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Corporate Strategies for Social Responsiveness and Responsibility in Technological Innovation: Analysis of Global 500 Companies' Sustainability Reports

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Problem definition

- Social responsibility **in innovation** – building awareness of enabling factors, of possible dangers, and of the future as a social reality;
- Why focus on **technological innovation**?
 - Technology underlines much of contemporary life style
 - It accounts for significant changes in social systems due to impact on human relations, health, and the environment
 - It represents a significant uncertainty with respect to its adoption in the future
- **Social impact:**
 - not static, strong (possibly irreversible) implications for the future, either positive or negative
 - refers to changes in how people “exist” within socio-economic systems
 - assumed to also apply to environmental impact due to widespread effect of the latter over people

Tasks and Rationale

- Determining how social responsibility pertains to technological innovation – possible agenda for technology assessment
- Explore theoretically whether and how companies:
 - build internal awareness of the range of possible impacts a given innovation may have on social systems
 - apply (new) methods geared towards generation of new organisational knowledge about a product's use and diffusion
 - devise new complex strategies that integrate perspectives on innovation (competitiveness), social impacts (responsibility), and policy (legitimacy)

Tasks and Rationale

- Understanding how global multinational companies (Fortune's Global 500) include the topics of technology and innovation in their sustainability “frameworks”;
- Identify strategies related to:
 - Social issues and concerns most likely to prompt innovation (demand-pull);
 - Significance of (technological) innovations as quasi-autonomous factors (technology push);
- Enhance the understanding of social responsibility by linking it to the context of innovation diffusion

Sources and data

- Focus is on the top global 500 companies (as per Fortune Magazine's ranking)
- The majority operate globally (multinationals) and publish “sustainability” reports
- Collected rankings, revenue and profit figures for both 2005 and 2011 (classification variables)
- Used Fortune's categorisation of industries – about 60 industries
- Country of origin based on headquarters' location (per Fortune's information)

Sustainability Reports as a Data Source

- Most multinational corporations publish such a report annually
- Very detailed, rich in content, often focused around issues of social relevance and strategic intent
- Reflect the “frameworks” companies use to refer to and explain their social responsibilities
- Demonstrate the confluence of:
 - business and management strategies;
 - social assessments, responses, and visions; and
 - non-business performance indicators
- Frequently present socially desirable visions for the future

A note on research design

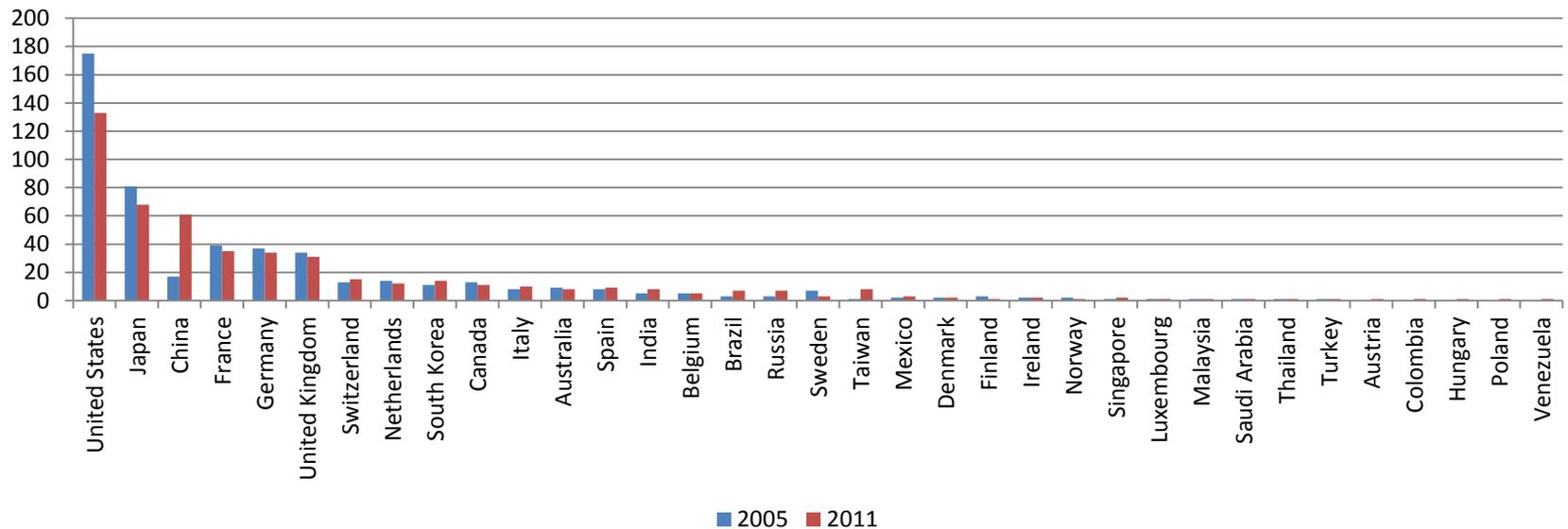
- Qualitative analysis of the sustainability reports of Global 500 companies – using Nvivo software tool:
 - **Inductive analysis** – use context to derive concepts, themes or models through interpretation by the researcher (Thomas, 2006)
 - **Grounded theory approach** – no preconceived theory; rather theory is developed by discovering significant themes inherent in the data (Strauss and Corbin, 1998)
- Limited use of quantitative tools (word co-occurrences, partial text-mining)
- Only one report (latest available on website) was collected per company

