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# 1

## The Thermometer Causes Sickness

In the 1970s, I (Walter Baets) graduated in Econometrics and Operations research. That science had crossed the ocean, after having produced big successes in real life in the US. The Air Bridge to Berlin, at the end of the Second World War, and comparable non-complex, but sometimes complicated, problems were dealt with successfully. The problems were similar in nature: they were linear – or could be made linear – and non-dynamic. Who knew, and who cared? Those of us involved had the impression we could model the entire world; worse, we had the impression we could craft the whole world. Later on I found out that there were few grounds for this assumption, and it was not true. The world was not a big complicated machine with us looking to describe how this machine should operate.

We experienced an euphoria similar to that of writing a first program that successfully does what it is intended to do. I learnt programming in those days (in Fortran) and my first program (by the way, programmed on punch cards) was the solution of a quadratic equation. I went into business and I constructed econometric and optimisation models: stock exchange forecasting, scenario analysis, risk management, assets and liabilities management, portfolio management, etc. It all worked perfectly but it did not really describe reality. I found that you always seem to run one step behind. It even became somewhat frustrating. For instance, you can make a perfect model. The better you are the more you can influence the outcome of your models. But the more you do that, the further you move away from the reality that you try to model. I found out much later that it was like the difference between playing music and playing an instrument, but knowing the difference doesn't make it easier to switch from one to the other. After a number

of commercial successes in modelling, but with increasing doubt about the real-life validity of it, I decided to quit my life as econometrician. I set out on a quest to find out why econometric models work perfectly, but do not fit reality.

I studied for a PhD (at Warwick Business School) where I experimented with the use of artificial intelligence as a research methodology. In those days (and we were in the 1990s by then) this was still not an evident choice. I will skip that part of the story. Anyway, I found out that there is something like emergence in phenomena, and that neural networks seem to visualise some of it. So I went on in my exploration. I was invited as visiting scholar to what was then the only centre in Europe in Complexity Studies, at Aix en Provence, France. I discovered the theories of Simon, Le Moigne, Morin, and what I would like to call the French school of complexity. It was very constructivist and one of the precious gifts I still carry with me from that period is the poem of Antonio Machado to the effect that there is no road, you make your path as you walk. I also came across complexity theory in physics, initiated by Prigogine (a fellow Belgian), and was unexpectedly invited (again in Aix en Provence) to be keynote speaker, together with Francesco Varela, to a conference on the Learning Organisation. As a result, a world of biological complexity opened up to me that I continued exploring afterwards.

In the meantime, my interest in artificial intelligence, or complex adaptive systems (things like neural networks, genetic algorithms, agent-based simulations, artificial life, fuzzy logic, etc.) became more and more important. I experimented a lot with those techniques in management applications and they appeared to give a way to visualise emergence. They all shared the remarkably strong quality of autopoiesis, the way Varela describes it. And slowly but surely a number of things came together.

The assumptions necessary for successful use of quantitative methods (like econometrics) are so limiting (and often not discussed) that they are hardly applicable in any real-life situation. This has everything to do with the fact that real-life situations are non-linear and dynamic and in no way Newtonian. This is particularly the case in social sciences (such as management, organisational behaviour). Complex adaptive systems seemed to do a better job and the reason for that (at least in my understanding) was that they better fit the reality in the sense that they visualise dynamic non-linear systems. The reason they might work, the mechanism on which they work, is the one of complexity in its largest sense: non-linear dynamic systems behaviour (Prigogine); biological

concept of autopoiesis and enaction (Varela); and the interconnected structure of agent-based simulations (Holland, Langton).

To keep the story short I will skip my encounters with all different kinds of interesting communities (the artificial intelligence one, the noetic sciences, etc.). What was missing was a larger picture. That is what I found in quantum mechanics. Puzzled by the questions that most quantum mechanics asked themselves about 'spooky physics on the background' (Einstein) or 'complementary physics' (Pauli), an entirely new world opened up. This world seemingly gave sense to most of what I had explored before. Could reality be considered from a quantum perspective, or what I call a quantum ontology? That is what I did in my previous book: *Complexity, Organisations and Learning: A Quantum Interpretation of Business*. But I still had the open question of meaning. In fact, at least in my interpretation, the most challenging of all quantum mechanics' contributions is precisely their questioning of meaning. I would say that the circle is almost closing now and my personal journey links into a wider movement across different areas of knowledge which Taylor (2001) codified as *The Moment of Complexity: Emerging Network Culture*.

As part of the shift, a lot of managerial thinking is questioning the meaning of things, products, and actions. Sense making and meaning are rapidly becoming one of the main corporate issues of today. This book is of course not value-free at all. I am seeking to question a number of fundamental managerial beliefs, concepts, and consequences that, in my understanding of conventional management thinking, are still based on the mechanics of the 1970s (what I will call later a Newtonian view on the world). They assume that we can construct the world precisely the way we want it to be. But the opposite is true. Unlimited growth as ultimate predicate of our liberal capitalist economy is no longer affordable. Nor, once we start considering ourselves as members of a much wider interconnected world, is it even ethical. What is the meaning of ever-continuing growth? Don't all countries have the right to unlimited growth? However, if they (e.g. China, India) do, and leading Western nations continue their growth, how devastating will the impact on our economic system (e.g. oil prices) and the environment be? The planet is giving us warning signs that we cannot continue as we have done. I will argue in this book that if we want to respond to the planet, we not only need to adapt our growth figures, but we have to change fundamentally the concept of growth itself, and the entire set of values and assumptions on which our managerial thinking and practice is based.

Growth has become the fetish of the day in economics and corporate life. Any government leader, regardless of the country, expresses pride about his or her nation's growth figures. They seek to convince their citizens, their economic partners, and, probably above all, their financial partners/investors about how impressive their growth is. This goes on despite dire economic situations, and with little attention to how stable, or temporary, that growth may be. China boasts of its double-digit growth over recent years. India's results don't quite reach double digits, but are still impressive economically. And much of the rest of the world has benefited from the cheaper commodities which have resulted. However, economic growth shows precisely what it shows: economic growth. It does not give any indication of how that growth is created nor at what expense. Has the country chosen for a short-term, immediate, and possibly forced growth? Has there been any consideration for the longer term, the sustainability of that growth, and the harmony of that growth with the natural resources which we need for a decent life on the planet? Economic growth indicators do not give insight into how it is translated into wealth, or for whom. They do not talk about the population's level of education, the degree of illiteracy, the quality of the health care, the amount of pollution, or the general well-being of the population.

