FTA and equity: New approaches to governance

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ABSTRACT

FTA and equity addresses the need for multiple stakeholders' participation in public policy and corporate decision making thus leading to more democratic societies. The need for more participative and inclusive decision making is due to the move from the technocratic nature of decision making towards more democratic processes, which is a result of the transformation of societies and situations as a result of various factors including globalisation, environmental concerns, more knowledge intensive work and lifestyle.

The current paper addresses Future-oriented Technology Analyses (FTA) in the context of a better understanding of issues that ought to be considered by the FTA community so that it can support the quest for new forms of governance. The paper has been structured on the discussion of governance around three pillars: socio-cultural evolution, corporate industrial activity and government.

Analysis of the relationship between governance and each of the three pillars poses a number of questions to the FTA community that reflect on the potential impacts of FTA activities in governance. Setting a new landscape for the FTA, the paper concludes with those issues where the FTA community is starting to devote attention, as well as those it still ought to consider.

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1. Introduction

The paper addresses Future-oriented Technology Analyses (FTA) in the context of the issues that ought to be considered for its application to support the quest for new forms of governance embracing governments, wider society and corporate activities. Setting a new landscape for FTA activities around the concept of governance, is the aim of the paper while shedding some light on the issues which ought to be addressed by the FTA community with the aim of supporting new forms of governance. The paper is structured around three pillars: (i) socio-cultural evolution, (ii) corporate industrial activity and (iii) government interests.

While there has been a great deal of emphasis on the development and use of FTA in the public sector there has been substantial growth in foresight and FTA in business. However, the discussion about multiple stakeholders' participation in public policy and corporate decision making has received very little attention from the FTA community who have taken for granted that FTA activities are participative. However, the stakeholders, their perspectives, and the representations of the participants involved are usually not analysed in a systematic way. Therefore, 'genuine' (not just a smokescreen), 'inclusive' (reflecting all views within the community), and 'effective' (not just a talking shop) participation becomes a highly disputed matter [1]. If the achievement of equity and governance is the ultimate aims for policy making, then high quality participation, which is genuine, inclusive and effective, is the essence of FTA processes.

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A short overview of the development of the present situation regarding governance sets the scene for the more detailed analysis of the relationship between governance and each of three pillars mentioned above. The later discussion intends to enable the FTA community to reflect on how FTA activities can support the move towards more democratic societies and the potential impacts of FTA in governance. The paper concludes with those issues in which the FTA community is starting to devote attention to as well as those it still ought to consider.

2. History

Governance is an outcome of the continual battle between risk and regulation. Risk is ubiquitous to all life, but in human societies it has perceptual and physical components infecting matters relating to society, science and technology, economics, ecology, politics and value/norms: hence the source of risk's ubiquity. Ulrich Beck [2] coined the term 'the risk society' in 1986, but this was some time after the UK's Royal Society embarked, in 1981, on a series of conferences on the assessment and perception of risk. Risk and perceptions of it are closely related to fear making the proper understanding of the real physical nature of risk of prime importance to framing regulations where the politics of fear may intrude irrationally.

Regulations are framed to attempt to calm the perceptions of risk and to control or reduce fear and to make life easier. Rarely is it eliminated as the world is rarely what the public perceives it to be. Governance then proposes and implements regulations in ways that are a political art as much as a science, underlain by the question of equity: for whom and by who is governance being exercised? However, this question is frequently overlooked and the focus on science and technology development and economics always prevails, instead.

The history of governance is mostly concerned with how the public's perception of technological innovation has grown over time. The link with FTA is obvious. It leads towards a notion of an extended role for FTA in a world where new forms of governance are growing from the emergence of the combined phenomena of globalisation and glocalisation and to the need to anticipate the future needs to manage risk and regulation.

All of the above needs to be seen in the context of a slow running rearrangement of the world's chessboard of power that is now reaching a peak in an eastward shift: invention and innovation, and their risks are an important part of the emerging landscape. At this point there is much force to Whitehead's perception that 'Science is concerned with generalities. The generalities apply, but they do not determine the course of history apart from some anchorage in fact.'

The role of FTA, as it affects human and natural life, has a pivotal role to play in assuring the continuation of human rights, freedom, democracy and privacy, all of which is threatened through risk, regulation and governance.

The relationship between advances in technology and human social development was established during the Enlightenment well before the notion of 'economics' was born as a cultural invention, rather than as a pseudo-objective science. The latter's claim to understand this relationship is recent and tenuous. It has become more tenuous over time despite strenuous efforts to the contrary that include Adam Smith's theses, long-wave (Kondratieff) 'theory,' Schumpeterian 'gales of creative destruction', Nelson and Winter's evolutionary economics and much else besides.

More recently, the pace of migration of new science and technology (S&T) has increased under the influence of the widespread use of new socio-economic communication technologies and the globalisation of the world markets. It has been only since the middle of the Twentieth Century, that a long, slow running unease with the assumption that all science and technology were 'good things' and that human mental plasticity would always adapt to them, has begun to split society.

The challenge to the conventional mantra that economic, not human, development, depends on the advancement of science and technology, has been accompanied by a growing rejection of technological determinism. H.G. Wells and Aldous Huxley were among the earliest authors to challenge the conventional mantra, exposing the hidden social consequences and concerns for the future of advances, real and imagined, of S&T though in very different ways. Soddy [3,4], in the 1920s, provided a particular form of scientific criticism of the conventional mantra. However, it was probably the use of the fission nuclear weapons to end World War II that gave added impetus to the questioning of the role of science and technology in human development.

Many of the scientists involved in the Manhattan Project, including Einstein and Oppenheimer, were deeply affected by its purpose and outcome; the controversy that began then has never died and has support the modern criticism of the role of S&T in human development. During the Cold War nuclear weapons strategies were emphasised by Herman Kahn and others [5–7].

