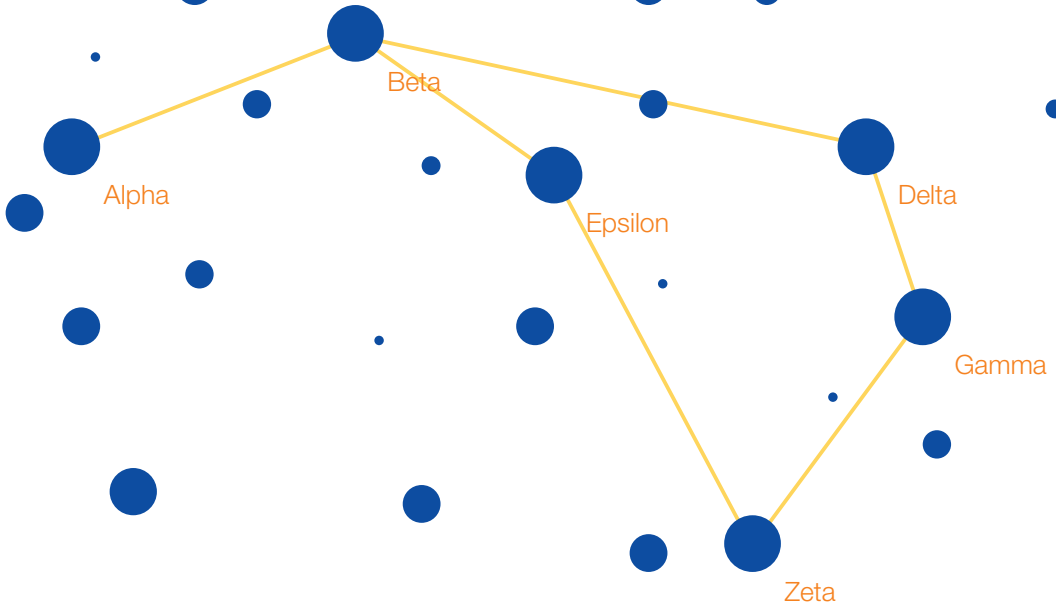


The Future Quotient

50 Stars in Seriously Long-Term Innovation



J W T

Forewords	
Volans and JWT	1
Atkins	2
The Dow Chemical Company	2
Shell Foundation	3
MindTime Technologies Inc.	3

Executive Summary	4
-------------------	---

Introduction	6
The Chasm	

Chapters	
1 What Tomorrow Wants	8
2 The S-t-r-e-t-c-h Agenda and 12 Sectors that Play Long	16
3 50 Stars in Seriously Long-Term Innovation	24
4 Are You Ready to Star?	32
5 Expand Your FQ: A Playbook to Get Started	36
6 The Quotient's Future	42

Appendices	
A Survey Process and Results	45
B References	48
C Publication Details	52
D Acknowledgements	52
E Other Publications	IBC
F Addendum	IBC

Culture The ingrained behaviors and beliefs characteristic of a particular social, ethnic or age group, sometimes described as, “what people do when no one else is looking over their shoulder.” The emerging focus of sustainability, as the context for behavioral change.

Future Quotient (FQ) A measure of the future-readiness—of individuals, teams, agencies, businesses, brands and beyond—to positively cope with and overcome the various complexities as a result of foreseeable and unforeseeable future changes in the economy, society and the environment.

Intergenerational 1 Being or occurring between generations. 2 A time period extending beyond one human generation. Average human generation is between 29 years (for women) and 33 years (for men).

Long-Term In *The Future Quotient*, considered as stretching out along intergenerational time-scales, i.e. beyond the 30-year time-horizon.

Paradigm The underlying assumptions and rules shaping current ways of thinking, framing and doing science. Paradigm shifts have been triggered by people like Copernicus, Galileo, Einstein and, we argue, James Lovelock.

Seriously 1 In a serious manner. 2 To an alarmingly grave extent. 3 With genuine, earnest intent; sincerely.

System Change A transformation in the way our economic and political systems, or our cultures, operate. Necessary condition of—and likely consequence of—a paradigm shift.

Transformational Disruptive change. Transformations can be scientific, technological, economic, cultural or civilizational. They can be advanced by incremental change, but true transformational change is disruptive in nature.

Our front cover image shows the constellation of Volans superimposed on a random field of 50 stars. Stars help with navigation and symbolise humanity's intense interest in knowing the future. Sadly there is no JWT constellation.

An old order is coming apart, a new one—for better or worse—self-assembling. Volans spotlighted this trend in 2009 in the report, *The Phoenix Economy*.¹ It was noted in that report that a crisis is a terrible thing to waste, but as Volans and JWT drafted *The Future Quotient* it was clear that the opportunity had largely been squandered.

2011 so far: the Japanese tsunami and Fukushima meltdowns sideswipe the global nuclear industry and mainstream low-carbon energy plans; America's debt rating was downgraded; Greece has teetered on the edge of default, with European political leaders scrambling to shore up other countries, indeed the entire Euro system. The UK has seen astonishing levels of violence in London, our home city, and elsewhere. Even normally peaceful Norway has been shaken to the core by an outbreak of anti-Islamicism that left scores of people dead.

The central argument in *The Phoenix Economy* was that we were seeing not simply a great recession but the beginning of an era of creative destruction. History tells us that when these periods happen, those who are ill prepared and unwilling to reinvent themselves go to the wall. Eventually, of course, capitalism will mutate and evolve, but not uniformly around the globe.

Over time, we will see a shift in understanding about the requirements for a 'going concern', as required by Generally Accepted Accounting Principles (GAAP), with new methods needed for asset capitalization, depreciation, and amortization. Currently, a going concern is considered to be likely to exist into the distant future—which may prove an optimistic assumption when the forces of creative destruction are breaking loose—and when natural resource and environmental security challenges are pressing in.

So do we trust to luck and allow a new economy to emerge wherever it chooses to do so, or do we seize the opportunity to create and shape the new order?

Volans and JWT choose the second option. Now, more than ever, it is time for businesses and their brands, governments and civil society organizations to test and build their capacity to meet the needs of both present and future generations.

We are profoundly grateful to our sponsors: Atkins, The Dow Chemical Company and Shell Foundation. These and other debts of gratitude are identified in our Acknowledgements on page 52. Our sponsors have given us a free rein on this project, so any failings should not be laid at their door—while our ability to get as far as we have has everything to do with their generous support.

We would very much welcome any comments you may have on what follows. E-mail addresses are provided at the end of the report on page 44.



John Elkington
Co-Founder &
Executive Chairman,
Volans



Charmian Love
Chief Executive,
Volans



Alastair Morton
Head of Ethos,
JWT London

Foreword

Atkins

Project Sponsor

The concept of the Future Quotient is central to the long-term value and sustainability of Atkins' business. The ability to look forward and see through the ambiguity and uncertainty that the future presents is vital if we are to continue to create value for our clients. As one of the world's largest infrastructure consultancies, we are comfortable dealing with the long-term, planning, designing and enabling of our clients' infrastructure projects and capital programmes, the design lives of which may extend over many tens of years. To remain at the forefront it is crucial that we challenge ourselves to better understand the implications of complex long-term change on everything we do.

We are investing in the challenge of future thinking through the creation of our futures team, where we are harnessing the deep skills from right across the business to understand the challenges that climate change, resource scarcity and carbon reduction present to the long-term resilience of infrastructure and climate compatible development. As we move forward on this journey this report raises important questions for us all to debate: How do we create the right environment, habits and behaviours for our people to think long-term? Have we the right balance of thinkers in our organisation and are we being bold enough in our thinking? And, crucially, can we improve how we communicate about futures to strongly resonate with our colleagues and clients?

The clarity by which we communicate future drivers of change will impact on how quickly and strongly they are adopted. We are pleased to be an early part of the Future Quotient journey and look forward to being contributing to the ongoing debate that will hopefully move many of us towards the example set by the report's "Top 50".



Elsbeth Finch
Director, UK
Atkins



Nick Roberts
Managing Director, UK
Atkins

Foreword

The Dow Chemical Company

Project Sponsor

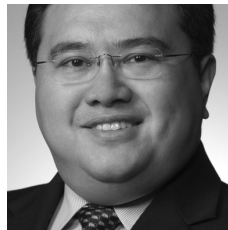
Old ways versus new ways. It's a conflict that Dow recently addressed with unprecedented self-scrutiny and transformation. In many ways, we are a case study for the paths forward that are presented in *The Future Quotient*.

A journey of the magnitude we as humans face, in order to save ourselves, requires immense, yet fundamental changes. The current world order, or disorder, is based on entrenched and dysfunctional systems—with no one person, one company, or one government at the controls.

Managing our destiny requires a clear and common vision of the future. Then we each have to drive the necessary changes that will get us to our shared destination. As Dow contemplates its third set of Sustainability Goals, we have opened the dialogue on what our role in the world should be on our 200th birthday, the year 2097.

What is our relationship with the planet? How do our technologies and our people contribute? Where do we invest today—in R&D, in manufacturing, in human capital—to have the best chance at shared prosperity?

The bets we all place these days are becoming bigger and longer term. Every decision each of us makes has an impact on our collective journey. *The Future Quotient* provides the impetus and framework for getting any business—and every business—on board.



Neil Hawkins
VP, Sustainability and EH&S
The Dow Chemical Company

In an increasingly unpredictable and volatile world, developing a strategy to manage the future is not easy. When Shell Foundation reviewed its strategy in 2010 after one decade of operations, we concluded that our success was in large part due to the fact that we didn't really have one.

When we first started out, we took the view that in order to create a successful new model for corporate philanthropy that was catalytic and could drive a whole new approach to international development, we had to experiment. A preconceived strategy that dictated our course would have got in the way. Instead, our strategy evolved from our operations and from our failures. However, as we re-crafted our model in line with what we learned, so we began to see a business model emerging that we could articulate. Only then did we feel that we could develop a strategy that would help us navigate the future.

Sometimes when you're trying to drive change you need to let circumstance and empiricism guide you rather than preconceived constructs that might limit your risk appetite and divert your focus. This is why we agreed to support Volans and JWT with their Future Quotient research initiative. We believe that the ability to navigate the future effectively depends on having an open mind, a willingness to learn from—and admit to—mistakes and a healthy appetite to go where others fear to tread.

We're delighted with the outcome and hope that the recommendations can be applied just as much to the philanthropic sector, corporate philanthropy and corporate social investment as they can to corporations and individuals.



Chris West
Director,
Shell Foundation



Clare Woodcraft
Deputy Director, UK
Shell Foundation

Plato implored us to “Know thyself.” Einstein insisted: “We cannot solve our problems with the same level of thinking that created them. We must see the world anew.”

We are in the midst of a huge explosion in our understanding of human consciousness and thinking. It is time for us to use these advances to better understand the minds that we are trying to manage towards radical change, including our own.

The Future Quotient, both as an idea and as a business concept, challenges us to rethink everything about the way we manage forward from today. It reminds us in no uncertain terms that the consequences of failure are unacceptable.

To achieve a high Future Quotient, akin to being well embarked on the road to sustainability, requires organizations that span the world to intelligently go about rethinking their ways. Significantly, however, this rethinking can no longer be done from a central place. The world is far too complex. Rather, it requires a deep commitment and investment in raising the level of individual and organizational awareness of thinking at work.

Ultimately, what we do starts with how we think. To re-think our ways we must first understand how we think, individually and collectively.



John Furey
CEO,
MindTime Technologies Inc.

Executive Summary

2011 proved to be a pivotal year, as indicated in Figure 0.1 below. 2012, thanks to a number of sustainability milestones,² will see the world debating progress to date in terms of sustainable development, a concept whose mainstreaming began a quarter century ago in 1987.

Around the time of the 2012 UN Summit on Sustainable Development in Rio de Janeiro, we will be bombarded with reports and case studies suggesting significant advances. The uncomfortable truth, however, is that much of what currently passes for sustainability strategy in business is little more than corporate citizenship—and more or less completely ignores the pivotal concept in the sustainability agenda: the interests and needs of future generations.

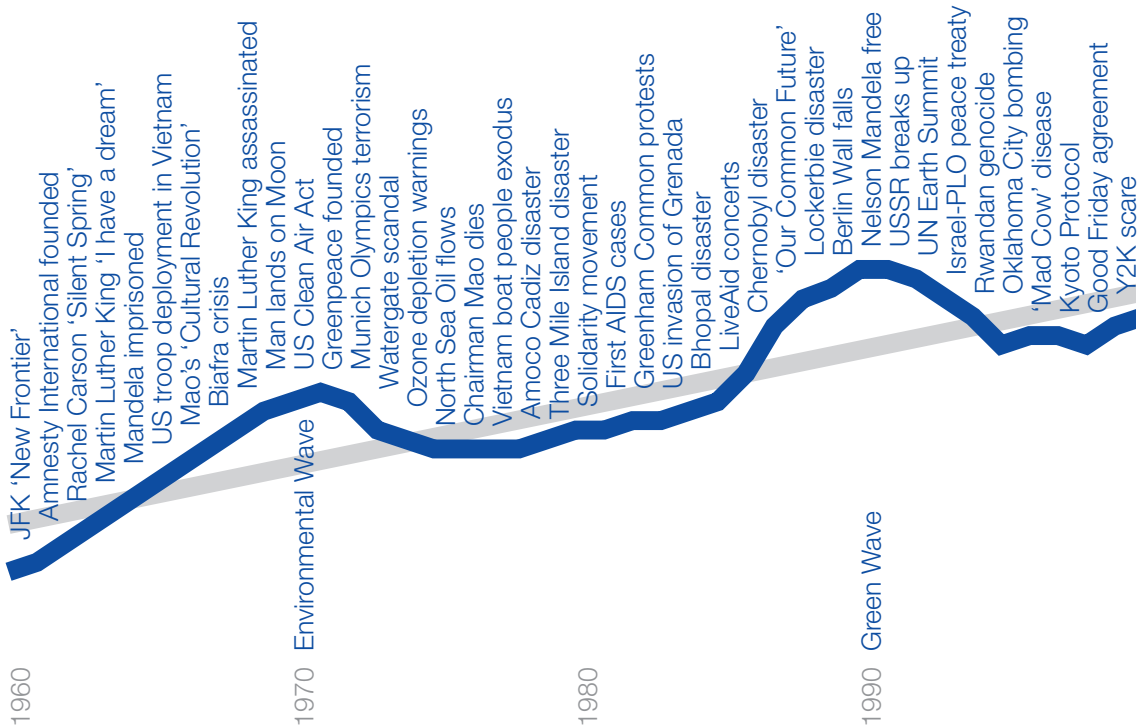
The Future Quotient, co-authored by Volans and JWT, is our take on the emerging agenda. It is a pitch for the introduction of a new concept—the Future Quotient, or FQ—designed to measure the ability to think and act along intergenerational timescales.

In the same way we currently measure the IQ or EQ of individuals, Volans and JWT believe that we need to investigate FQ as a measure of the future-readiness of individuals, teams, agencies, businesses, brands and beyond.

We explore why such a measure is needed as we establish the imperative for longer-term thinking and action (Chapter 1). We look at how leadership must stretch if it is to embrace this imperative (Chapter 2) and we outline the key dimensions that any FQ test must capture in order to be a true measure of future-readiness. We highlight 50 ‘guiding stars’ of seriously long-term innovation—individuals, organizations and economies that our team and wider network judged to be likely to show significantly higher-than-average Future Quotients (Chapter 3). We offer a way to explore your team’s style of thinking using MindTime’s methodology (Chapter 4), as a first step towards assessing Future Quotient. And in Chapter 5 we spotlight a range of tools as building blocks for an eventual Playbook, aimed at helping individuals and organizations

Figure 0.1

Waves of Societal Pressure

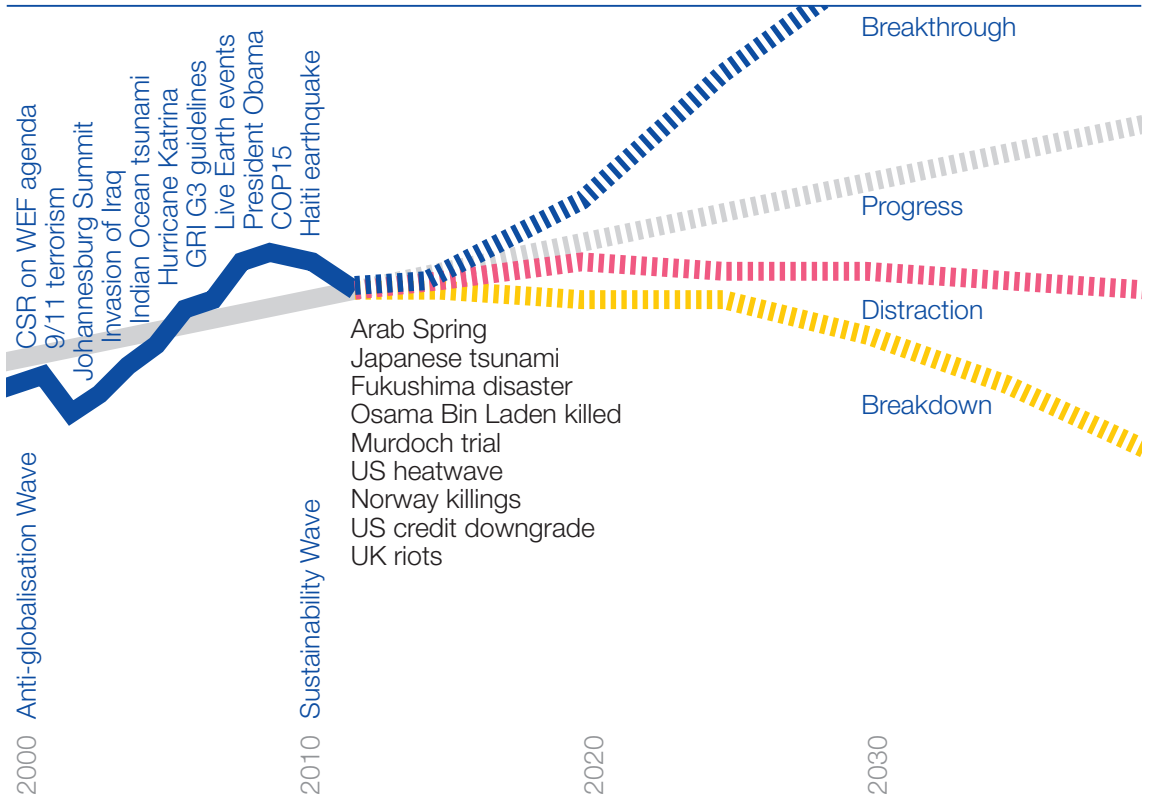


IQ, DQ, EQ and Eco-Q

Over the past century, a number of measures have emerged that aim to capture the capabilities of individuals. We already have the Intelligence Quotient (IQ) and, thanks to Daniel Goleman, we also now have the Emotional Quotient (EQ) and Ecological Quotient (Eco-Q). IQ testing has become central to education and human resources management. The first large-scale mental tests were used in China during the Sui Dynasty in 605 as part of the entry exams for the imperial civil service, with the IQ approach getting a big boost during WWI with the need to evaluate and assign recruits. There are now many different forms of IQ assessment, but the central idea is that an IQ score is an effective predictor of an individual's capabilities.

