

THE ROAD TO LONDON



PROFESSOR MICHAEL MAINELLI, Z/YEN

JAN-PETER ONSTWEDDER, THE LONDON ACCORD

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The Z/en Group

Introduction

Many people in the financial services industry have long-standing interests in environmental issues. Many have long had concerns about one of the greatest environmental market externalities, green house gas emissions. However, long-standing interests are difficult to translate into action when the principal tool at financial people's disposal is an abstract concept, the sources and sinks of financial markets and investment. Even more problematic, until greenhouse gas emissions are 'internalised' to markets, financial services people's efforts could only be 'at the margin'. Previous waves of interest in environmental issues, around 1970 symbolised by Earth Day, or around 1990 with ISO 14000, flooded, and then ebbed. Then, around 2004, climate change interest seemed to surge. People in financial services with environmental interests began to wonder if this third wave of interest might effect more change. Certainly as far as financial people were concerned, international environmental success was more likely to occur when 'all roads led to London'.

The London Accord began in the autumn of 2005. To help set the context - the Stern Review had been announced on 19 July 2005, but was an unknown quantity. Al Gore's film wasn't released until 2006. NGOs criticised financial institutions for not 'getting' the issue and not doing enough. Some of this criticism was fair, but much was unfair. Financial services 'get' most investments where the numbers add up. The metaphor we have used throughout the London Accord has been that: if your numbers add up, you can hide your light under 40 bushels and someone will find you in order to invest. If you're numbers don't add up, you can project your investment from a lighthouse and financial institutions won't pay attention. The question in the autumn of 2005 was, "do the numbers start to look like they're adding up for climate change investment."

The raw numbers didn't, but the prospect of carbon trading starting to bite indicated that major change was possible, particularly if the cost of CO₂e emissions was predictably above €30 per tonne. 'Internalising' into the world economy one of its largest, historic externalities could rock economies. Mankind might be looking at its greatest infrastructural change ever. Virtually all great infrastructural change over the past 200 years has been undertaken by the private sector – canals, railways, air travel, telecommunications, electrification, computing or internet roll-out. We make this point not to deny the importance of interaction with many other parties, such as government, researchers, policy-makers or third sector organisations, but to emphasise that the greatest efforts and investment are typically private sector activities. If climate change is solvable under the current economic system with the addition of effective carbon trading, it will be private sector decisions, investments and actions that will implement the bulk of those solutions. The UNFCCC report on financial flows (August 2007) estimates that fully 86% of total energy supply investment through 2030 will have to come from the private sector.

Early Connections

In the autumn of 2005, Gresham College, that 16th century 'open' institute in the centre of London, held a number of events which facilitated discussions between the Mercers' School Memorial Professor of Commerce, Michael Mainelli, and many other environmentally-aware people. Michael himself had a long-standing environmental background from research into environmental mapping in the 1970's at the Harvard Laboratory for Computer Graphics and Spatial Analysis through to the development of global mapping systems in the early 1980's (Geodat and Mundocart – the Google Earth's of that era) and on into early ISO 14000 work in the early 1990's. Since the early 1980's Michael had worked in the financial services industry. Since 1994 he had worked at Z/Yen Group, a commercial think-tank he co-founded to advance society through better decisions based on research, finance, technology and risk/reward analysis.

In many ways, the London Accord was born of Michael's frustration - frustration at the difficulty of getting 'joined-up' thinking among policy-makers, NGOs and investment institutions, as well as frustration that external perception of the financial services industry was that it didn't 'get' climate change when he felt the industry did. So the basic thrust of the London Accord was to help policy-makers and NGOs connect with genuine financial services thinking in order that their policies would be more in tune with private sector thinking and action, and therefore more effective at tackling climate change.

The basic idea behind the London Accord was to try and inject genuine investment research expertise into the climate change debate. An early draft proposal for the London Accord circulated around Michael's team at Z/Yen Group. Gresham College indicated its early support. This support is true to Gresham College's 400 year record of "New Learning", such as supporting the birth of the Royal Society and 'Natural Philosophy'. In late 2005 Forum for the Future began discussions with Z/Yen about the London Accord, and indicated its preliminary support. In early 2006, the City of London Corporation began to indicate that it would support a properly structured initiative. Many of the contributing investment institutions indicated their interest in early 2006. Then the London Accord hit paydirt. BP plc was prepared to 'second' their Global Head of Risk for Integrated Supply & Trading, Jan-Peter Onstwedder for the entirety of 2007, along with significant project support. With the commitment of Jan-Peter, who has a background in investment banking and finance, more potential contributors were convinced the London Accord would happen and momentum started to pick up significantly. Finally, in late 2006, the final core sponsor, the London School of Economics & Political Science lent its support and Reuters agreed to help provide an information conduit from the London Accord to a wider audience.

Framework

An early model for the London Accord was the Copenhagen Consensus. In fact, the Copenhagen Consensus was such a strong model that the name 'London Accord' consciously mimicked its predecessor. In 2003, Denmark's National Environmental Assessment Institute came up with an initiative to evaluate the costs and benefits of alternative public policy actions in a wide range of key policy areas. The focal ques-

Starting with a long list of 32 challenges facing humanity, the Copenhagen Consensus team focused on 10 they believed to be most promising; they didn't shirk tackling the genuine 'Biggies'. The core idea was to produce cost/benefit analysis for these 10 big challenges and have these analyses rated by eight leading economists (in the event, three of the eight were Nobel laureates). The 10 were:

- ◆ climate change;
- ◆ communicable diseases;
- ◆ conflicts and arms proliferation;
- ◆ access to education;
- ◆ financial instability;
- ◆ governance and corruption;
- ◆ malnutrition and hunger;
- ◆ migration;
- ◆ sanitation and access to clean water;
- ◆ subsidies and trade barriers.