The third largest gross domestic product (GDP) per capita, and, hence, by the readings on our economic thermometer, the third richest country in the world is Norway (IMF, World Economic Outlook database, April 2007). Norway also has a suicide rate of 19.5 males per 100,000 inhabitants (WHO Mental health, suicide rates, 2003; [<http://globatlas.who.int/globatlas/default.asp>]). France, with the twenty-first largest GDP on the list has a suicide rate of 26.1 males per 100,000 inhabitants. El Salvador, 101 on the GDP list, has a suicide rate of 10.4 males per 100,000, and Honduras, at 124 in the GDP ranking has 0 suicides per 100,000 inhabitants. Of course, this latter number is wrong, isn't it? And maybe it is, but which of these countries is the 'richest'? It all depends on how you measure. If the thermometer indicates a high temperature, we 'know' we are sick, don't we? But if it doesn't indicate a high temperature, does it mean we are healthy?

The United Nations Development Programme has developed the Index for Human Development ([<http://hdr.undp.org>]). It details more than 200 items that can roughly be gathered under the following headings: demographic issues; health care; water; inequality in birth-related health issues; risks (industrial, natural, etc.); crises; technological developments; education; economic development. Using a

thermometer sensitive to such broader dimensions allows, at the least, for more systemic, richer interventions with the aim of progressing to a fuller health that takes into account equity, happiness, and well-being. Indeed, while I have not stressed these so far, there might be a chance that we are on this world in order to contribute to it and to be happy while doing so. I will come back to that.

An illustration of the growing interest in more systemic thermometers than a restricted economic concentration on GDP was the conference, organised by the European Union and a few other partners, titled 'Beyond GDP', in November 2007 in Brussels (<http://www.beyond-gdp.eu>). The conference dealt with issues of progress, 'true' wealth, and well-being. Anyway, enough about 'the wealth of nations' since that is not what this book deals with.

This book deals with 'sustainable performance', how to understand it, how to measure it and how to manage it. This book addresses managers, people responsible for other people, inside and outside their companies. Yes, it is maybe worth repeating: managers are people, responsible for other people inside and outside the company. An assumption, indeed, but at least a clear one up front. An assumption that refocuses the role and purpose of the manager and even of the company. Is a company a 'corporation' as seen in the 2003 movie *The Corporation* that seems to live a life on its own, with its own purposes and rules, detached from the social network within which it is active? Does it recruit only its employees and deliver output for its clients? Can a corporation only have one goal: to improve profit in order to be able to pay dividends, and to attain this at any price? If it does then working inside a corporation is contributing to this purpose; and living outside this corporation is suffering its outcomes. This individualistic view of a company and a society contrasts with a socially embedded one and, as a consequence, provides an individualistic role for a manager inside the company, rather than one which is socially embedded, outside, as well as inside, the company.

Let us accept, for a moment, the earlier suggestion into an additional assumption: that we are in this world in order to contribute to it and to be happy while doing so. I am sorry if this starting point bothers you, but to me it seems a simple and straightforward one. It is this starting point that makes Corporate Social Responsibility logical and evident. It is these assumptions that invite ethical behaviour. It is such a view that makes space for sustainable performance. But we are still far away from this sustainable performance. We are only at the assumptions.

A while ago, I participated in a panel discussion of the French Employers' Federation (Medef), which was titled: 'Should We Rethink Growth?'. The panellists mostly agreed that we should. Moreover, they had some very interesting ideas about some issues related to *how* to rethink growth. I was a bit astonished still to have this question in 2007 instead of to be asking how to rethink growth. But the apotheosis of the day, the president's speech, made it all clear: growth is the only driver of our economies, and if we do not manage to beat the two digit Chinese growth, French companies will be in big trouble. Company growth is the credo. But let us go a step back, since I had a very remarkable experience during the panel. At a certain point in the discussion, I asked the audience (around 150 entrepreneurs and managers): How do you add value to the economy? What is your contribution to society at large? In other words, what is society missing if tomorrow you are bankrupt? And to my deep surprise, I rendered the audience of more than 100 managers completely silent. I repeated the question, but still no answer. Then I invited them to take the weekend to think this question over and over. 'If you do not have any value to add, if society doesn't miss you, then what are you doing?' And if they could not find any value added, any contribution, I suggested to them that on the following Monday morning, they gather their employees together and start a process of identifying the value added by the company and its contribution to society at large. Since if you do not make such a contribution, you will be forced to market yourself vacuously, in order to sell stuff that customers don't want and, even if they do buy, certainly don't need. Such practices are what have caused the overwhelming phenomenon of mind-boggling and unprecedented overconsumption in our society.

We left it there. I do not know whether any of the managers present took up the challenge and did this exercise and, if they did not find a contribution, whether they took the time to co-create one. Anyway, the challenge remains since, in the absence of a socially valuable purpose, someone is unable to take any socially responsible decisions. When Alice in Wonderland asks the cat which road to take, the cat asks her where she wants to go. Since she doesn't know where she wants to go, the cat can only tell her that any road is a good one. If you do not know where to go, all roads are good ones. You need a purpose in order to be able to make decisions here and now, not necessarily in order to reach that purpose. The future will show that. But only the present urges for decisions; there is no past and no future.

There is only a present, and in that present you need to know where to go in order to take any decision. If the only purpose you have is to grow, and/or to make profit, you limit your actions to that purpose. Independent of its devastating consequences, growth will be what you receive and/or profit is what you are going to receive. You purposefully limit your focus to a few 'people-independent' variables: costs, revenue, accounting, and manipulation of accounts (for fiscal reasons). Even humans are transformed into *human resources* (the current phrase) in order to become a cost. You disconnect yourself from the entire social *raison d'être* of your company. And, consciously or not, the path is chosen.

Consequences can include stress and burn out. These are diseases which have a lot to do with choices made in disconnecting economic activity from the people for whom we do it all (in theory). These diseases lead to a series of interconnecting questions. Do you still feel happy when you get up in the morning and drive to your job? Do you feel that you matter? Would the company and society change for the worse if you were not there any more? Isn't the economy sick in its fetishistic admiration of growth, a blind growth at any price? And isn't it that growth and the management indicators that go with it that do not allow for a change? In following this blind drive for growth, do we do anything other than just apply our economic theory, our managerial theory, and indeed, I want to stress, *our* theory?

In summary, therefore, a thermometer only measures what it is made for. A thermometer measures fever, not sickness. A GDP measures gross domestic product, not wealth nor health nor even the sustainability of that growth. Profit measures profit, and not social contribution or the value added by the company. That would not be so bad if it weren't true that you always get what you measure. Measuring is what makes reality, not mere existence. It is observation that in quantum mechanics turns the wave into a particle. Without observation, without measurement, everything is a large pool of infinite possibilities. But once a phenomenon is observed, measured, it becomes an unchangeable particle: the particle that you want to observe. The observer creates the observation, and since we often take the observation for reality, the observer creates reality (Baets, 2006). However, reality might be different, richer, broader, more systemic, not visual, and not causal.