The nuclear threat was the seed for the current call for new forms of governance to cope with the regulation of S&T that is now embedded in the combined phenomena of globalisation and glocalisation of business, with effects on every aspect of modern societies and the natural world.

By the early 1970s, the clamour for governance of S&T resulted in the formation of the PAU in the UK and the OTA in the USA; both organisations introduced rules for technological assessment, although with less formal attempts to assess the social accounting cum auditing of business activity.

New fora for involving the public in the governance of S&T came in many forms from the 1970s onwards, including citizen juries, consensus conferences and strenuous efforts to increase the publics' understanding of science.

All these procedures highlighted the breadth of the cascade of situations as they have evolved over the last 40 years. Technology assessment (TA) has diverged into environmental impact analysis (EIA), strategic environmental impact analysis (SEIA) and constructive TA while other processes include energy analysis (first developed by Soddy) and life cycle analysis (LCA).

These methods have to be seen in the context systems thinking of which they are all sub-sets as are the methods that accompany any future oriented technology analysis. Political confusion has never been far away as the OTA and the PAU have

both been disbanded under changing political regimes. Most recently, foresight studies have stormed onto the scene to become a global phenomenon.

Globalisation and its offspring glocalisation have moved centre stage and now present three pillars – corporate industrial activity, socio-cultural evolution and government interests – that are important in the quest for new forms of governance relating to them. All of these, including globalisation and glocalisation themselves, have to be set against the background noise of matters that affect human societies and natural life globally: a series of diagrams are used later to illustrate some of the issues that will need to be incorporated into any future mantra of governance and the evolution of S&T.

Some features may be the inclusion of the principles of industrial ecology and its near relative ecological economics. Both of these fields have been evolving since the 1960s. Similarly, the continuing pressure for the public participation in science and technology decision-making processes, elsewhere called a 'democratic deficit' and coming from Greenpeace, the Friends of the Earth, the ETC Group, and other activist groups, continues unabated introducing more complex intrusion into developments in S&T. These concerns have been assuaged partially by the evolution of corporate social responsibility (CSR) and the Global Reporting Initiative (GRI), both of which are becoming widely adopted under voluntary procedures.

The foregoing review is intended only to place FTA activity in context. It is as well to remember Wittgenstein's claim that 'methods pass the problem [situation] by.'

3. Governance

The shift from 'Government' to 'Governance' and to the new global 'regulatory' state explains the substantial changes in legislation, regulation and public policy [8]. The shift from technocratic decision making towards more democratic processes can be captured in the concept of governance. It explains the involvement of stakeholders in sharing responsibility for the political, economic and juridical decisions in a dialogue process with the political authorities. Governance and regulatory concepts imply a modified description of what regulation is and how it works, where the regulatory limits of state authority and the potential of society to influence, restrain or block public policies are recognised. It also involves the positive contributions of corporations, institutions and associations to enhance public policy within a new framework, which emphasises the interactive and interdependent nature of the new regulatory environment.

According to Sheng [9], governance is the process of decision making and the process by which decisions are (or not) implemented. The analysis focuses on the formal and informal actors involved in decision making and in implementing them as well as the formal, and informal structures that have been set in place to arrive at and implement such decisions. Good governance assures [9] that corruption is minimised, the views of minorities are taken into account and that the most vulnerable in society are heard in decision making, in ways that are responsive to the present and future needs of society. Sheng [9] claims that there are eight major characteristics to good governance:

1. Participation by both men and women through freedom of association and expression on the one hand and an organised civil society on the other hand.
2. Consensus oriented resulting from an understanding of the historical, cultural and social contexts of a given society and community. It requires different interests in society to reach a broad consensus on what is in the best interest of the whole community and how this can be achieved. It also requires a broad and long-term perspective on what is needed for sustainable human development and how to achieve its objectives.
3. Accountability of governmental institutions and private sector, and civil society organisations to the public or those who will be affected by decisions taken and consequent actions, and to their (institutional) stakeholders. Accountability cannot be enforced without transparency and the rule of law.
4. Transparency, which means that decisions taken and their implementation are done in a manner that follows rules and regulations. It also means that information is freely available in easily understandable forms and directly accessible to all who will be affected by such decisions, and their implementation
5. Responsiveness which means that institutions and processes try to serve all stakeholders within a reasonable timeframe.
6. Effectiveness and efficiency which means that processes, and institutions produce results that meet the needs of society while making best use of the resources at their disposal through the sustainable use of natural resources and protection or conservation of the environment.
7. Equity and inclusiveness that requires that all groups, particularly the most vulnerable, have opportunities to improve or maintain their well being, which depends on ensuring that all members of a given society or community feel that they have a stake in it and do not feel excluded from mainstream.
8. Follows the rule of law which requires fair legal frameworks that are implemented impartially, full protection of human rights, an independent judiciary and an impartial incorruptible police force.

New forms of governance are based on claims for accountability; transparency; participation; and coherence all of which aim at a reorganisation of decision making structures with the objective of re-asserting social legitimacy. Policy documents, such as the European Commission's White Paper on Governance [10] reflect the need to move beyond formal processes of government and public administration, to promote a continuous and closer interface between the state, the economy and society. Yet, COM [10] claims that governance methods and systems have not been institutionalised on a broad and continuous basis in Europe and elsewhere.