The ideas behind the Copenhagen Consensus were championed by Bjørn Lomborg, director of Denmark's National Environmental Institute, and the author of the controversial book, *The Skeptical Environmentalist*. The Economist newspaper supported the idea and reported on a number of the challenges as well as the overall consensus in mid-2004. The team produced a 648 page book available online - *Global Crises, Global Solutions: Priorities for a World of Scarcity*. [Lomborg et al, 2004]

The Copenhagen Consensus team focused on 17 options for dealing with the 10 big challenges. The results were that these leading economists felt that public policy monies were best spent on curing the communicable diseases of AIDS and malaria, liberalising trade and tackling malnutrition and hunger by providing micronutrients.

RANKING	CHALLENGE	OPPORTUNITY
Very good	Communicable diseases	Control of HIV/ AIDS
	Malnutrition and hunger	Provide micronutrients
	Subsidies and trade	Trade liberalisation
	Communicable diseases	Control of malaria
Good	Malnutrition and hunger	Development of new agricultural technologies
	Sanitation and water	Community-managed water supply and sanitation
	Sanitation and water	Small-scale water technology
	Sanitation and water	Research on water productivity in food production
	Governance and corruption	Lowering the cost of starting a new business

RANKING	CHALLENGE	OPPORTUNITY
Fair	Migration	Lower barriers to migration for skilled workers
	Malnutrition and hunger	Improving infant and child nutrition
	Communicable diseases	Scaled-up basic health care
	Malnutrition and hunger	Reducing the prevalence of low birth weight
Bad	Migration	Guest worker programmes for the unskilled
	Climate change	Optimal carbon tax
	Climate change	The Kyoto Protocol
	Climate change	Value-at-risk carbon tax

tion of the Copenhagen Consensus was “where should the world invest, say, \$50bn extra over the next four years to do the most good?”

The final results startled a number of people and generated quite a bit of controversy, particularly the low ranking of climate change initiatives. For instance, initiatives for stopping climate change ranked not only well below trade liberalisation, but even below reducing the costs of starting a new business. The controversial elements are exacerbated by Bjørn Lomborg’s reputation – he is a bit of a *bête noir* for environmentalists. But a number of less passionate critics also felt “something is rotten in the analysis of Denmark” when the need to stop global warming was ranked below lowering barriers to migration for skilled workers.

This Copenhagen Consensus approach is important, because the cost/benefit approach these economists used to tackle our biggest worries is the same approach that economists and politicians believe to be core to effective policy-making, and the same one risk managers and financial managers believe is core to making effective business decisions. The Copenhagen Consensus was one of the first great Commerce experiments of the 21st century. If the approach and results are right, then our priorities should change rapidly. We should stop whinging about the Kyoto Protocol and declare total war on malaria.

Then, on 30 October 2006, HM Treasury released a 692 page report on the subject of global warming and climate change – “The Economics of Climate Change” by Sir Nicholas Stern. The conclusions of the report are that climate change could seriously impact growth, the costs of stabilising the climate are significant but manageable, global action is required and that genuine options exist. The recommendation is for a UK and

Stern points out that ethics is at the heart of the economics. He believes that future generations should be protected from harm, that future generations should have a right to a standard of living no lower than the current one, and that the world should be passed on in at least as good a state as inherited from the previous generation. [Stern, 2006, pages 46-48] The Stern Review suggests committing 1% of GDP, around \$350 billion to \$480 billion per year, cut carbon emissions. Dasgupta and others criticise Stern for ignoring the rights of people currently living on the planet to a standard of living no lower than others. By comparison Bjørn Lomborg claims that "Spending just a fraction of this [Stern Review] figure - \$75 billion - the UN estimates that we could solve all the world's major basic problems. We could give everyone clean drinking water, sanitation, basic health care and education right now. Is that not better?" Argument is as much about equality as intertemporal transfer. If global population keeps on growing, do we owe future generations a planet as good as the one we have on an absolute or a per capita basis?

So, eminent economists disagree wildly about an important subject. Interestingly, a central economic issue in the debate is the discount rate. Stern concludes that the appropriate pure time discount rate to be applied to climate change decisions is very low, 0.1%. Stern is examining future consumption streams, so he is correct to focus on the pure rate of time preference - the rate at which future consumption ought to be discounted to make it equivalent in social value to consumption today, rather than typical public or private sector discount rates. A related argument is that the discount rate you choose is an ethical question based, to some degree, on whether you care about the future. "If you do not care about the long-term future, simply because it is in the future, you will not care about climate change." Stern does not reach this low pure rate of time preference rate conclusion lightly. He devotes an annex to his second chapter on "Ethical Frameworks and Intertemporal Equity" – basically about the relationship between the discount rate, the pure rate of time preference and intergenerational transfers. In response to questions, he said:

"Many previous studies have used higher rates of pure time preference, which are similar to those used for evaluating other kinds of investments. However, we argue that this disinvestment in the environment cannot be considered in, say, the same way as an economist would consider an investment in a railway. A railway can be replaced or redesigned, it can become obsolete or redundant. In other words, the probability of survival depends on the context. In this case the context is that of the whole planet."