An IQ score is more or less set for life, although average IQ scores have been rising at around three points per decade since the early part of the last century. By contrast, those measuring EQ or Eco-Q tend to assume that scores can improve with awareness and training. The design and innovation company **IDEO** has also proposed a Design Quotient (DQ) to track users' contributions to the firm's OpenIDEO website, which is also improvable with diligent effort.

@FutureQuo 2011 a year of transition
 Will it lead to Breakdown? Distraction?
 Or Breakthrough? #FutureQuo



The global sustainability movement is 25 years old, with 2012 marking a number of milestones—among them: 40 years from the *Limits to Growth* study,³ 25 years from the Brundtland report⁴ and 20 years from the first Earth Summit in Rio de Janeiro.⁵ But has real progress been made—and how well positioned are we to make progress tomorrow?

On the upside, corporate commitments to sustainability-focused initiatives actually increased during the first phase of the global downturn, with almost 60% of companies in a recent survey saying their investments in related areas increased in 2010.⁶

On the downside, a key element of the Brundtland agenda was the issue of long-term and intergenerational timescales and equity—and here we are failing, badly. With very few exceptions, leaders, decision-makers and policy-makers are not yet thinking and acting for the longer term. Indeed, stressed by the protracted downturn, too often they are hunkering down, lowering their ambitions, and shrinking their timescales.

We seem to be at a make or break point, teetering on the edge of the sort of chasm illustrated in Figure 0.1. The failure of 2009's Copenhagen COP15 climate summit and later meetings suggests caution in terms of expectations about the outcomes of current global governance processes. For the sustainability agenda to cross over into the mainstream population without serious dilution, new forms of leadership are urgently required— aspects of which are demonstrated by our 50 Stars in Chapter 3.

Leadership in crisis

It is in the very nature of things that a proportion of leaders will fail, but when the rate of failure increases dramatically, the chances are that system failure is at the heart of the problem. The current generation of leaders have fought their way to the top of the pile in a system whose rules they understood, indeed helped to define and police.

As a new order begins to emerge, their instincts, reflexes and well-honed solutions increasingly fail to address the increasingly complex challenges. The question is: do our leaders have the skills and ability to adapt to the new order?

As the financial and ecological systems weaken and stresses build, human nature dictates that we try to do more of what worked in the past. We focus even more on the conventionally defined bottom line. Stuck in a hole, we continue to dig, despite clear signals that radical change is needed. Eventually, natural selection will sort winners from losers, but will the winners be any better at addressing the core elements of the sustainability agenda? Will they be more adept in considering the long-term resilience of their organizations? In what follows, we sketch out a means of measuring the future-readiness of leaders—and offer a short survey of some of the tools used by our FQ50 finalists and others.

While measures such as IQ, EQ and Eco-Q (Panel 1) can contribute to evaluations of the capacity of an individual, team or organization to make sense of, manage and even improve the future, none is designed to provide an overall assessment of future-readiness, let alone the ability to address the needs of future generations.

@FutureQuo 81% of CEOs say they've embedded sustainability (Accenture survey).
But only 29 publicly traded US companies have CSOs (Weinreb) #FutureQuo

We need a tool—or tools—that can help us measure what we're calling our Future Quotient. A high Future Quotient can help individuals or groups identify new risks ahead of the pack, and play more effectively into emerging areas of opportunity. As the Canadians say in ice hockey, it can help players skate to where the puck is going to be—rather than where it is.

The Future Quotient project

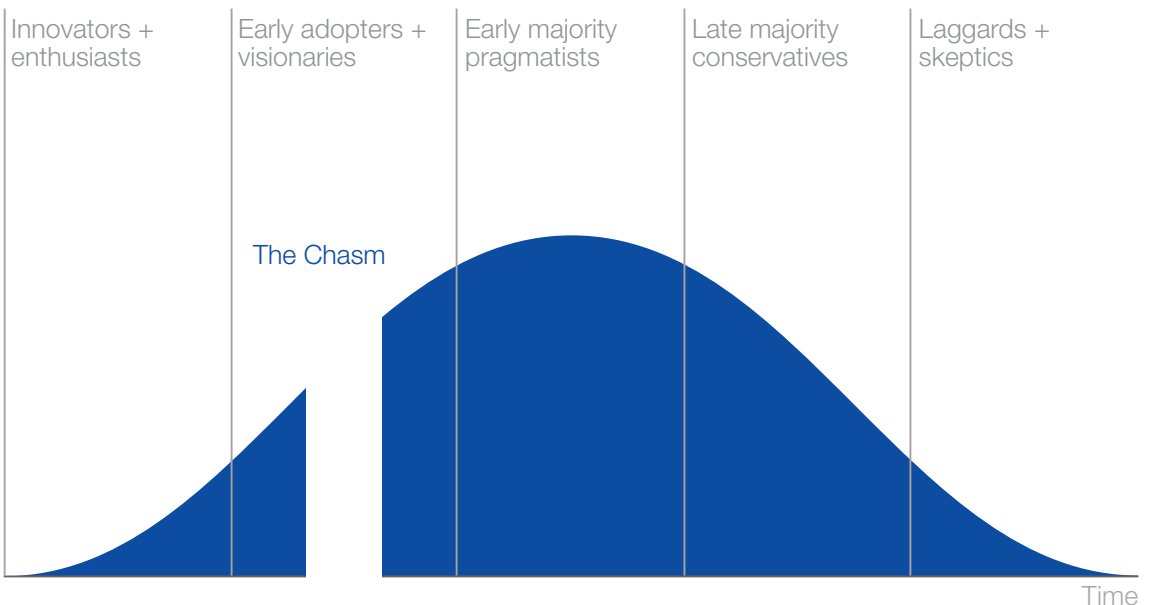
The project began as a response to evidence that CEOs, and C-suites generally, were concluding that they had already embedded sustainability.⁷ Ahead of the 2012 sustainability milestone events, we felt that some sort of counterblast was needed. The FQ idea evolved along the way—as a means of testing those C-suite assumptions.

We researched, scanned, interviewed and conducted a part-quantitative, part-qualitative survey surrounding the issue of long-term thinking and acting (Appendix A, pages 45–47). This was emailed to several thousand members of the Volans and JWT networks, resulting in 500 fully completed replies from thought-leaders and practitioners worldwide.

Drawing on this collective wisdom, and working closely with MindTime, who we discovered along the way, we began the development of a beta version of our methodology to measure your own FQ (Chapter 4). Building on the recommendations of our respondents, we compiled a listing of '50 Stars in Seriously Long-Term Innovation' which we term as the FQ50 (Chapter 3) as well as an FQ Playbook to help individuals and organizations stretch their FQ (Chapter 5).

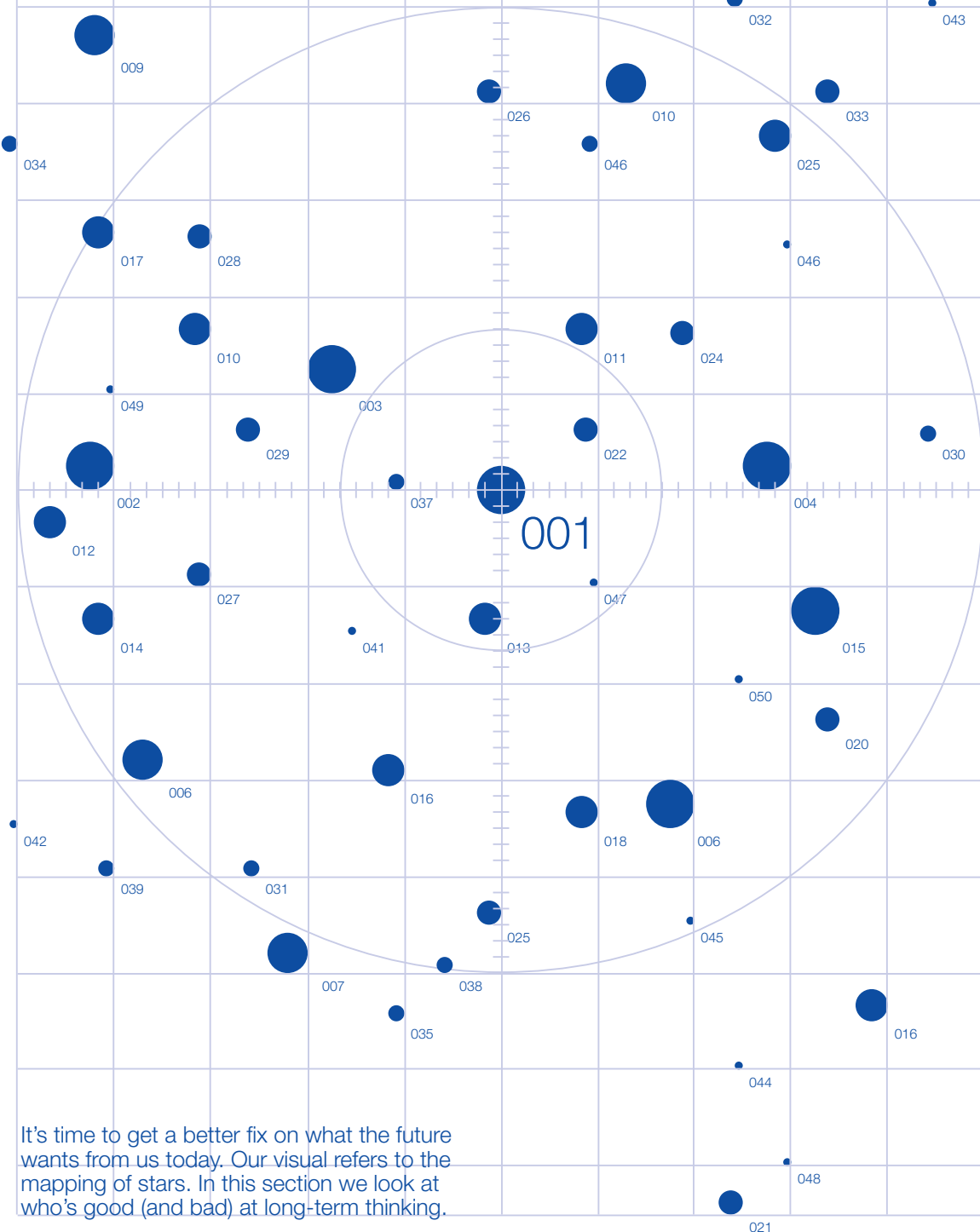
Figure 0.2
Make or break⁸
Adoption Lifecycle

Source: Geoffrey Moore, *Crossing the Chasm: Marketing and Selling Technology Products to Mainstream Customers*, Capstone, 1998.



Chapter 1

What Tomorrow Wants



It's time to get a better fix on what the future wants from us today. Our visual refers to the mapping of stars. In this section we look at who's good (and bad) at long-term thinking.

If you ask a CEO—or similar—to sketch their business universe on a flipchart or whiteboard, which we have, you quickly notice something striking about the diagram they produce. Typically, they place their organization at the very centre of the mapped universe. This should come as no surprise: this is their world, and their perceived centrality powerfully shapes their worldview.

This simple fact has huge implications for the capacity of CEOs and other members of the global C-suite to improve their Future Quotient and effectively engage the sustainability agenda. It means that business leaders are often in the same position as cosmologists pre-Galileo, seeing the agenda in corporate terms, rather than in wider societal or biosphere-centric terms.

And it shows in survey data. In 2010, for example, the **UN Global Compact** and **Accenture** reported the results of a global survey of 766 CEOs—in which 93% said that they saw sustainability as an important part of the business landscape and 88% knew that they now had to drive related requirements through their supply chains.⁹ The real jolt, however, came when 81% said that they had already “embedded” sustainability. Whatever they may have embedded, the chances are that it does not address the need for system change. This is backed up by a recent study by **Weinreb Group** which found that only 29 publicly listed US companies have a Chief Sustainability Officer (CSO) and they, on average, only have 4.2 direct reports on their team.¹⁰

Many companies now have a cycle of annual non-financial reports; they may now engage a wider range of external stakeholders than they once did; and they may be one of the few who have appointed a Chief Sustainability Officer. But some may be surprised to discover the degree to which they have failed to understand the fundamentals of the sustainability agenda they have signed up to—which is now set to become the operating code of twenty-first century markets.

As Volans argued in an earlier report: *“Properly understood, sustainability is not the same as corporate social responsibility (CSR)—nor can it be reduced to achieving an acceptable balance across economic, social and environmental bottom lines. Instead, it is about the fundamental, intergenerational task of winding down the dysfunctional economic and business models of the nineteenth and twentieth centuries, and the evolution of new ones fit for a human population headed towards nine billion people, living on a small planet which is already in ‘ecological overshoot’.”*¹¹

The key word here is *intergenerational*. Very few businesses operate on anything like a generational timescale, though in Chapter 2 we spotlight a sample of those that come closer than most to operating on such timescales.

As several CEOs told us during the course of this project, recessionary pressures and wider uncertainties in the system have encouraged short-termism to proliferate, with even pension funds becoming increasingly myopic in their investing.

Andrew Haldane of the **Bank of England** has tried to quantify short-termism. “Our evidence suggests short-termism is both statistically and economically significant in capital markets,” he and his colleague, **Richard Davies** report.¹² They underscore the impact of the fact that “information is streamed in ever greater volumes and at ever rising velocities. Timelines for decision-making,” they say, “appear to have been compressed.”

More significantly still, they conclude: “These forces may be altering not just the way we act, but also the way we think. Neurologically, our brains are adapting by shortening attention spans,” they conclude. “Like a transistor radio, our brains may be permanently retuning to a shorter wave-length.” This is a theme also explored in books like *The Shallows*.¹³

In the US and UK, cash-flows five years ahead are now discounted at rates more appropriate to eight or more years into the future. Haldane and Davies tell us, “10-year ahead cash-flows are valued as if 16 or more years ahead and cash-flows more than 30 years ahead are scarcely valued at all. The long is short.”¹⁴

Worse, our ability to make long-term investments seems to be weakening, at least according to the World Economic Forum (WEF). It concluded that in 2009, long-term institutional asset holders held slightly under half of the world's professionally managed assets—some US\$27 trillion out of US\$65 trillion.¹⁵ Haldane and Davies conclude that: “Public policy intervention might be needed to correct this capital market myopia.”¹⁶

As global population pressures build and emerging economies find themselves locked into resource-intensive economic models, there are growing grounds for concern that the pace of climate change and of other pressures on the biosphere will outrun our capacity to innovate, at least at the scale that will be necessary.

As the Stern Review on the economics of climate change argued, climate change looks set to become the biggest market failure in our collective history.¹⁷ Meanwhile, the risk of intergenerational tensions, in the sense of tensions between current generations, grows by the day. There are significant concerns about the future of public health care provision, pensions and climate change, to name just a few increasingly problematic fault lines between generations. Governments are proving ill-adapted to the emerging challenges, as Figure 1.1 suggests. Though, as Chapter 2 argues, the very nature of what government does means that, at its best, its time horizons can be significantly longer than those of most businesses.

Warning bells have been sounded by, among others, the **US National Intelligence Council** in a series of reports looking out a decade or two into the future.¹⁸ Among their conclusions: “The whole international system—as constructed following WWII—will be revolutionized. Not only will new players—Brazil, Russia, India and China—have a seat at the international high table, they will bring new stakes and rules of the game.”

These things go in cycles, of course, but our governments, financial institutions and many business leaders appear to be failing even in terms of the old market rules—let alone the new rules imposed by new considerations like energy, food, water and climate security.