As a counter-argument, Olsen [11] suggests that the process of governance may not always produce a precise and stable policy outcome. One of the reasons for this is that not all stakeholders have the resources to be involved in policy making processes. These points have been raised and discussed extensively by Ulrich [12], and Loveridge and Street [13]. Ulrich's [12] Critical Systems Heuristics (CSH) recognises that various stakeholders in society may see situations [14] in radically different ways because different stakeholder values and behavioural characteristics lead to different boundary judgements. In this way the complexities imposed in socio-cultural systems, where conflicts and unequal power distributions occur, may be taken into account. Ulrich's 'radical' view accepts that these stakeholders may be in conflict or confrontation with each other on unequal power terms [15], status and other behavioural characteristics relevant to (i) above. CSH claims to recognise existing inequalities of wealth, status, power, authority, gender, race and sexual orientation in a situation: these are all behavioural components of participants in Foresight. CSH also seeks to give a voice in the decision making process to those who suffer the consequences. Sharing those concerns, Loveridge and Street [13] suggest that an inclusive Foresight may be expected to:

- Create greater public awareness and understanding of new science and future technologies.
- Improve the anticipation of what are likely to be desirable uses of anticipated future technologies through public participation.
- Avoid the assumption that people have infinite plasticity towards new technology.
- Increase trust between policy makers, business and the general public, and consequently, reducing the number of occasions when products and services based on new technologies are rejected when they are launched or soon afterwards.
- Create policy processes amenable to current and future issues with the characteristics of trans-science [16] that require direct public participation.
- Help meet societal expectations of increased transparency and involvement in decision making.

In order to achieve a genuine, inclusive and effective participation process it is important to understand what is meant by the term "stakeholder". From Freeman's [17] definition, Saritas et al. [18] define stakeholders as "*any group of individuals who can affect or are affected by the policy decisions taken*" (p. 3). The new governance and stakeholder approach has various implications for the relationships between the society, corporate industrial activities and public governance. The implications of this approach for relationships between the society and public policy explain the shift from the government to governance. Regarding the relationships between corporate industrial activities and society, the this new approach brought the Corporate Social Responsibility (CSR) concept onto the agenda, explaining that businesses have further responsibilities, other than their shareholders and their economic performance, to take society's, and the environment's interests into account.

The question is how to formulate and facilitate policy making taking into account the active involvement of society and the requirements of the new governance systems. How FTA activity can support such moves must be set against the three pillars of corporate industrial activity, socio-cultural evolution and government interests, according to the pictorial metaphor described in Appendix.

However, the current practices of the FTA are not deep enough to understand and intervene in these transformed systems. Current FTA does not go beyond the application of certain methods, which are rooted in technological forecasting although it is claimed that FTA activities are inclusive, but the 'quality' of such inclusion is arguable.

Consequently, FTA has to transform itself too. "What then can FTA learn from this transformation?" is the main question this paper raises by describing the new governance landscape which can be represented by a Venn diagram with a triangle at the centre of the three intersecting systems (Fig. 1).

4. Social-cultural evolution

The growing need for a better quality of social life has given rise to pressures from a number of activist groups for social participation in decisions which affect society's ways of living, and to policies aiming to improve social cohesion.

In Europe cohesion policy is seen as the best way to foster regional development and convergence since it empowers citizens actively to shape their future and encourages an integrated approach to development which promotes partnership as a key element of good governance. According to the government-commissioned *State of the English Cities* reports [19], there are five different dimensions of social cohesion: material conditions, passive relationships, active relationships, and inclusion and equality.

These dimensions are ideals rooted in the social response to the concept of sustainable development, which has been moulded throughout the last few centuries[1] but was only disseminated worldwide by the World Commission on Environment and Development [21]. The concept means development that is able to meet the necessities of the present generation and does not compromise the rights, and the possibilities of future generations to attend their own necessities.

Sustainable development can be characterised as long term social learning oriented by public policies, which are driven by a national plan of between regions and within regions endogenous development. Here, sustainable development can be seen as a proposal with an ethical modernity in its horizon and not only a technical one; it implies incorporating the compromise with all life or continuity in the horizon of a transforming intervention of the 'world of needs' [22].
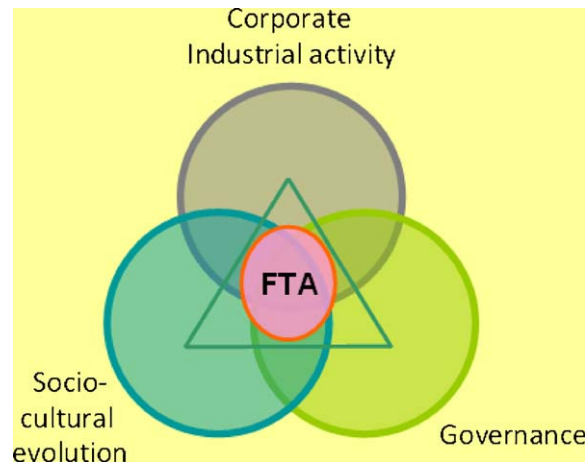
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[1] Cf. Cagnin [20].

Fig. 1. The new governance landscape.

To achieve this goal, a base of knowledge and abilities that are technically feasible and ethically desirable is needed. Implicitly, sustainable development recognises the need for technology to develop solutions that conserve the Earth's resources, allowing their renovation (in the case of renewable natural resources), in proportion to the needs of future generations. The concept should be understood as the possibility of building a new era of economic development, enabled with policies [22] that keep and expand the natural resources base. Sustainability emerges from the exhaustion crisis of economic development based on rational, 'growth' economics that subjugates social, cultural, political and environmental matters towards the consequences of economic growth.

