Taking the Future Seriously: Preparing for the Global Gigatrends

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Introduction

Mohamed El Erian (recently retired CEO of Pimco) is credited with the observation that for the foreseeable future investment decisions will be taken in a context of the 'new normal', characterised by much higher levels of economic (and political, social, etc.) instability and uncertainty than was evident in past decades. The fundamental question, then, is what are the key trends shaping the business landscape going forward? Our answer to this question is the *gigatrends.*

Included among the gigatrends is climate change; energy depletion; the rise of the BRIC nations; profound demographic shifts driven by both the genome revolution, widely divergent birth rates across countries, and the rise of a new middle class in the global South; the fiscal crisis that will embroil nearly all 'advanced' states in coming years; and the possibility that we are within sight of an end to substantive democracy and its replacement with a permanent 'crisis state'.

At the organisational level, each of these gigatrends will require some form of effective response in order to realise latent opportunities and/or mitigate looming threats. A much greater challenge, of course, is that these gigatrends will not unfold in isolation of each other, but rather in complex and largely unpredictable *interactions*. Yet corporate actors are not only passive bystanders to these developments, but also in many instances *active shapers* of market, industry, and sector evolution operating at various geographical levels. An understanding of the gigatrends also needs to be incorporated within executive education interventions to foster more ethical, enlightened and effective future leaders.

Yet the gigatrends, while already each in train, also constitute a *collective metaphor* on the future. More specifically, they challenge organisations to reflect upon how seriously they take the future; the meaning of 'the long-term' in context; and

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the extent to which conversations about the long-term eventuate in decisions which drive resource commitments *today*. The gigatrends provoke senior leadership to clarify its *strategic posture* (Courtney 1998) – the manner in which it interacts with its ecosystem – which in turn has implications for the organisational 'muscles' it will invest in to best realise the chosen posture of industry shaper, fast (or more cautious) follower, or committed bystander.

The Global Gigatrends

The first and preeminent gigatrend facing not only economic actors but the entire biosphere is that of climate change. The overwhelming judgement of the scientific community is that global warming is a fact, and that human industrial activity (based on burning fossil fuels) is a major contributor to the process (Hamilton 2010; IPCC 2008; Stern 2007). Sea levels are already on the rise, fostering "climate refugees" (Klein 2007); weather patterns appear increasingly unstable in comparison to historical norms, undermining agricultural productivity; and recent estimates of temperature increases suggest we are approaching a 'tipping point' which could be sufficient to trigger positive feedback loops which will drive runaway temperature increases in a catastrophe scenario (Guardian 2009a). Scientists from the Global Carbon Project state that the most likely scenario is for a 6 degree (Fahrenheit) rise by 2100, due to the manifestation of feedback loops through the failure of natural 'carbon sinks' to absorb greenhouse gas emissions, which increased 29% over the 2000–2008 period (Independent 2009). More recently the *National Climate Assessment* report issued by the United States government in 2014 confirmed climate change as a 'clear and present danger' to national security (USGCRP 2014).

The fundamental point here is that there is actually very little (serious) debate that global temperatures (and, consequently, sea levels) are rising. The key uncertainties concern the rate of warming and the point at which temperatures will peak. The policy debate circles around whether to concentrate attention and resources around containing and mitigating carbon emissions, or accommodating to living in a warmed world. A salient point here would be to consider that humanity has proven able to exist and function effectively, in a reasonable degree of comfort, in such extreme climates as northern Alaska or the Antarctic in winter as well as Dallas or Dubai in summer. Humanity has been able to survive in prosper under highly adverse climactic conditions due to the existence of effective heating and cooling technologies fuelled by abundant and affordable energy resources. This period of human history is quite possibly coming to an end, with epochal implications for contemporary techo-industrial civilisation (Greer 2008). This is why the next gigatrend is the most significant of all.

The second gigatrend is that of continuing (and accelerating) energy depletion. Up until very recently, the relevant science indicated that we were at or near the point in time in which known global petroleum reserves exceed consumed reserves (the definition of 'peak oil'), meaning we were in the early stages of an extended decline in which first oil, then other fossil fuel (coal and natural gas) reserves will

be run down to minimal levels (Guardian 2009b). In this scenario, alternative energy sources and technologies (e.g., geothermal, hydro, solar) would not be sufficient to offset the energy deficit left by fossil fuels because their *net energy yield* – the difference between the amount of energy one unit of a substance generates and the energy that has been expended in producing it – is only a fraction of that typical of fossil fuels (Heinberg 2005).