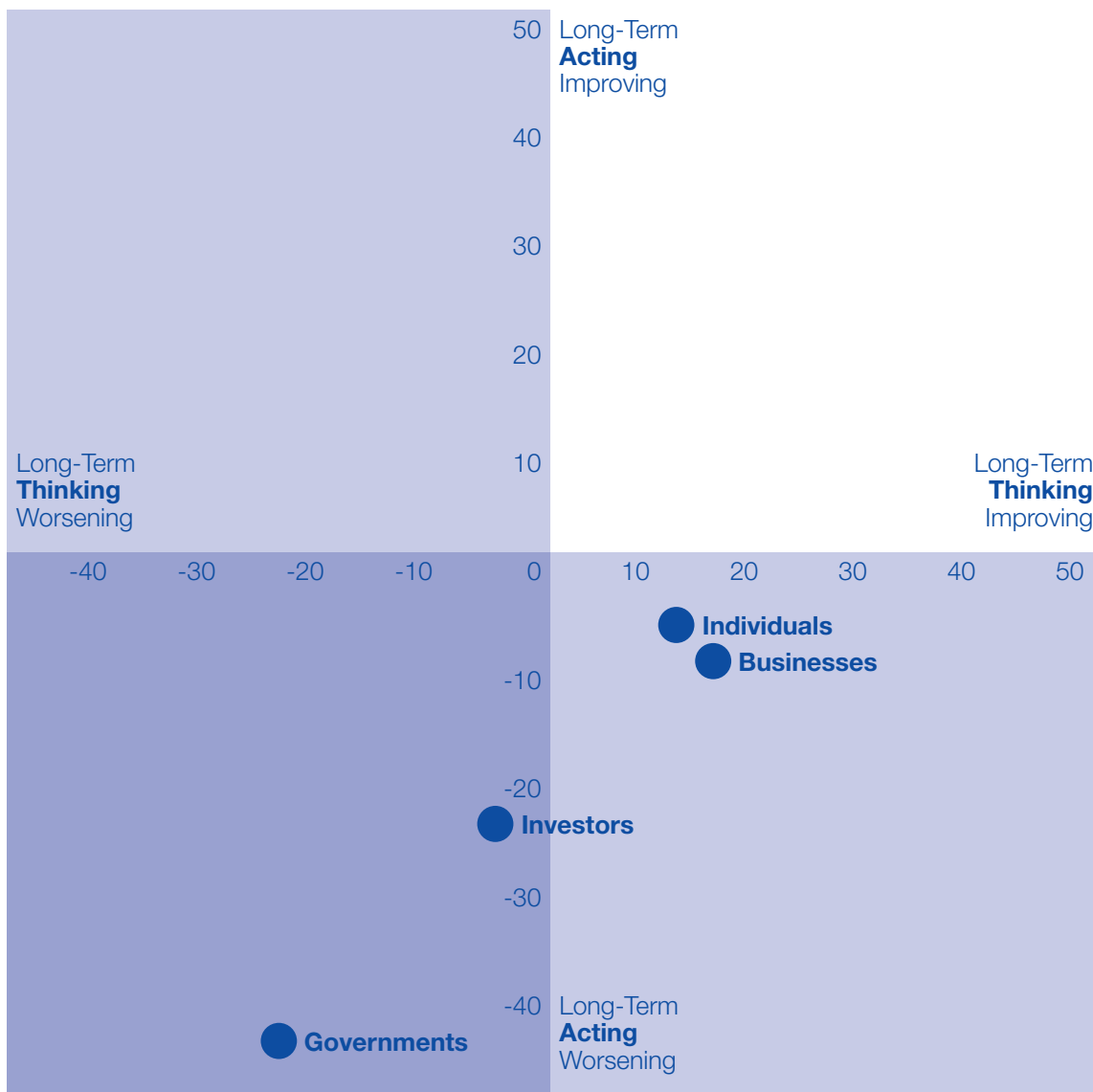
Panel 2
**Who's good—and bad—
at long-term thinking?**

In our first Future Quotient survey (see Appendix A) we asked: ‘In general, do you think that the capacity to think with long-term horizons in mind is getting better or worse?’ for each of four actors: individuals, businesses, investors and governments. We asked the same question to track their capacity to act with long-term horizons in mind.

For each actor, we calculated an index representing the net belief that they are improving in these capabilities. For instance, the positive index along the horizontal axis for businesses means that more of our respondents see businesses as getting better at thinking for the long-term than think they are getting worse.

Strikingly, no actor has a positive index on the vertical axis, meaning that, in total, respondents see a decreasing ability to act with long-term horizons in mind. One point to highlight is that despite governments being scored so poorly, we believe that some of them do indeed think and act with long-term horizons in mind. Perhaps not as effectively as we might want, but governments are generally responsible for such things as healthcare planning, infrastructure provision and social services. As **Dalton McGuinty**, Premier of Ontario, Canada, recently put it, “The responsibility of leadership is to represent the future to the present”. For more on government, please see Chapter 2 where we highlight 12 sectors that are playing long (pages 20–23).

Figure 1.1
**Who is getting better at thinking—
 and acting—long term?**



@FutureQuo Survey says individuals + businesses are improving at thinking long-term, but how to translate this into action?
 #FutureQuo

Panel 3
Cultural dimensions of long-termism

The degree to which we engage with long-term thinking differs from person to person, but there are also significant differences across cultures. Experts like **Charles Hampden-Turner** and **Fons Trompenaars** have mapped different cultures in terms of the time bubbles they occupy, shown as different sized bubbles representing the past, present and future.¹⁹

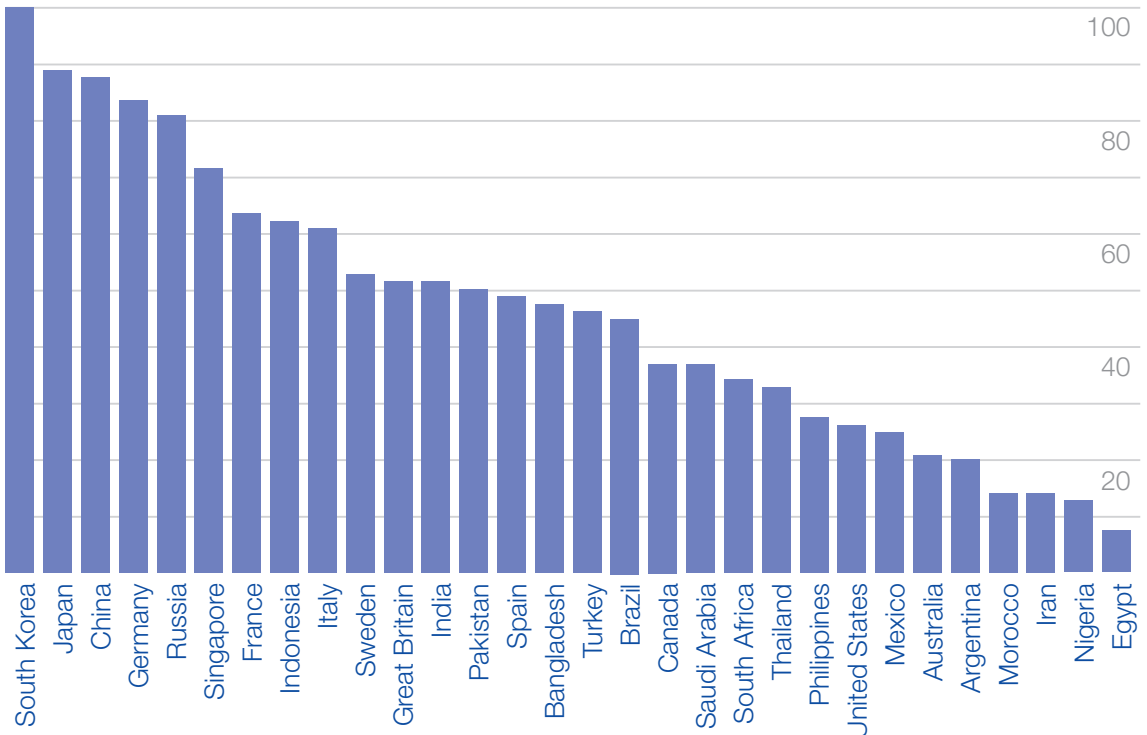
It is no accident that some of the pioneering work with tools like scenarios planning was done in sectors that have to think particularly long-term, particularly defense and natural resource extraction. Or that some of the most intense interest in cultural differences in terms of time-horizons has come from multinational businesses operating multi-cultural teams. A sensitive understanding of the time orientations of different internal and external stakeholders is crucially important. This is a field in which **Geert Hofstede** excels—see Figure 1.2.²⁰

It is interesting to see South Korea and China positioned leading the long runner pack, while Egypt—land of the age-old Pyramids—brings up the rear. By contrast to the situation in China, where long-term planning has been one key part of the impressive, sustained expansion of the economy and of the country's political position, the West appears to have been hamstrung by an aggravated case of political short-termism and market myopia.

It is important to note, however, that these examples are not without controversy. The long-term outlook of some countries on the left of the chart can ignore severe social injustices in the present. The positioning of countries like Russia, Slovakia, Bosnia and Albania is provocative and raises a number of questions about the links between long-term orientation and economic success.

Figure 1.2
Hofstede's long-term orientation, by country

Source: G. Hofstede, G. Hofstede, M. Minkov, Cultures and Organizations, McGraw Hill, 2010



Discounting tomorrow

A fundamental tool of modern capitalism explicitly involves discounting the future. Economics 101 tells us that a *discount rate* is the percentage by which the value of a cash flow in a discounted cash flow (DCF) valuation is reduced for each time period by which it is removed from the present. The estimation of a suitable discount rate is often the most difficult and uncertain part of a DCF exercise. The challenge is made even more difficult by the fact that a small change in the discount rate can cause large changes in value.

Most environmental experts see the impact of discounting as pernicious when applied to natural systems like fisheries, forests or the climate. These concerns are legitimate, though the precise implications critically depend on the timescales within which the discounting is done.

Three such timescales are suggested by the **Long Now Foundation** (one of our 50 Stars, see page 31), as they explore different conceptions of deep time. These time-spans range from a few days through roughly a human generation (30 years) and then out to the millennia over which the evolution of human civilization can now be tracked. People with a high Future Quotient can operate conceptually between multiple time domains—and are particularly conscious of these longer-term timescales.

One hopeful initiative announced as we were preparing *The Future Quotient* was a review of the impact of equity market dynamics on the longer-term competitiveness of the UK economy—led by Professor John Kay and supported by the **Department of Business, Innovation & Skills (BIS)**.²¹

One key question: “Whether the timescales considered by boards and senior management in evaluating corporate risks and opportunities, and by institutional shareholders and fund managers in making investment and governance decisions, match the time horizons of the underlying beneficiaries.” This is becoming a question of fiduciary duty.

Our shifting paradigm

A review of management timescales and discount rates would certainly be a start, though it seems unlikely that the interests of future generations, in the Brundtland sense, will be directly addressed. However, there are other reasons for optimism. **James Lovelock** (one of our 50 Stars, see page 28) may well turn out to be a modern Copernicus, and if we track his work back to the early 1960s—it is very possible that we are about 55-60 years into a paradigm shift that will have profound implications for the way we view and manage Earth resources and security.

‘Paradigm’ is a much-overused word these days, but when introduced by Thomas Kuhn in 1962, it had a very specific meaning.²² It refers to the basic assumptions and the underlying rules of the current way of doing science, to how reality is seen. Paradigm shifts typically take many decades—even human generations—to work through, partly because those ‘infected’ with the outgoing paradigm have to retire or die to open up space for the incoming one.

Before the Industrial Revolution, for example, the prevailing energy paradigm mainly revolved around renewable energy, including power extracted from the wind, sun, animals or slaves. We then moved into the fossil fuel era, with its defining ‘Cornucopian’ paradigm. Now, with growing concerns about ‘Peak Oil’, the peaking of other key resources and climate change, we are racing towards a new paradigm—whose character is yet to be determined.

2012 offers an important opportunity to look to the past and review progress to date. Whether we take a 50-year time horizon (back to Rachel Carson's *Silent Spring*,²³ which helped launch the environmental movement), or a 40-year (UN Stockholm Conference on the Human Environment, *Limits to Growth* ²⁴), 25-year (Brundtland Commission Report, *Our Common Future* ²⁵) or 20-year (1992 UN Earth Summit in Rio de Janeiro) horizon, the underlying trend is clear. There has been a global awakening: concerns about demographics (for example, human numbers and aging), natural resource availability, water scarcity, climate and a range of other environmental and social issues have increasingly penetrated the consciousness of ordinary people, policy-makers and business leaders—even if they do not yet know what to do in response.

But, as Figure 1.3 suggests, changing mindsets are only part of our overarching, multi-dimensional, non-linear challenge.²⁶ The diagram, developed by Volans, indicates that mindset change is only useful if it translates into effective changes in behaviors—and behaviors are often very hard to change because they are 'locked in' by cultures. Typically, these three domains are anchored in the underlying paradigm, which often takes a very long time indeed to shift—with 70-80 years being a relatively speedy shift.

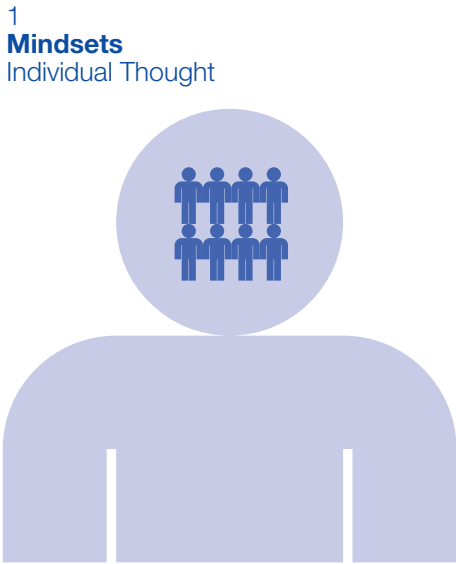
Even the best-intentioned leaders can hit the wall when attempting the transition from cells 1 to 2. They make the announcements, but their behavior remains unchanged: they rely on a (flawed) 'do as I say, not as I do' approach. Still, if you get this even partially right, the process can go viral, as it has with bans on public smoking in some countries. Those who do make it into cell 2, must then make the even tougher transition to cell 3. Here the focus is on integrating new values into corporate, urban, national, or global cultures. It must be about enrolling the right stakeholders and using ideas to capture collective imaginations and catalyze change at this cultural level.

Culture is the new frontier—and we need to get dramatically better at intelligent cultural engineering. One key area of concern, for example, must be the impact of the ageing trend on the willingness of our societies to support and invest in solutions designed to effect system change.²⁷ Older people, in addition to being politically active and more conservative, also tend to have their pensions invested in incumbent, older order industries and companies. How to green the greys?

Then, as we probe the margins of cell 4, the spotlight shifts to paradigms. However the next paradigm crystallizes out, intergenerational timescales, responsibilities and investments will need to be at its core.

@FutureQuo New leadership is needed to align mindset and behaviors with longer time horizons. Pls RT to build collective movement.
#FutureQuo

Figure 1.3
From Mindsets to Paradigms



Chapter 2

The S-t-r-e-t-c-h Agenda and 12 Sectors that Play Long



Civilization depends on the ability to hold social groups together and to build the necessary infrastructures and institutions. For our civilization to make sense of the 21st-century, we must stretch our timescales.

Broadly stated, the first 50 years of environmentalism saw processes of social fission at work. The one overarching agenda split into a set of different issues, each with different advocates and organizations rallying behind them. The result has been the release of an immense amount of negative energy as they fragmented society into different camps on key issues. The toxic consequences of these silos live on, particularly in areas like climate change. Nor have we seen the back of this political fission: it is still at work in the relations between business and government, the BRIC and non-BRIC countries, and between present and future generations. If this continues, we risk a future described by a 'fission scenario': a world where the focus is narrower, shallower, lower and shorter than it should be—and where, as a result, the best that can be achieved is incremental change.

A more positive scenario foresees a future based on social fusion, where new initiatives convene leading businesses and other actors to address key challenges. The fusion agenda depends critically on creating market and governance conditions where doing the right thing becomes the default setting for business and financial markets. Leadership would then involve thinking and investing over significantly longer time-scales in pursuit of transformational system change.

If fission is the status quo, what would need to happen to take us into a future of fusion? What would that future quo be? Stretching the time horizons of leaders in boards, C-suites, cabinets or other centers of power is part of the solution. But we believe that there are actually five dimensions across which leadership must stretch to take us to a fusion future. These are shown in Panel 4 on pages 18–19.

It is important to remember that the job of any leader is not only to focus on the future, but also to have the ability to work in the space between their vision and what is needed at a practical level in order to implement that vision under present conditions. Like a pendulum swinging to both extremes to reach the middle, leaders need increasingly to swing to the right side future quo characteristics (for example, incremental to systemic, or shorter to longer) in order to make up for the huge momentum with which society has been pulling us back towards the status quo.

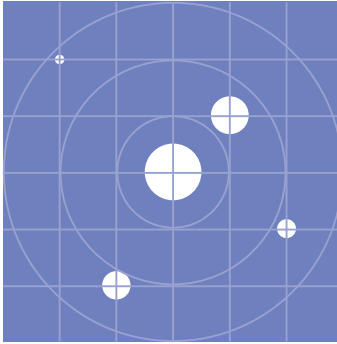
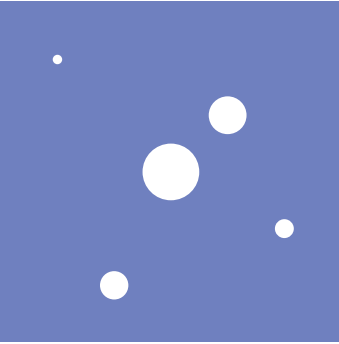
@FutureQuo 5 dimensions of high FQ leadership: 1. Systemic 2. Wider 3. Deeper 4. Higher 5. Longer. #FutureQuo

Panel 4
5 Dimensions of high-FQ leadership

Dimension

1
 Change
Incremental → Systemic

2
 Scope
Narrower → Wider



Description

This first dimension refers to the type of change desired. In times of fundamental shifts in the economy, we need to change the focus from incremental to system change. If the first 25 years of the sustainability agenda have defaulted to citizenship, responsibility and accountability goals, the ultimate aim was always systemic change—which now looks set to be central to the agenda in the next quarter century.