When the Australian railways were privatised, the railway company encountered the same problem most railway companies encounter: the trains ran late. When new, 'privatised' management took charge, they made immediate and drastic decisions. Each driver who gained time on

his or her train's trajectory was paid a cash bonus at arrival. The bonus system was realistic but not exaggerated, because it was designed to really motivate people. Say Paris–Marseilles normally takes 3 hours by high-speed train. The train leaves 10 minutes late, but arrives on time at Marseilles: the driver is paid for 10 minutes. And to nobody's surprise, the problem was about to be solved in a few weeks' time. More than 90 per cent of the trains were on time. The downside: clients were very angry. If we ask this question to a live audience we get a lot of equally possible explanations for this which are all wrong: people missed their train; there were security problems; the price of the tickets went up; the train didn't wait if a last passenger wanted to jump on. No, very simply, the trains didn't stop at intermediate stations any more. Hence the driver gained time (and a bonus) and did exactly the job for which he was appreciated/evaluated. And don't say too rapidly it would not happen in your company. What is a train being on time? The 'being on time' issue is only created since we have timetables. Without timetables, a train is never on time or late. Imagine that there is a train connection every half an hour between two cities. The trains run exactly half an hour late. From the customers' perspective, are those trains late or on time? Being on time, or being late, is only a question of agreement; it is not an essential part of a train journey.

Of course, you would like to arrive on time, but there are other ways to organise that. For sure, we think/hope that air traffic control is one of the best planned activities, but most probably it is not. On questioning Dutch air traffic controllers (during a seminar we held for them) about what percentage of aeroplanes fly within slot-time, I found, to my surprise, they responded with a bare 20 per cent. I had hoped it would be at least around 40 per cent, or even, 50 per cent. No, only 20 per cent of the aeroplanes leave within a reasonable period around their planned departure time. Does this mean that air traffic control is not working well? Of course it does, since it is self-organised. The aeroplane is ready, it asks for clearance, the air traffic controller puts it in the queue, and off it goes. Real delays are often caused by too much traffic in the area: there is no solution to physical limits. Or is there? By extending our earlier assumption, one solution would follow: fly less. After all, do we really need to make every one of the flights that we make or is this also just another example of consumerism?

If we translate all this to a company, we of course see exactly the same behaviour. A manager is going to manage precisely that for which he is evaluated, and in practice evaluation means salary or bonus. If managers get excessive bonuses for shareholder value, they are going

to do everything, indeed 'everything' – however artificial – to raise shareholder value. Shareholder value is a non-existing variable: it means you cannot manage it. You can only influence it indirectly. Higher revenues (or 'expected' revenues), lower costs (huge lay-offs) and good press (the Enron case, the Lernout and Hauspie case) all often have a positive influence on shareholder value. A manager can influence these three variables, but if this would be physically difficult or impossible (hampering sales), they could make it up by artificially raising the sales figures (and again the Enron and Lernout and Hauspie cases act as illustrations). The manager no longer manages the business; he or she manages the figures, the accounts. How many companies are managed by accountants and financial managers? Finance and accounts (even more, since they are only a reporting tool) are only the derivatives of the corporate operations which are based on corporate decisions. This book argues that the focus should be on corporate decision making, the vision, the shared dream of where to go, the real value added that the company creates in the economy. If there is a real contribution, the company will generate sales, revenue, and margins. A first refocus should be on the business and its societal value added and not on finance and accounts. That is what might give the company a sustainable focus, and a sustainable performance.

Inside companies we have seen comparable efforts to achieve sustainability. They manage via balanced score cards, 'improvement factors', etc., whereby the performance of managers (or even employees) is measured and evaluated using a series of 'objective' measures. The experience that most companies have with these approaches is that the managers do everything to optimise the measured items, and neglect the others. If a job description is not detailed, and if all items are not expressed in a measurable variable, it is not managed. If too many items are defined, they often act in opposition to each other, and the entire system becomes counterproductive. Many companies have returned to more classical evaluations of their managers. However, the shareholder value plague is still running through the country: albeit on a lesser scale, or in a more hidden form.

We live in a time when people have become increasingly aware of the 'limits of growth'. I deliberately use this term, since it refers to the first report of the Club of Rome in the 1960s. It all appeared to be a bit pessimistic, but a serious realistic view was the basis for it. We have thrown the baby out with the bathwater and haven't paid attention to some of the fundamental assumptions which the report challenged. We hit the wall today, harder, and with less time to find solutions.

One lesson from the report, and the reactions to it, is that we have a hard time to challenging and/or managing our assumptions. Further in this chapter I will come back to this, but I suggest that we rarely question our assumptions and doubt whether there is even an awareness of key assumptions. What are the economic laws behind our most important managerial decisions, if any? What managerial theories are at the basis of our managerial decisions, if any? If there aren't any, why do we try to teach our business students all these wonderful analytical and rational approaches to management, which they seldom recognise afterwards in their daily managerial practice? If we say that leadership is so important, why don't we have a concept of management that is built on that leadership paradigm (and not on a financial performance paradigm)? I leave the question for now, and promise to return to it later.

Since the opening shot of the Club of Rome, various initiatives have been developed to make managers at least aware of other options. In the shift from TINA (There Is No Alternative) to TALA (There Are Lots of Alternatives), the latter all have their value in changing, and in transforming, our society and its managers. Different people have been looking differently in different directions, and without any attempt to be exhaustive, we offer six examples.

1. Hazel Henderson – founder of Ethical Markets Media and currently series creator and co-executive producer of Ethical Markets multimedia productions – is a futurist, evolutionary economist, columnist, and consultant on sustainable development. She has published worldwide, and developed alternative indicators for quality of life, national wealth, etc. ([[www.ethicalmarkets.com](http://www.ethicalmarkets.com)]). Among many other honours, she shared the 1996 Global Citizen Award with Nobelist Perez Esquivel.

Ethical Markets's mission is to foster the evolution of capitalism beyond current models based on materialism, maximising self-interest and profit, competition, and fear of scarcity. As we move further into the Knowledge Society we learn that information and knowledge are not scarce, and our economic models can move towards sharing, cooperating, and a new abundance. Ethical Markets believe capitalism combined with humanity's growing knowledge of the interdependence of all life on Planet Earth can evolve to serve today's new needs and our common future – from beyond maximising profits for shareholders and management to benefiting all stakeholders. They deliver this message to the global market by featuring

stories of success. Ethical Markets showcase the organisations, trade associations, shareholder activities, the mutual funds and pension funds asset managers, financial planners, venture capital groups, innovative technologies and companies, as well as this vision of maturing, socially responsible, ethical capitalism fitting humanity's aspirations for a more peaceful, just, and ecologically sustainable world.

