

ADDRESSING EMPLOYEES' CONCERNS TO FACILITATE ENVIRONMENTALLY CONSCIOUS DECISION-MAKING IN INNOVATION

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Abstract

In recent years society as a whole has become more aware and concerned about environmental issues. In light of increasingly stringent legislation and the more critical eyes of external stakeholders, companies have come to realise the heightening need for their actions to be seen as environmentally responsible. The innovation process provides companies with an excellent opportunity to influence the environmental impacts associated with their products. However merely providing product developers with new processes and a toolbox of available eco-design tools is rarely sufficient to facilitate more environmentally conscious decision-making in innovation. This paper proposes that employee participation within the development of new initiatives will aid their implementation. It highlights the first results from a study undertaken at Unilever seeking to initiate employee participation within initiatives for environmentally conscious innovation by ascertaining the attitudes of employees involved in the product innovation process regarding environmental responsibility and its integration into innovation.

Keywords: employee, participation, innovation, environment, implementation.

1. Background

Addressing environmental and social issues alongside economic factors is increasingly important for companies (Rowledge *et al*, 1999) and moving towards more sustainable products and development processes has been pushed to the top of many company agendas. Companies now realise the need to assess and manage the interest and influence of their stakeholders and to address their evolving concerns. For the purposes of this paper, stakeholders are defined as groups or individuals who affect or who are affected by a company's activities (Freeman, 1984; Elkington, 1999).

Such stakeholders are making increasing demands on today's companies to change their products and development processes in order to make them more responsible and socially acceptable. Pressures such as those from customers, industry associations, increasingly influential NGO and media groups and broadening environmental legislation are all forcing companies to reconsider their approach to business. In recent years research has also shown that society is becoming more aware and concerned about environmental issues (MORI, 2000; DETR, 1999) and the advent of sustainability and ethical performance indexes (DJSGI & FTSE4GOOD) highlight the rising interest in assessing companies according to ethical, environmental and social criteria. As such many companies are beginning to place an increasing emphasis on making more environmentally conscious decisions in their business activities.

2. Environmentally conscious innovation

A key opportunity, particularly for consumer goods companies, can be found in the innovation process. Due to the nature of the industry and the products involved, the problems faced by this sector are different to those of other sectors; for example most of the products are disposed of through their use and many of the impacts associated with the products are at a stage in the life cycle out of the direct control of the manufacturing company. The innovation process provides an excellent opportunity for these companies to influence (and reduce) the environmental impacts associated with their products and processes throughout the life cycle. This is because almost all of the properties of a product, including environmental properties, are determined in the early stages of the development process (Rivera-Becerra & Lin, 1999).

There are many terms in the literature that represent the integration of environmental consideration into product development or the innovation process (see Lewis & Gertsakis, 2001 for an overview). However, as the aims of the different concepts outlined appear to be aiming for the same goal, the choice of term seems immaterial. Fiksel (1996), who chooses the term Design for Environment (DfE), perceives such development as a conceptual crossroads between two common corporate thrusts: enterprise integration (the foundation of which is total quality management) and sustainable development (the foundation of which is environmental stewardship). Therefore, it can be concluded that such development represents the route towards achieving sustainability and competitiveness at the same time, something that all successful companies desire.

For the purposes of this paper this concept will be termed *environmentally conscious innovation*. The word 'innovation' represents the overall aim of introducing new ideas and making change and therefore incorporates the research, design and product development functions of an organisation and also extends to incorporate other functions involved in creating a new product such as marketing, process development, procurement and specialist groups. The word 'conscious' implies that innovators¹ should be aware of and address environmental issues to enable them to make more responsible decisions. This does not suggest that new products should be designed or developed specifically for the environment; environmentally conscious innovation seeks to balance the business benefits and environmental impacts of decisions, whilst of course driving to minimise any adverse impacts.

Many tools and techniques are available to decision-makers to enable them to make more environmentally conscious decisions within the innovation process (see DERG (1997) and Graedel & Allenby (1995) for comprehensive accounts). These tools and activities range from generic 'guidance' and 'awareness' tools such as manuals, design guidelines and training to more specific 'analysis' tools and indicators such as LCA, metrics and matrices. Further 'implementation' tools are also available which can be used to ensure decision-makers are aware of the priority issues to be considered. Examples include design strategies, requirement matrices and checklists.

¹ Innovators are defined as individuals involved in any aspect of innovation; from the initial ideas and research, through product development to actually creating a new product for the market.