However, the 'fracking revolution' now well underway in the USA considerably changes this equation, pushing 'peak oil' – which the IEA had has recently as 2011 identified as occurring in 2006 – back some years, potentially even decades. As long as oil prices remain in the $100/barrel range, it will be economic to exploit shale oil and other forms of 'tight oil'. The real danger, it seems, isn't that there isn't enough oil, but that there will be *too much*! This will undermine the development of clean alternatives, vastly increase the release of carbon into the atmosphere, and thereby possibly catalyse runaway climate change (Carbon Tracker 2013).

Since industrial (and post-industrial) economies are based fundamentally on an ample supply of cheap energy from fossil fuels, the ramifications of energy depletion are *totalising* – think, for example, of the rapidly rising levels of electricity needed to power Google's servers![1] Unless there occurs an as yet unforeseen technological breakthrough which leads to some alternative energy source taking up the slack as affordable fossil fuel stocks wind down, the type of civilisation which developed in Western Europe and the United States in the nineteenth century, extending itself throughout most of the world in the twentieth century, will be *literally* unsustainable. That is, available energy resources will not be able to generate levels of electrical and other forms of cheap energy necessary to power the built environments and transportation grids integral to an advanced technological civilisation.

The third gigatrend driving large scale structural change in the world is the rise of the so-called 'BRIC' nations and the consequent (at least relative) decline of the West (and Japan) in terms of their role and status in the global economy. Inevitably, with rising economic power also comes political clout – witness the recent morphing of the G-8 into the G-20 as the world's most important international forum on economic affairs, along with China's major role in scuppering the 2010 climate negotiations in Copenhagen (Lynas 2010). Perhaps most significant from a longer-term perspective, however, will be the eroding value of the Western narrative of development through markets and democracy so celebrated in the 'end of history' thesis (Fukuyama 1992) and manifested in the neoliberal policies of the Washington Consensus (see Panitch and Konigs 2009).

The extent to which the Western development model has been discredited should not be underestimated. Some observers trace a growing conflict regarding the global 'rules of the road' back at least to the aftermath of the Asian Financial Crisis of 1997 (Aglietta and Berribi 2007). Conversations within key international institutions going forward will likely take on a much more pluralistic tone where multiple

[1] On a global basis, servers are currently estimated to account for 2% of all energy consumption, a number expected to grow dramatically in coming years (BBC 2013).

varieties of capitalism with differing roles for market, state and democracy will compete for policy influence over the institutional architecture of the global system. The BRIC nations can also be expected to compete with the West for access to key global resources such as energy, strategic minerals and arable land (see Klare 2012), a contest which is already evident in the neo-colonial 'race for Africa' between China and the United States (Financial Times 2010). Significant here is the fact that for China and many other emerging nations the benchmark development model is not the United States or Western Europe, but rather Singapore. With its effective mix of strong state, political stability, attenuated democracy, and social 'harmony', the success of Singapore puts into question the robustness of the Western formulation of democratic-capitalism as the modal institutional framework for developing countries (see Kagan 2009).

The fourth gigatrend impacting future history relates to massive demographic changes driven by biotechnology, birth rates, and migration patterns. We are on the brink of the genome revolution, which will foster a wide range of life extension technologies. While some scientists believe that we are within reach of living up to 1000 years (c.f., de Grey 2008), more widely held opinions expect a significant percentage of children born today to experience life spans considerably in excess of 100 years (Fukuyama 2003). Yet technological possibilities need to take into account political, social and cultural factors. The impacts on superannuation systems, labour markets and occupational structures are only the most obvious areas of disruption, but there are even more fundamental issues at stake.