2. Another illustration is the Global Reporting Initiative (GRI) ([www.globalreporting.org](http://www.globalreporting.org)). This is a large multi-stakeholder network of thousands of experts, in dozens of countries worldwide, who participate in GRI's working groups and governance bodies, use the GRI Guidelines to report, access information in GRI-based reports, or contribute to develop the Reporting Framework in other ways – both formally and informally. GRI have pioneered the development of a sustainability reporting framework which is used worldwide, and they are committed to its continuous improvement and application worldwide. This framework sets out the principles and indicators that organisations can use to measure and report their economic, environmental, and social performance.

The cornerstone of the framework is the Sustainability Reporting Guidelines. The third version of the Guidelines – known as the G3 Guidelines – was published in 2006, and is a free public good. Other components of the framework include Sector Supplements (unique indicators for industry sectors), Protocols (detailed reporting guidance), and National Annexes (unique country-level information). Sustainability reports based on the GRI framework can be used to benchmark organisational performance with respect to laws, norms, codes, performance standards, and voluntary initiatives; to demonstrate organisational commitment to sustainable development; and to compare organisational performance over time. GRI promote and develop this standardised approach to reporting to stimulate demand for sustainability information. The demand, and the standardisation, will benefit reporting organisations and those who use report information alike, and also help to distinguish between lip-service to sustainability and tangible progress.

3. The Centre for Sustainability and Excellence (CSE) ([www.cse-net.org](http://www.cse-net.org)) offer a further illustration. They are a leading advisory organisation and think tank (with offices in Athens, Brussels, and Dubai) specialising in providing sustainable development solutions to various corporations and institutions. They present outcomes of the cooperation between experts and scientists who deal with, apply,

and provide support in the most advanced practical methodologies for moving towards sustainability, while simultaneously adhering to social and environmental criteria. Through its network of international partners, CSE offers coaching in a vast array of advising services promoting sustainability and excellence to organisations, society, and governments.

In their own terms: management is a combination of art and science. Everyone who runs a business is ultimately interested in achieving success and sustaining it. This success is based on the ability to thrive in today's uncertain economic climate, and what it brings with it is increased stakeholder value and growth. Although there are plenty of theories based on the subject of business success, there are still winners and losers. Nowadays, what is required to achieve sustainable success is effective collaboration and CSE aims to assist the organisations, society, and governments in that respect.

4. The Global Footprint Network (GFN) – ([www.footprintnetwork.org](http://www.footprintnetwork.org)) – focus on the dilemma or paradox central to development of demand and the available biocapacity. GFN are committed to fostering a world where all people have the opportunity to live satisfying lives within the means of Earth's ecological capacity. They are dedicated to advancing the scientific rigour and practical application of the Ecological Footprint, a tool which quantifies human demands on Nature, and Nature's capacity to meet those demands. Created in 1993 by Mathis Wackernagel and William Rees, the Ecological Footprint is now in wide use by governments, communities, and businesses to monitor current ecological resource balances and to plan for the future.

In line with the project of this chapter to re-evaluate what we value, GFN's vision is to make the Ecological Footprint as prominent a metric as the GDP. By 2015, through its flagship Ten In Ten Campaign, GFN aim to have ten countries managing their ecological wealth in the same way they manage their finances.

Since its inception in 2003, GFN have made significant progress towards their goals. Currently 22 countries – including Australia, Brazil, Canada, China, Finland, France, Germany, Italy, Mexico, Russia, South Africa, Switzerland, and the United Kingdom – are likely to be the early adopters of the Ecological Footprint and are already working with GFN. Over 70 organisations, spanning six continents, have become formal GFN partners. Many of the world's largest environmental agencies and constituencies are already using the Ecological Footprint to accelerate global sustainability including: EPA Victoria

(Australia), the European Environment Agency, the Finnish Ministry of Environment, Wales in Great Britain, and large non-governmental organisations such as the Network of Regional Governments for Sustainable Development (with 50 regional government participants), International Council for Environmental Initiatives (with 650 local government members worldwide), and WWF (the global conservation organisation with 5 million global supporters).

5. The Vigeo Group ([www.vigeo.com](http://www.vigeo.com)), to cite a French example, claims to be a company 'measuring social responsibility'. They assess both the performance of companies and organisations and their level of corporate social responsibility (CSR) management. They assess the degree to which companies and public corporations take into account environmental, social, societal, and corporate governance objectives, which constitute risk factors for them in the definition and implementation of their strategy and policies.

Their analysis makes it possible to

- evaluate the level of commitment shown by organisations towards all CSR or sustainable development goals;
- identify any risks incurred by the company or organisation in this area;
- evaluate their level of management.

They provide companies with mechanisms for decision making and specific operational management tools by

- providing socially responsible investment (SRI) analysis for investors and asset managers on 1,500 European, Asian, and American stocks in order to assist them in selecting their portfolios
- performing social responsibility audits for companies to provide assistance with their strategic management
- carrying out sustainable development audits for local authorities to provide guidance for subsequent improvement.

Then we get to other kinds of organisations that have less of a focus on companies and corporate performance, but pay attention to community development and the leadership roles they offer for individuals. 'Common Purpose' ([www.commonpurpose.org](http://www.commonpurpose.org)) are one of these.

6. Common Purpose aim to improve the way society works by expanding the vision, decision-making ability, and influence of all kinds of leaders. They run a variety of educational programmes for leaders of all ages, backgrounds, and sectors. Common Purpose's goal is to

provide them with the inspiration, information, and opportunities needed for changing the world.

All of Common Purpose's activities are deliberately cross-sectoral. They have been specially designed to help people in leadership and decision-making positions to be more effective: in their own organisations; in the community; and in society as a whole. The community is both their subject and their venue. The participants don't just sit in meeting rooms studying abstract management problems or wrestling with intellectual exercises. They go out into their own community and grapple with real-life problems at first hand, and will visit prisons, housing developments, businesses, hospitals, and manufacturing plants in order to find inspiration outside their usual experience.

Together, they tackle topical issues (often with the people who carry responsibility for them), they trade leadership experiences and strategies with other leaders from a variety of fields, and they build wider networks.

According to them, what is different about Common Purpose programmes?