Bursztyn et al. [22] consider six dimensions for sustainability; their integration comprises elements that interact with each other. As a consequence, the social construction of sustainable development becomes a process of managing multidimensional social conflicts embedded in the six dimensions for sustainability as articulated systems: social; ecologic; economic; spatial; cultural; and institutional-political: the interdependencies among the major elements are suggested in Fig. 2.
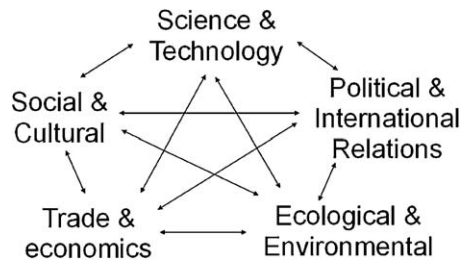

Fig. 2. Interactions between major elements.

The social response to sustainability, brings the need to "think globally and act locally," simply glocalisation. The latter is the principle of Agenda 21 (the document consensually approved at the UN Conference on Environment and Development in 1992 [23] by representatives of 179 countries) and is at the heart of the quest for new forms of global governance.

5. Corporate industrial activity and society

Corporate social responsibility (CSR) is a critical cross-connecting theme regarding democracy and participation in shaping corporate decisions. User-centred innovation assumes that user participation may help to prevent technological dead-ends, reduce dependency on vendors and promote universal interoperable technology when innovation processes are shaped by the social environment. CSR brings wider societal concerns and values, such as human rights, ethics and corruption, into business strategy and decision making.

Although some see CSR as philanthropy by a different name, it can be defined broadly as the efforts corporations make above and beyond regulation to balance the needs of stakeholders with the need to make a profit [24].

From a stakeholder perspective, strategic management needs to create a satisfactory balance of interests among the various stakeholders who contribute to or are affected by the firm's actions [25]. Moreover, CSR is believed to deliver the greatest benefits to a company and its stakeholders when integrated with business strategy and operations [26]. Hence, a core issue to CSR is partnership development.[2]

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[2] Cf. Shelton [27]; NNSR [28], among others.

CSR proponents have used four arguments to make their case [29]:

- *Moral obligation*: firms have a duty to be good citizens and 'do the right thing' that involves balancing competing values, interests and costs.
- *Sustainability*: an emphasis on environment and community stewardship often invoking the so-called triple bottom line of economic, social, and environmental performance. Nevertheless the sustainability school raises questions about these trade-offs without offering a framework to answer them.
- *License to operate*: every firm needs tacit or explicit permission from governments, communities and other stakeholders to do business offering a concrete way for a business to identify social issues that matter to its stakeholders and make decisions about them through constructive dialogue with regulators, the local community and activists. Although the views of stakeholders are important, these groups can never fully understand a firm's capabilities, competitive positioning, or the trade-offs nor does the enthusiasm of a stakeholder group necessarily signify the importance of an issue either to the company or to the world.
- *Reputation*: justification of CSR initiatives on the grounds that they will improve a company's image, strengthen its brand, increase morale and even raise the value of its stock. The underlying rationale often risks confusing public relations with social and business results.

All four schools of thought share the same weakness [29]: they focus on the tension between business and society rather than on their interdependence. Each creates a generic rationale that is not tied to the strategy and operations of any specific company or the places in which it operates. Consequently, none of them is sufficient to help a company to identify, prioritise and address the social issues that matter most or the ones on which it can make the biggest impact.

5.1. Research on corporate social responsibility

The business case for CSR can be divided into theoretical and empirical categories [30] based on frameworks that aim to explain the nature of the relationship between financial and environmental and/or social performance [30,31]. Frameworks proposed by Preston and O'Bannon [32], Salzmann et al. [30] point out that these differ in terms of the hypothesized causal sequence and the direction of the relationship.

Remarkably, theoretical frameworks often do not allow for non-linear relationships since the nature of the relationship could change depending on performance levels. One example is the non-linear relationship of an inverted U, which suggests there would be an optimal level of social–environmental performance reflecting intuitive logic that improvements in environmental or social performance pay off financially at first but have diminishing returns [30,31].

Empirical studies are dominated by research in two domains [31]:

- Managers' attitudes towards CSR and related concepts.
- Instrumental research attempting to either confirm or disprove the link between corporate social and environmental performance and financial performance.

Salzmann et al. [30] agree that empirical studies are either instrumental, which aim to test empirically the relationships hypothesized in theoretical studies, or descriptive that are intended to examine how firms and managers approach the business case for CSR in practice.

Empirical studies suggest that the relationship between financial performance and social–environmental performance is complex and contingent on situational, company and plant specific factors that are difficult to detect through analytical approaches. The issue of the causal sequence between financial and social–environmental performance remains unresolved. Descriptive research suggests that managers focus on the economic dimension of CSR revealing two shortcomings on firms' approach CSR: (i) there is a clear lack of comparative and cross-industry studies and (ii) there are even fewer studies that have concentrated explicitly on the business case for CSR as a driver of corporate sustainability management [30].

5.2. The business case for sustainability

The business case for sustainability is sector-specific. It is difficult for companies to build reasons for CSR with its apparent limited relevance to social and environmental risks and opportunities to a firms' core business. CSR's numerous and highly fragmented stakeholder demands and lack of basic organisational capacities to collect and process relevant data makes its relevance obscure [31].

Advocates of CSR have put forward pragmatic arguments that its pursuit would limit regulation and improve a company's reputation, employment recruitment and retention [33].

The reality is that, depending on the degree to which regulation forces companies to internalise externalities, environmental and social issues can become economically relevant for companies. CSR goes beyond compliance with the law and obviously not all externalities are internalised. For this reason stakeholders put firms' under additional pressure to internalise more of the social and environmental externalities that they create. Nevertheless, companies must ensure their own economic survival in a competitive and volatile business environment while dealing with social and environmental issues [31].