3. Embedding environmental concerns into innovation through participation

Within most companies, the traditional approach to environmental consideration is based primarily on technical, expert-based processes separate from but supporting the innovation process (and other functions). However there are limits to the benefits that can be provided by this 'standard' approach. In many cases innovation and environmental consideration are perceived as incompatible and it could also be considered that this approach neglects potential improvements from other means such as changing organisational structure, processes and aspects of job roles (Remmen & Lorentzen, 2000). Hutchinson (1996) describes how it can take four or five years to build adequate understanding and commitment amongst employees to successfully implement new environmental initiatives through traditional means; it seems a new set of solutions is needed.

Recognising this, many companies have initiated schemes to achieve greater integration of environmental management into innovation; they encourage their innovators to consider the environment within their decisions and specialists to develop tools to enable them to do so. However merely 'providing' innovators with new processes and a toolbox of available eco-design tools is often not sufficient to facilitate more environmentally conscious decisions within the innovation process. Previous experience indicates that new processes developed and provided by a group or organisation not directly involved in the innovation process may not necessarily be implemented (Klinkers & Nelissen, 1995; Wright, 1999); it is not certain that new processes will be embedded into the innovation process.

It is possible to identify three main reasons why new initiatives may not be fully implemented by those for whom they are intended (adapted from Darragh & Campbell, 2001):

- Individuals do not recognise or connect to the issues that the initiative is trying to address, and as such do not fully support it; they often reject new developments as unnecessary or difficult and perceive them as additional work.
- Individuals do not perceive the issues or the initiative as a priority; they feel there are more important activities and therefore are not fully committed to implementation.
- Individuals lack ownership and responsibility for issues, perhaps through a lack of understanding, and as such do not fully implement all aspects of the initiative. Unilateral action taken by top managers can result in other employees being confused or even hostile towards the changes needed (Sadgrove, 1994).

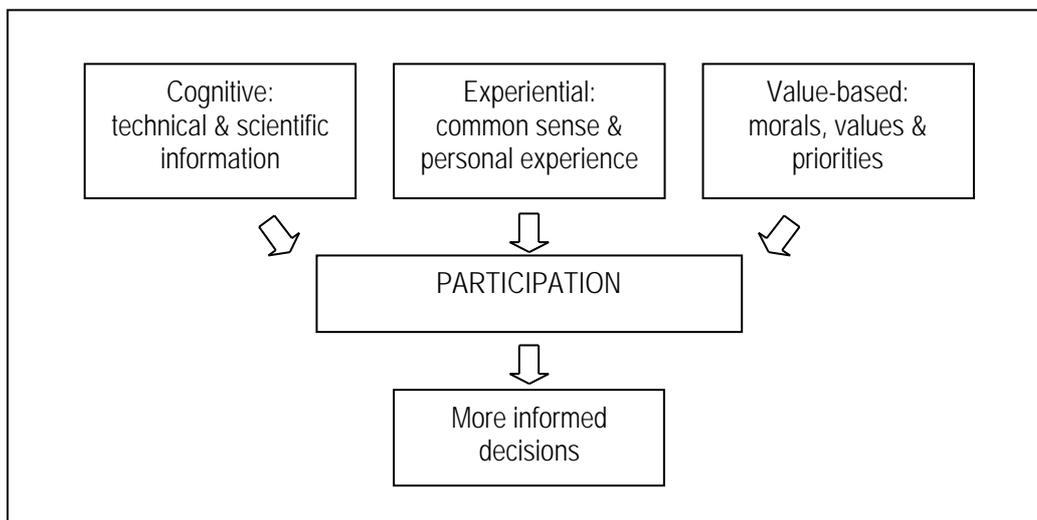
For new procedures and environmental initiatives to be truly embedded within business activities, the support and commitment of employees is of vital importance (Klinkers & Nelissen, 1995; Sadgrove, 1994). This can only be achieved through the participation and empowerment of affected employees right from the start of the development of the new strategies or processes (Shetty, 1994; Alexander, 1985). Indeed, employee participation within new developments for environmentally conscious innovation can provide a number of benefits. The process of participation is likely to result in improving company and individual awareness both of environmental issues and of the needs of employees to incorporate them more efficiently and effectively into their work. Some of the hostility expressed towards considering the

environment in innovation is a result of limited awareness and knowledge; employees who understand the issues and why they need to address them are more likely to support new initiatives (Klinkers & Nelissen, 1995). It is also likely that participation processes will increase communication within the company.