All the programmes help leaders learn to lead beyond their authority, both as professionals and as citizens. People who lead beyond their authority can produce change beyond their direct circle of control. This is very different from other leadership programmes. They are committed to looking for leaders in unexpected places – and then to exposing them to the information and the perspectives they need to be more effective. In the process, they meet new people, make new connections, and find new ways of working with people who may not view the world in the same way. Diversity underpins everything they do.

All Common Purpose programmes and activities share the same long-term ambitions: better decision making in all sectors, more effective solutions to common problems, more engaged and active citizens, and, ultimately, stronger communities. Since 1989, more than 120,000 people have been involved in Common Purpose worldwide and over 23,000 leaders have completed one or more of the programmes. They, and their organisations, consistently report better strategic thinking, better decision making, dramatically enhanced leadership competencies, and a greater ability to apply them in new situations as a result of their experience of Common Purpose.

Without any attempt at offering complete coverage, it is clear that a lot of initiatives have existed, do exist, will continue to exist, and even to blossom, to improve the environment and society. They aim either

to rank companies differently, to help them to be ranked differently (addressing some new and annoying stakeholders for instance), or just simply to share the idea that the thermometer itself indeed creates sickness, and explore pathways to holistic health.

## **Life on the edge**

### **Symptoms and diagnostics**

Despite all the good news of increasing interest in social responsibility, responsible management, etc., there is something more fundamental at stake in our opinion. While humanity is living in the turmoil of what is possibly the most decisive period in history (sanitary risks, ecological risks, experimentation with the living, etc.), Viverot (2005) diagnoses a kind of a widespread depression, or world at the edge of a 'universal nervous break down'. In what might be seen as a form of manic depression, our society suffers from not being, not living, at the right moment, the right time. In other words, it is incapable of intensely living the present, feeling good in this time-span and in contemporary 'shoes'. This 'dis-ease' transforms us into rational mammals, but even worse, into endlessly consuming mammals. The consumer society in which we live and simultaneously feed continuously makes for eternally unsatisfied people. This 'poverty' of the daily poisons lives. In Viverot's terms, there exists a relationship between the culture of economic warfare and the large psychic destabilisations. These are today at the roots of a new faintness in the civilisation of the young century. The crisis is not economic, but cultural and mental. For Viverot, the so-called economic crises are, in fact, cultural crises which are linked to the outcomes of our economic system. Thanks to this cultural crisis, the world has gone back half a century, and is scarred by unemployment and poverty, while, at the same time, consuming at levels not even imaginable only a few decades ago.

And consume is what the world does. The Talk the Walk study (UNEP, UN Global Compact and Utopies) gives us an idea of the role that marketing plays in that overconsumption, but, equally, it suggests the role that marketing could play in contributing to a different consumption pattern. Over recent decades, both in terms of volumes and quality, consumption has radically evolved. Average household consumption expenditures increased from US\$4.5 trillion in 1960 to US\$ 19.5 trillion in 2000. World population doubled over the same period. Half of that growth is due to a dramatic change in consumption patterns, which are today mainly produced by a consumer class of roughly

1.7 billion people, half of whom live in the so-called developing world. Recently that consumer crowd expanded significantly in countries like India and China. The breakdown of household expenditures has changed. The strong increase in incomes has led to expenses in areas such as leisure activities and devices, services, and transportation. The percentage of household expenditure dedicated to basic needs is decreasing. However, this growth is unsustainable, since the ecological footprint has grown larger than the world population. Since the mid-1980s we have crossed the Rubicon. If all humans were to consume like the Europeans, they would need three planets the size of Earth to live, and if they were to consume like the North Americans, they would need five more planets (WWF figures, 2004).

One gift of overconsumption patterns is obesity. Obesity already affects 30 per cent of the US population and grows at a triple digit rate every ten years (UNEP, 2003). Food-related cancers, which account for 30 per cent of all cancers in industrialised countries and 20 per cent in developing countries, also grow rapidly (ADS, 1998). The worldwide reorganisation of supply chains has disconnected consumers from the labour force, and is creating various social and economic side effects in both developed countries (delocalisations) and developing countries (exploitation). Talk the Walk expect energy consumption, carbon emissions, waste production, and water resource shortages to increase over the next decades. The single main reason for this is overconsumption to the service of an almost fetishistic growth credo, and the world still remains far away from what the UN CSD International Work Programme (1995) defined as 'sustainable consumption':

The use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as the emissions of waste and pollutants over the lifecycle so as not to jeopardize the needs of future generations.

Products can be made cleaner, and there is growing interest in buying these kinds of ecoproducts, but still the trend of unprecedented overconsumption remains unbroken. In Europe, the market share of green cars has grown from close to 0 per cent in 1999 to 14 per cent in 2005; and the market share of green electricity has grown from 1 per cent in 1997 to almost 8 per cent (anticipated) in 2006 (Talk the Walk, 2005). SRI's market share, however, remained stable at roughly 12 per cent between 2000 and 2006 (after a 13 per cent peak in 1999, and coming

from 8.5 per cent in 1997). It is also revealing that advertising budgets, as a percentage of sales, remain at astonishing heights: spirits at 15 per cent; detergents at 11.5 per cent; office supplies at 10 per cent; food at 10 per cent; beers at 8.5 per cent (Schonfeld & Associates, 2003).

### **Extinction or transformation?**

The Institute of Noetic Sciences's (IONS, 2007) Shift report is not only a highly readable document on the transformation, but offers positive ways forward. On the one hand, the Institute observe how our materialistic and scientifically based world view has led to lower infant mortality rates, eradication of many fatal diseases, explosion of new technologies, broader access to the accumulation of wealth, and greater individual freedoms and rights. At the same time, they see that not all its effects have been beneficial; and may lead us beyond the edge of extinction for humans.

The rise of capitalism and modern technology have fuelled heightened global consumerism, which is stripping the Earth of its resources and filling our land, seas, and skies with polluting 'externalities' of production. Fear of scarcity has driven nations to fight over resources, and modern weapons development has made war more lethal and widespread. Income disparities, species loss, the disappearance of indigenous wisdom, and global warming are all by-products of a materialistic and self-centred world view which continues to be propelled by ignorance, denial, and its own momentum. And to all that, the Institute of Noetic Sciences add the ongoing and escalating clashes among both ethnic groups and religious fundamentalists, which are not new to this century but further reflect a world in disorder.

According to Willis Harman, a past president of IONS and renowned futurist:

Very central to our modern myth is the idea that it is perfectly reasonable that the economy should be the paramount institution around which everything else revolves and that economic logic and economic values should guide our decisions. It turns out that if you look at the assumptions underlying our economic system – especially the ones regarding the prerogatives of ownership – and then you look at the goals we humans have about how we want to live our lives, there is no compatibility. The assumptions can never lead to the goals. (IONS, 2007)

Joachim Wolf (2003) sees it as humankind that is now wrestling to resolve the seemingly insurmountable differences between its parts.