Here we aim to measure the breadth of organizational horizons, networks and thinking. In times of intense change, focusing in harder on what has been done in the past can be a cardinal error. Instead, opening horizons for a 360-degree perspective—and creating partnerships that help migration into new domains.

FQ50 examples

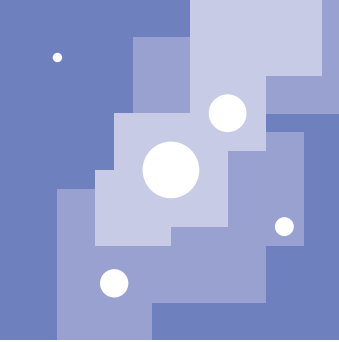
Airbnb
 page 31

Arab Spring
 page 31

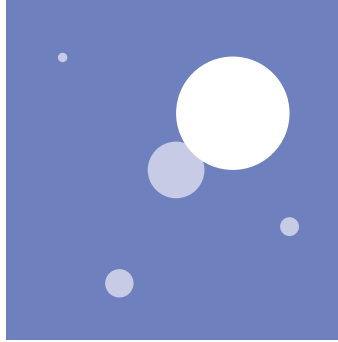
**London Organising
 Committee for the
 2012 Olympic and
 Paralympic Games
 (LOCOG)**
 page 30

TED
 page 30

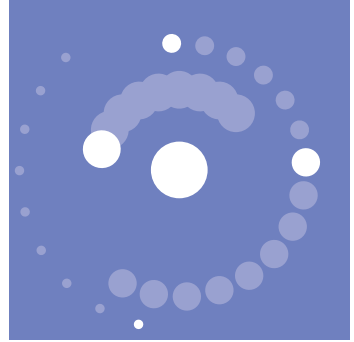
3
Analysis
Shallower → Deeper



4
Ambition
Lower → Higher



5
Timescale
Shorter → Longer



As globalization has extended supply chains, the capacity for deeper understanding has become stretched to—and sometimes beyond—the limit. The time has come to dig deeper, to better understand the history, science and likely future dynamics of key challenges. We must fight to avoid the shallow thinking that's so possible in the world of endless flows of information.

Here we focus on the scale of ambition—and the degree to which there is organizational willingness to stretch. Under stress, human beings tend to reset their expectations. They typically lower their targets, hoping to cling on to what they have. Yet the historical evidence suggest that successful leaders have often done the complete opposite, embracing stretch goals and setting their targets way higher than others thought sensible.

To succeed in these wider, deeper and higher strategies, leaders need to operate against longer time-scales. As Seth Godin puts it, people don't care about the long-term because: "You don't intend to be around; you're going to make so much money in the short term it doesn't matter; or you figure you won't get caught." But, he says: "The thing to remember about the short-term is that we'll almost certainly be around when the long-term shows up."²⁸

Gapminder
page 29

**Jochen Zeitz /
Puma**
page 30

**Lester Brown /
Earth Policy Institute**
page 28

**Paul Polman /
Unilever**
page 30

**Google / Virgin /
100 Year Plan***
page 31

*See Appendix F: Addendum

Long Now Foundation
page 31

Stretching across the Thames

So where would you look for industries, companies and business models that address these different dimensions of change—and particularly extended time dimensions? One answer spotlighted in our 12 sectors is civil engineering. A particularly striking example of explicit, thoughtful trading between the interests of present and future generations, brought to our attention by the **World Resources Institute (WRI)**, was the process that resulted in the **Thames Barrier**—which cost nearly £500 million.

Decision-makers embraced a flexible approach for managing uncertainty—so that the Barrier, designed to protect London from flooding, can withstand multiple levels of future sea level rise. For each adaptation option, WRI notes, the project assessed: the key threshold of climate change at which that option would be required (e.g. the extreme water level); the lead time needed to implement that option; and therefore, the estimated decision-point to trigger that implementation (in terms of an indicator value, such as the observed extreme water level, along with an uncertainty range).

The **Thames Estuary 2100** project is now looking at the next 100 years of this barrier. It has identified adaptation measures that can be sequenced over time, depending on the significance of the risks identified—in terms of rising sea levels off the UK coastline. The approach was informed not only by forecasting, but also by socio-economic scenarios used to explore cultural and consequent land-use possibilities for the coming decades. The costs of defending London against flooding are huge: modeling suggests that investment in building and maintaining of flood defenses will need to almost double to £1 billion a year (compared to £570 million now) by 2035.²⁹

Trading off the need—and ability to pay—of present and future generations led to a decision to design a modular system, good enough for the foreseeable future, but modular so that it can be extended to meet future contingencies.

At the same time, such challenges will open out tomorrow's markets. Tomorrow's economic leaders will be those who map, build and capture a share of emerging mega-opportunities, advancing transformative strategies at the pace and scale required to meet the relevant challenges. The 'winners' will be those with solutions that meet global demands for resources like energy and water, eliminate greenhouse gas concentrations, and enable climate-resilient development.³⁰

12 long-sighted sectors

We have identified 12 sectors that have a propensity for long-term thinking and acting. The leaders in these sectors have demonstrated a high future orientation, though they do not uniformly have this property. They are listed below—and it is no accident that four (venture capital, private wealth management, pension funds and reinsurance) are from the financial sector—this is increasingly where the Future Quotient spotlight must shine. What lessons can we learn from such sectors in designing systems that promote and reinforce high-FQ attitudes, behaviors and cultures?

1 Animal Breeding

The first of our 'long now' sectors dates back to the dawn of the Agricultural Revolution. The generations are shorter, but animal breeders—by definition—think inter-generationally. Whether they use artificial insemination, in vitro fertilization, genetic modification or cloning, they aim to accelerate evolution.

From Kentucky stud farms, through attempts to engineer species that produce pharmaceuticals in their blood or milk, there is an ongoing tension between the desire for purebreds and the necessity for crossbreeding. In some cases, hybrid vigor may result. Unsustainable outcomes are very possible, for example when new breeds of farmed fish escape and reduce the resilience of wild fish.

2 Research & Development (R&D)

This is an immense, crucial part of the global economy. A few years back, it was estimated that US-headquartered companies alone were spending \$330 billion a year on R&D.³¹

There is a continual tension between the pressure for short-term paybacks and the need for longer-term innovation. The need for sustainability-oriented innovation is made in the **WBCSD Vision 2050** study.³² Related investment in infrastructure, technology and human services could reach US\$ 3-10 trillion per annum in 2050, creating new opportunities for business to thrive and grow. Will China's long-term outlook power sustainability-oriented R&D, or will its unwillingness to tolerate dissent undermine the necessary creativity? Will the West wake up and play catch-up?

3 Petroleum and Chemicals

It is dangerous to generalize about something as vast as the oil and global chemicals industries, but both are critically important to our future—and plan and invest long-term. With more than 70,000 products and annual revenues of some \$4 trillion,³³ the global chemicals industry is a massive investor—and is a major contributor to global R&D.

In terms of the future, we need to watch trends in location, ownership and values. New global chemical players continue to appear in emerging markets. In 2009, only two of the ten largest companies by revenue in the 'Chemical Week Billion Dollar Club' were based in emerging markets.³⁴ By 2020, up to seven of the ten largest chemical companies could be based there as the current largest players pursue profitability over scale.

Wherever based, few sectors are more critical, both because of the long-term impact of related products on the biosphere and the potential contribution of sustainable chemistry to a lower-footprint global economy.

4 Higher Education

Few sectors have had a longer-term orientation than higher education when at its best. Globalization, however, has driven a rapid expansion of the global higher education market. Coupled with neo-liberal economics, the dominant paradigm in recent times, the historic emphasis on education as a 'public good' has increasingly been counter-weighted by education seen on a user-pays basis.³⁵

One impact of globalization, however, has been a greater focus on the practical, technical value of education, coupled with the spread of private high education provision and financing. While there is nothing intrinsically wrong here, one area of concern is whether this refocusing potentially acts as an even greater brake on the provision of longer term, sustainability-oriented education. Anecdotal evidence suggests that it does, though only time will tell.

5 Family Businesses

Unless they are royal families, family-owned businesses are easy to overlook in the markets focused on publicly listed companies, yet they are thought to create some 70-90% of global GDP annually.³⁶ Recent evidence suggests that they managed fairly well through the Great Recession. A **PwC** survey of more than 1,600 family-business owners and managers around the world suggests that most are strongly focused on future growth.³⁷

Family firms can operate on a huge scale, like India's **Tata Group**, and—at their best—their intergenerational nature can help them think and act longer-term than many publicly listed firms. Stewardship is a natural concept for many of them.³⁸ That said, they can also be compromised by family factions and intergenerational disputes. Family businesses are part of the global economy we need to engage more effectively.

6 Venture Capital

They may not hold investments for intergenerationally-long periods, but venture capitalists have to envision radical, transformative change in order to find suitable early-stage companies to back. The last decade was a helter-skelter ride for the global venture industry.³⁹ In 2000, it experienced its greatest boom, fueled by the potential of the Internet and rising stock markets. In 2009, it faced the challenge of continuing to build innovative companies as the global economy touched the depths of the greatest economic downturn in a generation.

In between, it responded to the emergence of China and India as venture capital centers, as well as changes in the public markets and investor appetite for venture-backed IPOs, and the sudden rise of investment opportunities in social media and cleantech. Firms like **Kleiner Perkins**, **Khosla Ventures** and **zouk ventures** are among those spurring cleantech forward. A sector to investigate and cultivate.

7 Private Wealth Management

Very much under-the-radar, this sector helps high net worth individuals and families handle such areas as investment, estate management, retirement planning and inheritance tax. Time horizons are different here, with concerns not only about the interests of individuals, but also about families and about the institutions or businesses created. There is a potential crossover with the field of private equity, another financial sector that, at its best, thinks longer-term. There is also sometimes a crossover, through the interests of the individuals, between these areas and philanthropic support of wider causes.

As a result, some family offices are notable investors in areas of the economy linking to social or sustainability challenges, steered by the interests and perspectives of investors. A growing number of financial institutions specialize in helping investors to apply a green or sustainability lens, including **Deutsche Bank**, **Pictet** and **Bank Sarasin**.

8 Pension Funds

Although several CEOs and academics warned us that even pension funds are becoming shorter-term in their thinking, due to pressures from short reporting timescales, this sector has been involved in a number of initiatives designed to explore and address longer-term societal challenges. They include the **P8 Group** and other efforts to engage with climate change in terms of strategic asset allocation⁴⁰ and **PharmaFutures**, which has helped pensions funds and pharmaceutical majors deliver long-term value to society and shareholders. This includes addressing critical issues such as the management of social contract, the environment, and access to medicines. There has also been growing interest in how best to alert pension fund trustees to potential risks and opportunities associated with the wider sustainability agenda.⁴¹ The evidence of truly long-term sustainability investment is mixed: in Germany, there is interest among pensions funds, but actual investment is below average;⁴² in Denmark, meanwhile, **PensionDanmark** is investing in wind power.⁴³ With aging societies, this sector can only grow in importance.

9 Reinsurance

Another relatively stealthy sector, but one with unusually extended time-scales, reinsurance involves insurers transferring portions of their risk portfolios to other parties—in this case reinsurance companies like **Munich Re** or **Swiss Re**—through some form of agreement to reduce the likelihood of the insurers having to pay a large obligation resulting from insurance claims. As the insurance industry is increasingly hit by claims linked to natural disasters, particularly those driven by climate change, reinsurers have become much more interested in environmental changes and the broader sustainability agendas. **Munich Re** has been among those warning about the likely future impact of climate change.⁴⁴

Among the systemic risks spotlighted by the **Centre for Global Dialogue**, founded by **Swiss Re**, challenges around sustainability are high on the list.⁴⁵ Stealthy, but a natural ally for the long-term change movement.

10 Forestry

Depending on whether it grows softwoods or hardwoods, a forestry business operates on commercial time-scales that are short-, medium- or long-term by mainstream standards. The plight of the global forest has been a defining environmental issue, with sectors like cattle ranching and oil palm plantations particularly controversial in terms of their contributions to forest loss.

Theoretically, there is enough wood to supply global wood requirements.⁴⁶ An analysis carried out by **WWF** and the **World Bank** indicated that by sustainably managing 60% of the world's forests, at different levels of intensity and for different purposes, we could protect the remaining 40%. Our success in protecting the global forest will be a key indicator of sustainability—and the sector's leading edge initiatives could provide a useful model for other sectors. One company to watch is Sweden's **Sveaskog**, which sees a bright future in such areas as ecological services.⁴⁷ Another key group focusing on this issue is **REDD+**, the UN Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries.

11 Civil Engineering

Few sectors think longer-term than civil engineering, whether building oil refineries, motorways, dams, urban infrastructures or sea defenses. As **Siemens** notes, what happens in the world's cities will largely determine whether humanity can lower its common environmental footprint, or whether it will face a greater environmental risk.⁴⁸ The **UN Population Division** estimates that over half of the world's population now lives in urban areas, likely to grow to almost 60% by 2025 and 70% by 2050.⁴⁹ Today's cities are already responsible for about 80% of greenhouse gas emissions,⁵⁰ making them carbon inefficient—but this need not be so.

Cities have built-in economies of scale that should enable much lower average environmental footprints for residents. Achieving these savings means taking challenges like global warming, water use or waste seriously—and creating the enabling infrastructures.

12 Government

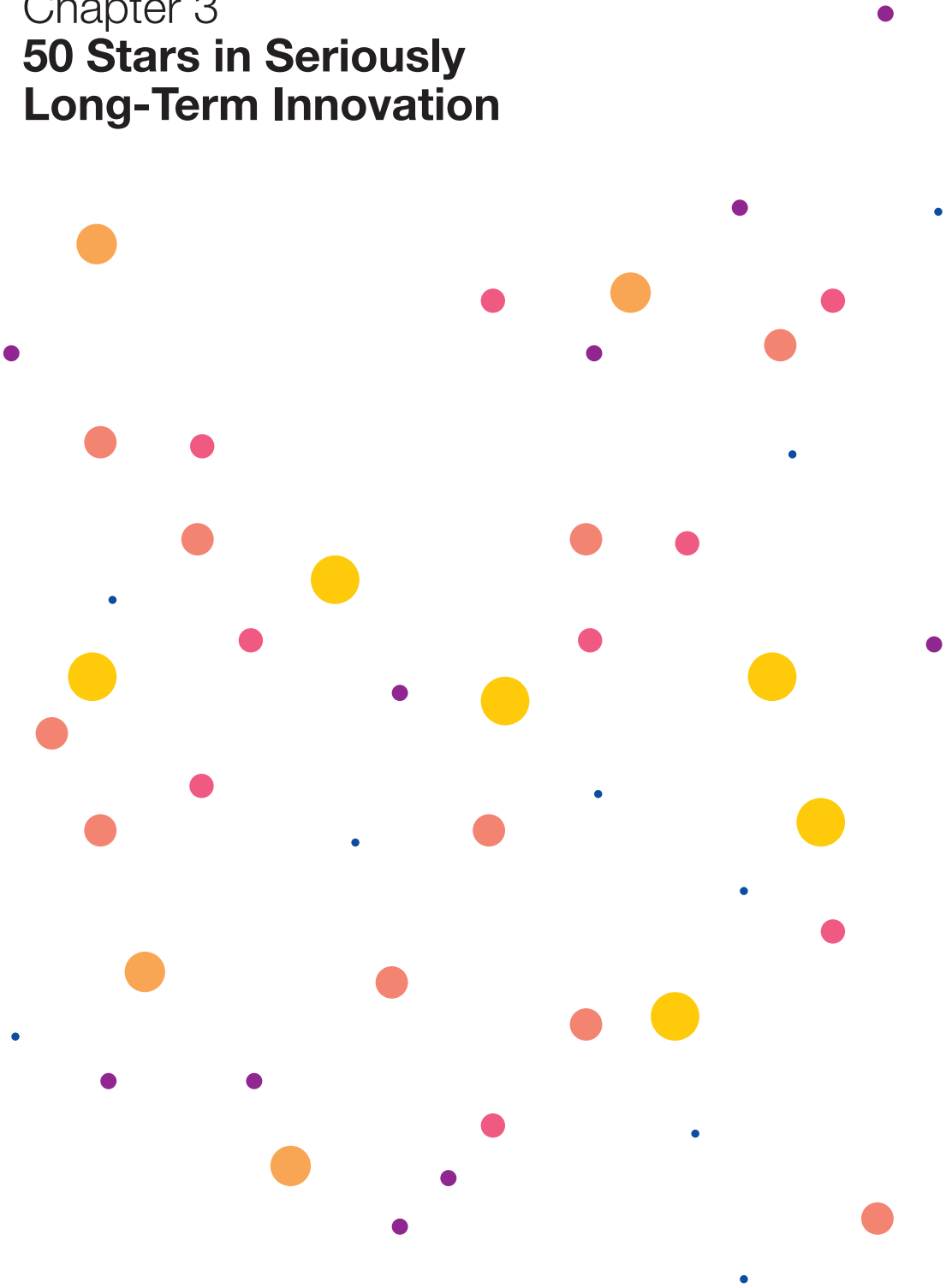
There is concern around the role of governments in thinking and acting long-term, as shown in our survey data (Figure 1.1, page 11), but there are few truly free markets: governments influence how business is done in many ways, direct and indirect. In many societies, governments—at their best—also think longer-term than most businesses. For each of the other eleven sectors spotlighted, effective, sustainability-oriented government is necessary for future progress. Equally, governments around the world face new demands, new expectations and a fast-growing array of new technologies and tools. In most countries, the civil service systems of today's governments require considerable modernization.⁵¹ At the same time as slimming down governments and their civil services, we must rebuild the social contract between governments and citizens through the use of such techniques as open government and open data. And more can be done to attune public sector purchasing to emerging realities, something the **US General Services Administration** (GSA) is increasingly working on.⁵²

There is not the space here to dig into the lessons to be learned from such sectors—nor the ways in which their own Future Quotients might be expanded. But it is no accident that we end with Government. Rarely popular with business, and rated lowest of all in Figure 1.1 (page 11), governments nonetheless have a crucial role to play in ensuring markets think and invest for the long-term.