The most starkly apparent characteristic of the genome revolution – in great contrast to the 'open-sourced' spread of the internet – is that it is unfolding in an overwhelmingly *privatised* organisational field composed of research labs (often spin-offs from public universities), biotech and pharmaceutical firms, medical equipment manufacturers, healthcare delivery providers (hospitals and clinics), insurance companies, and regulatory agencies. The trajectory of technological development and commercialisation of basic research will likely mean a profound skewness in the direction of treating those illnesses (e.g., diabetes, obesity) that afflict relatively well off citizens/customers in wealthy countries, rather than dealing with age-old maladies (e.g., tuberculosis, malaria) which torment hundreds of millions of poor people across the globe because, after all, a functioning market requires not only that a demand exists but that potential customers have the means to make payment. As noted by John Sulston, who led the UK branch of the Human Genome Project, "The fact of the matter is that many human genes have patent rights on them and this is going to get in the way of treatment unless you have a lot of money" (Guardian 2010). This unequal access to life preserving and extending technologies for the global minority, while the global majority may well experience *shortening* life spans as the ravages of climate change and energy depletion undermine states' ability to fund public health initiatives (Cecchetti et al. 2010; Greer 2008), raises issues of natural justice which clash directly with the 'ethics' of property rights. The bottom line here is that in a world of vastly unbalanced life chances due to chronic inequality, it is entirely likely that only those who can afford it will get to live longer – that is, just like today, only MUCH more so.

Another important aspect of demographic change is the rise of massive megacities in the South and the related shift of purchasing power to the 'second tier' cities of emerging market economies, particularly China. Foreign Policy (2006) noted that by 2015 almost all of the 21 global megacities will be in developing countries (Tokyo and Seoul are the only exceptions) and will be wracked by pollution, inadequate services, and crime. Observing these trends and linking urbanisation and age demographics, Magnus (2010) poses the question of whether key developing nations (most notably China) will 'get old before they get rich'.

Significantly, the 'southern' megacities' unfolding development represents a *reversal* of the classical (and functional) labour-intensive countryside/capital-intensive industrial metropolis couplet. We now witness capital-intensive hinterlands and burgeoning deindustrialised cities with shrinking formal economies, with few linkages between the two save for a one-way flow of urban migration. Davis (2007) attributes this urban influx to contemporary 'enclosure' measures aimed to open up formally subsistence acreage for agro-industrial production of specialised crops for export. He explores the linkages between global neoliberalism, the increasing urbanization of world poverty, and the rise of a 'surplus humanity' which is excluded from formal networks of production and exchange, forced to survive by any means necessary in the midst of increasing resource scarcity and environmental degradation.

Significantly, although they capture the imaginations of both optimistic and dystopian observers, it will not be the megacities that drive global economic development in the future. This at least according to a report by McKinsey (2012) which identified the 'second-tier' cities of emerging markets as the primary hubs of economic growth over the next few decades. This report notes that 80% of global GDP growth to 2030 will come from cities, with 600 second-tier cities (mostly in China) to account for 3/4 of all urban growth. By 2025 most middle class consumers will be located in emerging market cities, signaling a permanent shift in focus for the global giants of the B2C industries. Given that the axis of global growth is tilting increasingly to the emerging world, is it not inevitable that an increasing portion of global firms' key corporate functions and activities eventually follow the same pathway? The implications of this shift for the capability profiles of future corporate leaders – and, consequently, executive development programs – are clearly profound.

The final gigatrend, impacting nearly all 'advanced' countries, concerns the fiscal crisis of the state. It is universally acknowledged that the Global Financial Crisis (GFC) wreaked havoc with the accounts of most OECD nations as governments came to the rescue of their banking systems, using public funds to bail out private interests. Yet the dislocations following from the GFC pales in comparison to longer-term financial challenges. In seminal research, Cecchetti et al. (2010) examined the unfunded liabilities in health and welfare of OECD member countries to the year 2040. The results were staggering: under the condition of maintaining current levels of service provision, ALL states would effectively be bankrupted by the impacts of aging populations, shrinking tax bases (as fewer income earners were required to support more retirees), and rising per capita health care costs. The

magnitude of these impacts was far greater than that of the GFC. The primary conclusion of this research was that it would be inevitable that governments would have to renegotiate the 'social compact' with their citizens (possibly unilaterally) wherein which retirement ages increased substantially and state provision for public health and welfare was downscaled dramatically – with the consequent rise of 'user-pays' regimes to replace what had been public goods. Piketty's (2014) recent landmark analysis of contemporary capitalism offers insights which are fully consistent with the trends outlined above.

