

Boosting Our Future Quotient

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From the Debt Crisis Through Youth Unemployment to Climate Change, the Evidence Suggests that the Main Actors in Global Capitalism Need to Improve their FQ, or Future Quotient

An old order is coming apart, a new one for better or worse self-assembling. To help build and succeed in the new order, leaders in the private, public and citizen sectors need to switch from thinking about incremental change to transformational, systemic change. And to do this they will need to connect wider, analyze deeper, aim higher and invest longer. This is the key conclusion of *The Future Quotient*, a study from Volans (a think-tank and consultancy founded in 2008) and the advertising agency JWT (J. Walter Thompson, which tracks its roots back to 1864), designed to help set the agenda for business and government way beyond 2012's UN Summit on Sustainable Development.

Rather than simply diagnose the problem, the report sketches out a process by which we can measure the future-readiness of individuals, teams, businesses, brands and beyond. In this article we headline some of the conclusions reached and offer readers an opportunity to take a brief, dipstick test that provides an initial reading of their future orientation.

We undertook our own dipstick survey, polling 4,000 members of our global network, with fuller results provided in the report which is downloadable for free. As indicated in Figure 1, there was an overwhelming sense that thinking and acting long-term will be increasingly important, yet the majority of respondents felt that our ability to think long-term let alone intergenerationally is weakening.

This may be understandable in the context of the deepest economic downturn for generations, but too often political and business leaders have been misreading the runes, concluding that we are simply enduring another recession. By contrast, Volans predicted the protracted

nature of the downturn in its 2009 report, *The Phoenix Economy*.¹

Our central argument was that we were seeing not simply a great recession but the early stages 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.

We also noted that a crisis is a terrible thing to waste, but as we drafted *The Future Quotient* it was clear that the opportunity had largely been squandered. America's debt rating has been 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.

It is in the very nature of things that a proportion of leaders fail, but when the rate of failure goes off the chart, 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 new challenges.

Continuing to Dig

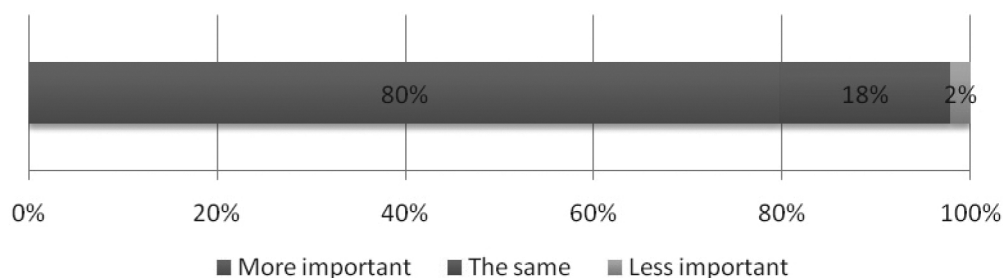
As the system weakens and stresses build, human nature dictates that we try to do more of what worked in the past. We focus even more on the conventionally defined bottom line. Stuck in a hole, we continue to dig. Eventually, natural selection will sort winners from losers, but will the winners be any better at addressing the core elements of the sustainability agenda?

And 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? In *The Future Quotient* we 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.

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1. <www.volans.com/lab/projects/phoenix/>.

Figure 1. Will the Ability to Think and Act Long-Term Be More or Less Important?



Yet companies and other actors bombard us with reports and case studies suggesting significant advances in relation to the sustainability agenda. Progress has since been made on some fronts, true, but on balance we often seem to have gone backwards.

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 2010.²

On the downside, a key element of the 1987 Brundtland Commission 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. 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 diagrams 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.

But 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. 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 the 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.

Sustainability is not the Same as CSR

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 21st 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’.”

The key word here is *intergenerational*. Very few businesses operate on anything like a generational timescale. 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

2. Sustainability: The ‘Embracers’ Seize Advantage, *MIT Sloan Management Review* 2011, <<http://sloanreview.mit.edu/feature/sustainability-advantage/>>.

Davies report in a recent paper.³ 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*.⁴

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”.

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). Haldane and Davies conclude that: “Public policy intervention might be needed to correct this capital market myopia.”

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.⁵ This study was commissioned by the UK Government, to help frame national policy on climate, but also had a significant impact on thinking in other countries. 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 2 suggests. Though 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. Among their conclusions:

3. A. Haldane & R. Davies, *The short long*, Bank of England, Paper and speech presented at the 29th Société Universitaire Européenne de Recherches Financières Colloquium, *New Paradigms in Money and Finance?*, Brussels, May 2011. Paper and speech available at <www.bankofengland.co.uk/publications/speeches>.
4. N. Carr, *The Shallows, how the internet is changing the way we think, read and remember*, Atlantic Books, London 2010.
5. N. Stern, *The economics of climate change*, Cambridge University Press, Cambridge, MA 2007.