The mindsets of many are so focused on differences that they cannot identify with the whole that unifies all. At the same time, many of us are dealing with too many changes, too many decisions, and too many things to think about. A 2006 KidsHealth survey found that 40 per cent of children (in the US) reported feeling stress all or most of the time because of 'too much to do'. More and more people are being diagnosed with mental illness. One of the most telling indicators that levels of stress have exceeded our ability to cope is the mushrooming sales of antidepressants and prescription drugs (although that is also driven by pharmaceutical spending on advertising): an estimated US\$1.9 billion in 2005 on television ads alone (in the US). US spending on prescribed drugs (Kaiser Family Foundation) went from US\$40 billion in 1990 to US\$189 billion in 2004. Our biological systems were not meant to handle stress as a lifestyle, nor as a persistent feature of daily life. 'Fight or flight' was meant to be a tool for handling crises, not a permanent state of mind or way of being.

Other facts highlight allied concerns: the richest 2 per cent of adults in the world own more than half of global household wealth (Helsinki-based World Institute for Development Economics Research of the United Nations University). The richest 1 per cent of adults owned 40 per cent of global assets in the year 2000, and the richest 10 per cent accounted for 85 per cent of the world's total assets. There have been more than 250 major conflicts since the Second World War which have resulted in over 23 million deaths and countless millions injured. Since 1945, 90 per cent of the war casualties have been civilians. Economic data are also useful for putting the annual cost of war in perspective: the ongoing Iraq War, US\$200 billion; Universal health care for all US people, US\$100 billion; universal preschool in the US, US\$35 billion; cancer research, US\$6 billion; immunisations worldwide, US\$0.6 billion (IONS, 2007). Credit market debt in the US reached US\$36.91 trillion in 2004 compared to US\$13.77 trillion in 1990 (IONS, 2007). Perhaps the most sobering statistic is the World Health Organisation (WHO) report of a 60 per cent increase in suicide rates worldwide over the past 45 years. They estimate that approximately 1 million people per year die from suicide, and that suicide attempts occur 20 times more frequently.

## **Connecting business**

When all that information is connected to corporations, the results are paradoxical. Many consultants and innovators are among the first to

embrace new, even radical, models of change. At the same time, the dominant paradigm rests on a model of competition that prioritises short-term gain over long-term sustainability. Today, the Newtonian model of business, among others characterised by Taylor's theories – that is to say, dominated by efficiency and obedience, command and control, and thinking of organisations and people as parts in a machine – is facing challengers for whom systems thinking and organic processes are primary. At the UN Global Compact Summit in Geneva, July 2007, economists and politicians, in unlikely harmony, pleaded for thought leadership in the area of management theory. Responsibility will only flourish in a managerial ontology that makes responsibility foundational. This book argues that such a new conception of business, and such a new managerial ontology, will be based on what we have learnt from quantum physics and evolutionary biology. Together, these provide the theoretical groundwork for developing a new managerial ontology, one that, in this book, will be based on social 'intrapreneurship' using such key concepts as: self-organisation, networks, wholeness, interdependence, and entanglement.

Evidence of the idea of responsibility as a major issue has begun to emerge through the business community's involvement in Corporate Social Responsibility (CSR). The UN Global Compact Summit in Geneva (2007) bears witness to hundreds of companies' growing interest in becoming more responsible through CSR, and starting to manage their companies as part of an interconnected reality. According to Aron Cramer, CEO of Business for Social Responsibility (in the IONS Report), companies are today in the fourth stage of implementing Social Responsibility. He calls it 'strategic' CSR, which he defines as value creation and the development, research, and development that looks for solutions to critical social problems in a way that has a dollar-and-cents impact on the bottom line. However, from the perspective of this book, companies are not yet into understanding how 'happiness' can contribute to that bottom line, and how that bottom line itself is most probably the biggest issue in becoming a more socially responsible company. This book aims to develop this fifth stage, a stage where social responsibility becomes an aim and is no longer just a derivative. Indeed, companies need to refocus on creating wealth, on contributing to the wider economy and society, and should no longer be focused on the short-termism of that famous bottom line. The bottom line is nothing but an indicator, it is not a purpose. Unfortunately, it is often the indicator that while becoming a purpose causes illness. What is measured will be obtained, and if the bottom line is the holy

benchmark, it will be reached, and reached at any cost, regardless of its sustainability.

A company that contributes to the economy and to the society is almost by definition sustainable. It considers itself as part of a larger interconnected economic and social reality, in which it has a role to play. That role is creating wealth for that society. A pure Newtonian business model, which considers the economy as in Chaplin's *Modern Times* (i.e. that suggests that past and future are completely interlinked, and that management therefore becomes an act of rational command and control), has no space for responsibility. It might allow it as a side effect, but only as long as it does not hamper the bottom line.

The 2007 Shift report does observe a growing interest in retraining (or training) leaders, using various approaches based on values such as integrity, authenticity, social and emotional intelligence, and self-awareness. Similarly, Senge et al.'s (2005) notion of 'presencing' asserts the primacy of deep inner experience; and Scharmer's (2007) book *Theory U* (2007) goes further to advocate an ongoing cyclical process of listening and observing, processing, and acting. In the processing stage, Scharmer's (2007) emphasis is on stillness and reflection. All these moves reflect another paradigm: linking being present with processing, and with stillness and reflection.

Interest is growing; goodwill is manifesting. But more than just goodwill is needed. To develop further will require a theory, a conceptual framework, able to support an alternative, and an associated methodology or metrics will be necessary to manage it. The McKinsey report 'Shaping the New Rules of Competition' is based on in-depth interviews with CEOs and executives of 38 organisations throughout the world. It shows that 31 of the companies, or 61 per cent of the respondents, think that increasing environmental concern, greater demand for, and limited supply of, natural resources (38 per cent), and the emergence of China and India in the global marketplace (37 per cent), are going to influence society's expectations on business. Furthermore, the following environmental, social, and political issues were considered as the most critical to address for the future success of their business: educational systems and talent constraints (50 per cent); poor public governance (44 per cent); climate change (38 per cent); and making globalisation's benefits accessible to the poor (36 per cent). Some 59 per cent of the respondents say they want to incorporate 'much more' environmental, social, and governance issues into their company's core strategy; and 34 per cent say they already incorporate 'somewhat more' of it.

