MOSTLY MISSING THE POINT: BUSINESS RESPONSES TO CLIMATE CHANGE

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Few would argue that the response of businesses to the massive challenge posed by climate change is currently adequate, but the same might be said of other groups in society. For example, while by no means a sufficient response, trends in UK energy efficiency in the business sector over recent decades have been far better than in people's domestic lives.[1] Is it realistic to consider that the business community might play an important role in creating a sustainable society in carbon terms? To the extent that it is, what lies behind current difficulties and what work needs to be done to enable higher quality responses by business people?

Some would say that it is unrealistic, that the business community is an active promoter of the problem. For instance some argue that there is an explicit anti-environment conspiracy currently active at senior levels in some US corporations.[2] Others have argued that the responsible management approach promoted by business leaders, for instance at the Rio convention, can be seen as a deliberate attempt to subvert the emerging agenda.[3] The evidence that this is the case for some people within the business community is strong.

But can we generalise from these extreme, perhaps even sociopathic, cases to the whole business community? I suggest not. To draw another parallel with the domestic sector, the UK fuel protests of September 2000 could be seen as a successful populist attempt to undermine a key environmental policy (carbon taxation) of a duly elected government, but no-one seriously argues that civil society is therefore a sworn enemy of a sustainable society. We rather recognise that civil society is complex, that people think and behave in different ways, not always consistently, that they often do not use their power with appropriate understanding of the wider consequences of their actions.

An archer once explained to me that the colloquial English term 'cock-up' refers to the directionless and weak progress of an arrow wrongly inserted into a bow with the single 'cock' feather uppermost. I suggest that this is a good analogy for business activity on climate change, that 'cock-up', caused by businesses mostly missing the point, is at least as strong a narrative as 'conspiracy', and that it leads to more hopeful strategies for change.

I have worked on environmental issues for many years in the business sector and have not encountered any overt hostility to environmental work at all, certainly not in my various encounters at boardroom level. On the other hand, I have encountered a lot of doubt as to whether an issue such as climate change has anything to do with business, doubt which I see as symptomatic of a serious failure of understanding of the situation. For instance, the environment director of one company once told me, in all seriousness, that managing issues like climate change was no different to managing health and safety

Again, however, such failures of understanding are by no means limited to the business community. In my work outside the business world, similar doubts are raised

by academics, by senior managers in local authorities, by ordinary citizens, even by some environmental activists.

My purpose in this chapter is not to draw conclusions as to the motives of senior business people but rather to explore the evidence that the business community is mostly missing the point and so failing to grasp the issues adequately. I will then move on to discuss some of the ways in which this might be addressed.

THE DOMINANT BUSINESS-AS-USUAL ASSUMPTION OF THE CORPORATE WORLD

The late 1980s: environmental concerns change the context of business

Three tragedies of the 1980s had a major effect on environmental practice in businesses. The first of these, the Chernobyl nuclear accident of April 1986, was not properly speaking a business tragedy at all, occurring as it did within the old USSR. Nonetheless the impact on the context of business was very significant: the public mood on environmental issues changed significantly for a while with the relative success of the Green Party in the European elections of 1989 and the more general rise in support for environmental pressure groups around that time arguably having been significantly facilitated by that event.

Directly in the business world, the terrible death toll that resulted from releases of methyl isocyanate at the Union Carbide plant in Bhopal, India in 1984 was followed a few months later by further (though happily not, on this occasion, lethal) toxic releases at the company's West Virginia plant. These incidents led directly to the adoption of the Toxic Release Inventory in the USA.

The Exxon Valdez oil spill in 1989 led to the adoption of the Ceres Principles for good corporate governance of environmental issues.[4]

The potentially beneficial side effects of these three otherwise shocking tragedies was reinforced by other events. The Brundtland report of 1987 brought the phrase 'sustainable development' into professional discourse. In 1988, UK Prime Minister Margaret Thatcher's Royal Society speech brought the issue of climate change into the mainstream political agenda. The negotiation of the 1987 Montreal Protocol for the reduction and then elimination of ozone depleting substances such as chlorofluorocarbons (CFCs) from industrial processes and consumer products was completed at around the same time.

Bringing the environment into business-as-usual: the early 1990s

The United Nations Conference on Environment and Development held in Rio in 1992, which was attended by 108 heads of state, showed how significant the issue was becoming. The outputs included the UN Framework Convention on Climate Change, which eventually led to the Kyoto Protocol for the control of carbon emissions.

Faced with what might have been the emergence of a radically new agenda, and stimulated to some extent, no doubt, by the business sector tragedies above, business

leaders participated in the Rio conference with, on the face of it at least, some energy. Indeed the predecessor to the World Business Council for Sustainable Development (WBCSD) was formed specifically to promote participation by business, alongside other sectors of society. The primary message of leaders of the business community at Rio was, you can trust us: we know how to manage things, these new challenges can be brought under managerial control.

Following the Rio Conference, practices broadly along the lines of the Ceres Principles quickly became the foundation of managerial responses. These included processes such as measurement, reporting, stakeholder engagement, allocation of responsibility at board level, clear delegation to managers below and adoption of environmental management systems such as ISO14001. These measures can be seen as extending mainstream management practice to the environmental agenda.