Employee involvement will also empower individuals and increase their commitment towards addressing environmental issues within innovation (Shetty, 1994). Employees assume a level of ownership of decisions and developments for environmentally conscious innovation, thus making them more receptive to a change in their role. Sadgrove (1994) suggests that ownership and shared goals will also improve morale, motivation and therefore productivity. Environmental measures should not be seen as top down, but as a decision supported by all those involved (Klinkers & Nelissen, 1995). Ensuring the voices of all employees are heard is likely to empower them and make them more likely to accept and support the decisions made and as a result implement new developments.

Additionally, greater participation will benefit decision-making by providing more extensive information. Glicken (2000) outlines how information can be grouped into three types: cognitive, experiential and values-based. Cognitive information is that based upon technical expertise such as the information provided by scientists and experts; experiential information arises from common sense and personal experience and values-based information emerges from social interests, morals and values. Glicken continues to suggest that participatory processes effectively inform decisions as they draw together all three types of information from a number of different sources (Figure 1).

Figure 1 – Informed decisions through participation.



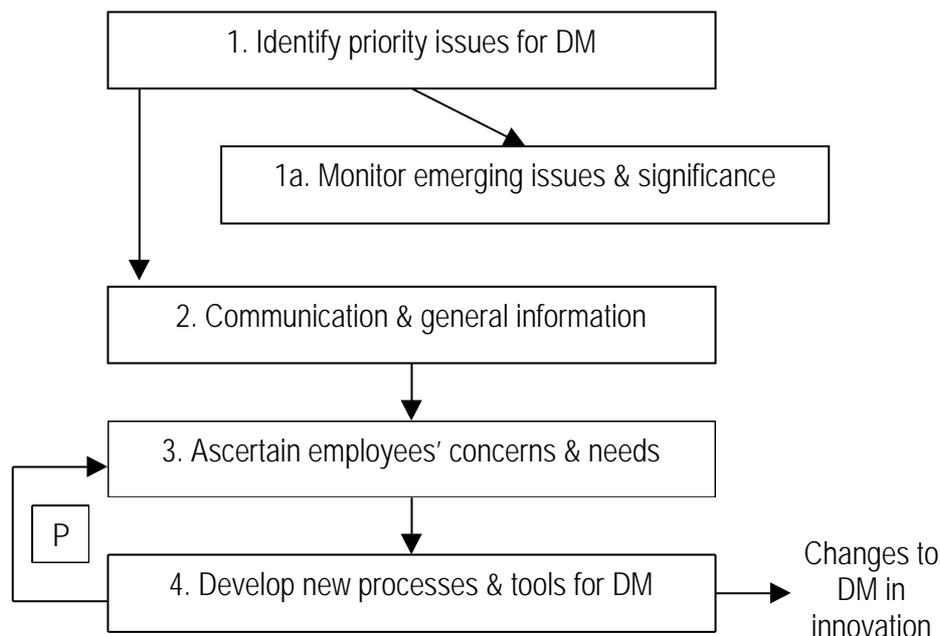
It is perhaps obvious that the concerns of innovators should be sought prior to the development of new processes and tools, this being the minimum level of participation. Whilst environmental specialists are just that, they are not necessarily ‘innovation experts’. Therefore they must involve those who are; after all who better to determine the needs of innovators, than innovators themselves? Direct involvement with the users is essential to ensure that the new processes or tools are ‘fit for

purpose' and that their development is efficient in time and resource use. The participation process will also help to remove the barriers between environmental specialists and innovators and in turn aid the integration of environmental management with innovation.

Previous experience has also highlighted other benefits from participatory processes. Remmen & Lorentzen (2000) determined that employee participation within new developments regarding the environment had a strong effect on changing work routines, affecting actual behaviour and increasing environmental consciousness amongst individuals. Participation is defined here in its broadest sense as any process whereby individuals' and/or their concerns and needs are included in an activity. However, as Klinkers & Nelissen (1995) identified, whilst all levels of employee participation within new environmental strategies are beneficial, co-decision-making schemes proved to be the most effective in increasing awareness and changing the behaviour of those involved.

Despite these reported benefits, the use of participation processes within companies is limited, primarily involving groups and individuals external to the company, and generally to inform product development. Within companies, participatory processes are rarely used to ascertain information specifically regarding environmental issues and concerns and are very rarely employed in the development of processes internal to a company. The work introduced in this paper was undertaken in part to explore a methodology that could enable participation processes to be used more widely.

Figure 2 - Developing new processes and tools for decision-making (DM).