Some major limits

- Time-sensitive comparisons are not possible
- Very high probability for “positive bias” in sustainability reports
- Mostly a qualitative approach – no statistical validity and representativity
- No opportunity to provide empirical test for stated CSR commitments or relate commitments to performance measures

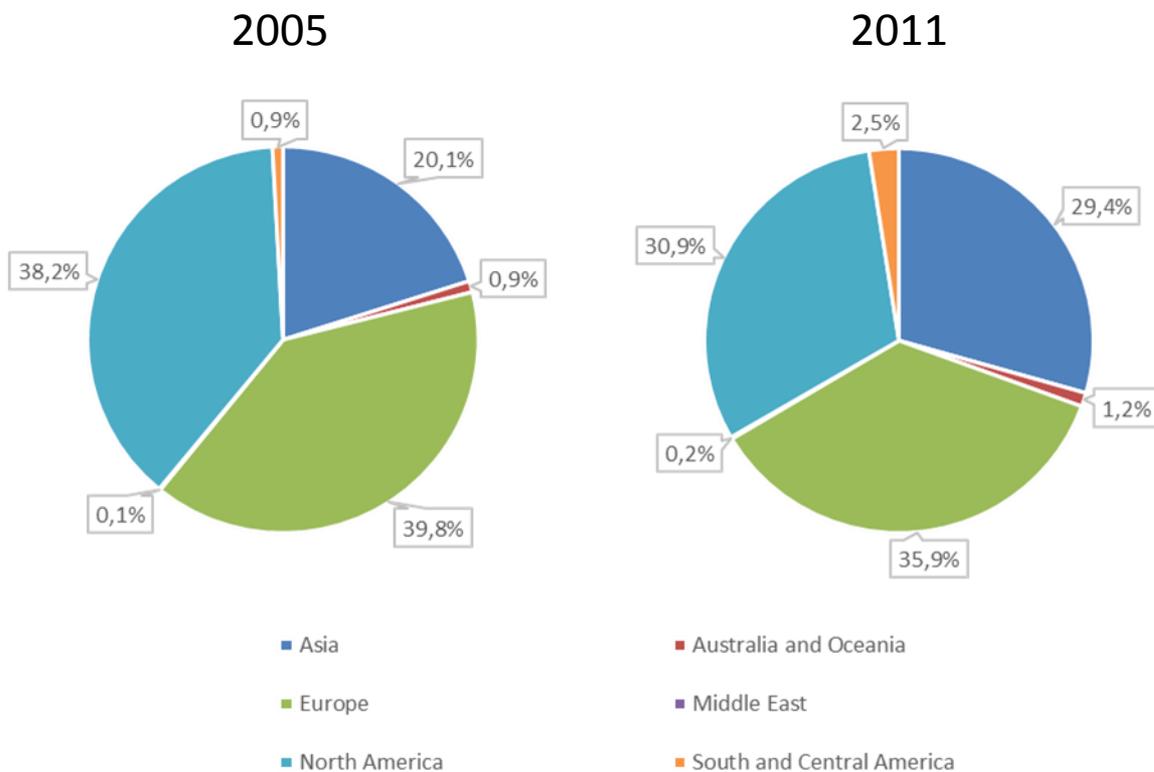
Quick look at Global 500 companies

- Total number of companies on the list in 2005 and in 2011 – **653 from 35 countries**
- Total number of companies on the list for both years – **347 from 29 countries**
- Total revenue in 2005 – **\$16,8 trillion USD**; total revenue in 2011 – **\$26+ trillion USD**



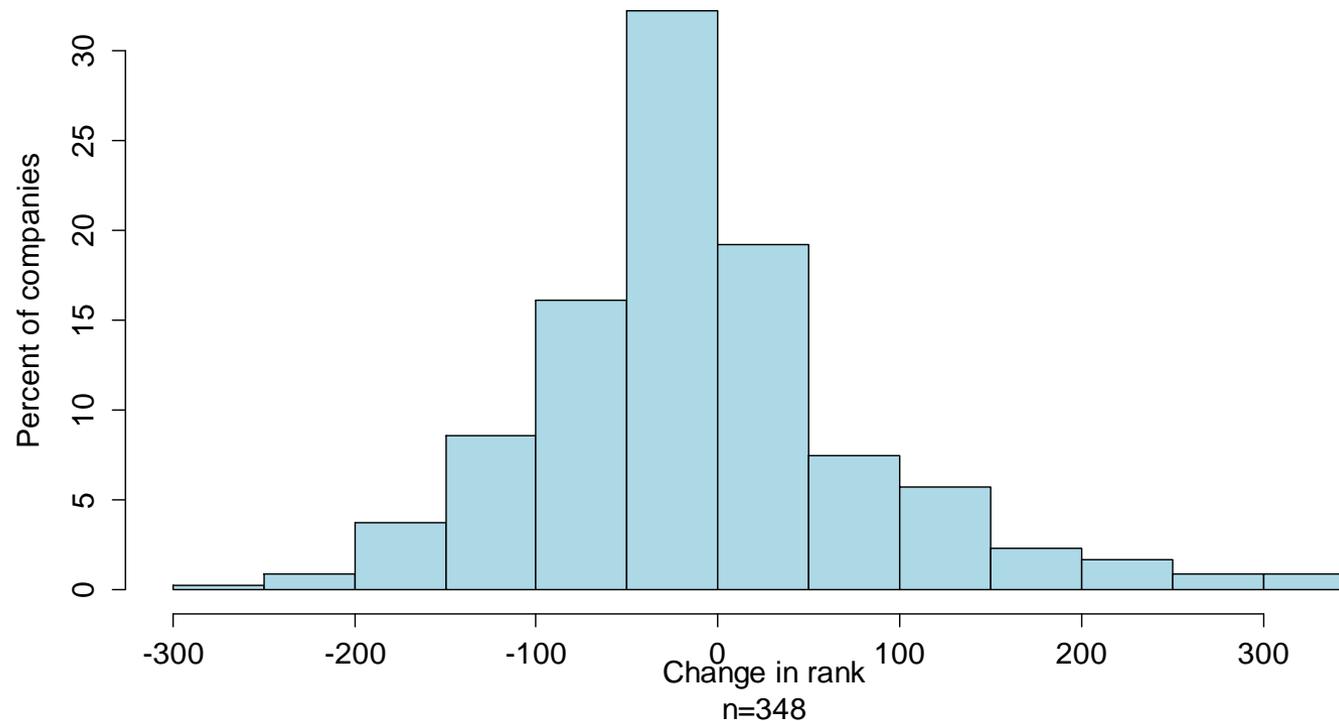
Quick look at Global 500 companies

Shares of generated revenue, by regions



Quick look at Global 500 companies

Histogram of change in rankings
between 2005 and 2011, per company



Key Assumptions

- Diverse markets, diverse strategies, diverse business and political climates, **but similar impacts**;
- Strategic social responsibility transcends beyond specific stakeholders, to society as a whole (i.e., due to externalities);
- Strategies for social responsiveness:
 - are based on determining the balance between **developing awareness about a problem**, and **getting involved with a solution** (opportunity for innovation)
 - require understanding of a **broad context** and on decisions for positioning the company within it