## Shifting barriers and undermining assumptions

But most enlightening in the McKinsey report is what those CEOs believe are the barriers. They see the obstacles to implementing an integrated and strategic company-wide approach to social responsibility as: competing strategic priorities (43 per cent); complexity of implementing strategy across various business functions (39 per cent); lack of recognition from the financial markets (25 per cent); and differing definitions of CSR across regions and cultures (22 per cent). Freely interpreted: they do not see it as a priority. Each function in the company operates autonomously and there is no real interconnectedness; the focus is short-term financial performance; and there is difficulty in recognising and using diversity as a creative force.

What else would you expect to see if you carefully consider our mainstream managerial thinking? As Kuhn and others, among them a number of quantum mechanic physicists, have said: one cannot explore a new paradigm from within the borders of the existing mainstream paradigm. Galileo Galilei could never have explained or discovered that the planets were turning around the Sun if he had stayed within the prevailing paradigm of his time (i.e. that the planets and the Moon would be turning around the Earth). Einstein could never discover or prove his relativity theory within the current Newtonian view of physics. Quantum mechanics doesn't make any sense within a Newtonian concept of physics. Similarly, long-term responsibility makes little sense within mainstream managerial thinking.

For example, what we know as business economics, the theory that forms the basis of our managerial thinking, seems to be of extremely limited help for contemporary conditions. Standard business economics is based on four main assumptions (Arthur, 1990; 1996; 1999). The first one assumes that all economic agents show rational behaviour. Though this is certainly partly true, it is also obvious that, for instance in buying behaviour, there is not always a lot of rationality. Marketing in practice aims to influence so-called rational behaviour, with mostly emotional elements. Accordingly, the acceptance of marketing itself as a valid activity and even a managerial discipline contradicts this rationalistic assumption fundamentally. As argued in my earlier work (Baets, 2006), no observation, no measurement, and, even more so, no interpretation can be objective, therefore the assumption of full rationality cannot hold in reality.

The second assumption states that the different economic players are fully informed (a necessity in order to be able to act rationally). In this specific era with massively expanding Internet information, this assumption seems highly theoretical at best. Not only is it virtually impossible to have all information, but even more so the interpretation of all available information brings us again to the non-rationality of information. Indeed information can only be transformed into knowledge by individuals, as knowledge that allows the user to enact behaviour (e.g. action and shaping). The expectation of being fully informed, independent of the knowing subject, is not feasible.

The next assumption is the alternative use of resources. In practice this means that once a resource is used in one product, it cannot be used in another product any more. This is a clear industrial era point of view, in which we mainly produced material products. In the knowledge economy, this is different. Information and knowledge are alternatively usable and, what is more, the more they are shared, the more their value can rise. That is an essential constituent of the law of increasing returns (Arthur, 1996). The law of diminishing returns, a basic one in classical economy, doesn't hold in the knowledge economy and doesn't hold in the 'today' economy, where nodes increase value.

The fourth assumption, which is more a question of convenience and probably causes least harm, is that there are a limited number of goods and services. It is clear that, certainly in the knowledge economy, services are often used for different purposes. Any service defined might therefore become a set of different services, according to the use that the clients imagine.

### **A new Mandelbrot set: Chaos perspectives, catastrophic consequences, and macroeconomic mistakes**

Mandelbrot and Hudson (2004), particularly in respect of financial markets, identify a similar set of assumptions that modern financial theory makes in order to justify their financial models. Mandelbrot and Hudson illustrate the catastrophic consequences of those assumptions on day-to-day financial portfolio management, and en route, destroy both the theoretical concept of those models and their financial performance. The assumptions he identifies behind classical financial theory are:

- People are rational and only aim to get rich.
- All investors are alike.
- Price change is practically continuous.

- Price changes follow a Brownian motion (independence of consecutive observations; statistical stagnation of price changes; the normality [Bell shape curve] of changes).

In general, the strong assumption behind most financial processes, but equally behind many managerial processes, is the normality of phenomena (99 per cent of the observations fall between the mean, plus or minus three times its standard deviation). Observational reality certainly does not conform to this assumption in most volatile markets.

In addition, these assumptions all fit in a reductionist framework that limits reality to a theoretically viable environment. As a consequence, observations in such a limited framework do not allow extrapolation into a real world, which, inconveniently, does not obey the assumptions. As *The Economist* (17 April, 1999) article, 'Quarks and coaches', observed: 'The one group of people to whom most businessmen rarely turn is economists. Big firms ask economists to predict the ups and downs of national economies, but when it comes to finding ways to run their own company better, many managers would sooner consult an astrologer'.

Furthermore, there are a number of concepts defined that don't really matter, that are acceptable but not really relevant, or do not add any value to the understanding of a particular problem. One example of such a concept is 'the circular flows of income and spending between business and households', whereby banks and governments play the role of 'multiplier' or 'catalyst'. Both multiplier and catalyst are concepts based on different assumptions. Multipliers indeed fit equations and causal relationships. A catalyst is not always as determined as assumed. A catalyst brings a situation to acceleration, without always precisely knowing where it moves to. The use of the word 'catalyst' in fact suggests a different kind of reaction, where what is meant, when analysed in more depth, is really a multiplier. Reality has shown that tax policy, possibly based on these theories, does not always work in the manner intended. In fact, it has become a political debate, and hence a political choice, whether one *believes* in a more important role for the government (always via taxes) or not. Independent of whether economic theory would work, tax policies are political choices, where all different parties in fact assume, or invent, possible side effects that would make crucial differences.

The claimed aims of macro-economic policy, again a set of political choices, are full employment, stable prices, economic growth, and a balance of payments equilibrium. So-called macroeconomic models

prove particularly unable to catch the dynamics of those markets. Therefore, they become highly irrelevant if a country enters any highly dynamic environment (hyper-inflation, political treaties, threat of a revolution, etc.). In the case of a stable situation, of course, those models would work, but they aren't necessary in that case, since behaviour is stable.

The essence of monetary theory is based on the equation  $MV = PQ$  (quantity of money \* velocity = price \* quantity). This is neither untrue, nor wrong, but it is not particularly helpful for the manager. And that summarises the essential 'axioms' of business economics.

## **Business economics and textbook lessons**

Similar illustrations can be drawn from what is known as business economics by briefly going over the structure of a standard business economics textbook. Typically, such a textbook would start describing the 'international economic environment' by concentrating on such high-level aggregations as: average wage level, labour cost per unit, trading price, competitiveness, and efficiency that would *not* be discounted in any other variable. Such a chapter would finish up with the role governments play in business practice, referring to legislation, taxes, trade zones, etc.