LOCK-IN AND THE HUGE MANAGERIAL CHALLENGE OF TRANSITION

So the response of the business community has basically been one of ‘business as usual’. In the change theories of leading organisational thinkers such as Chris Argyris and Donald Schön, this is sometimes known as a 'level one' response – one that applies the same 'mindset' or set of taken-for-granted assumptions to resolve an issue, thereby tending to block significant change. An example of a level one response would be a stressed executive who takes up jogging as a way of relaxing but is soon training hard to run marathons competitively: the behaviour is still conditioned by the same assumptions. But climate change requires that many underlying assumptions be questioned in 'level two' and higher responses so as potentially to allow responses to address the root causes of the issue.[5]

To demonstrate this point, it is worth considering briefly the crucial role that the technical and economic infrastructure of business plays in the interactions between human beings and the environment.

Climate sceptics sometimes say that it is crazy to imagine that mere humans could have a significant impact on the great planetary systems that regulate the climate. And were we to consider humans simply as social beings, that might perhaps be true. Deforestation, which is a major contributor to climate change, has been happening since the beginning of agriculture, but the capacity of a single human being or small group to clear land with their bare hands or with axes is quite limited. Add the chainsaw and the bulldozer to the picture, however, and organise people into large corporate systems, with economic incentives to clear land, to manufacture and sell equipment, to keep processes supplied with usable energy, and the potential for destruction becomes magnified many times.

With industrialisation, massive economic, technological, legal and sociological systems have quickly become dependent on each other and have imprisoned us as we have become dependent on them. To take an example, building roads leads to offices and shops being situated near them, increasingly on the periphery of towns rather than in town centres. This stimulates the market for cars: most of us know from experience that public transport works much better to and from city centres than between points

on a periphery. Cars last for many years: even in the UK the total fleet is still rising.[6] This means that people are increasingly able to decouple themselves from their communities by travelling further to work. This then drives the need for more roads. People's livelihoods – their needs as well as their greeds – become dependent on road building, car manufacture, petroleum extraction and distribution, etc.

Both shareholders and lenders want a profit on their investment in factories, roads, etc. Individual citizens come to depend on these profits to finance their retirement and governments depend on them to finance social services, to build hospitals, train teachers, bring the police officer to the scene of crime and so on. Indeed without the prospect of a profit for someone, even the investment needed to maintain our current systems – social as well as economic and technical – will not be forthcoming. But as these profits are in turn re-invested, these intertwined economic, technical and social systems become more and more complicated.

Such economic activity is dependent on use of fossil fuels to an extent that is rarely appreciated. For instance there is a very strong correlation between economic growth and the amount of work as measured by physicists – basically moving things from place to place – required in an economy.[7] More economic growth, more physical work. Since the basic laws of physics set limits to the efficiency with which free energy can be converted into physical work, more economic growth implies an increasing consumption of free energy. But the energy flows that are central to our economy are of course still largely sourced from fossil fuels. The International Energy Agency has projected an average 1.7 per cent annual increase in energy use to 2030, with over 90 per cent of the increased demand being met by fossil fuels.[8]

It doesn't take much of an interruption to that flow of energy to have a major impact on economic activity: the OPEC embargo of the early 1970s caused economic mayhem, and yet the flow of oil to the USA only fell by 5 per cent.[9]

So what are the assumptions that need to be challenged? These technical-economic systems have therefore become 'locked in', self-perpetuating, ever more complex, becoming ever more destructive. There is a very strong argument that continued growth in physical work, and therefore in economic activity, is not a realistic goal if climate stability is to be achieved. But the whole basis of current economic and business planning, completely and – I would say – unthinkingly assumes the opposite. So there is an immediate and huge challenge to the assumptions of the current economic model, in which the business community is completely entwined alongside government and the ordinary citizen.

THE STRATEGIC IMPLICATIONS OF CLIMATE CHANGE FOR BUSINESS

If this example is typical of the wider context, what are the particular points that the people I encounter in business might be missing when they see climate change as largely irrelevant? This is not the place to 'prove' the scientific consensus on climate change but rather to summarise the key points and then to consider how the climate

change agenda poses specific strategic risks (and perhaps opportunities) to businesses around the world.[10]

To summarise before looking in more detail, the physical infrastructure of the business world will be significantly affected by climate change and this will impact upon businesses' costs and competitive position as it is strengthened and renewed or as it fails. This is known as the adaptation agenda. In addition, as described above, the energy systems on which the current business model depends need to change very significantly and very quickly if there is to be any hope of bringing climate change under control and if completely unmanageable impacts are to be avoided. This is known as the mitigation agenda. Added to this, major diversion of financial capital and free energy will be required actually to make that transition, and this will also indirectly but very significantly affect the market for goods and services.

Note that both adaptation and mitigation actions are central to climate responses: they should not be considered to be in opposition to each other. Delays in the climate system (e.g. between hopefully rapidly reduced emissions of greenhouse gases and the impact on climate change some decades later) mean that climate impacts are bound to become more serious: adaptation is a necessity. On the other hand, unless we cut greenhouse gas emissions, impacts will spiral right out of control and threaten the very survival of our species amongst others: mitigation is a vital necessity.