There is no such thing, it is often said, as a truly free market, and our challenge for the coming decades is to design, incentivize, regulate and police our markets in new ways fit for purpose in the twenty-first century. To get some sense of the directions that high-FQ pioneers are taking, we now spotlight 50 Stars in seriously long-term innovation.

Chapter 3

50 Stars in Seriously Long-Term Innovation



At times it seems that everyone wants to be a star, but few are prepared to put in the necessary time and effort. Here are 50 individuals, initiatives and organizations that are first magnitude stars—or headed in that direction.

“We are on a journey,” CEOs like to say as they sign up to the sustainability agenda. What they often mean is that the outlines of their enterprise are vague, the destination unclear, the captain and crew distracted, and the sailing date still to be agreed. But the leaders who feature among our 50 high Future Quotient Stars mean something very different where they use the phrase.

So what are the characteristics we need to adopt to ensure the new, stretched, future-friendly forms of leadership highlighted in the previous chapter? We asked our 500 expert respondents what qualities enable thinking and acting with stretch. When we crunched the numbers strong patterns began to emerge—and, ultimately, seven key themes surfaced. Most of them are now commonplace in the management and leadership literatures, but a couple are not, and the combination of all seven helped develop the framework used to identify the FQ50.

Our respondents suggested that high-FQ leaders know how to navigate what we call the 7Cs (see Panel 5 on pages 26–27).

Clearly, the best leadership decisions play across many—or all—of these dimensions. To take just one striking recent example, recall the decision of 200 Japanese pensioners to volunteer to begin the cleanup at the Fukushima power station.⁵³ Made up of retired professionals, the ‘Skilled Veterans Corps’ clearly think long-term, arguing that they should be facing the radioactive risks, not younger people, because they would be more likely to die of natural causes before the cancer risks told. Such forms of collaboration and cross-generational sensitivity are deeply cultural, which is why the cultural dimensions of change are critically important.

On pages 28–31 is the final sample of 50 Stars we identified, as mini cases of different characteristics of high-FQ thinking and action. The selection is based on rigorous discussion, but is by no means definitive—indeed is quite skewed to the USA and Europe. As you view the 50 Stars, think of them as the sort of pattern you might see when you shake a kaleidoscope of brilliant crystals. It would be fascinating to see what happened when we shake the kaleidoscope in different parts of the world—or with different age groups.

To draw out the narrative a little, we have clustered the Stars under five categories: Pole Stars, Superstars, Constellations, Pulsars and Neutron Stars—and will explain each as we go.

@FutureQuo FQ50 7Cs criteria:

1. Challenging
2. Curious
3. Collaborative
4. Courageous
5. Creative
6. Cross-generational
7. Culturally connected #FQ50

Star Magnitude



Panel 5
7Cs of High FQ Leadership

Characteristics + <i>keywords used by respondents to the FQ survey</i>	FQ50 example	Description
1 Challenging <i>values, empathy, passion, purpose</i>	X Prize Foundation demonstrate a strong change orientation page 31	Leaders need a capacity both to scan 360-degree horizons and to focus down like a laser on critically important priorities. They understand the risk posed by the ‘Chasm’ described earlier. They challenge the status quo. They are driven to change the current order. If they are CEOs, they see beyond the bottom line. If politicians, they operate beyond normal electoral cycles. But the critical point is that they take their investors, customers, employees or voters along with them—to the point where they ask for more change, not less.
2 Curious <i>openness, playful, understanding</i>	Janine Benyus remain intensely curious page 28	In times of change, successful—and useful—C-suite members are likely to have a voracious appetite for new ideas, for new conversations and for different ways of doing old things—or new things to be done.
3 Collaborative <i>connected, fusion, generous, networked</i>	Ushahidi experiment with new ways to be collaborative page 30	The recent business bestsellers tell us that success comes from being connected, being collaborative, tapping into society’s “cognitive surplus”—or willingness to contribute to open source methods for developing solutions. Successful leaders are as good on internal collaboration as they are on external forms—and at linking the two.

Characteristics + keywords used by respondents to the FQ survey	FQ50 example	Description
4 Courageous <i>focused, patient, risk-tolerant</i>	James Lovelock a courageous stand over decades for a new scientific paradigm page 28	System change demands immense courage, sustained over long timescales. High-FQ leaders have courage and stamina, plus an ability to adapt when necessary. They also motivate others to follow their lead.
5 Creative <i>analysis, ideas, optimism</i>	Living Bridges play into creative destruction and renewal page 28	Low-FQ leaders are the victims of the processes of creative destruction mapped out by economists like Joseph Schumpeter. Their high-FQ competitors, by contrast, understand the macro-economic trends, the lessons of history and the drivers in the sustainability agenda that will reshape global markets. For a high FQ solution from the rural world, see Living Bridges, which were born from the need for flood-proof means of crossing rivers.
6 Cross-generational <i>having children, legacy, long-termist</i>	Ian Cheshire / Kingfisher and B&Q are comfortable with cross-generational timeframes page 29	Generational agendas come in many forms. They differ for product designers and for animal breeders, for family businesses and pension funds. There are natural selection processes in most long-sighted sectors (see Chapter 2) that ensure a better alignment of the business with the interests of stakeholders, and lessons can be learned and transferred to other sectors.
7 Culturally connected <i>systemic thinking, vision</i>	The Elders work to co-evolve the cultural context page 29	Changing mindsets is tough, but changing behaviors is almost impossible at times unless you also change cultures. That is what a growing number of pioneers are attempting. Done well, this takes us several steps towards paradigm change.

Pole Stars

Reliable, navigational reference points

**Aspen Institute's
Long-Term Value Principles**

2007 USA

www.aspeninstitute.org

Representing an unprecedented consensus among companies, investors, and corporate governance professionals, the Principles promote exactly the sort of thinking and practices that are critical to long-term value creation.

Janine Benyus

1958 USA

www.janinebenyus.com

A natural sciences writer, innovation consultant, and author of six books, including *Biomimicry: Innovation Inspired by Nature*. Although standing on the shoulders of giants, she branded an emerging discipline that seeks sustainable solutions by emulating nature's designs and processes (e.g. solar cells that mimic leaves, agriculture that models a prairie, businesses that run like redwood forests).

Lester Brown

1934 USA

www.earth-policy.org

Founder of the Worldwatch Institute and the Earth Policy Institute, author and co-author of around 50 books, published in some 40 languages, and careful to balance coverage of the world's greatest challenges (e.g. loss of biodiversity, climate change, poverty) and emerging solutions (e.g. smart grids, electric vehicles, bicycles). Recently has taken a civilizational perspective.

Gro Harlem Brundtland

1939 Norway

http://en.wikipedia.org/wiki/gro_harlem_brundtland

A medical doctor by training, and aged just seven when she joined the Norwegian Labour Movement, Brundtland served as Norway's minister for environmental affairs before becoming the country's first female prime minister in 1981. She was instrumental in propelling environmental responsibility to the international agenda through the 1987 report *Our Common Future* (also known as the Brundtland report).

She has continued to lead long-sighted change through her work as Director-General of the World Health Organization (1998-2003), and Special Envoy of the UN Secretary-General on Climate Change (2007 to date).

**Jeremy Grantham /
GMO**

1977/2011 UK/USA

www.gmo.com/america

A British-born investor who co-founded Boston-based asset management GMO in 1977, Grantham takes a very long-term view in his investment—and has published several fascinating letters for investors on where we currently find ourselves. Also funds research, for example, on climate change.⁵⁴ A fascinating model for other financial analysts and investors.

James E Hansen

1941 USA

www.stormsofmygrandchildren.com

Described as the Paul Revere of impending climate chaos, Dr Hansen is a world-class climate scientist, who has taken an active stance on the policy issues—including writing the book *Storms of My Grandchildren*.

Institute for the Future

1968 USA

www.iff.org

For the past 40 years, this non-profit has helped organizations make better decisions through foresight. Their 2008 *Sustainable Outlook Map* explored possible strategic responses to the sustainability agenda, and they have a rolling 10-year forecast.

The Intergenerational Foundation

2010 UK

www.if.org.uk

This fledgling non-profit seeks to place intergenerational issues at the heart of public debate—both between living generations and on intergenerational timescales. Working in partnership with a German counterpart—Foundation for the Rights of Future Generations—they are encouraging research into the area with a prize. Watch this space.

Living Bridges

Unknown India

<http://rootbridges.blogspot.com>

Perhaps the epitome of inter-generational innovation, and certainly the most sustainable bridges in the world, these beautiful and immensely strong tree-root bridges span rivers of Northern India. Taking half a generation to complete, as roots are teased and woven to create bridges up to 100 feet long, many last for at least 500 years. A benchmark for innovators of today who aim high for future-fit ideas.

James Lovelock

1919 UK

www.jameslovelock.org

Originator of the Gaia Theory, he argues that the earth as a whole is a self-regulating system able to keep the climate and chemical composition comfortable for organisms. Patience and conviction saw this paradigm-level theory weather many criticisms, and elements of it achieved widespread acceptance in the early 2000s. It has been described by one former critic as a 'Copernican insight'.

Stockholm Resilience Centre

2007 Sweden

www.stockholmresilience.org

Resilience—the ability to deal with change and continue to develop—is a property closely linked with fitness for the future. This international centre advances research for governance of social-ecological systems, looking at how we can culturally, and intergenerationally, manage and govern for the future.

**The Economics of Ecosystems
and Biodiversity (TEEB)**

2007 International

www.teebweb.org

Biodiversity loss is often framed in intergenerational terms—we have species today that our children will never see. TEEB aims to spur the development of cultures that value biodiversity. It treats the middle ground between the moral imperative and the hard economic case for the conservation of ecosystems. Under the leadership of Pavan Sukhdev, TEEB has developed an agenda for decision-takers and policy-makers that will be hard to ignore.

Santa Fe Institute

1984 USA

www.santafe.edu

A centre designed to bring thinkers together to work across disciplines to solve complex problems. The research into complexity and systems thinking allows for deep exploration of issues and areas, including intergenerationally-specific topics such as the dynamics and sustainability of cities.

World Future Council

2007 Germany

www.worldfuturecouncil.org

As the 'voice of future generations,' this charitable organization aims to encourage the development of policy that properly values the needs and rights of future life. Among their campaigns, the Future Policy Award celebrates 'future just' policies from around the world and they have also created Future Justice, which brought together Ombudsmen for future generations.

Superstars

They shine brilliantly—energizing all around them

Aravind Eye Care System

1976 India

www.aravind.org

What started out as an 11-bed hospital is now one of the world's largest facilities and research/training centers for eye care. Aravind uses a tiered pricing model and other innovative business models to provide treatment for those who would usually be unable to afford it—and is rapidly expanding its services across India. Aravind also operates a manufacturing arm that continues to design and produce high quality ophthalmic products that are both affordable and accessible.

Vera Cordeiro

1991 Brazil

www.saudecrianca.org.br

A general practitioner, she has worked to break the cycle of children coming back into Brazilian hospitals because their homes lack the necessary resources to ensure adequate nutrition, sanitation and psychological support. The approach she pioneered at Associação Saúde Criança has spread to other communities across the country.

Ian Cheshire / Kingfisher and B&Q

1982 UK

www.kingfisher.co.uk

Led by Ian Cheshire, a leader who is walking the talk of sustainability, Kingfisher is the parent company to DIY superstore B&Q. In building the company for the future, they take stock not just of the views of employees, but also of those of the children of employees—among other things asking them what they think of their parents' jobs.

DSM and DSM NEXT

1902 The Netherlands

www.dsm.com

A company with competencies in life and material sciences, DSM has tied half the bonuses for its management board to environmental and social targets such as the reduction of greenhouse gas emissions and energy use, the introduction of environment-friendly products and improvements in workforce morale. Through DSM NEXT, the company is also capitalising on its pool of Gen Y employees, providing a platform for them to act on their ideas to tackle innovation and broader sustainability challenges.

The Elders

2007 UK

www.theelders.org

Launched by Nelson Mandela, The Elders emerged out of a conversation between entrepreneur Sir Richard Branson and musician Peter Gabriel. Convening senior political leaders, the aim is to support peace, help tackle major global problems and ease human suffering. A prototype for intergenerational working.

Gapminder

2005 Sweden

www.gapminder.org

The brainchild of statistician Hans Rosling, Gapminder's visualization software shows the world in a radically different light. By their nature retrospective, statistics presented in this way nevertheless expose insights and trends at a global level, encouraging curiosity and potentially powerful cross-connections.

Garth Japhet / Soul City and Heart Lines

1992/2002 South Africa

www.heartlines.co.za

A widely celebrated social entrepreneur, Japhet founded Soul City Institute for Health and Development Communication to use mass media to educate the public on health issues. Also founded Heartlines to focus on such issues as HIV/AIDS, youth sexuality and violence against women.

The Bill & Melinda Gates Foundation

1994 USA

www.gatesfoundation.org

The Future Quotient of Bill Gates can be debated, but the work of the foundation is nothing short of extraordinary. With over \$25 billion worth of grants committed since its inception, in areas including global development and global health, he is now an undisputed leader in such areas as health and climate change.

InSTEDD

2006 Cambodia

www.instedd.org

The aim here is to help communities everywhere design and use technology to continuously improve their health, safety and development. Founded in California's Silicon Valley with seed funding from Google.org and the Rockefeller Foundation, InSTEDD now works around the world. One goal: early detection of emerging pandemics.

Lily Lapenna / MyBnk

2008 UK

www.mybnk.org

An internationally acclaimed social enterprise that is increasing financial literacy amongst young people, empowering them to build the knowledge, skills and confidence to manage their money effectively and make enterprising choices—a crucially important challenge in an era where consumerist lifestyles and credit card debt have collided headlong.

50 Stars in Seriously Long-Term Innovation

Paul Polman / Unilever

1956 Netherlands

www.unilever.co.uk

A finance director turned CEO, he has been responsible for guiding Unilever to scrap quarterly reporting and launch its Sustainable Living Plan. He has spoken out about short-termism, providing a guiding light for other CEOs as he seeks to help “drag the world back to sanity.”

‘Save More Tomorrow’ Pension Scheme

1998 USA

www.anderson.ucla.edu/faculty/shlomo.benartzi/save-more.htm

Designed by Richard Thaler and Shlomo Benartzi, ‘Save More Tomorrow’ aimed to change behavior towards greater enrolment and volume of savings. By restricting the pension contribution amount to a portion of future pay rises, this behavioral economics-like ‘nudge’ enables long-term minded behavior, while avoiding the barrier of short-term loss. It has been implemented now by a number of pensions providers including those abroad. In one study, average savings rates among subscribers almost tripled.⁵⁵

Shi Zhengrong / Suntech Power

2001 China

www.suntech-power.com

An increasingly global solar powerhouse, delivering hardware to generate solar power in the home and as part of some of the world’s biggest solar arrays. They have benefitted from China’s strong support of the renewables sector.

Siemens AG

1847 Germany

www.siemens.com

A global group active in electronics and electrical engineering, and operating in the energy and healthcare sectors. Had recent problems with corruption, but has shown high-FQ by focusing its business on cities—where over half of us now live. A useful lens on the future of cities.

Ushahidi

2008 Kenya

www.ushahidi.com

Ushahidi, meaning ‘testimony’ in Swahili, uses open-source software and mapping technology to collect and visualize data. It empowers people as citizens, seeking to harness the transformative change possible through technology that now exists in people’s hands and pockets.

Ken Yeang

1948 Malaysia

http://en.wikipedia.org/wiki/ken_yeang

Known as the ‘father’ of the bioclimatic skyscraper, Ken recognized early in his career the need to apply an ecology-based approach to architecture.

Through his use of ‘ecomimicry’, the results of over 200 projects he has designed globally include reduced or zero dependency on non-renewable sources of energy, and the use of cutting-edge features such as eco-land bridges, green living walls and ecological corridors. A blueprint for all buildings and infrastructure to come.

Jochen Zeitz / Puma

1948 Germany

www.puma.com

The first major manufacturer to account for the economic value of their environmental impact with their 2011 Environmental P&L, Puma are helping drive a new agenda through business.