“The whole international system—as constructed following like 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.” If institutions like the United Nations survive through the coming decades, for example, their governance, geographical orientation and politics are likely to change substantially.

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.

Our Shifting Paradigm

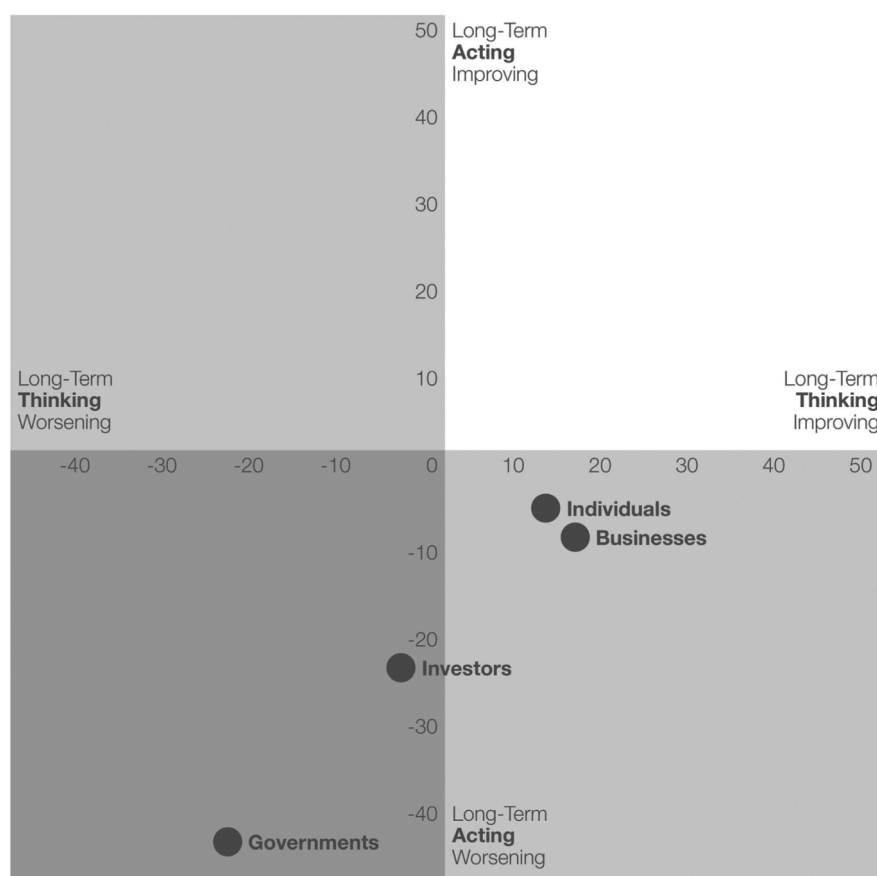
A review of management timescales and discount rates would certainly be a start, though it seems unlikely that the interests of future generations, in the Brundtland sense, will be directly addressed. However, there are other reasons for optimism. James Lovelock, the independent scientist who came up with the Gaia Theory, which explores how our planet sometimes operates as if it were a single organism, may be controversial – but he 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 related security challenges.

“Paradigm” is a much-overused word these days, but when introduced by Thomas Kuhn in 1962, it had a very specific meaning. 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.

Panel 1: Who’s Good and Bad at Long-Term Thinking?

In our first Future Quotient survey 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.

Figure 2: Who Is Getting Better at Thinking – and Acting – Long Term?



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*, which helped launch the environmental movement), or a 40-year (UN Stockholm Conference on the Human Environment, *Limits to Growth*), 25-year (Brundtland Commission Report, *Our Common Future*) 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 3 suggests, changing mindsets are only part of our overarching, multi-dimensional, non-linear challenge. 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 60-70 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.