Immediate adaptation pressures

The UK has done significant work on what climate impacts are likely to mean in practice.[11] For instance:

- One of the main impacts of climate change will be on rainfall. While the effects of this will differ around the world, in a country like the UK we are likely to see less rain in the summer, which will lead to more droughts.
- As a consequence of droughts, the ground is likely to become less absorbent. When rain does fall, it is likely to be more tropical in nature with sudden downpours which can then not easily be absorbed by the dry ground.
- This will lead to more flooding both from swollen rivers and from inadequate storm drainage. A third form of flooding will result from increasing sea levels as the sea warms and expands and – in due course – as land ice near the polar regions melts.
- Another impact is likely to be increased wind speed. When this occurs alongside heavy rain, a phenomenon known as 'driving rain' occurs: this has great capacity to penetrate building cladding.[12]
- There will also be an increasing number of significant heat stresses: the summer 2003 high temperatures across Europe, which killed 30,000 people in Europe, blocked river and road transportation, disrupted essential services such as hospitals and which led to nuclear power stations having to close down, could be attributed to climate change with some statistical confidence that this was not a chance event.[13]

While impacts in other countries will be somewhat different in some respects, nonetheless they are likely to be just as significant. For instance, hurricane activity is being studied carefully and – although it is too early to say that any single incident,

such as Katrina or the 2004 hurricane season – is related to climate change and not just the result of natural variation, a greater number of such events is both expected and observed.

These will only be relatively early 'discomfort and damage' impacts, which will occur, say the IPCC, if temperature rises do not exceed 2º C: if temperature rises go beyond this, however, then we will move into the 'disaster' zone, with much increased likelihood of extreme weather events with 'disastrous consequences for some'. If still unchecked, then we will eventually find ourselves in the 'catastrophic' zone, with 'irreversible damage to global ecosystems'.[14] These scenarios will not look any more comfortable for investors than for the rest of us.

People often talk of the corresponding economic benefits that might accrue from climate change, at least in the short term. These are not complete fantasy: for instance a successful UK wine producer has tracked temperatures over some years and puts his vineyard's economic viability down to the extended warming effect of climate change.[15] But these can be exaggerated. For instance, the impact of higher temperatures on UK tourism patterns is seen as an opportunity, but the evidence was reviewed in a recent study and no link between changes in weather and holiday plans could be identified. In addition, the impact on the landscape will be great and costs seem likely to rise, for instance to counter the erosion impact of torrential rain on footpaths.[16]

It seems clear that economic impacts will be significant and that they potentially affect all areas of the economy. Indeed in its excellent Governance advice on climate change, Ceres stressed that all sectors of the American economy are potentially at risk.[17]

Early signs of the cost of impacts

Such predictions are already being supported by the observations of major reinsurance firms such as Swiss Re and Munich Re, two companies who demonstrate through their analysis over many years that the business community is not altogether 'missing the plot', that the best business minds can indeed contribute to the great endeavour of responding to climate change. Analysis by Munich Re makes particularly sobering reading.[18] Climate-related economic losses are on an exponentially rising trend. 2004, dominated by extreme weather events, was the costliest year yet for the insurance industry with losses that exceeded US$ 41bn (this was before Hurricane Katrina, where the losses appear likely to be far greater). There are other factors besides climate change at play behind these numbers, including changes in settlement patterns, but the rising trend in extreme weather events is entirely consistent with the IPCC's warnings.[19]

Businesses' ability to insure against catastrophic financial losses is already reducing as insurers become less willing to offer cover to assets in potential flood plains. And yet the UK's Carbon Trust has identified that many of the financial risks can be significantly reduced, provided that timely action is taken.[20] The development of a competent insurance market that is skilled not only in assessing exposure to risks but

also in assessing a management team's ability to respond to them is therefore of strategic importance to the business sector.

The required mitigation actions

The possible points at which climate impact transitions shift from 'discomfort and damage' to 'disaster' and beyond might occur is not yet clear. However it is widely agreed that if climate change is to be contained at anything like a safe level, then major cuts in greenhouse gas emissions are required. The UK target is to cut emissions by 60 per cent by 2050, which was said by the UK's Royal Commission on Environmental Pollution in 2000 to be consistent with a contraction and convergence approach to stabilising atmospheric CO2 at 550 ppmv.[21] While such a reduction would be far beyond Kyoto, recent scientific advice is that stabilisation at well below that level will be required to prevent major impacts and that much more aggressive reductions are required.[22]

A 2005 study by the UK's Tyndall Centre for Climate Change Research showed that it is feasible in principle to make 60 per cent cuts in carbon use in the UK's economy. Indeed a variety of routes are possible to this end, including more aggressive investment in low-carbon sources and in carbon capture and storage or by contrast a high energy efficiency route with less investment in low carbon generation. It seems possible that these approaches could be combined to achieve greater savings than 60 per cent and it seems likely that other nations could also potentially make large savings. This implies that the climate change dice are not yet finally cast.

But the choices required to make even these transitions are not easy. In the UK, for instance, rapid rises in carbon from air and ship transportation mean that these sectors could potentially use almost all of the carbon emissions from a 40 per cent economy, and yet there is currently no governmental or intergovernmental mechanism for the control of emissions from either. To the extent that this problem remains unaddressed, the reductions required for the rest of the economy move from possible but challenging to extremely punishing. If it is addressed, however, the impact on corporate supply chains in a globalised economy will surely be huge. [23]

Implications for consumer spending

In addition, actually making these transitions will not be easy. A considerable investment of financial capital will be needed to finance any transition, for instance. The lifetime of a new aircraft from manufacture to disposal, for example, is several decades, longer if the design lead time is taken into account. Even if a new much lower-carbon aircraft were to be feasible (not a current likelihood), a massive flow of financial capital would be needed to retrofit or replace the existing fleet. Even energy efficiency measures and adaptation measures require financial investment, particularly when retrofitted.