A simplified approach to developing new processes and tools for decision-making in innovation is described in Figure 2. Whilst this paper does not focus on steps one and

two, it is essential to recognise that employees' concerns and needs and the necessity for new processes and tools for innovation result from priority issues first being identified and then communicated throughout the company. The whole process also relies on overall company commitment to address these issues. Steps three and four represent the process of determining the needs of innovators and subsequently developing new processes and supporting tools to meet these needs. As the figure shows, this should be a participatory process [P] involving all those affected. This process should draw together the company values and requirements, the expertise and concerns of specialists, the expertise and concerns of innovators and the experiential and value-based knowledge of all of the participants. Decisions and developments should then be undertaken jointly, based upon all of the available knowledge and expertise. The solutions are therefore more likely to efficiently and effectively meet the needs of the innovators to address the issues identified. As suggested by Sadgrove (1994), the first phase of the participatory process is to undertake a 'climate survey' – to ascertain the awareness, concerns, needs and any barriers perceived by those involved.

4. Ascertaining employees' concerns and needs.

This section outlines the first findings of a study seeking to understand employee concerns and needs for environmentally conscious innovation. To initiate the participation process, research was undertaken at Unilever during 2001 to provide an insight into the attitudes of innovators towards environmental responsibility and environmental consideration in innovation. The study especially sought to ascertain their concerns, needs and the main barriers they perceived.

Unilever states that it is committed to protecting the environment and driving towards a more sustainable business (Unilever, 2001). For a number of years it has identified that it is important to consider environmental issues within company activities and decision-making. Indeed Unilever has been recognised for its approach to environmental management and corporate responsibility. It is ranked in second position overall and first in the Food Producers and Processors Group in the 6th BiE Index of Corporate Environmental Engagement survey (2001/2) and is listed in first place in the SAM/Dow Jones Index for the Food and Beverage Group². The findings of this study could therefore be used in the future to inform and initiate the development of new processes and supporting tools and to further embed environmental consideration within innovation.

The research was undertaken through a series of focus groups and in-depth interviews with innovators from a case study product category. It was initially planned that a series of focus groups would be undertaken; they are generally more suited to determining the perceptions and opinions of individuals as they focus on detailed descriptions and allow individual's perceptions and values to evolve through the interaction with others (Morgan, 1998). However it proved to be very difficult to organise focus groups involving busy participants from different sites (and in some cases from different countries). As such it became apparent that in-depth interviews would be the most appropriate method of data collection for those unable to attend a

² Refer to http://www.business-in-environment.org.uk/bie_index_6.html and <http://www.sustainability-index.com/> for details.

focus group session. In-depth interviews provide similar advantages to focus groups; participants are asked to describe and explain their perceptions and feelings regarding issues and the interviewer can probe for clarification, ensuring meaningful information is revealed. However it is recognised that this method relies to a certain extent on the participants' having pre-formed opinions regarding the issues discussed.

The participants were selected according to their role within the innovation process. The phases of the innovation process can be grouped into three basic stages of *research*, *development* and *implementation* (Wright, 1999). An internal stakeholder scan at Unilever identified that the key functions involved in each of these could be grouped as Research, Product Development, Packaging Design, Process Development, Buying, and Marketing. Up to ten people from each function, of varying work levels and roles, were involved in the research.

4.1 Awareness & understanding

Generally the innovators' awareness of environmental issues was good, and the need to consider environment within innovation was widely recognised. However as some innovators lacked specific technical knowledge of environmental issues, they found it difficult to identify how they connected this to their role. However all of the participants were positive about considering the environment within their decisions and most stated that they would be receptive to any developments that made it easier for them to do this. They also considered Unilever to be a responsible company and perceived this to be important for Unilever customers and their employees.

When defining environmental responsibility, the innovators identified individual activities that represented (personal) responsibility such as understanding your personal role, considering the environment within your role, making more informed decisions, minimising resource use and recycling. Additionally they described their general understanding of environmental responsibility; how they felt it related to companies. This addressed four key factors: increasing awareness and deepening understanding, minimising impact and finding a balance, extended responsibility and communicating honestly.

Several of the participants outlined how a key part of being environmentally responsible was having a full understanding of the products and their impacts. Almost all of the participants defined environmental responsibility as '*reducing impact*' or '*minimising damage*'. One participant also suggested that there were two levels to environmental responsibility: '*to stay, of course, out of the forbidden areas... And to be as much proactive as we can...reducing ...negative effect*'. Several participants also described how they perceived environmental responsibility as finding '*the best balance possible*' between meeting business needs and minimising adverse effects on the environment. A number of the participants also identified a need to consider '*the whole...product you sell*'. Some discussed in detail the need to consider all impacts relating to the product; even those beyond the direct control of the company: "*...we have to be responsible for...anything that goes into the environment. But more than that – it's like a life cycle also – so total energy consumption, through use of products, from manufacture, from sourcing raw materials right through to how it gets disposed of....*"

All of the groups felt that communication was essential both within the company and externally. Several panellists believed that communicating current activities and the benefits achieved would educate individuals and help build the company reputation. They also stated that it was essential *'to be honest'*.