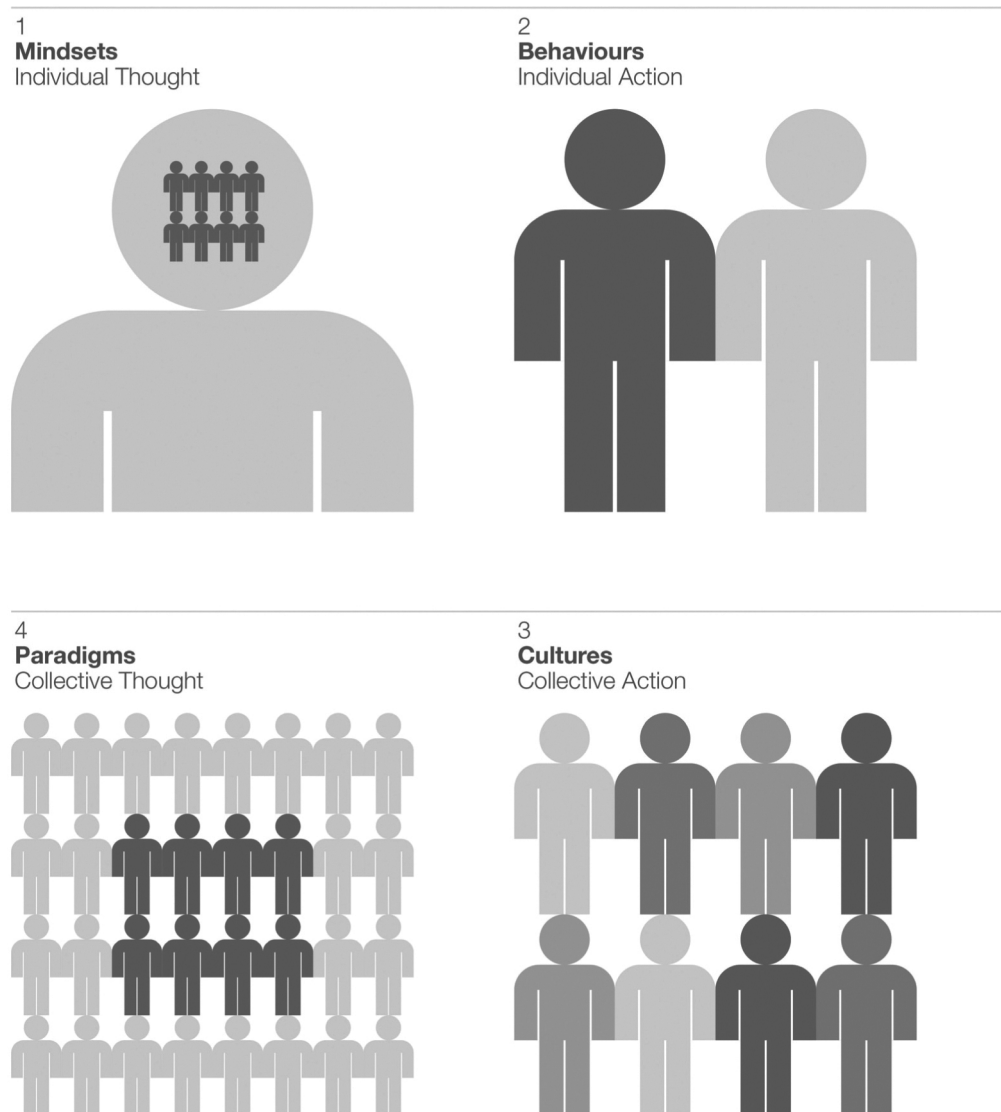
Culture is the new frontier and we need to get dramatically better at intelligent cultural engineering. One key area of concern, for example, must be the impact of the ageing trend on the willingness of our societies to support and invest in solutions designed to effect system change. Older people, in 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.

Dimensions of High-FQ Leadership

As we worked back and forth through the examples of change flagged up by our surveys and other research, five key dimensions shone through the data. These were as follows:

Figure 3. *From Mindsets to Paradigms*



1 Change: Incremental > Systemic

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. Even 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 to be central to the agenda in the next quarter century.

2 Scope: Narrower > Wider

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

3 Analysis: Shallower > Deeper

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 is almost inevitable in the world of endless flows of information.

4 Ambition: Lower > Higher

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 suggests that successful leaders have often done the complete opposite, embracing stretch goals and setting their targets way higher than others thought sensible.

5 Timescale: Shorter > Longer

To succeed in these wider, deeper and higher strategies, leaders need to operate against longer time-scales. As best-selling management author 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."

Testing Our Future-Readiness

The question is: do our leaders have the skills and ability to adapt to the new order?

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, emotional intelligence/quotient (EQ) and even Eco-Q (a proposed measure of ecological intelligence) 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.

We need a tool or tools that can help us measure what we are 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 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. This is even true of the Shared Value approach developed by Michael Porter and Mark Kramer.⁶

The FQ Project

So Volans is developing a new measure of the readiness of a team, business, government agency or economy: what we call the "Future Quotient".⁷ As a first step, we teamed up with John Furey and his team at MindTime Technologies, based in California, and devised a simple, easy-to-take test of an individual's, team's or organization's future-readiness.

The project began as a response to the evidence that CEOs, and C-suites generally, were concluding that they had already embedded sustainability in their companies. Perhaps they confused corporate citizenship and social responsibility with the system change imperatives that underpins the sustainability agenda? 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. This was emailed to 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 FQ. Building on the recommendations of our respondents, we compiled a listing of "50 Stars in Seriously Long-Term Innovation" which we term the FQ50, as well as an FQ Playbook to help individuals and organizations stretch their FQ. The Playbook gives examples of tools that are already being used to help decision-makers to think wider, deeper and longer, while working out how to set their targets higher.