There will also need to be a flow of free energy: a windmill produces four times as much energy as it uses over its life but the investment comes before the savings; the same is true of energy efficiency measures: we must invest energy as well as capital if we are to save carbon. This investment of energy must occur as the economy as a whole cuts its use of carbon-based energy very dramatically. Energy and economy specialists Malcolm Slesser and Jane King, for instance, have calculated that the transition to a low-carbon economy requires a huge diversion of energy from use for consumption (e.g. on consumer goods) to the creation of infrastructure.[24]

The implication is that the pattern of consumer spending will be significantly affected with knock-on consequences for markets in goods and services.

Taking stock

Taken together, the various aspects of climate change clearly pose radical challenges to the competitive environment of many, if not most, businesses. Neither the adaptation nor the mitigation agendas look good for investors, nor for the business executives whose job it will be to keep them happy in years to come. And yet the consequences of ignoring them seem much worse.

ASSESSING HOW FAR LEADING BUSINESSES GRASP THE AGENDA

My direct experience suggests strongly that very few people in business (as elsewhere) grasp the scale of the challenge. I wondered how to test this, to move beyond personal experience to third party sources. I decided that this could be most straightforwardly done by focusing on businesses that are regarded by their peers and by external critics as doing relatively well on corporate responsibility and environmental issues. If even these companies miss the point, it is surely fair to conclude that the laggards will be far worse.[25]

I chose a sample of businesses that had been awarded, or shortlisted for, significant environmental or sustainability prizes in 2004 or 2005. In the UK I chose businesses that had been awarded prizes by Business in the Community in 2005, or which had been shortlisted for awards for their environmental or sustainability reporting by ACCA (the Association of Chartered Certified Accountants) in 2005. In the USA I selected from businesses that had been shortlisted for similar reports by ACCA and Ceres in 2004 and from those that had scored well (above 70 out of 100) for their governance on climate change issues by Ceres. This produced a list of companies that is skewed towards the USA and the UK but nonetheless came from a wider range of countries, including Germany, Canada, Japan and Australia.

I then looked at their corporate position on climate change. This is facilitated by the sterling efforts of Paul Dickinson and his team at the Carbon Disclosure Project in the UK. This is an organisation that acts on behalf of institutional investors (pension funds etc) with total assets currently in excess of $31 trillion. Each year it sends a simple questionnaire to leading companies worldwide – to 500 in 2005. Company responses to the nine questions offer an insight into their grasp of these issues.

But not every leading business responded to the CDP 2005 survey. In selecting the companies, I left non-respondents out of my analysis, thereby further skewing my analysis towards businesses that are likely to perform relatively well. I added a further two businesses (Tesco and Barclays) that had not met the other criteria but which are well-known and which come from under-represented sectors (food retailing and banking). This left me looking at 20 companies from a range of sectors.

The companies I looked at emit around 230m tonnes of carbon dioxide per annum from direct operations; the figure would be much higher if their supply chain impacts (for instance Tesco), or the impact of their products in use (for instance the oil company Statoil) were included.

Assessing their strategic understanding of climate change

With this deliberately overwhelming skew of my sample in favour of businesses that might be expected to perform well, and with the scale of the use of carbon of some of them, it is surely fair to conclude that if many of these businesses do not have a strategic grasp of the climate change agenda, then the business community as a whole is 'mostly missing the point'.

As a minimum, I was looking for these businesses to show that they considered the practical implications of climate change impacts and climate change mitigation measures on their current business model. The CDP survey makes this relatively easy. For instance, the first question invites managers to say whether they perceive that climate change itself, the policy responses to it, and/or adaptation responses to climate change represent commercial risks or opportunities to the company.

Corporate strategy processes often include a review of contextual trends that are captured in the mnemonic 'PESTLE': Political, Economic, Social, Technical, Legal and Environmental.[26] The brief overview above suggests that climate change might easily affect most of these trends, and so really ought to be picked up and assessed by a strategically competent organisation. This simple question is therefore a strong test of a company's wider strategic grasp. I was looking for evidence, both from this question and from their responses to other questions, that they grasped the agenda.

What I found

Adaptation

Looking to the specifics, what about adaptation to climate impacts? The situation is clearly generally poor. Work by experts in the UK in 2003 found that there is a significant risk of building collapse with consequent loss of life and yet that climate

adaptation hardly featured on the corporate agenda in the construction sector, neither among clients nor among building contractors. My own work in the construction sector, carried out in parallel at the same time, came to exactly the same conclusion: the importance of climate impacts is very rarely recognised.[27]

The 20 businesses that I looked at were hardly any better, with eleven of them not even mentioning climate impacts as a potential risk. These included DuPont, despite its substantial interests, for instance, in building design and construction. DuPont's Chairman and CEO, Chad Holliday, said in 2005 that he 'believes that there is a need for prudent action'.[28] While his speech is impressive on the mitigation side, the climate change adaptation agenda does not get a mention.

Norwegian energy company Statoil did not mention the impact agenda, despite vital facilities such as its Mongstad and Kalundborg refineries being near sea level and therefore potentially vulnerable to flooding. Neither did food retailer Tesco, despite likely massive climate impacts on the production and distribution of food. Metals company Alcoa, despite its statement that 'the issue is serious and that urgent action is required now' did not see the need to assess the risks to its own facilities, many of which are near rivers.

