



Corporate Social Responsibility (CSR) Business Tools

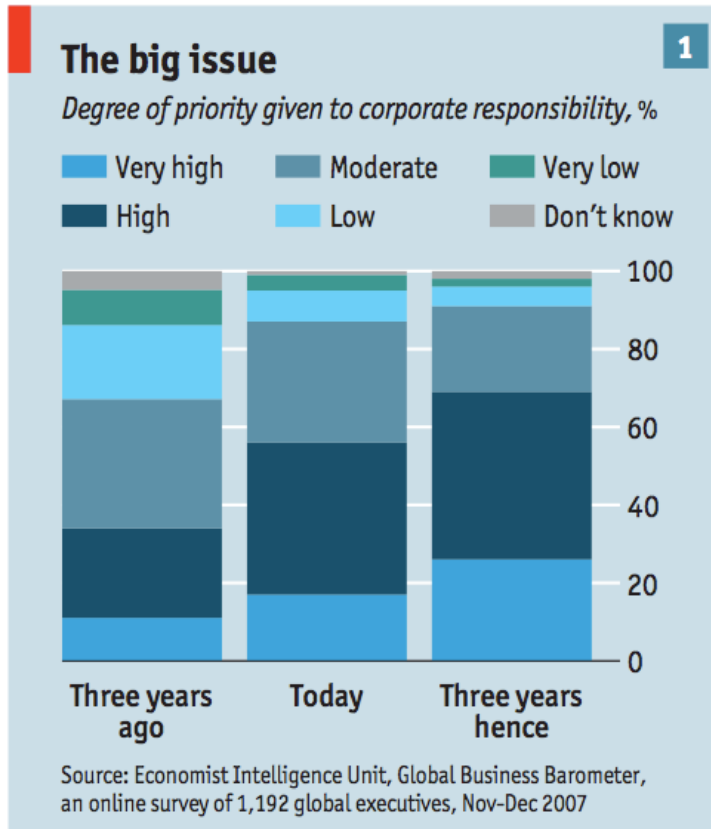
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Corporate Social Responsibility (CSR)

A big issue



Definition of CSR:

- Efforts of corporations
- Aim: balance the needs of stakeholders with the need to make a profit
- Above and beyond regulation
- Mostly social and environmental

Relevance
for companies
involved in NT?



Drivers towards Corporate Social Responsibility (CSR) ... in particular for companies involved in NT

- Climate change requires immediate action
- Public funding addresses societal demands
- Uncertain impacts of existing nano products
- Uncertainty about upcoming regulation
- Need for risk assessment
- Demand for corporate transparency
- Fragile public acceptance



NanoMeter: Assess societal issues



CSR Briefing Document: Manage societal issues



Why Business Tools?

Function

- Disseminate results among those involved in product development and marketing
- Stimulate the discussion on Corporate Social Responsibility (CSR) and Nanotechnology

Form

- Innovative approach
- Translate the project's output into relevant business information
- Simple and effective communication
- Appropriate language



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Past and future developments

NanoMeter

Assessing Opportunities and Risks of Nanotech Applications

- Social benefits
- Impact on health & environment
- Resource requirements
- Privacy issues
- The overall user benefits
- Aspects of product stewardship