[Stern Review, Frequently Asked Questions #8, 2006]

Dis-count Me Out

To some degree, Stern's rate is closer to the real interest rate for government bonds, while his critics prefer rates closer to the weighted average cost of capital for private companies. Government discounting practice is to use a discount rate that falls over time in order to avoid 'discounting away' long-term problems such as climate change. A very low discount rate benefits projects that have long-term benefits in the distant future. In Stern's words, "a high rate of discounting of the future will favour avoiding the costs of reducing emissions now, since the gains from a safer and better climate in the future are a long way off and heavily discounted (and vice versa for low discount rates)." [Stern, 2006, pages 50 and 51] However, we must be clear that Stern's 0.1% is the pure rate of time preference for intergenerational transfer. Discount rates for investment decisions are not the same thing and will change over the period of climate change and be different under changing circumstances. Quite rightly, Stern says, "Thus the question 'what is the discount rate' is badly posed. There will be many discount rates depending on the period of time and the path." [Stern rebuttal, 2007] [...]

international response based on emissions trading, technology cooperation, action to reduce forestation and international funding for adaptation.

There have been many positive responses to the Stern review. It is clearly an important piece of work bringing together many important threads into one document. It is also a brave work, daring to try and encompass an enormous subject and exposing the author(s) to global critique. Naturally, there have been

The discount rate is “relevant only for marginal analysis and thus is not of direct significance for changes involving non-marginal impacts.” The pure rate of time preference is “an integral feature of the overall set of values and is relevant for all applications marginal or non-marginal. Its ethical status, however, requires careful examination.” When Stern says “non-marginal”, he means that the results of doing nothing could be catastrophic. In Stern’s words, “a high rate of discounting of the future will favour avoiding the costs of reducing emissions now, since the gains from a safer and better climate in the future are a long way off and heavily discounted (and vice versa for low discount rates).” [Stern, 2006, pages 50 and 51] However, we must be clear that Stern’s 0.1% is the pure rate of time preference for intergenerational transfer. Discount rates for investment decisions are not the same thing and will change over the period of climate change and be different under changing circumstances. Quite rightly, Stern says, “Thus the question ‘what is the discount rate’ is badly posed. There will be many discount rates depending on the period of time and the path.” [Stern rebuttal, 2007]

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Another way of looking at this is that you can use the discount rate to evaluate a game of Russian roulette, but you have to accept the chance of dying. If you don’t want to die during the game under any circumstances, then discount rate analysis is useless. Stern again, “the pure time discount rate applying to the existence or non-existence of the planet should be much lower than that applying to the existence or non-existence of a project in terms of a possible new environment (from unforeseen policies or technical change, for example) which would render that project irrelevant.”

Of course, we could also be ripping ourselves off. Stern points out that his mitigation cost estimates of 1% of world GDP is equivalent to GDP in 2100 being “940% higher than today, as opposed to 950% higher if there were no climate-change to tackle”. [Stern, 2006, page 278] Professor Nordhaus points out that the assumptions used in the Stern Review imply that global per capita consumption in 2200 will be \$94,000 [perhaps more comparably in 2100 about \$26,000] as compared to \$7,000 today and asks is it ethical to transfer wealth from someone making \$7,000 a year to someone making \$94,000 a year?

many negative responses. The criticisms include assertions that Stern’s assumptions were pessimistic, that when faced with a choice the report chose the most pessimistic outcomes, that Stern ignores the potential for technological change, and that Stern’s social cost of carbon is out of the normal range. Stern’s social cost of CO₂e is well above other reputable studies that estimate, based on different assumptions, anything from \$2.50/tCO₂e towards an emerging consensus around \$30 to \$40/tCO₂e. Stern’s social cost of carbon might be around \$85/tCO₂e though it is important to stress that he notes, “Further work on what social cost of carbon corresponds to potential stabilisation levels is needed.” [Stern, 2006, page 344]

Initial London Accord Proposal – Build A Community

Bill Emmott, former Editor of the Economist, remarks that “capitalism is forever under challenge, forever being questioned”. He classifies these challenges along four channels - unpopular, unstable, unequal (both nationally and internationally), and hitherto unclean (environmentally). For many in the London Accord

community, capitalism should be able to address these four challenges. For example, sold well, cap-and-trade should be popular, price volatility is an important factor in climate change decisions, cap-and-trade seems fair and by pricing emissions cap-and-trade helps to clean the world. However, cap-and-trade is as much an ideological proposition as “carbon taxes are inherently good because monies are raised for governments”. Similar problems affected the Copenhagen Consensus, e.g. how to value quality-adjusted-life-years or how to trade-off vastly different incomes against treating human beings equally. Ideology and ethics are bound into the economic valuations.

We believe that the Copenhagen Consensus was right to try and engage people, particularly economists, financiers and policy-makers, with cost/benefit analysis. Cost/benefit analysis is what drives financial decisions, and financial decisions determine where investment in our future goes. Investment determines the form of future we will have. However, with regard to Climate Change, the Copenhagen Consensus may have been unintentionally biased, in at least three ways:

- ◆ heterogeneity – such a highly variable set of issues inevitably leads to braver assumptions in order to make the cost/benefit comparisons, while at the same time some investors may restrict their interests to Climate Change prevention. Tol [Tol, 2006] challenges us on issues of uncertainty and equity;
- ◆ the quality of the options – the three Climate Change options were an optimal carbon tax, a value-at-risk carbon tax and the Kyoto Protocol. Investment in these may just have been poor against the other options, but it is the quality of suggested options that feeds cost/benefit analyses. Perhaps, properly challenged, environmentalists can come up with more and better options, e.g. cap-and-trade, carbon sinks, tropical photovoltaic farms, etc;
- ◆ ignorance – it may be that we don’t have any Climate Change options that are worth investing in (when contrasted with the leaders in cost/benefit such as HIV/AIDS, trade liberalisation, malaria and micronutrients) because we don’t fully understand the problem or have solutions that deliver against a reasonable discount rate. If this is so, and we believe Climate Change to be real and significant, then we should invite more research.