Constellations

Linking multiple change agents

China’s 5-Year Plan 2011–15

2011 People’s Republic of China

http://en.wikipedia.org/wiki/five-year_plans_of_the_people's_republic_of_china

China’s government passed its twelfth 5-year plan in March 2011, aiming to address rising inequality and create an environment for more sustainable growth by prioritizing more equitable wealth distribution, increased domestic consumption, and improved social infrastructure and social safety nets. Way short of perfect, but the rest of the world has a great deal riding on the sustainability of the outcomes.

Climate Disclosure Standards Board

2007 UK

www.cdsb-global.org

A consortium of seven business and environmental organizations that works with leading professionals in accountancy, business, standard-setting and regulation to develop and advocate a generally-accepted global framework for use by corporations in disclosing climate change-related information in mainstream reports. Underscores the central role of the right sort of standardization.

Green Growth / UN ESCAP

2005 South Korea

www.greengrowth.org

Nominated as an unusual attempt to bring green growth thinking to bear on poverty and development challenges across Asia, which accounts for 40% of the Earth’s land area and 61% of its population. UN initiatives are always complicated, but this one is working towards system change in critical areas.

London Organising Committee of the 2012 Olympic and Paralympic Games (LOCOG)

2005–2012 UK

www.london2012.com

There has been growing interest in green and sustainability issues in the Olympics community, but the 2012 event—which has not been controversy-free—is bending over backwards to ensure its legacy is strongly net positive. Strong supply chain initiatives to squeeze out carbon.

Republic of Singapore

1959 Singapore

www.gov.sg

The third most densely populated country in the world, and an interesting case study in how we might make sense of a world of 9–10 billion. Singapore leads by planning over extended time-horizons, as when dealing with an aging population and the resulting pressures on younger generations. Its ‘Top Up for a Loved One’ scheme,⁵⁶ for instance, creates a tax-efficient way for saving between family generations. Singapore is also developing research and industry clusters of new technologies in areas such as biotechnology and cleantech.

TED

1984 USA

www.ted.com

A simple mission—spreading ideas—has seen TED feed the curiosity and fuel the imagination of millions across the globe. They have opened their doors to wider involvement with the crowdsourced TEDx and tapped into that crowd’s cognitive surplus in the form of the Open Translation Project. Altogether inspirational.

UN Principles for Responsible Investment (PRI)

2006 International
www.unpri.org

An effort to deconstruct the widely held belief that fiduciary duty and societal objectives are at odds. Its six principles recognize the need to invest with the long-term interests of beneficiaries in mind. It now has nearly one thousand assessed signatories, over half of which are investment managers. It has been challenged by investment consultant Roger Urwin to make intergenerational timescales more explicit in its principles.⁵⁷

Pulsars

Slightly weird, signalling future directions

Airbnb

2008 US
www.airbnb.com

Darling of the collaborative consumption movement, Airbnb is leading the way for the future of the hospitality industry by helping anyone with a spare room, couch, igloo, island (etc) to become a bed and breakfast—using their computer or an iPhone app. It is set to represent more rooms than the Hilton by 2012.

Paul Anastas / John Warner / Green Chemistry

1991 US
www.chemicalstrategies.org/other_green.htm

Chemicals are critical ingredients to the products we consume globally. As more and more pressure is put on full supply chains, the work of chemists in cracking the code of some of the most toxic substances and transforming them into less harmful compounds is a big business for the future.

Aviva Investors / Forum For The Future

2010 (Partnership) UK
www.forumforthefuture.org/forum-network/partners/aviva-investors
 Aviva Investors CEO Paul Abberley is on a mission to influence the direction of mainstream investing by taking actions such as linking sustainability into its voting at company annual general meetings. Together with Forum for the Future, Aviva has developed a groundbreaking report on what the sustainable economy will look like in 2040.

Google / Virgin / 100 Year Plan*

2008 (Partnership) USA and UK
www.google.com/virgle

Both companies, each known for their entrepreneurial spirit and drive to challenge the status quo, launched a joint venture, Virgle Inc., dedicated to establishing Plan B in the face of environmental degradation—a human settlement on planet Mars by 2108. We commend this ambition, but hope that civilization on planet Earth will survive beyond the 21st century.

*See Appendix F: Addendum

The Khan Academy

2004 USA
www.khanacademy.org

Sal Khan teaches the way he wishes he had been taught. From humble beginnings as a way to tutor Khan's cousins online, The Khan Academy has quickly become a major disruption to the way education is delivered around the world. With 2,400 video tutorials available online, and over 73 million lessons delivered, The Khan Academy is helping to evolve the future of education.

Long Now Foundation

1996 USA
www.longnow.org

Aims to foster long-term thinking and responsibility. One of their main projects is the Clock of the Long Now, designed to tell time over the next 10,000 years. Buried inside a mountain, the Clock will chime a different melody every time it chimes in the next millennium. Also working on the Rosetta Project, to digitize all human languages, and Long Bets, which encourages people to compete to place their bets about the future.

Renault-Nissan Alliance / Better Place

2008 France/Japan and Israel/USA
<http://blog.alliance-renault-nissan.com>

All partnerships have their ups and downs, but the Renault-Nissan agreement to jointly build out the infrastructure for electric vehicles spotlighted the way in which large incumbent companies increasingly need to work with innovative start-ups.

Svalbard Global Seed Vault

2006 Norway
www.nordgen.org/sgsv

A secure, remote seedbank designed to preserve a wide range of plant seeds in an underground cavern, providing insurance against the loss of germplasm and biodiversity because of environmental degradation—and also offering a refuge for seeds in the case of large-scale regional or global crises.

Thames Barrier

1982 UK
http://en.wikipedia.org/wiki/thames_barrier

From its inception, the Thames Barrier was an exercise in cross-generational thinking. As London continues to plan for its future, the Thames Estuary 2100 project takes this onwards another three generations.

World Oral Literature Project

2009 UK
www.oralliterature.org
 An academic project to document and disseminate endangered oral literatures, World Oral Literature Project is a fascinating and enlightening initiative that respects the huge value in culture. This project specifically looks at verbal art: passing this between generations lies at the heart of cultural practice. Potentially this will provide tomorrow's leaders with greater cultural intelligence.

X Prize Foundation

1995 USA
www.xprize.org
 A non-profit organization dedicated to solving the world's 'Grand Challenges' by creating and managing large-scale, high-profile, incentivized prize competitions that stimulate investment in research and development worth far more than the prize itself—for the benefit of humanity. Motto: 'Revolution through Competition.'

Supernovas

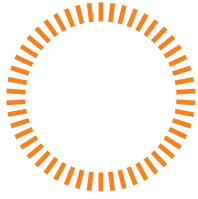
High-risk, but opening out immense new possibilities

Arab Spring

2011 Tunisia/Egypt/Bahrain/Libya
http://en.wikipedia.org/wiki/arab_spring
 The events which sparked the extraordinary uprising of public protest and resistance to oppressive regimes need no rehearsing here. While it is far from clear where all of this goes next, this series of meltdown promises to liberate new energies that could be devoted to democracy and sustainability.

Chapter 4

Are You Ready to Star?



Stars are born all the time—and some shine for a very long time. Every so often, though, the heavens blaze with a supernova, as a star collapses and the stuff of new stars and of life spray through space.

When we came to the notion of a Future Quotient, one key question was always going to be, ‘How can I measure my FQ?’. This was never going to be addressable in this first short report. We want to apply the FQ concept not only to individuals but also to businesses, to governments, and even to cities or other entities. Each of these applications would require its own set of data and analysis.

So far, we have understood five dimensions across which leadership must stretch to have high-FQ. We have seen seven characteristics that our expert respondents see as markers of high-FQ and 50 high-FQ examples. But the final quantification of FQ is a second-stage project that we are keen to undertake, aiming to create a tool robust enough for organizations to use internally, and in conversation with investors and stakeholders.

Nevertheless, we felt it important to provide an interim step towards what a measure of FQ could become. We toyed with creating our own questionnaire, and scanned the options already in existence. With its strong link to the dimension of time in how teams and individuals think, we adopted an online platform developed by MindTime Technologies as this interim step. Consider the results an early indication of your FQ.

So how do you—and your team and organization—relate to the world of time? MindTime’s team of thinkers, philosophers, social scientists and designers developed a simple map to describe the time-based dimensions of thought, something that the late professor Julian Jaynes of Princeton University had written about. MindTime maps your thinking type on the axes of Past (focusing on certainty), Present (probability) and Future (possibility).

The blending of these three primary perspectives (Past, Present and Future) creates in each of us a unique ‘TimeStyle,’ almost a form of mental fingerprint. “This, our thinking style,” MindTime founder John Furey explains, “is responsible for: our individual perceptions of the world, the way we process and learn new information, our preferences, how we communicate and engage with others, our learning style, and in large part, our behaviors.” And, critically, it shapes how we think of and engage the future.

To find out your own style of thinking, please visit www.mindtimemaps.com/fq—the anonymous survey will take only a few minutes. You will also find a truncated version on pages 34–35.

By taking the short test, you will be able to discover how your personal TimeStyle shapes your opinions and priorities. You will also be able to see how your thinking relates to that of other people around the world as the survey builds and keeps track of the results. Importantly, MindTime does not prioritize one type of thinking over another, but instead recognises the need for balance within a team. Furey explains that “when working with people of different thinking styles we must first recognise the value of their thinking. Only then can we understand how our thinking works in collaboration with theirs rather than in competition.”

Therefore, the MindTime methodology cannot be seen as a measure of Future Quotient—it does not result in one number that you or your organization can measure yourself by. Certainly a lack of ‘Future thinking’ in a group, to use the MindTime concept described below, will spell a low-FQ, for it is the Future thinkers who are often courageous and the most curious. But a wealth of Future thinkers is not necessarily sufficient for a high-FQ.

So let’s take a quick look at how each time frame works.

Strengths of Past thinking

A team or organization weighted to Past thinking will tend to evolve a cultural time frame that seeks to leverage the past. The team's thinking strategies mine the past to avoid risk and increase certainty. As a collective, the team will undoubtedly know what it is talking about. Its members will research what is known, accessing individual and collective experiences and knowledge from beyond the team. They will seek to understand the fundamentals and measure and weigh all evidence carefully before coming to any, even tentative, conclusions. Significantly, such teams and organizations will have an aversion to risk of any kind and will resist any action or change that has not first been carefully thought through and vetted. Their greatest virtue is that they invest themselves in the pursuit of truth.

Strengths of Present thinking

A team or organization dominated by Present thinking will tend to evolve a cultural time frame that is near term. They will focus on current trends controlling the present towards a predetermined or desired goal. They will be highly organized and changes in plans will be seen as major disruptions to continuity, the end game of Present thinkers. Existing organising structures, processes and systems are seen as the means to control and manage forward. The future is not something to be explored and exploited; it is something to be navigated. Rules are used to shape people's behaviors towards intended outcomes. Present thinkers get the job done, on time and on budget.

Strengths of Future thinking

A team or organization weighted to Future thinking will tend to evolve a cultural time frame focused on what's next. They move towards areas of chaos and uncertainty where new ideas and possibilities emerge, the end game of Future thinkers. Quick to change course and adapt, and highly tolerant to risk and ambiguity, a Future thinking team will engage most of all in speculation and be driven by challenges. They will pursue possibility, often with little more than their intuition to guide them, using imagination to problem solve what is in front of them. Their greatest virtue is that they bring hope.

They are visionaries and idealists that inspire our minds. [With all of that in mind, the next two pages open up a simple version of the survey to our readers.]

Test the Test

We have created a dipstick test based on the deeper MindTime technology that can be taken in less than 10 minutes, yet provides a useful early sense of how individuals, teams and organizations think about and engage the future. Take the full MindTime test at www.mindtimemaps.com/fq. But, as a taster, try the following steps:

Step 1 First, identify a group of people you want to map (a team, department or division). Complete a MindTime Scorecard (Figure 4.1) by distributing a total of 10 points between the three statements shown. The higher the points assigned to any one, the greater the agreement with how the statement describes your chosen group.

Step 2 Second, take the scores assigned for 'Present', 'Future' and 'Past' in your Scorecard and apply them to a MindTime Map (Figure 4.2). Using the three sets of guide numbers along their respective edges, draw three lines across the map.

Step 3 Third, shade in the area between the three lines you have drawn. The shaded area represents the cultural drivers of the mapped group's thinking. Is it skewed towards one 'trisection' of the map? If so, turn back to the characteristic strengths listed on this page to gain some initial insight.

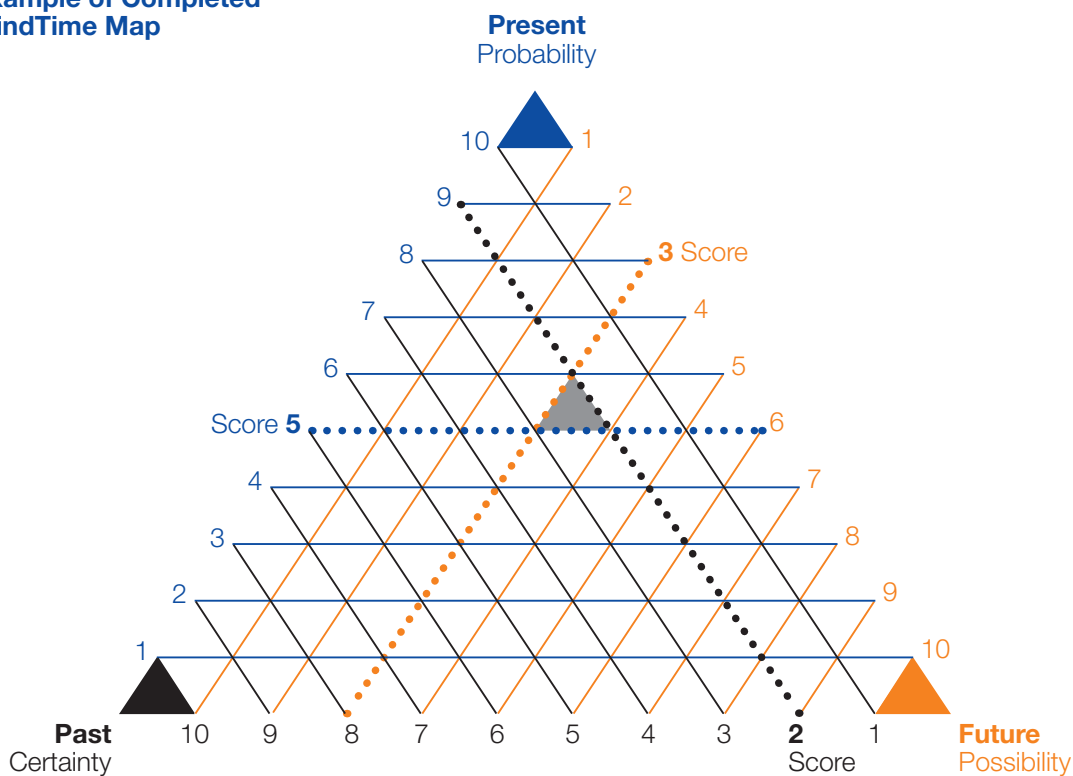
Step 4 To check how your own perspective might have influenced your answers in the group mapping exercise, answer the three statements just with yourself in mind. Again, plot your place on the map. Draw a circle or dot to represent your own positioning.

So how do you now think you fit in with the dominant cultural thinking style of the group you mapped? And how might your position be influencing your perceptions of the rest of—and interactions with—the wider group? More about the theory and methodology of MindTime can be found at <http://learning.mindtime.com>

Figure 4.1
**Example of Completed
 MindTime Scorecard**

Statement	Disagree									Agree
Past Analytical with focus on risk reduction	1	2	3	4	5	6	7	8	9	10
Present Procedural with focus on execution	1	2	3	4	5	6	7	8	9	10
Future Innovative with focus on possibilities	1	2	3	4	5	6	7	8	9	10
Total (Past + Present + Future) =										10

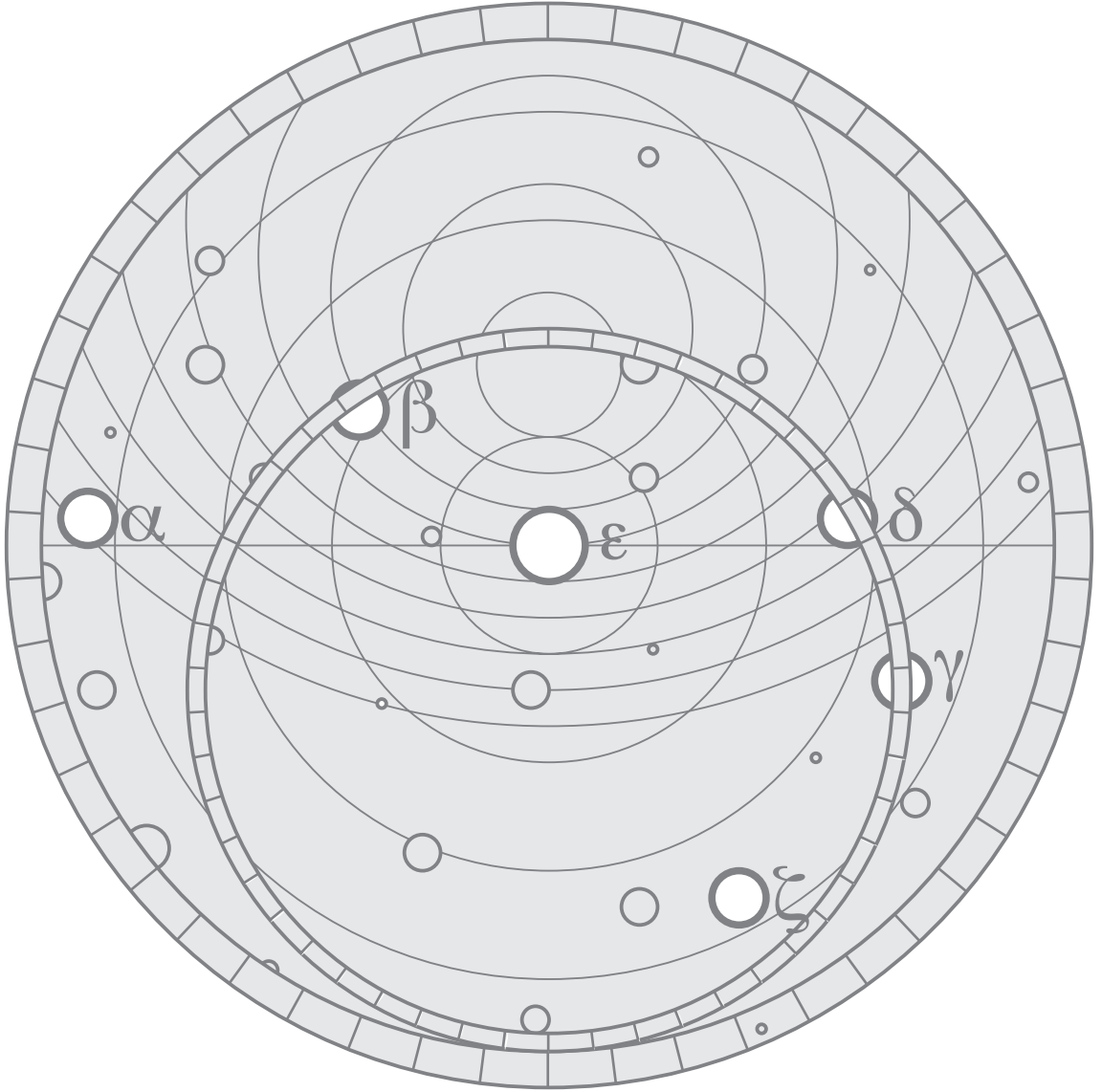
Figure 4.2
**Example of Completed
 MindTime Map**



@FutureQuo How do you + your team
 relate to the world of time? Create your own
 #mindtime map with this 4min online quiz
<http://www.mindtimemaps.com/fq>

Chapter 5

Expand Your FQ: A Playbook to Get Started



The astrolabe was an early form of computer, designed to calculate the position of key stars as a means of navigation. In the same way, consider using our 50 stars to plot your own future course.