CSR strategies may work under certain conditions [24], but they are highly vulnerable to market failures. Often there is a chasm between what is good for a company and what is good for society as a whole. One of the assumptions behind CSR is that business outcomes and social objectives can be more or less aligned, that the market will ultimately balance itself. Yet there is little if any empirical evidence that the market behaves this way. Traditional regulatory models would impose mandatory rules on a company to ensure that it behaves in a socially responsible manner. Regulation brings with it predictability and, in many cases, innovation, such as standards which can be continuously improved through a combination of both research and legislation [24].

5.3. Tools and standards to support business sustainability

The GRI Sustainability Reporting Guidelines have created performance indicators (both quantitative and qualitative), measuring the impact or effect of sustainability on the reporting organisation. The indicators have emerged from the combination of the GRI and the UN Global Compact Initiative (UNGCI) in the GRI G3 guidelines.[3] The UNGCI, launched by the United Nations in 2000 in partnership with business, offers nine principles relating to human rights and the environment which have become the ethical roadmap for the future.

At the same time, socially responsible investment (SRI) has become mainstream since 1999 when the Dow Jones Sustainability Indexes were created, closely followed by the FTSE4Good [24]. Socially responsible investment is about investors taking ethical, social and environmental criteria into account when making investment decisions. SRI plays an important part in creating corporate and public awareness about CSR issues and about the active role that the financial community can play in furthering social causes without suffering financially. It is a means to make contribution towards more responsible and sustainable business behaviour. Its selling point is that SRI funds allow investors to invest according to more ethical values, while making good financial returns. Indexes such as FTSE4Good Index,[4] Domini 400 Social Index and Dow Jones Sustainability Index played a crucial role in the commercial breakthrough that SRI has seen over the last decades due to the fact that they allow benchmarking between the performance of SRI and the overall market. In this context, sovereign wealth funds have gained world-wide exposure by investing in several Wall Street financial firms including Citigroup, Morgan Stanley, and Merrill Lynch. There have been attempts to distinguish funds held by sovereign entities from foreign exchange reserves held by central banks. The former can be characterised as *maximizing long term return*, with the latter serving short term *currency stabilization* and liquidity management.

To link foreign direct investments to CSR, the OECD Guidelines for Multinational Enterprises (MNEs) provide voluntary principles and standards for responsible business conduct in a variety of areas including employment and industrial relations; human rights; environment; information disclosure; competition' taxation; and science and technology. Their aim is to ensure that MNEs operate in harmony with the policies of the countries where they operate. These voluntary standards cover the full range of MNEs' operations and are a part of the Declaration on International Investment. Nevertheless, the number of voluntary standards has risen in the last decades and put companies in difficult situations in abiding by their principles.

In reality, the most common corporate response to CSR has been neither strategic nor operational but cosmetic [29]. Forward looking commitments to reach explicit performance targets are rare. To advance CSR it is important to look beyond community expectations to opportunities to achieve social and economic benefits simultaneously, thus reinforcing corporate strategy by advancing social conditions creating economic and social shared value.

5.4. Strategic corporate social responsibility and governance

Strategic CSR is about choosing a unique position [29], principles that apply to a firm's relationship to society as readily as to its relationship to its customers and rivals. Table 1 outlines that strategic CSR moves beyond good corporate citizenship and mitigating harmful value chain current and future impacts.

Strategic CSR involves both inside-out and outside-in dimensions, where the opportunities for shared value truly lie. Inside-out linkages are those that a company impinges upon society through its operations, which are dependent on location. Outside-in linkages are those external social conditions that influence corporations for better or for worse. Integrating inside-out and outside-in practices through pioneering value chain innovations and addressing social constraints to competitiveness are powerful tools for creating economic and social value, but are more powerful if they work together making CSR hard to distinguish from day-to-day business of the firm [29].

CSR also unlocks shared value by investing in social aspects that strengthen a company's competitiveness. The more a social issue tied to the firm's business, the greater the opportunity to leverage the company's resources and capabilities, and benefit society. Each company can identify the particular set of societal problems that it is best equipped to help resolve and from which it can gain the greatest competitive benefit. The assumption that CSR can be defined as business decision linked to ethical values [37] presupposes that stakeholders and businesses understand each other as well as which interests are being met and the reasons why.

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[3] The GRI G3 guidelines emerged from a strategic alliance between GRI and UNGCI, to offer a framework to help companies build an internal capacity to embed the values and principles of CSR and the GRI reporting into organisational strategies and culture across their value chains.

[4] FTSE index date back from 1962, was first calculated worldwide in 1985 and FTSE was established as an independent company in 1995 [http://www.ftse.com/about_ftse/About_FTSE.jsp].

Table 1
A strategic approach to CSR.

Generic social impacts	Value chain social impacts	Social dimensions of competitive context
Good citizenship	Mitigate harm from value chain activities	Strategic philanthropy[5] that leverages capabilities to improve salient areas of competitive context
Responsive CSR[6]	Transform value-chain activities to benefit society while reinforcing strategy	Strategic CSR

Source: Porter and Kramer [29].

Corporate governance is then about strategic CSR, which integrates value chain social impacts and investments in competitive context; it is the means developed by a firm to build a proper dialogue with stakeholders so that there is a real understanding of what needs are being or will be met and reasons why. Therefore, stakeholders need to have a say or at least to understand the strategic decisions of a company so that the eight criteria of good governance are met: participation and inclusiveness, understanding of all points of view (consensus-oriented), responsiveness which is related to effectiveness and efficiency, and accountability which is linked to transparency and the rule of law.