Applying a
life-cycle
perspective

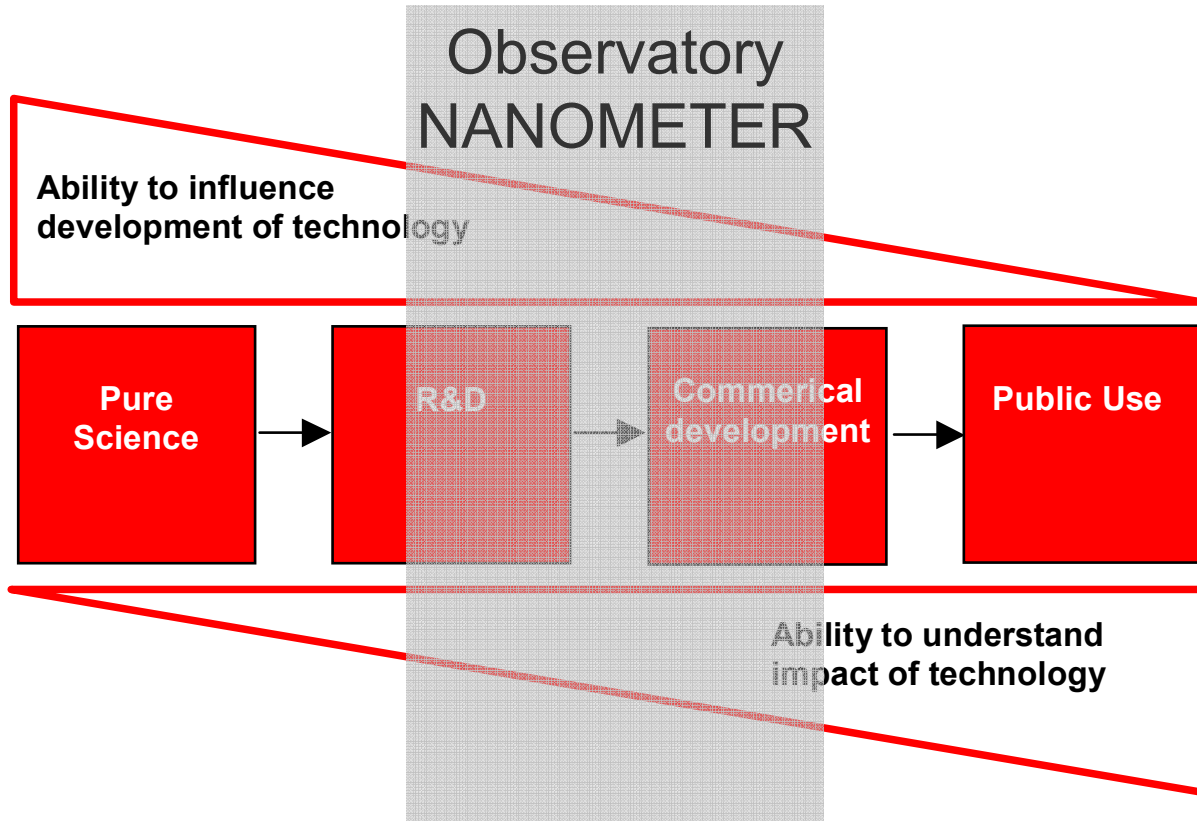


Tayloring ELSA towards
Technology Sectors



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At what stage can/should it be used?





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Why a self-assessment tool?

Business internal use

- Application-focussed analysis
- Evaluates existing knowledge about an application from an ELSA perspective and selects important ELSA
- Identifies relevant knowledge gaps of single nano applications
- Supports the risk assessment of a single application
- Supports the sharing of perceptions and knowledge

Business in society use

- Assesses impacts on public acceptance
- Responds to demand for corporate transparency



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How does it work?

1 Select nano-enhanced application (under development)

2 Select the appropriate Technology Sector (TS)

3 Define a reference application

4 Assess risks, opportunities and knowledge gaps
(consult additional explanations where needed)

5 Receive summarized results for internal discussion (PDF)



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How does it work?

1

Select nano-enhanced application (under development)

2

Select the appropriate Technology Sector (TS)

3

Define a reference application

Application example:

4

NT-enhanced t-shirt (antibacterial)

Assess risks, opportunities and knowledge gaps
(consult additional explanations where needed)

5

Receive summarized results for internal discussion (PDF)



Application example: NT-enhanced t-shirt (antibacterial)

Select a technology sector

- Aerospace, Automotive & Transport
- Agrifood
- Chemistry & Materials
- Construction
- Energy
- Environment
- Health, Medicine & Nanobio
- Information & Communication
- Security
- Textiles

- 1 Select application
- 2** Select Technology Sector
- 3 Select reference application
- 4 Assess opportunities/risks
- 5 Receive summarized results



Application example: NT-enhanced t-shirt (antibacterial) Reference application

“[...] name an existing application or current technology on the market that you are about to enhance or substitute with a NT-based version [or] provide a similar non-nano parallel“

Reference Application:

conventional t-shirt (non-nano)

- 1 Select application
- 2 Select Technology Sector
- 3** Select reference application
- 4 Assess opportunities/risks
- 5 Receive summarized results

Why a reference application?

Context-based assessment: risks vs. benefits:

- Less resources needed?
- Smaller Carbon Footprint?
- Less intensive waste water treatment?
- Easier to recycle?
- Additional benefits & risks for consumers?