Initially, the London Accord proposed building a community based on shared research. The London Accord wanted to answer the following questions by employing cost/benefit analysis in order to engage the financial community with environmentalists, governments, NGOs and other stakeholders:

“Where should world governments invest, say, \$Xtn extra over the next four years to do the most good reducing man-made climate change?”

“Where should world businesses invest, say, \$Xtn extra over the next four years to do the most good reducing man-made climate change?”

“How can we align government and business investment?”

This was similar to the wider Copenhagen Consensus, however we wanted to remove the Copenhagen Consensus’ issue of heterogeneity by focusing on just Climate Change, challenge the environmental com-

munity to come up with better more detailed options and inject some research opportunities into the options. In the event, these questions are not answered, but we would point people to the portfolio analysis in this document which makes a small step in this direction.

Another difference between the Copenhagen Consensus and the London Accord was the role of academics. In the Copenhagen Consensus academics conducted much of the work and academics produced the final rankings for the options. In early 2006, Simon Mills of the City of London Corporation had a key insight, why focus on academic research, why not focus on getting investment researcher to do the work themselves? Since this insight, the role of academics in the London Accord has been to challenge, not to conduct, the investment research.

The final pieces of the London Accord structure came together when key individuals from five organisations agreed to act as a governance team. Simon Mills (The City of London Corporation), Alice Chapple (Forum for the Future), Chris Mottershead (BP plc), Michael Mainelli (Z/Yen and Gresham College) and Alex Evans (Center on International Cooperation) set the formal goals and milestones for the London Accord. With the City, BP, Forum for the Future, Z/Yen and Gresham College formally committed as sponsors the structure and governance was in place to assure the London Accord's ability to deliver on its promise.

During the last quarter of 2006 and throughout 2007 a large number of meetings with groups and individuals contributed ideas and insights to the formation of the London Accord. It is impossible to list them all, but we would point to two in particular:

- ◆ The Associate Parliamentary Group on Wholesale Financial Markets and Services Briefing, 11 July 2007

"So far but no so good? What next "

Climate Change & Carbon Emissions - What Market Mechanisms does the Industry Need?

An Industry Perspective

Guest Speakers:

Michael Mainelli, Executive Chairman, Z/Yen Group (Moderator)

Gilles Corre, Director, Environmental Markets Division, Evolution Markets Ltd

Garth Edwards, Trading Manager for Environmental Markets, Shell

Neil Eckert, Chief Executive, Climate Exchange Plc

Martin Hession, Head of Global Carbon Markets, DEFRA

- ◆ The UNFCCC event, 21 June 2007, from their private sector consultation series

“Collaborate or Collapse” - Climate Change As Global Risk

Global risks are events or circumstances that are beyond any particular party's capacity to control, which may adversely impact multiple parties across geographic borders, industries, and/or sectors. Global Risks may be beyond our present capacity to solve, or the solutions may be prohibitively expensive, or our efforts may be too little or too late. The connectivity of global markets, volatility of political, social, and environ-

mental landscapes, and the accelerating rate of change produce greater complexity and uncertainty about risk. We contend that global risks demand a Global Collaborative response. We also recognise that there is no single problem or solution. To quote Jared Diamond, "The single most important problem [facing the world today] is our misguided focus on identifying the single most important problem!" [Diamond, 2005, page 349]

At the Annual Meeting of the WEF in Davos, the Global Risk Network releases the "Global Risks" report [World Economic Forum, 2006] that sets out a useful risk landscape. Global Risk 2006 said:

"The World Economic Forum's Global Risk Programme has identified three core areas where these problems can be addressed and risk mitigation improved:

- ◆ *enhancement of the quality of information on risk and its flow amongst stakeholders;*
- ◆ *reassessment of risk priorities and reallocation of resources and incentives accordingly; and*
- ◆ *strengthening the capacity and resilience of business and political and administrative institutions at all levels."*

"The underlying premise of enterprise risk management is that every entity exists to provide value for its stakeholders. All entities face uncertainty, and the challenge for management is to determine how much uncertainty to accept as it strives to grow stakeholder value."

[*"Enterprise Risk Management - Integrated Framework - Executive Summary"*, Committee of Sponsoring Organizations of the Treadway Commission, September 2004.]

Virtually all organisations strive to survive. Commercial enterprises to create value for suppliers and customers, manage themselves and anticipate the future. Most commercial enterprises can structure their response to their environment and anticipate changes in their environment. Many enterprises specifically work to reduce risk, i.e. they attempt to reduce the likelihood of adverse events or the impact on the enterprise if the risk materialises. Commercial responses to risk at an individual enterprise level can be summarised as:

- ◆ ignore: all risk cannot be eliminated;
- ◆ accept: which may include elements of retention, self-insurance, captives and protected-cell captives;
- ◆ share: typically to pool with other entities via an insurer;
- ◆ reduce: risk management, i.e. invest in reducing risk likelihood or impact;
- ◆ avoid: exit the sector or transfer to a third party, presumably at a cost.