6. Government interests: society and corporate activity

A central assumption behind innovation systems theory is that knowledge is the fundamental resource in the modern economy and that, learning is the most important process. It is also assumed that learning is an interactive and socially embedded process that cannot be understood without taking into consideration its institutional and cultural context. Factors such as public awareness of industrial and technological risk, growing instances of social resistance to new technologies, and claims for novel forms of public involvement and for democratisation of knowledge, raise the need to look at how perceptions and values, brought about by the so-called risk society, are shaping innovation processes. Hence it is important to be clear that there is a need for emerging technologies to be subject to social scrutiny. Whereas technological innovation originates within firms and is protected, to a great extent, by secrecy and intellectual property, it is clear that novel modes of governance presuppose the transparency and openness of decision making procedures to stakeholders while acknowledging the relevance of knowledge other than science, such as experimental, ethical and social knowledge.

The foregoing are shown in the uppermost layer of the pictorial metaphor (see Appendix) and illustrate how FTA is embedded in the background to the influences globalisation and glocalisation on the three pillars of corporate and industrial activity, socio-cultural evolution and government's interests, creating the need for new forms of governance. There is no doubt that innovations in international relations and regulations are embedded in globalisation and glocalisation. Similarly, innovations in international agreements on trade, standards of all kinds, intellectual property rights, environmental matters, health and safety and human rights are all involved, often interactively, in the emergence of new forms of governance as globalisation and glocalisation develop. The 'joker in the pack' is international conflict and informal war or 'terrorism' as these can have significant influences on the evolution of globalisation and glocalisation. Ultimately any government's interests lie in the 'nuts and bolts' of policy that involve the synthesis of possibilities from the two lower boxes in Fig. A3 (Appendix).

In this entire context, standardisation in regulation is one of the fundamental concepts of governance. Standards were traditionally set by public bodies. More recently, industry and retailers in some countries have taken independent initiatives to develop standards and health related schemes. These activities are aimed at the enhancement of consumer trust and brand value, and at avoiding litigation claims through the involvement of the society in setting the standards. This kind of 'private' regulation is named 'self-regulation' and has become part of the standardisation and regulation process in a number of areas including food safety and environmental standards. The breadth and influence of those attempts have gone beyond national borders and initiatives at the global level have been taken.

7. Discussion: FTA in support of new forms of governance

Governance methods and systems have not been institutionalised on a broad and continuous basis possibly because participation seems to be guided mostly by social legitimacy, rather than by a genuine desire to involve the public into decision making. Hence, it is important to reflect on how FTA methods and processes could support a move towards genuine governance and thus a more democratic society.

The headline message from the 2006 World Economic Forum at Davos was that we are shifting from a world characterised increasingly by resource constraints to one which, in addition, is driven increasingly by radical disruption of markets, societies and ecosystems. Firms will need to focus on themes like creativity, breakthrough innovation, entrepreneurial solutions to great challenges, like pandemics and climate change, and rapid scaling, and replication of successful solutions

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[5] Strategic philanthropy, also know as creative capitalism [34] or context-focused philanthropy [35,36], is the use of philanthropy to enhance context bringing thus social and economic goals into alignment and improving a firm's long-term business prospect.

[6] Responsive CSR comprises two elements [29]: acting as a good corporate citizen, attuned to the evolving social concerns of stakeholders, and mitigating existing or anticipating adverse effects from business activities.

beyond addressing global inequalities and cultural and religious divides. Dignity, equity and peace together with globalisation, world trade, Africa and climate change were the highlights in the 2007 Annual Meeting. On the same theme The World Economic Forum Annual Meeting 2008 opened with calls from the Co-Chairs to exercise "The Power of Collaborative Innovation" to meet the top challenges of economic instability, climate change and equitable growth.

One may argue that citizens who are given the opportunity to be informed effectively; to understand and to have a say on new technological choices in appropriate settings, may be ready and willing to exert their own right in decision making processes and at the same time contribute to firms, and public decision making. But what would then be the role of government and industry in developing human capacity and enabling the literacy of citizens at large? The question is especially relevant as globalisation must offer opportunities for all. In fact, the latter poses a number of questions which need to be addressed such as how do FTA methods and processes address the complex issue of literacy asymmetries of different stakeholders? How can FTA strategies and methods make sure that the visions of different stakeholders can be harmonised and represented in the final outcomes and products? How far would public and private leadership literacy as well as building citizens' capacity in FTA methods and processes lead to more participation in overall decision making?

7.1. FTA for public decision making

Actors affected by innovation processes ought to be more involved in technological development, so that their needs are taken into account. Therefore it is critical to reflect on how FTA methods and process contribute to governance modes that are more responsive to risk society perceptions, values and apprehensions.

Questions need to be considered that include what kinds of governance is needed to permit actors external to the innovation processes to become more actively involved in technological development, and enables their needs and requirements to be taken into account, in functional, as well as in social and ethical terms? Are conventional technocratic modes of regulation yielding to governance modes that are more responsive to risk society perceptions, values and apprehensions? Above all, how do FTA methods and process contribute to such governance modes?

The conditions for democratic governance of technology and innovation need to be acknowledged and discussed. Rather than just opening dialogue between science and society solely in terms of environmental or health impacts, there is a need to tackle broader social concerns such as ethical and cultural values, power relations, and the role of experimental or local knowledge. Thus issues underlying social reaction to new technologies and the undisclosed ways in which industries take decisions must be resolved.

More openness and participation may further the social legitimacy of procedures at stake. So how does the practical reality of participation of social and economic agents, and civil society at large, in the new institutions and procedures look like? At the same time, which FTA methods and processes could contribute to enlarge societal participation in development strategies (at local, regional, national and international levels)?