Only nine of the 20 mentioned impacts. At the better end, British Telecom and National Grid Transco obviously had at least some grasp of the operational implications, particularly of wind on cable networks. However most of the nine mentioned adaptation to impacts only superficially, often parking the issue in the 'too hard' tray. For instance Barclays mentioned that 'the challenge of climate change is to interpret the impact on the whole range of businesses we support', but there is no sign that it has actually done so, beyond the most general levels. And yet a bank's assets are secured by the future asset values of the businesses in which they invest. Those by a river are obviously less secure in terms of asset values, than those in a spot secluded from the wind on higher ground. Bankers Citigroup do appear to grasp the generic risks, but not to have worked through the detail.

In the metals sector, the 'potential impacts of actual changes in the climate on Alcan's business have not been quantified and without better information on the likely local impacts of changed weather it would be very difficult to do so'. This is highly questionable: making sense of uncertain futures is exactly what scenario planning was created to address and in any event one can reasonably easily assess a plant's or product line's exposure to known risks such as flooding, water shortages and high wind without necessarily having the whole picture. Bayer of Germany recognises that there will be risks and opportunities but does not analyse them.

Mitigation

So the strategic grasp of the adaptation agenda appears weak, even for these leading companies. On the face of it, the picture on reduction of carbon emissions is much better: all 20 businesses had quantified carbon emissions to at least some extent.

Indeed a few clearly grasp that this is a strategic issue. Four businesses stand out in particular. German company Bayer 'is working on the assumption that the requirements for reducing greenhouse gas emissions will be tightened even further' and aims to lower emissions by 50 per cent from 1990 levels by 2010. Du Pont had reduced its CO2 emissions by 72 per cent from 1990 levels by 2003 and is clearly planning for a radical change in energy use by business. British Telecom has a similarly impressive record, 'actively pursuing emissions reductions strategies' including much greater production and use of renewables. Statoil is 'preparing for a carbon-constrained economy and is engaging in the development of non-fossil energy sources and carriers. … climate change strategy is an integral part of our business strategy.'

Three other businesses, all heavily dependent on energy, are showing encouraging signs of assessing the strategic agenda. Aluminium manufacturer Alcoa states that it sees the importance of climate change, had achieved a reduction of over 25 per cent reduction from 1990 levels by 2003 and plans to maintain this despite planning a 40 per cent increase in production by 2010. Toyota also recognises that the marketplace is changing and commits to become a 'leader and driving force'. Mining company Anglo-American recently surveyed the significant risks and opportunities that it acknowledges will face it in a carbon-constrained world. While most surely have far to go, at least these companies seem to recognise that this is a major issue.

However although mitigation is to some extent on each of the remaining 13 companies' agendas, even here the lack of strategic grip is usually only too apparent. Food retailer Tesco, for instance, has clearly taken a number of steps to help reduce incidental energy use, setting up travel clubs for staff, trying to make use of space on empty lorries, etc. But the food sector is the third biggest energy user in the UK economy, with supermarket refrigeration alone accounting for a whopping 5 per cent of UK electrical energy consumption, and this means that Tesco faces major strategic challenges if the 40 per cent (or less) UK carbon economy becomes a reality.[29] There is not a hint of this in their response to CDP's questions.

National Grid Transco has achieved good reductions, but the implications for its transmission networks of the various options for low-carbon electricity generation is not mentioned either as risk or opportunity. Alcan sees the risks to its business model as being increased costs (aluminium is one of the most energy intensive of all sectors), but its targets for reduction are modest and the more fundamental question of how it might gain access to the energy that its current business model takes for granted in a significantly carbon constrained world is not discussed. Neither bankers Citigroup nor Barclays seem to recognise that the profitability of the businesses and projects in which they invest will be significantly impacted by the move to a much lower carbon economy. And so on.

CONCLUSIONS: MOSTLY MISSING THE PLOT

It is good to acknowledge that at least some do seem to get the plot and appear to be engaging with the issue in a thought-through way. British Telecom appears to have a grasp of both the adaptation and mitigation agendas. Others, particularly Du Pont,

Bayer and Statoil grasp the mitigation agenda. National Grid Transco seems to understand the adaptation agenda reasonably well. There is good practice on one or the other dimension in some of the other 15 businesses, including, but not limited to, those mentioned above.

However the analysis clearly shows that most companies, even at this level, do not really recognise that business-as-usual is not a dish that is on the strategic menu any longer. If any companies 'get it', these 20 surely should. But the majority are still framing the issue in a vaguely corporate-socially responsible way and do not see the issue in its strategic gravity. While they are all applying the sound management techniques introduced after the Rio convention – they routinely measure, report, have management systems, engage with communities, have board level sponsorship, etc – even these practices, far ahead of many, do not seem to help them grapple with an issue of this magnitude and urgency. Indeed it may be that these processes do not help at all, but rather hinder, in so far as they might give the illusion of control and of adequately engaging with the tremendous challenges that we face. Both adaptation and mitigation have the potential to stop the economic show, neither can be seen as optional, but few seem really to grasp this, with grasp of the adaptation agenda being particularly weak.

Japanese office equipment supplier Ricoh puts it bluntly: 'We do not think that climate change represents commercial risks in terms of business activities'. Unfortunately, Ricoh's analysis ignores the vulnerability of its operations to impacts altogether. While no doubt competent in its operations, the company positions carbon reductions as being attractive to customers, rather than as a survival necessity, but makes no effort to prove the point.