The Collaborative Problem - Responses

In 1968 Hardin [Hardin, 1968] proposed the "tragedy of the commons" concluding that we need to submit to "mutual coercion" on activities such as waste disposal or breeding. Hardin's influential paper polarises debate. At one extreme, public assets must be publicly governed. Coercion via government is a natural enforcement mechanism. At the other extreme, only by allocating property rights over formerly public assets will people care enough, in their own selfish interest, to defend and maintain assets. "Global Risks 2006" points out the asymmetry of risk costs and benefits as those who invest in protection incur costs disproportionate to the benefits they will receive, while those who fail to invest receive free benefits and/or impose costs on the system that devalue investments made by others.

Structured organisational responses to risk are often called enterprise risk management (ERM). ERM can be a unit or a project that takes an enterprise-wide view of risks and tries to manage them. Large corporations, particularly complex multi-nationals, have evolved very sophisticated internal markets for risks such as pollution, terrorism, shipping or politics. Market prices affect managers' key performance measure, financial returns. This completed circle, i.e. managers foresee risks, manage them, reduce risk costs, improve their financial performance, return to foreseeing risks, is increasingly termed Enterprise Risk-Reward Management (ER-RM). ER-RM goes beyond taxonomies of corporate risks and assignment of responsibilities to help managers make informed decisions that balance the value of investment against the risk incurred.

Z/Yen and PricewaterhouseCoopers (PwC) have shared a collaborator-collapse framework consists of four parts:

- ◆ **participants:** at what levels of organisation might we act?
- ◆ **responses:** what strategies can we enact?
- ◆ **methods:** what tools and techniques, i.e. mechanisms, should we use to help us meet our strategy?
- ◆ **principles:** what guidance can we have to help us increase our chances of success?

The Collaborative Problem - Participants

"Risk is exposure to a proposition of which one is uncertain ... Risk is a condition of individuals and animals – that are self-aware. Organizations, companies, and governments are not self-aware, so they are incapable of being at risk. Rather, they are conduits through which individuals – members, investors, employees, voters, and such – take risk." [Holton, 2004] Subjective perceptions, not objective assessments, drive attention to Global Risk and, thus, resources committed to Global Risk solutions.

Subjective, or emotional, assessments provide opportunities for profit. In a single-entity situation, the entity can use asymmetric evaluation to profit. If the single-entity employs objective assessment while others follow emotion, the single-entity should gain advantage in the long-run. With Global Risks, the failure to align emotion with objective assessment means that the wrong risks are addressed in the wrong order. Trivial risks can be inflated – perhaps the Millennium Bug or computer viruses? Significant risks can be overlooked due to familiarity – perhaps world hunger?

Observation suggests that companies with more well-established risk management programs are more likely to turn their attention to global risk as a mega-threat that if left unmanaged would render daily risk management efforts moot, whereas those who are immediately challenged with getting daily controls under control have not the time or wherewithal to worry about "what ifs". The level of concern about global risk is driven by management perception of what is most likely to affect its business. An oil price spike, for example, is of significant concern to a transportation company, less to a food manufacturer vulnerable largely to the indirect commodity price impact, and still less to a services company that transfers its costs to its clients.

Solving Global Risks requires Collaborative Risk-Reward Management, "an integrated approach among many actors to address risk, adopting multiple interacting and reinforcing strategies and tools, while providing just rewards to participating enterprises". Global Collaborative Risk-Reward Management should help people and organization to develop and implement Global Risk solutions cooperatively using a common framework that people can use to structure their thinking.

Ostrom questioned these extremes finding numerous, centuries-old examples of principals in interdependent situations organizing and governing themselves for joint benefits "when all face temptations to free-ride, shirk, or otherwise act opportunistically" - forestry management in Japan or complex, successful irrigation systems in Europe, Asia or South America. In one recent example, governments simply banned

How can organizations adhere to their goals, add value, benefit from their own added value and collaborate in achieving societal goals? Beyond the boundaries of a single enterprise, commercial enterprises have long recognised that multi-party collaboration affords opportunities. There are trade associations, bulk-buying agreements, knowledge sharing agreements, standards, mutual risk management and mutual insurance. As an example, the shipping industry's P&I mutual clubs respond to an international risk. Sometimes Adam Smith's invisible hand needs a little help to see the big picture. But what is more difficult about Global Risks? Participants struggle with Global Risks more than enterprise or industry risks due to:

- ◆ **uncertainty:** the degree of uncertainty grows with the number of unknown quantities, difficulties with measurement and problems with prediction. How do we model decisions under uncertainty? What can our firm really do about Global Warming that might make a difference? Multiple actors mean that putting values on outcomes, well nigh impossible, becomes truly impossible with the addition of politics. Should our firm 'value' alleviating third-world hunger more than preventing bird flu?
- ◆ **complexity:** no part of the problem can be isolated and solved; solutions that work are, of necessity, holistic. Asset values affect economic returns affect investment affect politics affect communities affect compliance affect asset values, etc. Solutions to Global Risks are likely to involve mechanisms, such as markets, which are not predictable. It is hard to anticipate the causal interactions of forces. Complex behaviour, within broad conceptual predictions, emerges rather than being directed;
- ◆ **scale:** the effort involved in managing a Global Risk is beyond the capacity of any single firm, region, nation or trade group. Kunreuther and Heal [2003] point to the threat of systematic underinvestment in risk management where "the incentive to invest in protection approaches zero as the number of unprotected agents increases."