Most textbooks contain a chapter on macro-economics, which is interesting, but not really part of business economics. In a chapter on the organisation of firms and markets, where we expect to see some organising principles, mechanisms on how processes emerge, etc. we mainly find legal issues. In effect it offers a summary of a business law course.

The chapter on business objectives is the one that builds foremost on the assumptions and axioms (stated or hidden) of business economics mentioned earlier. The chapter starts with a discussion about mission statements, carefully not identifying whether we talk about a goal or a path. Referring to the 'rational behaviour' assumption, a company is claimed to pursue the profit maximisation principle. This maximisation is based on a number of equally impossible assumptions, which, in fact, limit reality to an artificial (i.e. unrealistic) but above all linear and stable situation (highly unusual). Those assumptions are:

- No division between ownership and control (which in practice is, of course, years out of date for any larger company). The ownership (the shareholdership) is represented in a general assembly of shareholders

but the daily management (the control) is done by professional managers. An interesting discussion here is whether a different kind of management can be observed in Small and Medium Enterprises (SME) (where ownership and control are often either in the same hands, or close to each other) and larger companies. Most research indeed suggests a difference.

- Full knowledge of costs and revenues (referring to the full information general assumptions) which is often neither reached nor reachable. An additional problem is that even if we can identify a fully correct picture at any moment, this would deny the dynamics of this process (certainly on the revenue side).
- No problems with fixed cost allocation (since there is theoretically only one product). In most companies this is far from the reality.
- Rational behaviour and only one objective, which, as already argued, are weak assumptions.

The difference between ownership and control – not to mention other stakeholders who are dramatically ignored in business economics – also opens the debate between sales revenue optimisation and growth maximisation, or sustainable development. Simon, for example, talks in this context about ‘satisfiers’ instead of maximisers.

The classical mistake, or weakness, resides in the process description of how to get to the corporate goal, due to oversimplified assumptions *and* presumed static, linear behaviour. Business economics focuses on fixing the path, instead of explaining the emergence in networked systems. Next the fixed path should be realised and management reduces itself to the control mechanism of the realisation of the path (not even always of the goals any more). The law of increasing returns (described earlier) in a knowledge economy is only one example of how disastrous the classical law of diminishing returns is when discussing the knowledge economy. The illustration of this type of mistake can be found in the classical aspects of business economics: demand analysis; cost theory; and pricing theory.

Demand analysis is often done using linear regressions (in best cases, as described in textbooks), denying the dynamic behaviour of markets. Apart from the basic assumptions already mentioned, a number of technical assumptions (often hidden) need to be fulfilled in order to be able to apply linear regression. Homoscedasticity (normal distribution of the error term) and the absence of multicollinearity (collinearity between explanatory variables) are only two of them. Non-fulfilment of these assumptions causes numerical deficiency on the

results that cannot be observed in the classical statistics of the regression analysis. In quasi-stable, quasi-linear markets, all those models work, which only serves to illustrate that this situation is a special case (a simplified form) of a more generally valid quantum interpretation. In fact, the regular business economics theory is a special case of the more general quantum economics theory, only applicable to quasi-stable and quasi-linear situations.

The fixed and variable cost theory, based on oversimplified assumptions of no cross relationships and full information, is again a special case of a more general cost behaviour structure. Once we accept cross relationships between products (services) and human production actions, we automatically fall into the network paradigm.

### **Emerging differences and guiding frames**

Other than in oligopolistic markets, which are again a special case of fully interacting markets, pricing in non-linear dynamic markets becomes a question of strategising. The best example of strategising games can indeed be found in game theory. The best known case is the prisoner's dilemma, in which two 'players' play against each other, each having two possible strategies (reality, of course, is infinitely more complicated, with a huge number of possible strategies for each player.) The unknown in the game is that each of the players ignores what the other plays. Game theory knows zero sum games or non-zero sum games. Game theory has been used to illustrate pricing games. As the law of increasing returns suggests, strategising of prices goes much further. According to Arthur's theory, the aim is to get a snowball effect going, at the right moment. If a company strategises a market correctly, it should be able not only to price correctly, but to do so at the correct moment. That kicks off the dynamic process of market penetration, often leading to important market shares. A wrong strategy (price or timing) causes the product to die out. The law of increasing returns explains why demand analysis and pricing cannot be considered differently. In dynamic situations (knowledge markets), market behaviour and price interact in continuous feedback loops and can therefore only be studied jointly. It is clear that this market behaviour, incorporating pricing issues, will become the backbone of a quantum interpretation of business economics (Baets, 2006).

Most classical textbooks have two more chapters. A chapter on investment analysis, concentrating on investment appraisal, which is highly dependent on a lucrative anticipation of the future expected returns.

A final chapter needs to discuss corporate strategy formulation, discussing goals, but most often fixing paths. Porter's chain of value analysis, and/or his five forces model have survived the major quantum revolution. It still identifies a number of generic strategies: cost leadership, and differentiation and focus, that, if all assumptions indeed worked, would lead automatically to a fully transparent market with all players having all information. This would reduce strategic choice to the one and only really plausible strategy in such a situation of fully informed markets and players, which is a pricing strategy (hopefully based on a cost leadership). In a case where these assumptions proved true, and the model worked, it would push the remaining players to minimal profits and eventually into losses, which we can indeed observe in certain markets. The airline market is just one illustrative example. As much as markets are emergent and pricing is one of the many loop variables in such markets, strategy cannot be identified, but equally emerges out of the interaction of market players.

One purpose of this book is to give the business community a conceptual framework, an ontology, and tools to be able to manage for sustainable performance in an interconnected world. Where current managerial theories seem to be part of the disease, we need not only another conceptual frame, but also other metrics in order to allow a company to manage for sustainable performance, from a more holistic point of view. Only within a more holistic view on management is there space for sustainability, for Corporate Social Responsibility, and for ethics. These offerings are designed to contribute to the call of the UN Global Compact programme to take part in the development of a new conceptual understanding of responsible management.

Chapter 2 of the book discusses its underlying theories of biology and complexity that allow us to suggest a quantum ontology of acausality in Chapter 3. Chapter 4 introduces concepts of non-violent communication, interrelationship, networks and co-production. Chapter 5 deals with an emerging practice of management by values and discusses the central role of values in corporate strategy, while Chapter 6 develops the concept of sustainability and leadership. This enables Chapter 7 to design and test a holistic diagnostic for sustainable performance; to construct a technology for analysing the company differently. Leadership, as will be argued, is playing a key role in sustainable performance once we have defined the latter from a systemic perspective. Chapter 8 draws some interesting lessons of social entrepreneurship, before 'social intrapreneurship' – a new kind of management, targeting

different goals, with different activities, and piloting the company with different tools – is defined in Chapter 9.

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