Human beings have always had an appetite to know where the future might take them. Think of the Oracle at Delphi, Nostradamus, tarot cards and the like. Strikingly, Wikipedia offers 16 pages of entries on different forms of divination alone, starting with *abacomancy* (interpreting patterns in dust or funerary ashes) through to *zygomancy* (using weights).⁵⁸

Today, there are ‘harder’ tools that can be used to build projections of what the future may hold. For example, actuaries mathematically evaluate the likelihood of events and quantify the outcomes in order to minimize losses, particularly financial, associated with undesirable events. And there is also a growing array of ‘softer’ tools, among them the use of scenarios.

We have no ambition to be the present-day version of Delphi, and of course being fit for the future isn’t simply about trying to predict what might come to pass. However, as this side of our work evolves, we hope to develop a toolkit to help expand the world’s capacity to engage future challenges and opportunities.

FQ Playbook 1.0

What follows is a listing of some of the principles, models and tools identified through our survey and other research that potentially allows individuals, teams and organizations to boost their Future Quotient. With the next quarter century in mind, and as a placeholder for the ultimate FQ Playbook, we now offer 28 pointers to investors, businesses and governments on how to more effectively engage the future.

Panel 6

A quick start guide to expanding your FQ

In the pages that follow, you will find our first stab at an ‘FQ Playbook’—spotlighting some of the things that investors, businesses and governments can do to improve their FQ and engage with the future. Some of these you will already be doing, some won’t be right for you, and some will take time to implement. But in the spirit of curiosity, we believe that there are five things that you can do now in addition to exploring your own and group’s TimeStyle at www.mindtimemaps.com/fq. Together, these form a ‘quick start guide’ to evolving your individual or collective FQ.

Incremental → Systemic

Write down one fundamental thing that you would like to change about the rules that seem to govern how you or your organization are expected to operate.

Narrower → Wider

Draw a map of you or your organization in the wider stakeholder landscape. Do not put your company at the centre, and include at least five potentially relevant organizations you wouldn’t usually consider part of that landscape.

Shallower → Deeper

Spend 20 minutes watching a recent TED talk, or reading a Wikipedia entry or research brief on a topic you think you and your organization need to understand better. Is it something you would tweet?

Lower → Higher

Formulate an audacious target you’d like to hit—and consider what sort of timescale would be appropriate.

Shorter → Longer

Ask yourself, how old will you be in 2030 or 2050?⁵⁹ What might you then have wanted your current self to have done today?

FQ for Investors

1

Develop triple bottom line scorecards

Social Venture Capital funds, such as **Bridges Ventures** in the UK and **Physic Ventures** in the US, use specially designed scorecards for each of their portfolio companies that illustrate where their investments are creating value for the future beyond a simple financial return.

2

Review your discount rates

The discount rate allows investors to choose investments today by looking at the risks in investing in a business or project. It's time to think not status quo but future quo. Review your discount rates for investments in the light of the sort of trajectories indicated by our 50 Stars. It may make sense to use a significantly lower rate in some areas, as argued by Nicholas Stern, in his *Review of the Economics of Climate Change*.⁶⁰

3

Quantify everything, even if it is free today

Greg Laughlin, an assistant professor from the **University of California, Santa Cruz**, has attempted to 'value the world', coming up with a valuation of five quadrillion dollars, or \$5,000,000,000,000,000.⁶¹ See also **The Economics of Ecosystems and Biodiversity (TEEB)** study, led by Pavan Sukhdev⁶² and the Volans report, *The Biosphere Economy* (see Appendix E). Full-cost accounting has been slow to take off, but it is the future. So how is your organization accounting for the resources it draws down from our asset base of natural capital? Learn from **Puma**, which has begun to publish an Environmental Profit & Loss account (EPL), valuing the greenhouse gas and water consumption impacts of the company's operations and supply chain at €94.4 million (\$133.5 million).⁶³

4

Surf the long-finance wave

An important project in the financial sector is the Long Finance Initiative. "When would we know our financial system is working?" is the question underlying Long Finance's goal to improve society's understanding and use of finance over the long term. There are four programs: *London Accord*, *Financial Centre Futures*, *Meta-Commerce* and *Eternal Coin*.

The fourth of these aims to rethink the concept of value—taking a long-term and intergenerational approach.⁶⁴ Among other initiatives under way is **Forum for the Future's** joint venture with the **Friends Provident Foundation**, which has produced an excellent report called *Overcoming the Barriers to Long-term Thinking in Financial Markets*,⁶⁵ including a review of the recommendations of other reports on the theme, and the **Tomorrow's Company** investigation into the question, 'Do Capital Markets Incentivize Sustainable Business Behavior?'⁶⁶ Forum for the Future has also been working with **Aviva** on a roadmap for capital markets, entitled *Sustainable Economy in 2040*.⁶⁷

FQ for Businesses

5

Consider your fiduciary duty

This is an existing model used in governance where the sustainability agenda can and should be framed. For your next board meeting, include fiduciary duty as a discussion topic to engage your board in what they think of the term and how it relates to your organization maintaining its status as a 'going concern'.

6

See opportunity in tomorrow's needs

As one of our Advisory Group members, Sophia Tickell, noted: "Today's leaders need to combine this skill with a systems perspective. To identify interconnections and dependencies that either did not exist, or were not previously visible, and to manage them accordingly."

7

Create an external expert advisory board

Even the sketchiest of maps can help those navigating in new, uncharted waters. It pays to talk to those who have been there before. There is a growing number of think-tanks devoted to the future, among them the long-established **Global Business Network (GBN)**, now part of the **Monitor Group**, and the **Institute for the Future**. Mobilize a team of external experts with specialization in a range of topics to your board. Award yourselves bonus points if this advisory group includes members from multiple generations.

8

Find new data sources

New forms of forecasting are constantly emerging, among them the monitoring of search engines like Google and social networks like **Twitter**—though these lines are blurring fast. New organizations are being launched to detect early signs of impending disease outbreaks, particularly pandemics, among them **InSTEDD**. Among other useful sources suggested by survey respondents were **Deutsche Bank**,⁶⁸ **Frost & Sullivan**,⁶⁹ **HSBC**,⁷⁰ **Mercer**⁷¹ and the **Cleantech Group**,⁷² alongside think-tanks like the **Institute for the Future**, the **Foresight Network** and the **World Future Society**.

9

Create long-term incentives

Align senior executives' compensation and incentives with business strategy and long-term metrics. Institutional investors ensure that performance measures and compensation policies—including annual bonuses, long-term incentives, and retirement plans—for executives and investment managers emphasize long-term value creation. Check out the **Aspen Institute's** Long-Term Value Principles.

10

Take back power

By insisting on reports on a company's performance at regular short-term intervals, analysts have made the market inherently impatient and institutionalized a set of norms that counter the opportunities in long-term value creation. Recognizing this, **Unilever** took a first step towards reducing the stranglehold of analysts by refusing to provide share guidance on a quarterly basis. **Nestlé** has done this for a very long time. Who's brave enough to step up next?

11

Clarify your values

Know what strengths and weaknesses characterize your team or organization. One of the approaches we like is that developed by the **Barrett Values Centre**. Their core products are called *Cultural Transformation Tools* (CTT),⁷³ These have been used to map the values of over 3,000 organizations and 2,000 leaders in 50 countries. The linked values assessment instruments are now available in over 30 languages. Ultimately, though, values have to be expressed to be effective.

12

Build scenarios

Shell continues to update their two energy scenarios, *Scrabble* and *Blueprint*, which link back to techniques first developed forty years ago. "The future is 'terra incognita'," says Shell, "although we may be able to guess the outcome of events that lie close to us, as we project beyond this we enter an unmapped zone full of uncertainty. Paradoxically, the range of options this reveals can seem paralysing. No one can definitively map the future, but we can explore the possibilities in ways that are specifically intended to support decision-making."⁷⁴ One of the most useful websites featuring scenario tools for sustainable development is the aptly named **Scenarios for Sustainability**.

13

Create roadmaps

Like blueprints, roadmaps can help us get a sense of the future—though lawyers have long lobbied to stop companies including them in their annual non-financial reports, arguing that they imply future commitments. Which they do. This is what Volans aimed to do a few years back with the 5-stage *Pathways to Scale* model.⁷⁵ One useful roadmap was produced by **Ceres**, setting out 20 expectations for sustainability that companies should start implementing to be considered sustainable going forward.⁷⁶ The report has more than 200 company best practice examples across 20 sectors. It also features more than 250 resources and tools from a wide range of global experts, organizations and thought leaders.

14

Go intergenerational

Actively seek input from the next generation to glean how their values compare to your business model. Be open to enthusiasm as well as criticism. **Kingfisher** and **B&Q** found this through an internal process where the children of employees commented on their parents' work—inspiring a candid conversation on how the company can continue its quest for intergenerational sustainability.

**15
Ride your intuition**

Faced with complexity, the human brain often jumps to conclusions, or more positively it intuits. Successful business leaders aim to detect emerging S-curves⁷⁷ early, with a view to surfing them for all they are worth. And, like surfers, the best leaders sense the future well before it arrives—but their challenge then is how to explain their vision to key stakeholders without complete data to prove their hypothesis.

**16
Make a game of it**

Let's face it, the challenges we face are complex, frightening and likely to be kicked further along the road, like the proverbial tin-can, for someone else to deal with. Which is why we need to keep a positive outlook and find ways to both work together and compete to bring about the best solutions. That's why we like organizations such as the **X Prize Foundation** ('Revolution through Competition'), **Innocentive**, the **INDEX Awards** and **Katerva**. There are also now dozens of online games that allow a player to 'role play' into the future, such as **Red Redemption's Fate of the World** game. Find ways to leverage the gaming element in your organization through inter- and intra-level games anchored in business issues you anticipate for the future.

**17
Adopt and apply long-term metrics**

A critical resource here is the set of principles created by the **Aspen Institute**. And an organization well worth engaging is the **Long Finance Initiative**, as mentioned in point 4 on page 38.

**18
Look back to the future**

To get a grip on the trajectories of the future, it can help to dig back into history, looking for patterns and trajectories. Paul Saffo's rules of forecasting include the recommendation to "look back twice as far as forward." That's what near-legendary investment analyst **Jeremy Grantham** of **GMO** does.

**19
Feed your networks**

As investor Warren Buffett is reputed to have said, "If you want to go fast, travel alone. If you want to go far, go together." One of Kevin Kelly's core 'Rules of the New Economy' is 'Feed the Network'.⁷⁸ And there has been a huge growth in recent decades in membership organizations that are looking at sustainability issues for the future, including **World Business Council for Sustainable Development (WBCSD)**, which recently produced its *Vision 2050* study,⁷⁹ the **World Economic Forum (WEF)** which just launched its Global Shapers Community that brings together future leaders of society aged 20-30 years,⁸⁰ and the **United Nations Global Compact (UNGC)**, which convenes over 6,000 companies in the sustainability space. If you aren't already a member of one of these organizations, join and help shape their agenda and work.

**20
Tap into collective intelligence**

One long-established method for getting a sense of the future has been the *Delphi Method*, an interactive forecasting process tapping into panels of experts in order to build collective intelligence. More recently, we have seen experimentation with prediction markets—which, as the name suggests, are speculative markets designed to help make predictions. Crowd sourcing and other forms of open source innovation are also increasingly popular, with key players including **Innocentive**, which span out from Eli Lilly.

**21
View the glass as half full**

Research shows that our images of the future play a crucial role in shaping what we do—and how effectively we do it.⁸¹ "Pessimism and cynicism sap our willingness to confront the wrongs in the world," said **Worldchanging** editor Alex Steffen. "They make us fearful. They make us small. Optimism, on the other hand, makes us bigger. It helps us envision a better future, connects us to new friends and allies, turns our hopes into strengths: optimism makes us worldchanging."

22

Speak up

Leaders need not only to act in their own organizations but to speak up publicly. That's why the voices of such high-FQ Stars as **Lester Brown (Earth Policy Institute)**, the late, great **Ray Anderson (Interface)**,⁸² **Paul Polman** of **Unilever** and **Jochen Zeitz** of **Puma** have been—and will continue to be—so important.

23

Explore behaviors

Behavior change will be part of successful system change and high-FQ stars are all change agents. Yet understanding *how* to change behaviors is easier said than done. Engage with the theories of behavior change, be it behavioral economics thinking popularised by *Nudge*,⁸³ or 'social marketing' research such as that conducted by the UK Government's **Central Office of Information**.⁸⁴

24

Boost your cultural intelligence

Cultures determine the unwritten rules of behavior. Leaders of change understand and engage with the different cultures within their stakeholder base. Reports like **UNESCO's** 'Investing in Cultural Diversity and Intercultural Dialogue'⁸⁵ highlight some of the determinants of cultural diversity, including language, education and modes of communication.

FQ for Governments

25

Account for the future

Governments already use various methods of generational accounting to address the intergenerational transfers of financial burdens, as in the pensions sector. Interest is likely to grow in this field as we see growing concern about the longer-term economic and social implications of the aging of populations in many countries. Intergenerational tensions are likely to be aggravated in economically declining regions, as the future is seen to shift elsewhere and emerging challenges around natural resource and environmental security intensify. Civil society needs to focus more attention on public sector discount rates and accounting principles and practices, as the **Intergenerational Foundation** has done.

26

Engage the public

Open source methods can help open out public understanding of the drivers of future challenges and opportunities. Before it was shut down, the UK **Royal Commission on Environmental Pollution** did useful work on likely future links between demography and environment.

27

Shape markets

One interviewee noted that companies rarely push the boundary where the market does not dictate that they do so. Rather, like ants, they follow marker "pheromone trails."⁸⁷ He had been involved in a multi-centre, pan-EU study that concluded that Europe should raise its carbon reduction targets from 20% to 30% by 2020.⁸⁸ Among the benefits foreseen were that the EU could increase its growth rate by up to 0.6% per year, create up to 6 million additional jobs Europe-wide, boost European investments from 18% to up to 22% of GDP, increase European GDP by up to \$842 billion (2004 values). In the event, however, MEPs voted the proposal down, for the moment showing low-FQ.⁸⁹

28

Engage tomorrow's stakeholders

Expect advocates to take legal action in the name of future generations, as we have already seen in the USA—where a group of interests convened as **Our Children's Trust** have taken legal action against the federal government in relation to climate change.⁹⁰ The challenge will be to get ahead of the curve. By no means finally, but intriguingly, **Future Justice** promotes Ombudspersons for Future Generations at all governance levels.

Chapter 6

The Quotient's Future



As the stars revolve overhead, some see a natural clock, some draw the sort of inspiration that spurred artists like van Gogh, some push back the frontiers of science and technology—and others look for clues to our common future.

Like fireflies in a jam-jar, our 50 Stars are a sample of future-oriented individuals, initiatives and organizations that came up in our trawl of our networks. They shed light on our subject, but are by no means a definitive sample. We spotlight them to suggest possible ways to perhaps inspire and boost our collective Future Quotient.

At a time of endemic leadership failure, it is time to ask where can we experience—and get involved in—better futures that are still in embryo? As science fiction author William Gibson put it: “The future is already here—it’s just not evenly distributed.” The **Arab Spring** may seem an unlikely finalist in the first Future Quotient 50, but one key task facing us is to break the stranglehold, the tyranny of the past, to open up the space in which a better future can grow.