The pending fiscal 'train wreck' outlined above is even more alarming when we consider how this gigatrend might interact with others (e.g., climate change), almost inevitably in ways which will put increasing strains on public purses. This crisis of the state could easily lead to an institutionalization of a permanent 'state of crisis', which incorporates the enshrining of democracy as a normative ideal while formally embedding anti-democratic 'technocratic' regimes under serially renewing emergency legislation. Such a 'state of exception' situation was observed and theorised in Weimer Germany in the 1920s by Carl Schmitt (Teschke 2011). One could also argue that this is essentially characterises how the key allied powers functioned during the existential crisis of World War 2.

As a bankrupted state withdraws from many sectors of society and renegotiates the 'social compact' with citizens over the manner in which rights and responsibilities are to be allocated, the private corporation will be increasingly called upon to provide for the legal, economic and civil rights of individuals. To some extent this process is already underway. For example, the European Group for Organisation Studies (2009) observed that

> Today, many multinational business firms have started to voluntarily regulate their activities or produce global public goods. As the widespread participation in the UN Global Compact shows, these firms assume political responsibilities that once were regarded as belonging to government. They contribute to public health, education, social security, and the protection of human rights, or engage in self-regulation to fill gaps in legal regulation and to promote societal peace and stability.

Matten and Crane (2005) have explored the empirical conditions under which the corporation might be expected to engage in administering the political, legal and civil rights of citizens. This expanded corporate role is depicted as filling an institutional vacuum resulting from the withdrawal (or complete absence) of the state from significant areas in society. While it seems inevitable that corporations will become more fully involved with the societies in which they operate – whether by inclination or necessity – Fleming and Jones (2012) articulate at length the many dangers that such elevated engagement entails for the future of democracy.

Interactions

We could speculate endlessly on the potential interactions between various gigatrends; such an exercise is practically best conducted from the perspective of a specific organisation, industry or business ecosystem. Here we will briefly discuss two of the most obviously important interactions which will impact a wide spectrum of sectors and industries.

The gigatrends associated with climate, resources and development are, to a greater or lesser extent, interlocking. For example, clearly there is a direct causal connection between the globalisation of capitalism and ever-increasing levels of production, consumption and waste as societies transition from subsistence to consumerist orientations. While the immediate environmental impacts of this economic activity have shifted in recent decades from the North to Asia and parts of the South as Western and Japanese TNCs have restructured their supply chains (Dicken 2011), the aggregate amount of environmental degradation continues to increase with the volume of industrial activity, despite improvements in productivity which allow more outputs from fewer inputs.

The key gigatrend interaction, however, is that between climate change and energy depletion. This interaction is all about carbon in the sense that the burning of carbon-based fossil fuels drives global warming, while the challenges of dealing with the latter require increasingly elaborate and energy intensive technological solutions (most obviously desalination plants), most of which are powered by electricity. Of course the vast majority of electricity is generated by the burning of fossil fuels (primarily coal and natural gas), so the destructive cycle continues.

A challenge for democratic countries going forward will be their structural disadvantage in dealing with the long-term challenges of climate change and energy depletion due to their preoccupation with short electoral cycles and reliance on market forces, both of which tend to discount the future heavily. It may well be, then, that only some form of authoritarian-capitalism (i.e., the Singapore model) has any hope of surviving the twenty-first century *and* dealing effectively with the gigatrends.

For example, the increasing incidence of ‘climate refugees’ may well also drive the institutionalisation of de facto authoritarian-capitalist regimes (justified through narratives based on ‘law and order’, ‘border control’ and the like) throughout most of the democratic-capitalist West over the next few decades as fears of ‘barbarians at the gates’ intensify. Such a development would likely amplify the ‘weaponising’ of urban space noted by Sassen (2006), as police and private security organisations expand to cope with the challenges of internal security and border control in check so that key flows of people, goods and information can continue to interact in a functional manner.