7.2. FTA for corporate decision making

The challenges faced by corporations reflect the structural changes taking place in the economy and society. A new global setting of the world economy is defining the framework for operation of the industrial sector both inside the national boundaries and internationally. In this context, corporations have used FTA to detect and prepare responses to challenges which have arisen due to:

1. Rapid and accelerating technological progress in pervasive fields such as microelectronics, ICTs, biotechnology, new materials, fuel cells and nanotechnologies.
2. Increased financial, trade and investment flows.
3. New business models for the design, production, distribution, retail and management of products and services.
4. Responses to the challenge of sustainability and changes in demography, in consumer behaviours and in social values, which brought the CSR concept higher on the agenda.

Companies and other organisations create value in multiple dimensions. In business this is summarised as the triple bottom line or the creation of shared value through reconciling economic, environmental and social values and performance. Ethics, human rights, how to deal with bribery and corruption, climate change and other societal concerns should be dealt with in a transparent and participative way. Nevertheless, it is the responsibility of a company's board to take forward such an approach in a strategic way and to define the appropriate balance between shareholders and other stakeholders taking into consideration social impacts and social dimensions of its value chain in a competitive context as well as its relationships with employees, customers, governments and society at large. It is then critical to understand how FTA processes and methods can help corporate leadership in creating balanced value across and beyond a firm's value chain building upon strategic CSR.

Strategy is always about making choices and success in CSR is no different. It is about choosing which social issues to focus on. The short-term performance pressures companies face rule out indiscriminate investments in social value creation. It suggests, instead, that creating shared value should be viewed like R&D, as long-term investment in a firm's future competitiveness. The money already invested in CSR and corporate philanthropy would generate far more benefit to both

business and society if consistently invested in social initiatives which were in concert with their core strategies. It then becomes critical to understand how FTA practices can support the need to choose which social issues to pursue strategically on a participative, consensus-oriented and inclusive way which is responsive and accountable to all stockholders and the legal frameworks in place, therefore being effective, efficient, and transparent.

Corporate governance codes and shareholder expectations have changed the need for boards of directors to demonstrate effective leadership, quality decision making processes and the ability to exert corporate controls. This also raises the need for board evaluation measures against corporate and societal objectives as well as on the effect of stakeholders' communication and participation on management, transparency, performance (economic, environmental and social), and corporate identity. Value chain and competitive investments in CSR need to be incorporated into firms' performance measures and reporting. Hence it is also paramount to reflect on how FTA processes and methods may help companies to evaluate CSR and, most importantly, the social impacts of all firm unit's activities in each location where it operates. Most challenging, however, is to understand how FTA can support companies in anticipating impacts which are not yet well recognised and to report these in a transparent, and responsive manner, which goes far beyond current practices of reporting. Even if these are based on the widespread GRI G3 guidelines, they still do not offer a coherent framework for strategic CSR initiatives.

Integrating business and social needs takes more than good intentions and strong leadership: it requires adjustments in organisation, reporting relationships, and incentives. Few companies have engaged operating management in processes that identify and prioritise social issues, based on their salience to business operations and their importance to the company's competitive context [29]. Even fewer have unified their philanthropy with the management of their CSR efforts, much less sought to embed a social dimension into their core values. Doing these things requires a new approach to both CSR and philanthropy than the one prevalent nowadays. Companies need to shift from a fragmented, defensive posture to an integrated, affirmative approach. The focus needs to move away from an emphasis on image to an emphasis on substance. One of the main challenges for the FTA community is to support such a shift by embedding forward-looking participatory practices into strategic decision making.

8. Conclusions: a new role for FTA

The new role this paper suggests for FTA brings with it issues and considerations that are emerging in the landscape of governance due to changes and transformations in society. Any new mantra for FTA needs to recognise the obsolescence of the conventional mantra of invention and innovation as primary supports to 'growth' economics. The conventional economic mantra has persisted far beyond its 'sell by' date, a point made forcefully at least as early as 1972 in the publication of the "*Limits to Growth*" [38]. The shift towards a new mantra based on ecological economics began at least as early as 1968 when Daly published the first of his papers [39]. The parallel emergence of the notions of industrial ecology in 1973 when Evan [40] defined industrial ecology as 'a systematic analysis of industrial operations including factors like: technology, environment, natural resources, bio-medical aspects, institutional and legal matters as well as the socio-economic aspects.' Davitaya [41] enlarged Evan's definition describing, by an analogy relating industrial systems to natural systems, a model for a desirable transition to cleaner production:

> *Nature operates without any waste products. What is rejected by some organisms provides food for others. The organisation of industry on this principle—with the waste products of some branches of industry providing raw material for others—means in effect using natural processes as a model, for in them the resolution of all arising contradictions is the motive force of progress* (Wikipedia's 'History of Industrial Ecology')

Industrial ecology was later popularised by Frosch and Gallopoulos [42]. The marriage of the principles of industrial ecology and those of ecological economics, and its influence on globalisation, glocalisation and governance, for which there is evidence in recent EU moves towards requirements for 100% recyclability, should be part of any new mantra for FTA. Throughout it should be remembered that invention and scientific breakthrough are pseudo-random, if not totally random events in time and nature. In contrast innovation is the widespread use of an artefact, a social process in the widest sense, which depends on an organisations willingness to invest in the face of real and anticipated risks and regulations embodied in governance.

The move towards a new mantra for FTA is shyly and slowly being shaped since, at least, the Second International Seville Conference on Future-Oriented Technology Analysis (September 2006). The greater acknowledgement of the co-evolution of technology and society, as well as the claim that FTA practices should be submitted to interpretation of their significance by the relevant disciplines of the social sciences and humanities (SSH), has been pivotal in this move since it led to the understanding that FTA activities, and its umbrella communities, should adopt necessarily more complex perspectives. Long term and systemic analysis are key characteristics of FTA, which explicitly deals with complex socio-technical systems and science–society relationships. FTA is also an agenda-setting process aimed at providing anticipatory intelligence as basis for decision making. At the same time, it allows for the construction of common visions and produces issue-specific knowledge through dialogue, creating joint learning between users and producers, knowledge generation and shared sense of commitment. Not surprisingly, FTA has relevance in all human activities where there are collective stakes [43].