Global Risks create change. Change permits organizations to develop new, value-adding strategies. Therefore, Global Collaboration offers the opportunity for rewards from new services, new products, new processes or additional value. For example, increasing consumer interest in 'green' products provides opportunities for competitive advantage to early adopters. These opportunities force us to see not just risk management, but risk-reward management, i.e. managing risks and rewards towards a goal. One can categorise participants' organisations at four levels:

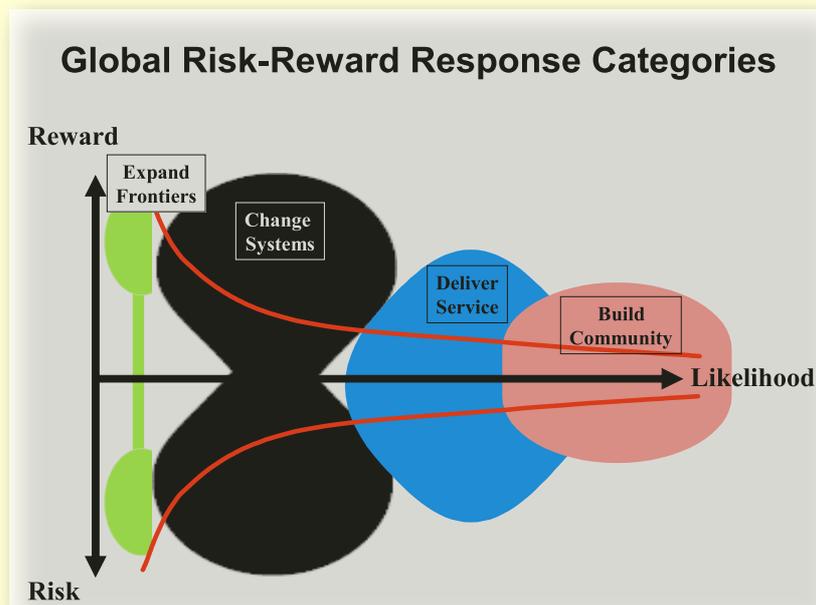
- ◆ **single-entity:** a company, government department, NGO or other legal entity working on its own;
- ◆ **multi-entity directed:** a collaborative effort led by a single organisation, typically operating in a hierarchical manner, i.e. top-down to a plan;
- ◆ **multi-entity emergent:** a self-organising network structure, such as markets or commons-based peer production;
- ◆ **collaborative risk-reward management:** an integrated approach among many actors to address risk, adopting multiple interacting and reinforcing strategies and tools, while providing just rewards to participating enterprises - a rich system of many entities acting at all three previous levels in a spirit of community.

CFC's to protect the atmosphere, and this worked. In contrast for SO₂, the US government supported a traded market for SO₂ emissions that achieved in months what the government believed would take regulatory years

The London Accord fits with some interesting work that Z/Yen Group was conducting with PricewaterhouseCoopers (PwC) on global risks. PwC had provoked quite a bit of thinking about global risks, and the thinking goaded the London Accord team into trying out Z/Yen and PwC's "Collaborate or Collapse" template as a 'sanity check' on the entire approach of the London Accord.

We believe that Global Risk-Reward Collaborators have four typical Responses and relate the four Response categories to risk-reward perceptions in a diagram:

- ◆ **expand frontiers** to solve or mitigate a Global Risk - e.g. developing drugs which might cure and/or prevent disease, finding technologies that provide renewable energy, or adapting irrigation techniques to help meet the needs of farmers in barren places;
- ◆ **change systems** to re-prioritise a Global Risk, to develop markets or to release resources - e.g. change government policies on child labour, or seek to protect a depleting world resource or develop cap-and-trade carbon markets;
- ◆ **deliver service** to address the immediate need - e.g. providing care for children in war-torn places, or providing care for the elderly in HIV / AIDS stricken regions;
- ◆ **build community** to people deal with Global Risks through communal activity - e.g. voluntary carbon emission reduction, reducing civil rights to reduce terrorism or establishing an environmental discussion forum.



The Collaborative Problem - Methods

There are numerous mechanisms available for dealing with Global Risks. They are diverse. Take “malaria” – we have malaria@home, malarial vaccine research, the Gates Foundation work, pharmaceutical R&D, anti-malarial drugs, direct aid for the afflicted, distribution of mosquito nets, education in affected areas, spraying mosquitoes, draining mosquito breeding areas, or raising funds, to name but a few. Global risks are so complex that they require several forms of response with multiple mechanisms.

We believe that there are four categories of mechanism, we call them four Methods, for any Global Risk, viz.:

- ◆ **sharing knowledge**: the degree to which risk management is enhanced by sharing information and knowledge with other entities about severity, likelihood and effectiveness of responses;
- ◆ **finance**: the degree to which market mechanisms price risk and reward improvement, a richness of supporting financial methods and, in many cases, direct financial support;
- ◆ **standards**: the degree to which standards and the audit of standards can help to set goals, share knowledge, improve the effectiveness of market forces and provide signals from consumers to producers; [...]

- ◆ **policy:** how well intelligent government legislation, regulation and enforcement underpin private sector responses. In addition, how policies are created and enacted in all organisations can affect risk, for example purchasing policies on sustainable timber or anti-discrimination policies.