The Gigatrends and Executive Education

Findings from some significant recent leadership research indicate that, compared with the generation that preceded them, future business leaders will require a different general outlook and understanding of the role and purpose of their organisations in society. They will need to employ a range of leadership approaches to deal with a new range of issues. This, in turn, will entail the development of new leadership capabilities.

Following a particularly germane report by Ashridge (2011), we can understand these developmental areas in terms of capabilities to manage *context*, *complexity*, and *connectedness*. According to this research, the global leader of tomorrow needs to understand the changing business *context* – the business risks and opportunities of social, political, cultural and environmental trends. They will need to know how their sector and other actors (regulators, customers, suppliers, investors, NGOs) are responding to events and trends. These leaders will need to be able to factor social and environmental trends into their strategic choices.

The second cluster of knowledge and skills is around the ability to lead in the face of increasing *complexity* and ambiguity. The challenges and opportunities that these issues and trends present are by definition complex – there is often little certainty or agreement both about their precise nature and the response that is required. Leadership in these circumstances requires a range of discrete skills, including the ability to be flexible and responsive to change; the ability to find creative, innovative and original ways of solving problems; the ability to learn from mistakes; and the ability to balance shorter and longer-term considerations. Future leaders will also be required to understand the interdependency of actions and the range of global implications that local level decisions can have, as well as the ethical basis on which business decisions will be made.

The final cluster of knowledge and skills is around *connectedness* – the ability to understand the actors in the wider political landscape and to engage and build effective relationships with new kinds of external partners. For different businesses this can mean regulators, competitors, NGOs and/or local communities. The mindset with which current leaders are groomed does not encourage productive engagement with partners outside the organisation. For example, leaders receive plenty of training in negotiation skills, but on the whole lack the skills for engaging in effective dialogue and partnerships. To survive and thrive, the global leader of tomorrow needs to be able to identify key stakeholders that have an influence on the organisation, understanding at the same time how the organisation impacts on these stakeholders. Senior executives will need to engage in effective dialogue in order to build productive partnerships with internal and external stakeholders.

The previous insights are largely echoed in a report by HayGroup (2011), which argues that the strategic thinking and cognitive skills leaders will need to navigate a gigatrend world are unprecedented. The task is so enormous that it is beyond the power of one single individual to accomplish, making collaboration among a range of different people and perspective essential even at the stage of conceptualising challenges. As well as being multilingual, flexible, internationally mobile and

adaptable, and culturally sensitive, future leaders will also have to be collaborative and good conceptual and contextual thinkers. They will need outstanding cognitive skills to balance the competing demands of financial success, social responsibility and environmental custodianship. Leaders must also act as change agents, advocating environmentally responsible business practice within and outside their organisations, forging new levels of intra-and inter-company collaboration in order to encourage shared solutions.

Clearly, this suggests that executive development programs will accordingly need to evolve their content and structure to foster leaders who are not only technically competent, but also emotionally intelligent, ecosystem conscious, and comfortable making rapid strategic decisions under highly uncertain conditions. Intensive experiential exercises which foster team building under pressurised conditions clearly have a prominent role here. In terms of content, a 'return' to the humanities and social sciences may be in order, supplanting (for more senior executives at least) foundational and genuinely research-based disciplinary knowledge for the more mechanical content typical of business functions (marking, strategy, etc.). A third inclusion would be to incorporate genuine dialogic conversations (Bohm 2004) into program structures in order to promote a mutual understanding of the parameters of reality attached to individuals within each unique executive cohort. This dialogic understanding could then be practically applied by program graduates by treating organisational boundaries within their relevant ecosystems as highly permeable, thus enabling effective communication between ecosystem members to promote understanding, learning, and, ultimately, genuine sustainability.

Discussion Questions

1. How do the concepts of organisational *agility* and *resilience* relate to the global gigatrends?
2. What are some outstanding examples of companies which are *already* acting in ways which exploit some of the business opportunities created by the gigatrends?
3. Identify some companies and sectors which seem *most vulnerable* to the unfolding gigatrends.
4. Discuss the *potential contradictions* between short-term pressures from the financial markets and the type of long-term resource commitments necessary for organisations to position themselves advantageously with respect to the gigatrends.
5. Based on your understanding of the gigatrends and their interactions, create an *investment portfolio* for a hypothetical 30-year trust fund.

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