagination and inventiveness.

The speed and depth of change in this world is breathtaking. The internet, for example, looks nothing like it did in 2012. Clean technology is booming, especially nano-solar; fusion power is coming online; and food and water shortages have been addressed by the use of smart technology. Automation means that the pace of everyday life is accelerating, while digitalisation, virtualisation, miniaturisation, and ubiquitous connectivity mean that whole industries are being turned upside-down, and people are starting to question what reality really is. This exponential rate of change makes some individuals, especially older people — of which there are now many — rather anxious. But overall, life is good, although in many instances it is no longer life as we know it today.

Please Please Me: a world of greed

This is, in many ways, the society that we had become so used to during the long boom (1991–2007) prior to the financial crisis of 2008. It is an era of economic growth, free markets, individualism, consumerism, selfishness, and self-indulgence, where people work harder and longer, and where greed and status remain key — and unapologetic — drivers of much human activity. It is a world of money, where successful people, especially celebrities, are envied and copied by followers worldwide. It is a place of luxury, displacement, and detachment, too — for those who can afford it. The past is increasingly irrelevant in this world that celebrates newness and novelty, and delights in planned obsolescence, over-supply, and over-consumption.

One significant development is the dominance of the BRICs (Brazil, Russia, India, and China) and the economies of those in the Next 11, abbreviated to N11 (Bangladesh, Egypt, Indonesia, Iran, Mexico, Nigeria, Pakistan, the Philippines, Turkey, unified Korea, and Vietnam). Of particular interest is the endless stream

of cutting-edge technology companies that are emerging from these markets.

In short, this is a world that's all about me, myself, and I; a narrowly focused, narcissistic future where it's everyone for themselves, and to hell with the consequences for anyone else. It is a world driven fundamentally by greed that, some might argue, has lost its way by confusing rapid movement with meaningful progress.

Dear Prudence: a world of temperance

In this society, people are alarmed about the health of the planet, and about the pervasive influence that materialism and individualism has had upon their lives. They have decided to take personal responsibility — to do something about it. This is a future of sustainability and switching things off, of buying fewer things and seeking to reconnect locally with the simpler pleasures of life. It is a world where many things go backwards, in a sense, and where ethics, values, and reputation really count again.

Overall, most people are surprisingly happy — they live in a 'dark euphoria', as the writer Bruce Sterling called it. This is partly because peoples' lives have become more balanced, and partly because there is a strong sense of common purpose. 'Altogether now', 'less is more', and 'you can help everyone, everyone can help you' are popular slogans. It is in many ways a pessimistic world, yet one that retains a degree of hope.

Helter Skelter: a world of fear

This is a world where a series of unexpected events creates a general sense of fear and fragility. The impact of climate change, the implosion of global financial systems and institutions, cyber crime, soaring food costs, high taxation, and the ever-growing disparity between rich and poor mean that people turn their backs on the notion of a single global economy. A few individuals

with money remain relatively engaged in the global information economy; they live in gated communities or areas with private security. Those with much less, especially those with no jobs, no money, and no prospects, are angry. They feel betrayed by the promise of globalisation, and withdraw physically and emotionally. The allure of free markets and democracy fades, and people all over the world rediscover an angry appetite for parochialism, protectionism, and regulation — concepts they describe as ‘healthy self-sufficiency’.

This is a world running on empty, where global politics drifts towards the right, nationalism and tribalism re-emerge, and globalisation and localism are uneasy bedfellows. Ultimately, it is driven by fear.

Note that the four futures are generic scenarios, which, although useful, would ideally be replaced in the real world with a set of scenarios based upon more specific questions than the ones we have used and, often, with a particular industry or geography in mind. Similarly, the timelines that we will present after each story are not intended to be analysed to destruction, but are merely examples of the kind of things that could happen to presage these worlds.

We call the future that someone wants to come to pass a ‘preferred future’. A preferred future is not the same as a scenario, although some of our scenarios will be closer to your wishes than others. As you read about each of the four futures, we urge you to think about their relationship to your preferred future.

Let’s now open the doors onto these worlds as we imagine ourselves living in them, remembering, perhaps, Albert Einstein’s words: ‘Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand.’