In the 2006 FTA Conference, the FTA community realised the need to address the imperative of improving the two-way linkage between knowledge and the building of a 'common world'. To do so a vivid debate took place in trying to grasp the

community's readiness to address global issues and to building governance at a global level. Many ideas were debated, but these remain to be operationalised. The ability of the FTA community to garner sufficient credibility, legitimacy and authority to contribute to such global agendas is still a concern. At the same time, the contribution and intervention of FTA on global issues still needs to be conceptualised better to enable the community to take action.

To sum up, the way forward may be for FTA to recognise that it can play an important role in a complex world in which globalisation, glocalisation and governance are critical elements. The current paper goes beyond the issues already outlined by Cagnin et al. [43]. It does so by indicating that the time has come for the FTA community to go beyond the current major focus of identifying and/or recommending priorities, mainly for RTDI policies and strategies, towards that of embedding forward-looking participatory practices in overall processes of strategic policy and decision making. Being able to respond to the questions posed in Section 7 of this paper is critical to making such a shift. By engaging actively in shaping the move from the current paradigm of 'growth' economics to that of ecological economics and industrial ecology, FTA can fulfil its role of supporting actors in society in shaping a common future based on a shared vision among all concerned.

Appendix A

The following diagrams set out the metaphor that underlies the discussion in the text. The stages in the evolution of the metaphor are shown in the first two diagrams: the entire metaphor is illustrated in the final diagram (Figs. A.1–A.3).
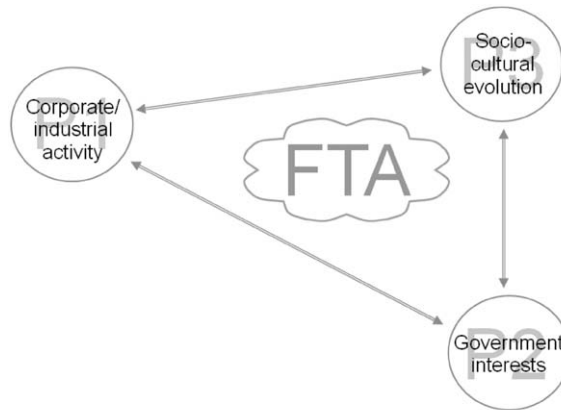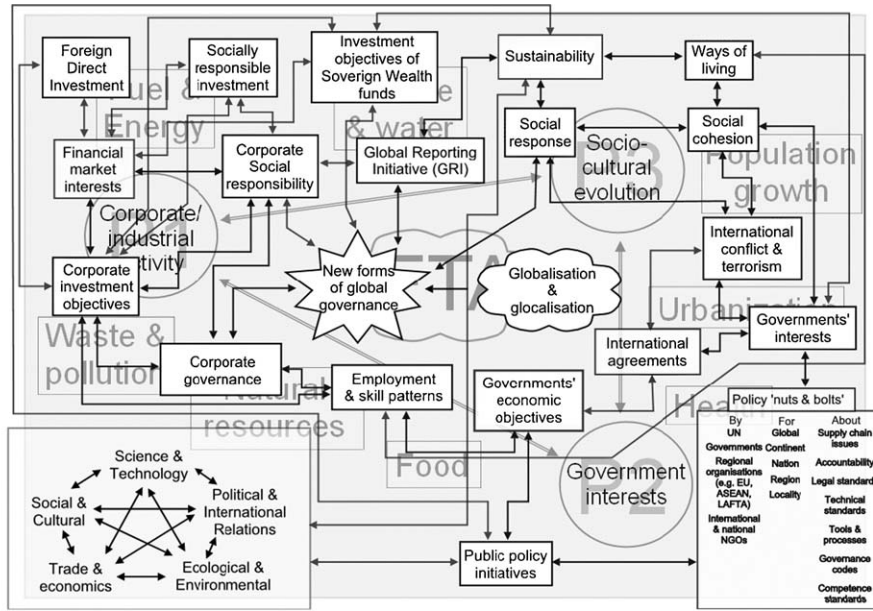

The first layer of the metaphor contains three pillars, P1 (Corporate/industrial activity), P2 (Government interests) and P3 (Socio-cultural evolution).

Fig. A.1. The three pillars.
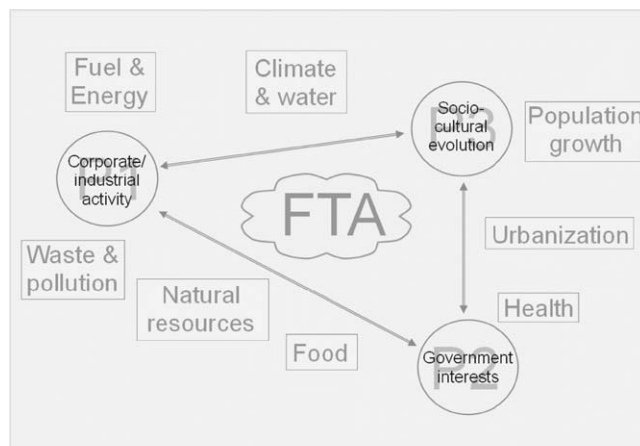
The second layer imposes the background of factors that influence human life and ways of living and within which the three pillars are embedded

Fig. A.2. Background to the three pillars.

The top layer completes the metaphor illustrating the interdependencies that flow from the prime forces in the situation, globalisation and glocalisation.

Fig. A.3. The entire metaphor.

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