Contents of sustainability reports

	assessment	future	innovation	responsibility	social	strategy	sustainability	technology	impact
assessment		0,7365	0,8543	0,7487	0,4790	0,4958	0,8823	0,7743	0,7439
future	0,7365		0,7491	0,6271	0,3692	0,3279	0,7915	0,6849	0,7958
innovation	0,8543	0,7491		0,7371	0,4280	0,6161	0,8622	0,7757	0,7860
responsibility	0,7487	0,6271	0,7371		0,6069	0,5627	0,6809	0,5435	0,6302
social	0,4790	0,3692	0,4280	0,6069		0,5437	0,4081	0,1829	0,2350
strategy	0,4958	0,3279	0,6161	0,5627	0,5437		0,4279	0,4021	0,3247
sustainability	0,8823	0,7915	0,8622	0,6809	0,4081	0,4279		0,9054	0,8992
technology	0,7743	0,6849	0,7757	0,5435	0,1829	0,4021	0,9054		0,8902
impact	0,7439	0,7958	0,7860	0,6302	0,2350	0,3247	0,8992	0,8902	

Co-occurrence of keywords in the contents of sustainability reports (on a paragraph level)

Higher numbers indicate higher incidence of two keywords appearing within the same paragraph

Highest co-occurrences:

- Sustainability / Technology
- Sustainability / Impact
- Sustainability / Assessment
- Sustainability / Innovation
- Innovation / Assessment

Changes in the perception of social responsibility

- The boundaries of corporate responsibility are expanding both internally and externally (Warhurst, 2005)
 - **Internal focus** – concerned with internal business processes, not with production and strategy development
 - **External focus** – “conducting business with responsiveness to public issues and concerns.” (The Dow Chemical Company 2012)

“Mandates” behind innovation

- **Implication for business strategy and mission:**
 - “[Innovation is] desire to redraw the bounds of possibility” (Merck, 2011)
 - “Air France-KLM supports research and innovation in order to better understand the environmental impact of its businesses and to act on this effectively.” (AirFrance-KLM 2012)
- **Sustained competitiveness in the future** – “Innovation is at the heart of ABB’s success and crucial to our long-term competitiveness.” (ABB Group 2012)
- **Solutions based on the convergence of business and social objectives** – “We believe most of the sustainability challenges the world faces can be solved with innovation, and that this innovation can have a positive business impact.” (Procter and Gamble, 2012)
- **Strategic push for change** – “We are renewing our commitment to discontinuous innovation — innovation that obsoletes current products and creates new categories and new brands that have environmental improvements.” (Procter & Gamble, 2012)

Social relevance of innovation

- Addressing current societal challenges requires innovation by default – they would not be challenges if current solutions worked
 - “Innovating for the future – a “citizenship priority” (Abbott 2011)
- Combine a product’s competitive advantage with an environmental advantage
 - “Since 85 percent of our unit case volume is delivered in recyclable bottles and cans, those packages are where our innovation can make the biggest difference... As we strive to improve our packaging, we balance environmental concerns with our need to protect product quality and manufacturing as well as our need to transport products economically.” (Coca Cola 2012)

Social relevance of innovation

- Successful innovation requires **collaboration**:
 - “scientific innovation can only be fully realized with **collaboration between the key players in our global energy future** – policymakers, the private sector, academics and advocacy organizations. Collaboration and innovation can allow us to address real-world energy demands where and when they arise.” (DuPont 2012)
 - “Innovation and collaboration go hand in hand. [...] We **cultivate relationships** with diverse stakeholders, such as governments, academic institutions, non-governmental organizations, customers, thought leaders, social entrepreneurs, and industry peers. [...] Together we develop holistic, successful, and scalable solutions that benefit communities over the long term.” (HP 2012)