The broader business community

If this is the position of 20 of the world's leading edge companies, what of the mainstream business community? While the UK's Confederation of British Industry (CBI) published statements in 2005 supporting the national target of 60 per cent carbon reductions, the emphasis of its comments is towards security of energy supply, avoidance of cost penalties and of what it regards as over-regulation. The tone is of supporting the general good rather than focusing the government's attention on what it regards as a major and pressing strategic priority. It argues that the business community is a relatively low direct emitter of carbon.[30] Its evidence to the UK's Stern Committee on climate change economics at around the same time barely mentions the cost of climate change adaptation, and when it does mention climate impacts it does so in terms of the highly questionable potential benefits rather than the considerable costs.

Putting this in context: broader public grasp of climate change

This should not surprise us too much. Businesses are made up of ordinary people, and the vast majority of the population, in the UK at least, would perform just as badly – indeed probably much worse. While almost everyone has heard of climate change, 85

per cent think it is happening and 71 per cent think that humans are causing it, only around 15 per cent see it as a pressing danger that needs to be dealt with now, by our generation (2001 figures).[31] Putting it this way, it is clear that businesses can usefully be seen as made up of people who are broadly like the rest of us.

IMPLICATION: THE BUSINESS SECTOR IS NOT YET READY TO LEAD

The implications are obvious. We cannot rely on the business community to lead transformation, even to be able to offer meaningful advice to government or each other, if their understanding of the agenda is as limited as it appears to be. Stakeholder-led processes are unlikely to work if the stakeholders do not grasp the agenda, even at the very top of the tree. Do not expect businesses to drive change down supply chains if even those at the top do not really understand what is going on. Beware of advice from business leaders unless you are sure that they are among the few who have grasped what is going on. When speaking to members of the business community, never take their understanding for granted. For they are no other then the ordinary person in the street.

THE AS-YET UNREALISED POTENTIAL OF THE BUSINESS COMMUNITY

While this analysis should dispel any fond delusions that the business community yet has the capacity to lead responses, I still believe that it is potentially a great place for change agents to work on the climate change agenda. The transition to a low-carbon economy can surely not happen without business people. And their support may be closer than previously. For instance in June 2006, as part of a wider consortium, Tesco did approach the UK Prime Minister Tony Blair, suggesting seven areas for government action on climate change.[32]

The chapter ‘Clearing the Pathways to Transformation’ (by Susan and David Ballard in this volume) presents a research-based summary of what we see as the vital elements of human change in response to climate change. The notion of ‘agency’ or the ability to do something personally meaningful in response to what is a massive, overwhelming agenda is key. We argue that how people define ‘agency’ changes as they engage more fully with the agenda. Early in the engagement process, agency is defined in terms of meeting other objectives that an individual sees as meaningful, whether this be increasing sales or reducing costs, gaining a knighthood for good works, protecting one’s investment or maintaining services to the community (e.g. hospital or education services) about which one cares deeply.

As a person's engagement deepens, with consequent increases in awareness, ‘agency’ (doing what is personally meaningful) is increasingly defined in terms of making an appreciable impact on the issue of climate change itself. But however it is defined, without a sense of 'agency', of being able to engage in a way that they find personally meaningful, people will not engage.[33]

There are very good reasons why ‘agency’ interpreted in both ways is unusually present in the business community. At the entry level the adaptation agenda, potentially provides a clear set of easy-to-understand challenges to the bottom line and to services. Steve Rayner, Professor of Science and Society at Oxford University

and a sociologist who has written extensively on environmental issues, explained this to me when I met him in 2002: if you are responsible for a new project – say a new hospital or a new factory – it is relatively easy to assess risks of flooding, of high winds and driving rain, and the like. If these issues are thought though, they can usually be addressed, at least for the lifetime of the building. This means that services (e.g. health services) can be provided, investment values don't collapse, profits can be maintained. This offers very clear agency at the entry level.

If you are a hospital administrator, and are building a hospital with potential climate risks, you will probably only encounter this agenda once in your career but if you work in business in the construction sector, say, you encounter it again and again. Not only can your own climate risks be reduced, but it is also possible to help your client organisations, as a commercial service, to recognise them and address them. This means that the business community can potentially create the conditions for deeper change.

To focus on adaptation runs the risk, of course, that people might become complacent, that they might ignore the need for mitigation, but Steve Rayner argued, and my experience in working with his advice has been consistent, that the opposite can also be true if the process is well designed and supported. As people explore what climate change might mean for an investment, they improve their understanding of its broader implications. They find that they have some, albeit limited agency, that they can do something meaningful in response. That potentially opens the floodgates of awareness – and these are hard to close again. As engagement deepens, the search for agency can easily shift to the mitigation agenda. My own experience supports Steve's conclusions.

At this deeper level of mitigation agency, there is a difficulty: if total carbon emissions were 7.2 billion tonnes of carbon in 2004 (figures from Vital Signs 2005), and if emissions from an economy such as the UK were only around 2 per cent of that figure, how can any single project offer meaningful reductions? The search for agency on climate change itself is much more daunting; significant scale is needed and this needs a multiplier effect from change initiatives.

Here again the business world offers significant possibilities for agency and therefore for change. It is a paradoxical truth that it is just when the largest damage is possible that the greatest possibility to do something meaningful in response to climate change can be found. Engineers can already design and build structures with very low carbon footprints indeed: the Velux company's UK Headquarters in Kettering, for instance, was built with around 20 per cent of the carbon footprint of a typical building, was built quickly and more cheaply than a typical design and has very high occupancy satisfaction measured in terms of absenteeism.[34]

The change agent who works in business is in a potentially key role, able to bring these options to the scoping discussions at the framing of the project and to do so over and over again. Such projects are not just potentially meaningful in terms of the direct carbon savings but can also offer the taste of agency and of association with other people to a wide stakeholder group.[35] If supported in action through a difficult transition, the people involved in such processes often become champions who work to limit and reverse climate change. In time – and it takes time, for this is a complex agenda – some of these champions will gain the depth of understanding that will

enable them to become truly effective. This implies that the process of major investment can potentially act as the crucible of much wider social change.