Application example: NT-enhanced t-shirt (antibacterial)

Impact on health and environment

How do you rate the likelihood of (accidental) release of nanostructured materials during production?

- nanostructured materials can under no circumstances be released
- low (e.g. best available safety standards and technology is applied)
- medium (e.g. technological approach based on chemical production standards)
- high
- not applicable

Degree of certainty

Indicate your degree of certainty for the option selected:

fairly sure

Comment

(e.g. safety measures taken to prevent release of nanostructured materials, probability of release):

particles are put on fibre by dipping, probability of release is considered as low

- 1 Select application
- 2 Select Technology Sector
- 3 Select reference application
- 4** Assess opportunities/risks
- 5 Receive summarized results



Application example: NT-enhanced t-shirt (antibacterial)

Impact on health and environment

How do you rate the likelihood of (accidental) release of nanostructured materials during use/
consumption?

- nanostructured materials can under no circumstances be released
- low
- medium
- high
- not applicable

Degree of certainty

Indicate your degree of certainty for the option selected:

very sure

Comment

(e.g. safety measures taken to prevent release of nanostructured materials, probability of release):

friction and turbulence during washing could lead to little particles release (not chemically bonded)

- 1 Select application
- 2 Select Technology Sector
- 3 Select reference application
- 4** Assess opportunities/risks
- 5 Receive summarized results



Application example: NT-enhanced t-shirt (antibacterial) Impact on health and environment

How do you rate the likelihood of (accidental) release of nanostructured materials during recycling/disposal?

- nanostructured materials can under no circumstances be released
- low
- medium
- high
- not applicable

Degree of certainty

Indicate your degree of certainty for the option selected:

estimation

Comment

(e.g. recycling/disposal path or technology):

no relevant data available

- 1 Select application
- 2 Select Technology Sector
- 3 Select reference application
- 4 Assess opportunities/risks**
- 5 Receive summarized results



Application Example: NT-enhanced t-shirt (antibacterial)

Summary of self-assessment and potential societal concern

Level of potential societal concern Potential failure on the market!

Aspect	high -----low	Comments
HEALTH AND ENVIRONMENT		
Release of nanostructured materials ... during production	◎	<i>particles are put on fibre by dipping, probability of release is considered as low</i>
... during use/consumption	●	<i>friction and turbulence during washing could lead to little particles release (not chemically bonded)</i>
... during recycling/disposal	○	<i>no relevant data available</i>

(● = very sure, ◎ = fairly sure, ○ = estimation)

1

2

3 Select reference application

4 Assess opportunities/risks

5 Receive summarized results



Application Example: NT-enhanced t-shirt (antibacterial)

Additional advice

Level of potential societal concern

Aspect	high -----low	Comments
HEALTH AND ENVIRONMENT		
Release of nanostructured materials ... during production ... during use/consumption		<i>particles are put on fibre by dipping, probability of release is considered as low</i> <i>friction and turbulence during washing could lead to little particles release (not chemically bonded)</i>
... during recycling/disposal		<i>no relevant data available</i>

1

2

3 Select reference application

4 Assess opportunities/risks

5 Receive summarized results

(● = very sure, ⊙ = fairly sure, ○ = estimation)

Watch out: Try to focus on knowledge gaps to better respond to societal concerns!



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Basic set of aspects

Social benefits	Contribution to relevant human problems
	Technology transfer and active development assistance
Health & environment	Application safety (incl. toxicity)
	Release of nanostructured materials during production, use/ consumption, recycling/ disposal
	Reduction or substitution of harmful substances
Resource requirements (incl. energy)	Resource consumption during production, use/consumption
	End-of-life treatment
Privacy	Personal data
Overall user benefits	Fit for purpose
Product stewardship	Regulation
	Voluntary risk governance
Transparency	Identification of stakeholder opinions and concern
	Responsiveness to opinions and concerns
	Access to risk-related research



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Output

Visible for the user

- Perception and knowledge of application performance in defined areas
- Information deficits
- Documented result, to be distributed and discussed internally, and to be used in further application development

Our current focus

- What aspects are most valuable for companies?
- What (additional) aspects are relevant for technology sectors?





Thank you for your attention!

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