Tyranny and military rule rarely—if ever—create the pre-conditions for genuinely sustainable development. Several Arab Spring rebellions have broken ground so better futures might take root, but it is still far from clear whether or not the result will be a net boost in the Future Quotient of these societies.

The variable success of outside forces in supporting the process has raised important questions over the longer-term role of **NATO** and national armed forces in securing peace. To raise their FQ, such institutions, including intelligence services, need to be repurposed and rebooted.⁹¹

And what about the pre-conditions needed to promote higher-FQ strategies in business and finance? It is now fashionable to challenge the relevance and impact of the corporate social responsibility (CSR) agenda in western countries. But, while there are genuine criticisms to be addressed, there is no question that the principles of responsibility, transparency and accountability underpinning CSR and ESG (environment, social, governance) investment strategies are still much needed in many parts of the world.

We have tried to be somewhat objective, but a large measure of serendipity helped shape the thinking outlined in *The Future Quotient*. It operated when Volans found an alignment of interest with JWT, and then when Atkins, The Dow Chemical Company and Shell Foundation swung in to support the project. And it went into overdrive when we connected with John Furey and MindTime. The overlapping of our collective work and theirs has spurred a degree of hybrid vigor that we hope to pursue further once this short report is launched.

The first quarter century of the sustainability agenda was largely about predicting challenges that demographic, social, economical, political and environmental drivers suggest will tax our ingenuity to the limit—in areas like energy, water, food and climate security. The second quarter century looks set to be about ways of effecting the system change needed to create liveable conditions for a global population of something like 9 billion people by mid-century.

We began by noting that an old order is disassembling and a new one self-assembling. Too much of the sustainability movement has set itself the target of mainstreaming in that old order, instead of heading out into those edgy spaces where the future is mutating and evolving. If MindTime is designed to be the equivalent of a GPS navigational system for the human mind, the time has come to expand such platforms to guide our thinking and actions as we head into the new realms of risk and opportunity.

Whatever it is that 81% of CEOs polled in the 2010 **UN Global Compact / Accenture** survey⁹² worldwide think they have embedded in the name of sustainability, they, their companies, their investors, their stakeholders and future generations would all be better served if they ensured that their Future Quotient was significantly enhanced. True, these days, genetic engineers can make any animal shine by transferring bioluminescence genes from bacteria or similar organisms. Less controversially, the orientations, skills and talents necessary for success in seriously long-term innovation can be transferred—to individuals, teams, organization and, ultimately, entire economies. That’s why we are so interested in places like **Singapore**, which are successfully playing into the future.

We plan to further develop the Future Quotient platform. And, in the spirit of Alan Kay's dictum, that "The best way to predict the future is to invent it," we aim to help evolve new constellations of talent and resources—including various types of Stars identified in Chapter 3, alongside keen-to-learn but so far less-than-stellar players—to tackle the century's great economic, social, environmental and governance challenges.

To keep posted on developments:

- Track progress at www.futurequotient.com
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- Follow us on Twitter, @futurequo, #futurequo

To test your TimeStyle or that of your team:

- Take the MindTime test here: www.mindtimemaps.com/fq

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Survey Process and Results

The survey was designed as a dipstick test of current thinking among thought-leaders and practitioners in the linked fields of sustainability, social innovation and social enterprise, and corporate social responsibility. It was emailed to some 4,000 members of the Volans, JWT and Net Impact networks—and held open between June 15, 2011 and July 20, 2011. The survey was closed when we had 500 fully completed replies. In addition to the online responses, a considerable number of people sent in emails with further thoughts on the subject, including input from WPP's worldwide network of Corporate Responsibility champions. The vital statistics can be found below.

Vital statistics

A total of 578 replies were received within the time period, of which 501 were completed in full. These were used as our sample. The demographic and sector make-up of the sample is illustrated in Figures A1 and A2. We see a reasonable spread through these lenses. We had respondents from 50 countries, although a heavy weighting towards the US and UK, and a relative absence of countries such as China and various African countries that will need to be addressed in any future rounds.

Results

We asked a series of closed questions to understand and quantify the prevailing beliefs among our expert respondents. The results from these are summarized below.

When you think of our societies, economies and businesses, how important is the ability to think and act with long-term horizons in mind?

At more than 9 in every 10 respondents, an overwhelming majority see it as very important to be able to think and act with long-term horizons in mind. This strong response was demonstrated across all the demographic breaks in the survey.

Is the ability to think and act with long-term horizons in mind likely to become more or less important over time? (see Figure A3)

Interestingly, younger respondents are slightly less inclined to this belief: a smaller majority (66%) of 25–34 year olds see the need becoming greater.

How effective is your own organization in thinking and acting with long-term horizons in mind? (see Figure A4)

Over 80% respondents feel that their own organization is at least somewhat effective at thinking for the long term. This question, more than others, showed a significant difference by the type of organization that the respondent works for. On this data, people in social enterprise have the most confidence that their own organizations are effectively operating with long-term horizons in mind, while their private sector counterparts have the least confidence. We followed up this question asking:

What do you see as the key contributory factors that have led your organization to behave in this way?

These open ended responses showed either that many of those who see their own organization as very effective, attribute that effectiveness to strong vision and values, or else it is a product of the type of business that they are in (such as sustainability consultancy or NGO). Those who see their organizations as ineffective often lay the blame at the door of the short-term nature of business, and sometimes simple fear of the unknown.

In addition to the above questions, we also asked a number of open questions, including:

Which people, business, governments, investors and/or brands do you see thinking and acting for the long term?

Which 3 or 4 qualities enable long-term thinking and action?

Which tools do you see as most helpful in this area?

The answers to these questions shaped our content and conclusions in terms of the 50 Stars selection criteria (Chapter 3) and the beta version of our Playbook, for those wanting to boost their Future Quotient (Chapter 5).

Figure A1
Respondents by age

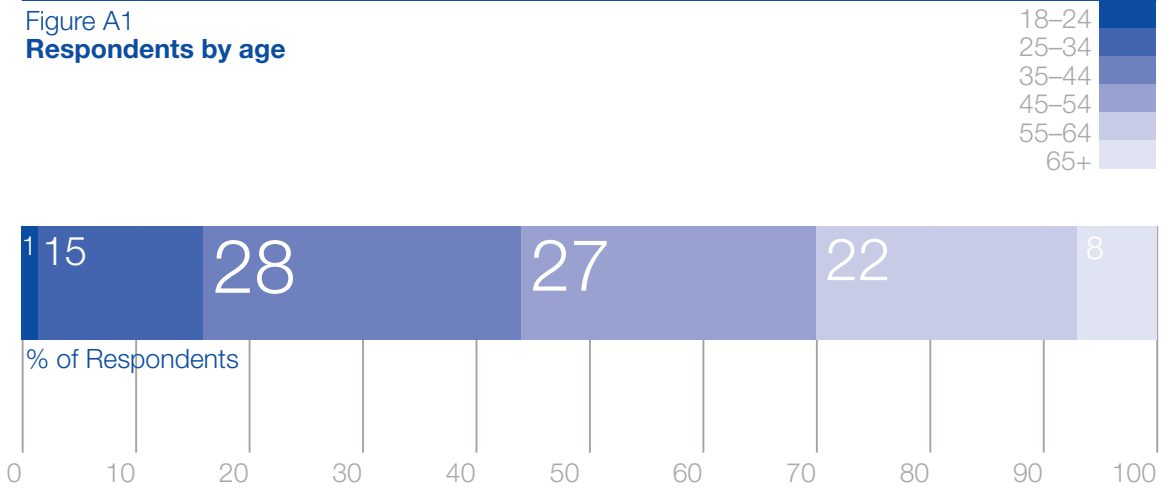


Figure A2
Respondents by main type of organization

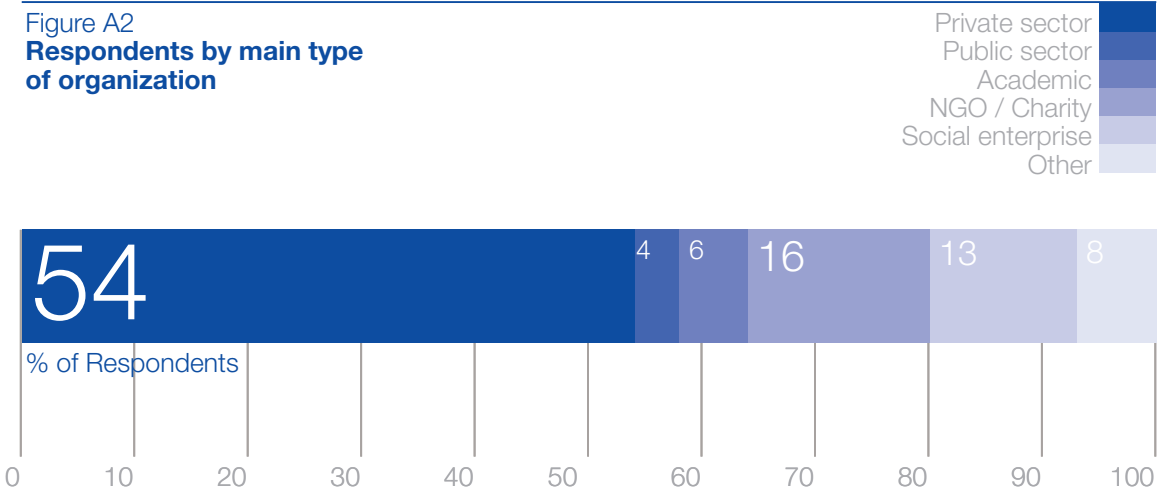


Figure A3
The growing importance of long-term horizons

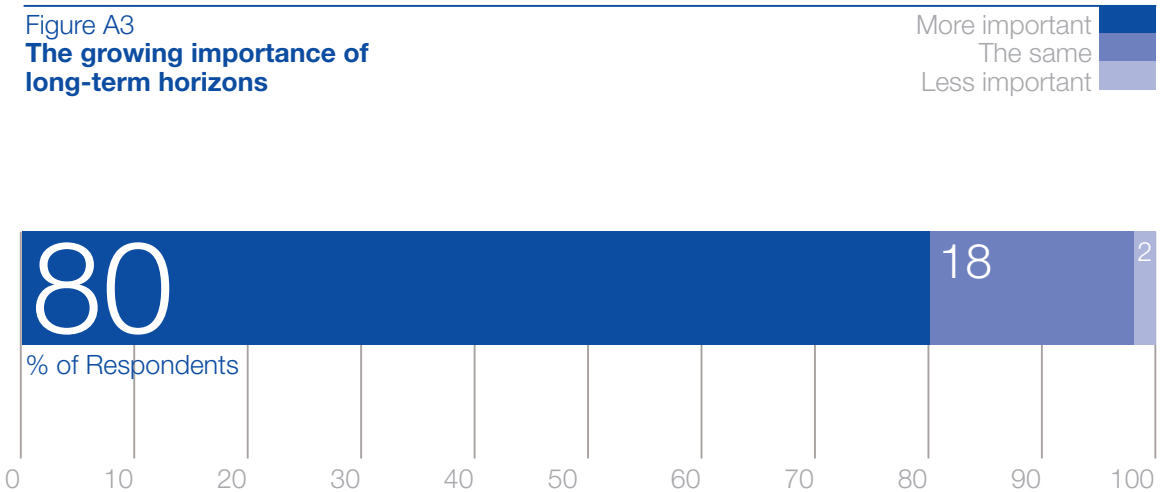
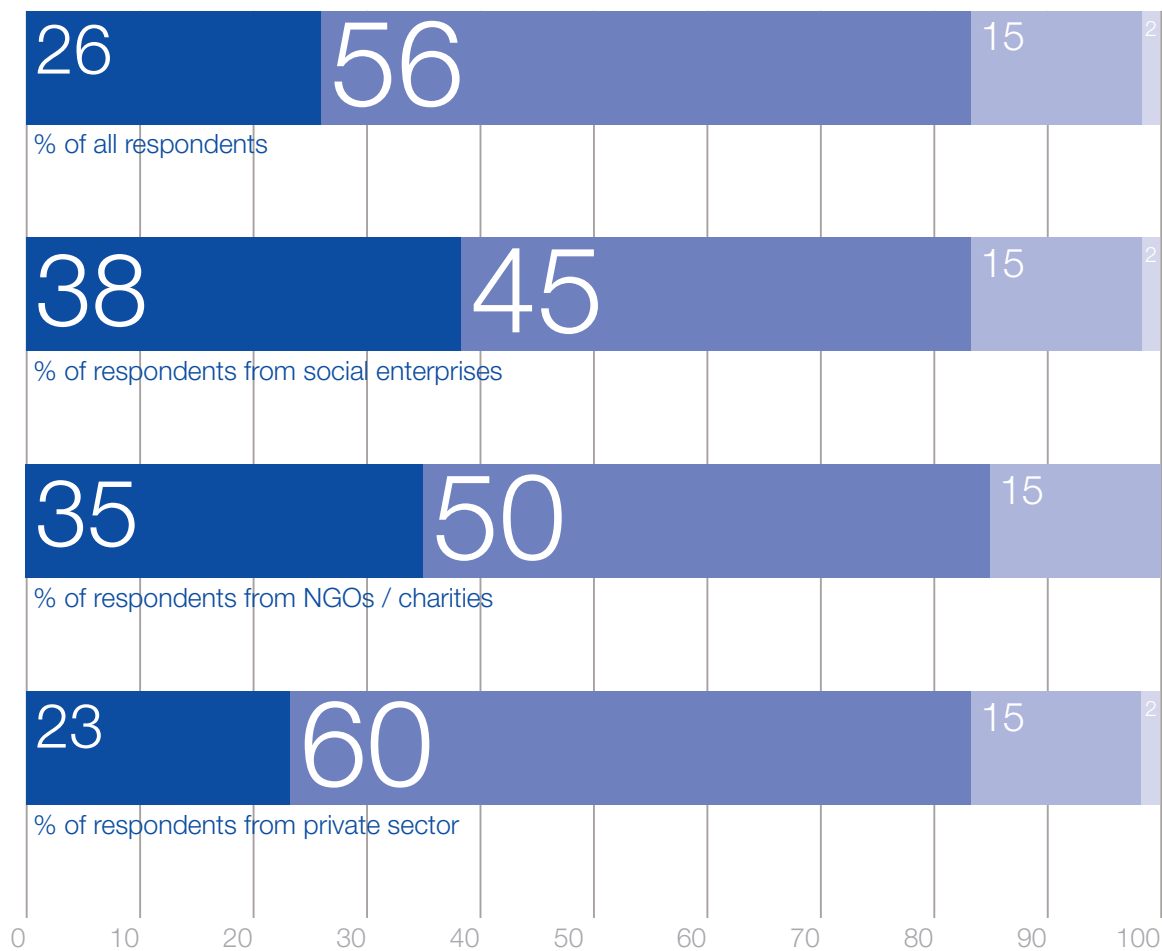


Figure A4
Organisational effectiveness at long-term thinking and action, by total and type of organization of respondent

Very effective
 Somewhat effective
 Not very effective
 Not effective at all



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Launched in London at JWT's HQ in October 2011, *The Future Quotient* is being progressively rolled out around the world. For the Asian launch in Singapore, we are delighted to have worked with Caroline Seow and her colleagues at the Family Business Network Asia (FBN Asia).

Volans Blogs

Volans News & Views
www.volans.com/news-views

Inside Sustainability, *Guardian*
Sustainable Business website
www.guardian.co.uk/sustainable-business/sustainability-with-john-elkington

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Google / Virgin / 100 Year Plan

pages 19 and 31

This example is not a 'live' one; in fact it was an April Fool's hoax released by the two companies in 2008. Nevertheless, we feel that the ethos behind both organisations, Google and Virgin, as seen through some of their other ground-breaking initiatives, is still note-worthy in that they audaciously challenge the status quo (think Virgin Galactic¹ which is making space travel a reality, and Google's \$30m Lunar X-Prize² which will go to the first privately funded team to land operational robots on the Moon).

For more on this particular issue, read John Elkington's article, "Spoofed! By Google and Virgin's plan to build a city on Mars", published on 2 November 2011 in the Guardian Sustainable Business blog.³ We have also since launched a new Twitter campaign to hear peoples' views on whether 100-year plans are feasible (please tweet your answer to @futurequo #100years).

¹ www.virgingalactic.com

² www.googlelunarprize.org

³ www.guardian.co.uk/sustainable-business/sustainability-with-john-elkington/john-elkington-long-term-planning-business-strategy

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Founded in 2008, Volans aims 'to help the future take flight'. We are a future-focused think-tank and consultancy business that works at the intersection of the entrepreneurship, intrapreneurship, innovation and sustainability movements. We apply our thought leadership and our global networks across these three sectors to help innovators, investors, private sector and government leaders develop solutions to the challenges facing our world. *The Future Quotient* is our fifth publication (page 52). We are delighted to have JWT as a partner because of their history, their new Ethos offering—and because behavioral and culture change are now crucial.

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JWT is the world's best-known marketing communications brand and the world's oldest advertising agency, bringing pioneering spirit to our clients ever since the mid 1860s. With more than 200 offices in over 90 countries employing nearly 10,000 marketing professionals, we are a truly global network. JWT Ethos is our specialist offering designed to help our clients' brands prosper by making better forward thinking decisions over social and environmental issues. With *The Future Quotient*, we urge business and brands to take up the responsibility and challenge that this presents.

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