How Do I Measure My FQ?

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One key question was always going to be: 'How can I measure my FQ?'. This was never going to be addressable in our first short report. Over time, 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.

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.

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.⁸ MindTime maps your thinking type on the axes of Past (focusing on

6. <<http://hbr.org/2011/01/the-big-idea-creating-shared-value>>.

7. If you use SMS or text messaging, you may find that FQ has a somewhat salacious meaning but we decided to ride with that.

8. <www.julianjaynes.org/>.

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, visit www.mindtimemaps.com/fq: the anonymous survey will take only a few minutes. 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. Importantly, MindTime does not prioritize one type of thinking over another, but instead recognizes the need for balance within a team. Furey explains that “when working with people of different thinking styles we must first recognize the value of their thinking. Only then can we understand how our thinking works in collaboration with theirs rather than in competition”. (personal communication)

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 us 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 organizing 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 aim to 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 is 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.

The Quest for High-FQ Sectors

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 twelve 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.

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.

Twelve Long-Sighted Sectors

We identified twelve 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, which 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 potentially long-sighted 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.

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.⁹ It envisages huge expenditures on infrastructures in the coming decades, with investment in infrastructure, technology and human services seen as likely to reach US\$ 3-10 trillion per annum in 2050, creating new opportunities for business to thrive and grow. So 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 both plan and invest long-term. With more than 70,000 products and annual revenues of some \$4 trillion, 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. 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.

One impact of globalization, meanwhile, 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.

9. World Business Council for Sustainable Development: *Vision 2050*, The new agenda for business, Geneva, Switzerland, 2010.

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. Recent evidence suggests that they managed fairly well through the so-called 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.

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. 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. 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 shrinking 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 allocation 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.

The evidence of truly long-term sustainability investment is mixed: in Germany, there is interest among pensions funds, but actual investment is below average; in Denmark, meanwhile, PensionDanmark is investing in wind power. 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.

Among the systemic risks spotlighted by the Centre for Global Dialogue, founded by Swiss Re, challenges around sustainability are high on the list. 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. 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%.¹⁰ Our success in protecting the

10. <www.panda.org/what_we_do/how_we_work/key_initiatives/transforming_china/resources/?150322/GFTN-Factsheet>.

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. 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

11 Civil Engineering

Few sectors think longer-term than civil engineering, whether building oil refineries, motorways, dams, urban infrastructures or sea defenses. As infrastructure provider Siemens has noted, 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. 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 2050.¹² Today's cities are already responsible for about 80% of greenhouse gas emissions, 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, 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. 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), the government agency that is the largest single purchaser in the world, is increasingly working on.

Conclusion

"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 the enterprise are vague, the destination unclear, the captain and crew distracted, and the sailing date still to be agreed. But growing numbers of business leaders have decided to embrace at least some parts of the agenda, moving considerably beyond the basic requirements of regulatory compliance and even citizenship.

So, based on our findings to date, what are the characteristics we need to adopt to ensure new, stretched, future-friendly forms of leadership? We asked 500 expert respondents what qualities enable thinking and acting on stretched time-scales. When we crunched the numbers, strong patterns began to emerge and, ultimately, seven key themes surfaced. Our respondents suggested that high-FQ leaders know how to navigate what we call the 7Cs. So, among other things, they:

1. *Demonstrate a Strong CHANGE Orientation*
Leaders need a capacity both to scan 360-degree horizons and to focus down like a laser on critically important priorities. 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. *Remain Intensely CURIOUS*
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. *Experiment with New Ways to be COLLABORATIVE*
Increasingly, management 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.
4. *Inspire Others to Be COURAGEOUS*
System change demands immense courage, sustained over long timescales. High-FQ leaders have courage and stamina, plus an ability to adapt when necessary. They can also motivate others to follow their lead.
5. *Play into CREATIVE Destruction and Renewal*
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.

11. <www.un-redd.org/AboutREDD/tabid/582/Default.aspx>.

12. <www.un.org/esa/population/publications/wup2007/2007WUP_Highlights_web.pdf>.

6. *Are Comfortable with CROSS-GENERATIONAL Timeframes*

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 that ensure a better alignment of the business with the interests of stakeholders, and lessons can be learned and transferred to other sectors.

7. *Work to Co-Evolve the CULTURAL Context*

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.

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 nuclear power station, after it was devastated by the tsunami.¹³ Made up of retired professionals, the “Skilled Veterans Corps” clearly thought 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 likely to be critically important as we move ever deeper into the twenty-first century. And FQ-like provocations promise to be a useful catalyst for the necessary thought and action.

13. <www.bbc.co.uk/news/world-asia-pacific-13598607>.