This is a credible strategy for social change, and the business community could be central to it. And yet the analysis earlier in the chapter suggests that the number of business people who have the capacity to lead such processes remains very small.

How might this potential be realised, how might this hypothesis be tested? Due diligence and risk management processes during the investment process may be the way in, with the financial sector being key. If the Barclays and the Citigroups of this world are exposed to unassessed risks, but basically understand how to investigate risk and manage it, then this is potentially a rewarding place for change agents to focus attention. Let them ask their clients whether they have assessed climate risks and whether they have managed them, let them ask searching questions about companies' resilience to a low-carbon economy and call for this capacity to be enhanced as a condition of investment. Let the wider change community in the governmental sector, in NGOs and in education and more widely focus awareness efforts particularly on such moments when action is easy, working with the pragmatism of the business community rather than against business people.

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[1] Source: UK Department of Trade and Industry Energy Consumption Tables, Table 1.4: Final energy consumption by final user (1) 1970 to 2005. Accessed from http://www.dti.gov.uk/energy/statistics/publications/energy-consumption/overall-tables/page17954.html, 7th September, 2006.

[2] Robert F. Kennedy Jr, 2004, Crimes Against Nature, Penguin, London,

[3] Nick Mayhew makes this point in his 1997 article 'Fading to Grey: the Use and Abuse of Corporate Executives' 'Representational Power' in R. Wellford (ed.) Hijacking Environmentalism: Corporate Responses to Sustainable Development, London, Earthscan.

[4] www.ceres.org. Ceres is a national network of investment funds, environmental organizations and other public interest groups working to advance environmental stewardship on the part of businesses.

[5] More on level two change can be found in Chris Argyris and Donald A. Schön (1995), Organizational Learning II: Theory, Method and Practice, Reading, MASS, Addison Wesley.

[6] The number of cars on the UK's roads increased by 68 per cent from 1980 to 32 million in 2004, with the rise being steady throughout apart from a brief period of stability during the early 1990s. This shows that even more than a century after the first cars came onto the UK market, end-of-life withdrawals from the car population are still below the number of new cars being produced each year. Source: Transport Trends, 2005 edition, page 13. Department of Transport, UK.

[7] Malcolm Slesser and Jane King, 2002, Not by Money Alone: Economics as nature intended, Charlbury, Jon Carpenter Books, page 64 and Appendix 2.

[8] International Energy Outlook 2002, quoted in Vital Signs 2003-2004, Worldwatch Institute, p. 34.

[9] James Howard Kunstler (2005) The Long Emergency, page 46, Atlantic Books, London.

[10] A good overview of climate change and of its economic impact is provided by the UK Government's Stern Review of the Economics of Climate Change in its 2006 discussion paper, 'What is the Economics of Climate Change?' and in the associated technical annex. These are available at www.hm-treasury.gov.uk/independent_reviews/stern_review_economics_climate_change/sternreview_index.cfm. A critique by Ian Byatt and others which summarises some of the most common sceptical arguments is also available on this site, as is Sir Nicholas Stern's crisp response to this critique. The overwhelming extent of the scientific consensus is summarised in 'The Scientific Consensus on Climate Change', a short article by Naomi Oreskes, Science, Vol 306, p. 1686 (3.12.2004).

[11] This work is co-ordinated by the government-funded UK Climate Impacts Programme, www.ukcip.org.uk.

[12] The likely impact of climate change on UK buildings has been assessed in some detail by scientists at the UK's Building Research Establishment: Sanders, Chris H., Phillipson, M.C. (2003), UK Adaptation Strategy and Technical Measures: The Impact of Climate Change on Buildings, Building Research and Information, Special Edition, July 2003.