Responses and Methods – Generic Examples

METHOD				
RESPONSE	SHARING KNOWLEDGE	FINANCE	STANDARDS	POLICY
Expand Frontiers	joint research	long-term funding	emerging standards	new legal frameworks
Change Systems	innovation	non-traditional channels	consumer push-back	‘last resort’ backup
Deliver Service	information organisation	markets, indemnities, insurances and funding	standards markets	land, distribution or personnel from government accelerate an activity
Build Community	mutually supportive benchmarking	local loop finance	community principles	facilitate communication across sectors

In the face of a Global Risk, no strategy can be directed ‘top-down’. An excellent strategy can still suffer from poor management, leading to poor implementation. An excellent strategy poorly executed is, in actuality, a poor strategy. We believe that there are likely to be a number of principles that can be enumerated to help us better design Global Collaborative Risk-Reward Management systems. At the same time, one of the most interesting problems is generating bottom-up initiatives. One of the great strengths of market mechanisms is their ability to generate bottom-up, community-centred solutions. This ability is often overlooked in a modern era of global perspective, but farmers’ markets, local business clubs, shared research, trade bodies, standards, contract templates and many other commercial activities are self-organising responses within a commercial framework.

Ostrom [1991] derives eight design principles for systems that successfully manage common-pool resources, viz: clearly defined boundaries, congruence between appropriation and provision rules and local conditions, collective-choice arrangements, monitoring, graduated sanctions, conflict-resolution mechanisms, recognition of rights to organize, and the use of nested enterprises. This is a good starting set for thinking about Global Collaborative Risk-Reward Management principles. Another approach might be to recognize that Collaborators must work through fluctuating and new communities, requiring:

- ◆ **communication:** multi-entity responses always require a higher degree of communication than single-entity responses;
- ◆ **contribution:** if people and organisations are not part of the development of the solution, then they are less likely to be part of the solution;
- ◆ **consensus:** respect, time and space must be made to allow people to develop consensus about responses, including time to adapt emotional responses to objective data;
- ◆ **commitment:** people and organisations build trust through evidence of shared commitment in the form of time, resources and patient attention – this needs to be emphasised;
- ◆ **cooperation:** people and organisations must be respected for their position and rewarded for their appropriate efforts, all mixed with a degree of tolerance for different viewpoints and different motivations.

Structuring Participants, Responses & Methods

For Climate Change and the London Accord, we completed the following table:

The London Accord: Responses and Methods

COLLABORATIVE GLOBAL RISK MANAGEMENT – CLIMATE CHANGE (EXAMPLES ONLY)				
METHOD				
RESPONSE	SHARING KNOWLEDGE	FINANCE	STANDARDS	POLICIES
Expand Frontiers	www.climateprediction.net www.realclimate.org	Clean Development Mechanism	developing new ways of feeding alternative energy back into energy grids	academic research funding
Change Systems	GOF Climate Change and Energy Programme: ISS (Information Sharing System)	VCs or hedge funds investing in alternative energy firms	Carbon Disclosure Project	political support for contraction & convergence or cap-and-trade
Deliver Service	carbon footprint audits	industry schemes, e.g. CoalPro (Confederation of UK Coal Producers)	ISO14000 (environmental management)	government purchasing of renewable energy
Build Community	London Accord - share best practice about investment analysis and portfolio construction	London Accord - inform UNFCCC with private investment opportunities	London Accord - encourage development of standards such as investment appraisal incorporating climate change or product level emission measurement standards	London Accord - encourage dialogue with investors and academics about effective policies

To explore reasons why collaboration seems to be particularly difficult for climate change, the London Accord team played a light-hearted but informative game at its Launch Conference in March. The ‘Warm Game’ (see F2: **A Game for All Seasons**), developed by Z/Yen with CORDA, is a role-playing game that examines some of the political difficulties countries might have in attempting to tackle global climate change. It proved a good team building exercise as well.

The Collaborative Problem - Principles

Clearly, the London Accord is a community-building exercise that shares knowledge, helps to develop an aware financial community, and attempts to influence policies. Global Collaborative Risk-Reward Management builds on global communities. It is difficult to define a community. One can start with the idea that communities define themselves, e.g. “I am an accountant”, “I am an academic”, “I work with banks”, “We belong to the SWIFT network”, “I have to make our reports to X regulator”... However, this illustrates the complexity - people belong to multiple communities, some voluntary, some imposed, some of which they’re proud, some of which they wouldn’t consider communities. We set out six characteristics of strong communities that may help us to identify appropriate principles:

- ◆ common history and purpose: the fundamental reason or passion for joining is clear – let’s stop global warming;
- ◆ shared knowledge and culture: there is a common cultural context, principally risk and reward determine “how we decide to do things around here”;
- ◆ common practices: there are known procedures and benchmarks for operations and conduct;
- ◆ co-location in space and time: there are shared physical and virtual spaces with known periods of interaction;
- ◆ common action: lobbying as a group for their own interests;
- ◆ co-created future: communities develop shared visions of the future.

These principles guided the London Accord.

How Did It Go?

The original timetable is reproduced below. Overall, the London Accord largely adhered to its timetable. The one significant exception is that the autumn conference, publication and celebratory dinner are being held simultaneously at the Mansion House in London on 19 December 2007.

London Accord Timetable – As Planned In Mid-2006

PERIOD	TIMING	KEY ACTIVITIES
Preparation	January – March 2007	
	Governance	Agree and set up the governance structure; appoint board members; set performance contract for the Project Director; agree budget
	Research guidance	Agree key assumptions and suggestions for scenarios; develop templates for executive summaries
Spring Conference - hosted by Reuters at the Reuters headquarters	March 2007	Agree the core question for each research team; define with buy-side participants the key aspects of the research, take input from NGOs, academics and government
Core research	March – September 2007	
Cross analysis	September – October 2007	Cross-papers on common themes and conclusions, public policy implications, technology take-up rates and feedback loops
Autumn Conference	October 2007	Presentation of results; celebratory dinner
Publication	November – December 2007	Publication by the City of London

Four points of the London Accord's track record are worth noting.