Social relevance of innovation

- Successful innovation requires **collaboration**:
“HP addresses critical social needs through a powerful union of innovation and collaboration, measuring our progress by the positive impact of our programs. The insights we gain through these metrics help us strengthen our programs.” (HP 2012)
“We favor rolling up our sleeves in **full collaboration with partners across other sectors**, as opposed to simple “checkbook philanthropy.” (IBM 2012)

How are companies changing

- From a subject to legal constraints and government regulation, companies are increasingly adopting **leadership roles in the elaboration of complex public policies**; governments no longer have a monopoly over public policy development;
 - “We believe that we need to be part of identifying and then implementing solutions.” (IBM 2012)
- Traditional separation of a limited number of stakeholders is not sufficient -> shift in strategy development from integrating interests of specific stakeholders to defining broader responsibilities to society as a whole

How are companies changing?

- Exert higher levels of pressure on some traditional stakeholders (like suppliers and contractors) for compliance to predefined responsibility standards:

“We work with our suppliers at the corporate level to align and enhance approaches to a range of sustainability issues.” (Ford 2012)

How are companies changing?

- Explicit commitments to addressing critical societal challenges is seen as a strategy for **both business success and stimulating societal well-being.**

“As a leader in global healthcare, we are committed to addressing critical social, environmental and economic challenges to ensure not only the vitality of our business, but also the health of our world.”

(Merck 2011)

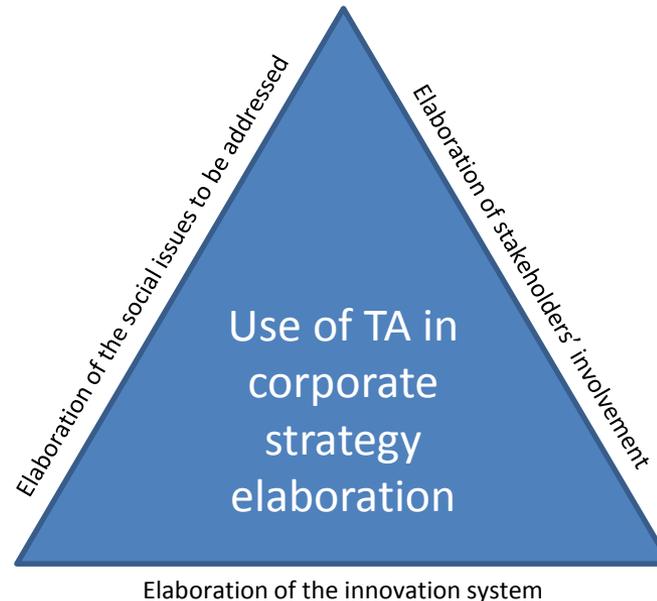
How are companies changing?

- Integration of business and citizenship strategies at the core of a global strategy (a firm's holistic theory about how to compete successfully (Peng 2006)):

“Individual GE businesses and locations confront unique circumstances, but there are a few common issues, including **energy, climate change, water scarcity, resource availability, economic stability and the rule of law**, that touch most if not all of our businesses.” (GE 2011)

A holistic approach to responsibility in innovation

Implications for people and communities
(social responsiveness and responsibility)



Implications for the company
(knowledge and business
development)

Implications for public policy
(networking, partnerships,
advocacy, legitimation)

Use of Technology Assessment in Strategy Development

- Determining which parts (areas) of a company's technology "portfolio" have the highest social impact, and what that impact is;
- Determining the need and scope of policy regulation over the use of new technologies, roles and opportunities for stakeholders;
- Application of scenarios and participative methods in determining likely paths in technology adoption and the possible resultant changes in social systems;
- Contribute to organisational learning and (social) knowledge generation.

Ambitions for future research

- Assess **corporate readiness** to “embrace” a social responsiveness-based view on innovation;
- Assess the **added value** of integrating social responsibilities of innovation within a corporate value-chain;
- Review **successful applications** of TA-methods and their effectiveness in strategic planning for innovation and social responsibility.

Questions and Comments

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