[13] Sir David King, the UK Government's Chief Scientific Adviser, speaking at the Greenpeace Business Lecture in the UK in 2004. His speech may be downloaded from: http://www.greenpeace.org.uk/contentlookup.cfm?CFID=5264391&CFTOKEN=79794930&ucidparam=20041013100519. Copies of his slides are available from http://www.ost.gov.uk/about_ost/csa.htm.
[14] See Grubb, Michael (2005), The Climate Change Challenge: Scientific Evidence and Implications, The Carbon Trust, page 17, which summarises the IPCC view on future scenarios. Available for download from www.carbontrust.co.uk/publications/publicationdetail?productid=CTC502
[15] Talk given by the proprietor of the Camel Valley vineyard, Cornwall, UK, August 2005.
[16] McEvoy, D., et al., Climate Change and the Visitor Economy: Challenges and Opportunities for England's Northwest. Sustainability Northwest (Manchester) and UKCIP (Oxford), 2006.
[17] Cogan, Douglas G. (2006), Corporate Governance and Climate Change: Making the Connection. Available for download from www.ceres.org/pub/
[18] Response can be downloaded from www.cdproject.net/response_list.asp?id=3&letter=M
[19] Data from Vital Signs 2005, p. 51, published by the Worldwatch Institute. Total losses, including those uninsured, were the second highest ever at almost US $105
[20] Carbon Trust report on Business and Climate Change.
[21] Energy: The Changing Climate (2000), the Royal Commission on Environmental Pollution's 22nd Report, available for download from www.rcep.org.uk/newenergy.htm
[22] This was the conclusion of an international scientific conference held by the UK's Met Office in Exeter in February 2005. The UK Government's report of the conference is available for download from www.defra.gov.uk/environment/climatechange/internat/dangerous-cc.htm
[23] Report is available from www.tyndall.ac.uk/media/news/tyndall_decarbonising_the_uk.pdf
[24] Slesser, Malcolm; King, Jane (2002), op. cit. See Chapter 10 in particular.
[25] Research published in Dunphy, Dexter et al (2003), Organizational Change for Corporate Sustainability, London, Routledge. There appears to be a clear hierarchy of responses with the type of activity undertaken by these leading companies indeed towards the top end.
[26] See www.strategy.gov.uk/downloads/survivalguide/skills/s_pestle.htm for an explanation.
[27] See Sander, C.H. and Phillipson, M.C. , op. cit. See also Ballard, D.I. (2005, Using Learning Processes to promote change for Sustainable Development, Action Research, 3(2), pages 135-156.
[28] http://ap.stop.dupont.com/Media_Center/en_US/speeches/holliday_09_17_05.html, accessed 31st May 2006.
[29] Estimate by Doug Marriott, UK retail energy expert, details from MarriottUK@aol.com.
[30] 'Powering the Future: Enabling the UK energy market to deliver, November 2005.
[31] Source DEFRA. (2001). Survey of Public Attitudes to Quality of Life and to the Environment 2001. London: Department of the Environment, Food and Rural Affairs.
[32] The letter, from the Corporate Leaders Group on Climate Change, may be found at http://www.cpi.cam.ac.uk/bep/clgcc/downloads/pressrelease_2006.pdf (7th July 2006). Note that this letter concentrates entirely on the mitigation agenda, misses most of the macro-economic risks and does not mention the adaptation agenda at all.
[33] This has been observed by many researchers. The best summary of the argument is perhaps given in Macnaghten, P., Grove-White, R., Jacobs, M., & Wynne, B. (1995). Public Perceptions and Sustainability in Lancashire. Lancaster: Lancashire County Council, 1995, œ10.00.
[34] The performance data were given by Preben Gramstrup, Head of Group Facility Management at VKR Holding A/S (Velux's parent company) in a presentation at the University of Bath in December 2003. Further information on this innovative project may be obtained from the RIBA Journal, April 2002 and in the Architects Journal, May 2002.
[35] The Awareness, Agency and Association-based model of change is summarised in this volume in Susan and David Ballard's chapter, Clearing the Pathways to Transformation. It is also summarised in Ballard, D.I. (2005), Op. Cit.

ABOUT THE AUTHOR

David Ballard is Principal of Alexander, Ballard & Associates, a consultancy that focuses on strategy and human change for environmental sustainability. He has a prized mix of expertise, combining a strong background in business and a sharp strategic mind with a sophisticated understanding of change at the personal, organisational and social level which he applies to sustainability-related issues, climate change in particular.

Building on a London Business School MBA, David spent over 10 years in increasingly senior roles in Finance, Strategy and Marketing with the Royal Mail, Esso Europe Inc. and THORN EMI. At one stage he had responsibility for an income of over £400m per annum, exceeding all targets for income, profit and return on capital, etc. In 1990 and 1991, however, he made a radical career change to focus on environmental policy and improving corporate environmental performance. He began by becoming THORN UK's first Environment Manager, very significantly reducing greenhouse gas emissions and other environmental effects and also winning a series of national awards for environmental reporting.

He sat for some years on the British Retail Consortium Environment Committee. He was a founder member of ICER, the Industry Council for Electronic Equipment Recycling, and produced papers for THORN EMI and also for Friends of the Earth and WWF that were published approvingly by various parliamentary committees.

On leaving THORN, David worked as an Environmental Strategy Consultant with Aspinwall & Company until 1995. He was then invited to become a Director of Bath Consultancy Group, one of the UK's most respected organisational learning and strategic change consultancies. Here he deepened his ability to work with complex human responses to environmental issues. He was also a Director of the Swindon and Marlborough NHS Trust from 1993 to 1997, participating in their successful early PFI bid to develop a new hospital. In 1998-99, he worked with the Round Table for Sustainable Development to produce a report for the Deputy Prime Minister on the role of reporting on sustainability.

Since 1998, David has concentrated on the challenge of sustainable development, with a particular interest in strategies for human and social responses to issues such as climate change. He is experienced in working with both corporate and public sectors as well as with the scientific and voluntary sectors. As a sustainability consultant, he worked for several years for one of the UK's leading construction companies and is now highly respected for leading-edge policy approaches to behavioural change. Much of this work has been carried out with Hampshire County Council and other members of the ESPACE consortium (www.espace-project.org) and it is planned to continue until 2008 in partnership with significant public sector bodies in the UK and in Europe, focusing on how organisations can develop the 'adaptive capacity' needed to handle issues such as climate change and energy constraints.

Besides his consulting work, David also holds a part-time Senior Research Fellow position at the University of Bath, where he carries out research on sustainability issues and also teaches on its innovative MSc in Responsibility and Business Practice. In this role, he initiated, helped win and is currently project managing a substantial (£800k) industry : university joint project funded by EPSRC which aims better to understand how to encourage the rapid adoption of low carbon technologies.

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