- ◆ Spring conference: 29 & 30 March 2007 – this conference was a breath of fresh air. Over 80 people attended the conference, sponsored and organised by Reuters and held at the Reuters building in London's Docklands. National and local politicians, e.g. Chris Huhne MP, the Liberal Democrats' Shadow Minister for the Environment, and Nicky Gavron, Deputy Mayor of London, kindly came to lend moral support. The objective of the conference was to assure a shared direction for the London Accord and to help investment research teams understand some of the viewpoints of scientists, academics, government and NGOs. For investment research teams, accustomed to working on their own, starting a project with so many people talking to them at such an early stage was daunting. In the event, many research team members found it exhilarating not just to talk with a wider community, but also their colleagues in competitive firms;
- ◆ Cross-analysis – with more time ... The final drafts of many papers did not arrive until mid-November. With a late November printing deadline, some of the late arrivals clearly limited the amount of cross-analysis that could be done on all of the documentation together. The idea behind the cross-analysis was to draw some preliminary themes and conclusions from the papers. To a degree, this has been done, but it is anticipated that many readers will want to extend the analysis, and this is to be encouraged.
- ◆ In addition, we had our highs and lows with collaboration. Many, in fact most, firms took to the idea of a collaborative project and stayed with us throughout the period. But a few ran into trouble with other priorities and had to drop out. As a consequence, we don't have a paper on Nuclear or on the dynamics of highly localised, 'off-grid' electricity generation – although both topics are covered in some of the other papers.
- ◆ And our last 'lack of time' regret is that our portfolio analysis could not extend to developing the data from the individual reports sufficiently to build the analysis around those, instead of the IPCC numbers.

What Has Been Achieved?

This enormous research project has produced two outcomes, one 'hard' and one 'soft'. The hard outcome is the publication of the London Accord as a body of work. We leave it to the reader to judge its value. We are as interested in the soft outcome, that investment research teams can work together for everyone's benefit. We would highlight two of the softer, community-building achievements as:

- ◆ 'open source' research – the London Accord method has led to a variety of commercial collaborators being able to sustain a research theme. There is a similarity here with 'open source' software development. Each participant has filled a necessary spot, though they might compete on others. There have been problems along the way, for example over copyright or with the compliance requirements of a modern, international financial services firm. However, the London Accord shows that cooperative

research can be done well. Perhaps an 'open source' research approach can be applied to other 'wicked' problems;

- ◆ sharing financial thinking more widely – too few policy debates involve financial thinkers until it is too late. Climate change policy meetings are full of government and NGO participants. Financial professionals are thin on the ground. Policy-makers need to influence and, more importantly, be influenced by financial professionals before policies are crafted. But to do that, financial professionals need to be able to speak freely. For instance, would a financial professional freely criticise a proposed government policy if, by criticising, the firm risks losing a mandate for funding some infrastructure or handling a privatisation transaction?

Where Do We Go From Here?

The London Accord was intended to generate debate, principally between the investment community and policy-makers, and between investment managers (buy-side) and investment banks' research (sell-side). There are at least three events planned for sharing the results of the London Accord:

- ◆ 19 December 2007 – publication launch and reception at the Mansion House in the company of the Lord Mayor, Alderman David Lewis, who has supported the London Accord since its earliest days in 2005;
- ◆ 30 January 2007 – an afternoon seminar at Gresham College, Barnard's Inn Hall, Holborn, London EC1N 2HH, tel: +44 (0)20 7831-0575. This seminar is open to the public;
- ◆ Early 2007 – an afternoon seminar at the London School of Economics and Political Science (date to be confirmed).

Many people have asked where the London Accord might go from here? The entire effort from 2005 to November 2007 has been conducted with little view past this first publication at the end of 2007. As a longer-term research project looking at the next 50 years of interaction between the investment community and climate change, the London Accord might be criticised for a somewhat short-sighted self-perspective. But there are a couple of reasons for that short-term view.

First, there were points where we doubted The London Accord would come together and produce anything material. There was little point in looking towards permanency until we could prove we'd added value. Second, while the London Accord effort has been estimated at something £7M, at virtually no time has a penny changed hands. There has never been a need for a central budget or for fundraising. Each firm decided upon its own contributions in its own way. The intellectual property that has been created has been donated to the world. A permanent programme and permanent organisation, strangely, might have ruined the spirit of cooperation and contribution that has characterised the contributors to the London Accord.

Nevertheless, Z/Yen has resolved to keep the London Accord flame alive for a while yet. Z/Yen is sounding out current members and the wider community on what, if any, role the London Accord might have in the future. The community behind the London Accord may wish to keep a focal point where research can be shared, policy can be informed and people can find like-minded people who share their concerns. The Copenhagen Consensus has decided on periodic renewal and that may be an appropriate decision for the London Accord too. Finally, the London Accord's 'open source' model might be usefully applied to other 'wicked' problems. We'll see. Remember we told you so.

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Nice critique of Pure Time Preference Theory - <http://www.mises.org/journals/scholar/murphy2.pdf>

Pensions - The Pensions Institute discussion paper, “Is There A Pension Crisis In The UK?” - <http://www.pensions-institute.org/workingpapers/wp0401.pdf>

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