4.2 Identifying barriers

Whilst the participants were generally positive about considering environmental issues within innovation, they were able to identify a number of potential barriers and propose actions to remove them.

A key barrier identified by all of the participants was personal knowledge. Despite having a good level of awareness of environmental issues, the participants did not feel they had a deep enough knowledge to be able to make informed decisions or relate environmental responsibility to their products. Therefore it is important that innovators receive relevant ongoing training to build their confidence. Whilst it is not expected that innovators become environmental experts, they should have (and feel they have) a good knowledge of the associated impacts of their products and the role they can play in minimising them. Many participants also identified that it was difficult to consider the environment, more difficult than other innovation criteria, as it was very difficult to make straight comparisons. They felt considering the environment rarely results in a straightforward, 'black and white' choice. Whilst they were not able to determine how this problem could be resolved, they felt it to be a necessary focus for future research.

Building upon this, the participants also outlined that it was essential that any specialist information was easily accessible to them. They recognised that the time that innovators have to make decisions is limited. Therefore if it is necessary for information to be provided, it must be instantly available or available in a short time to be beneficial to innovation decisions. Many companies, including Unilever, have a comprehensive safety approval system for products, however a number of participants identified the need for more general information, which they considered essential for early decision-making stages of the innovation process. Additionally the participants felt that it is important to recognise that innovators within different functions and also different stages within the innovation process are likely to have different information requirements.

4.3 Insights

It is not possible to outline here the specific issues raised within the research due to participant and company confidentiality. However it is possible, from the findings of this study and also the literature previously outlined, to identify a number of key factors and needs that any developments for environmentally conscious innovation should encompass.

Awareness is key. Innovators need to have an adequate awareness not only of environmental issues and how they relate to products and individuals' roles, but also of the policy of the company as a whole towards the environment. It is essential that a company's commitment, strategy and individual initiatives and activities regarding the environment are communicated internally to ensure that employees, and particularly

innovators, are aware of them. If not, innovators will perceive the environment to be a low priority for the company and therefore a low priority for innovation and therefore might not support or fully implement any new environmental initiatives. Communicating individual activities and the benefits achieved will also increase the awareness of individuals, which itself will influence environmental consciousness within innovation.

Training, guidance and support. Developments for environmentally conscious innovation need to encompass three levels of information provision to ensure the environment is fully integrated within innovation processes. Ongoing function and/or product specific training is essential to allow innovators to build their own personal knowledge and awareness. Educating them in this way ensures that they can make more informed decisions. Standard processes and supporting tools are also needed to provide a structured approach to environmental consideration and guide innovators towards more environmentally conscious innovation. Additionally there is a need for specialist support; the findings of the Unilever study identified that innovators did not want the provision of new processes and tools to lead to the elimination of specialist support.

The 'right' information. It is necessary that the information provided meets the needs and expectations of all functions and innovation groups. It should be recognised that, in addition to specialist environmental clearance procedures, innovators need access to general information in the early stages of innovation and other more specific information relating to specific roles such as buying, process development and packaging design, later in the product innovation process. As shown in Figure 2, the process of ascertaining innovators' needs and providing new processes and tools to support them should be ongoing, thus ensuring the right information is available.

How? not Why? The findings indicated that innovators are now aware that the effect on the environment is an important issue to be considered within innovation. Therefore, whilst information, training and support provided to innovators should reinforce the need for environmental responsibility, more emphasis should be placed on how to consider such issues. Several innovators expressed frustration because, despite knowing they should consider such issues, they were less sure about how to relate the environment to their specific project and exactly what they should do.

Participation. It is essential that there is greater interaction between innovation groups and also between the innovation groups and specialists. Involving innovators in the development of information services, tools and activities that they will use is likely to result in the solutions being more widely accepted and them better meeting the needs of those who will use them. Such participation can provide many benefits (see Section 3) including reducing the time and resources taken to develop new initiatives. Participation will also break down barriers between specialists and innovators and therefore address the need to more effectively integrate environmental consideration into innovation.

5. Summary & Conclusions

The innovation process can provide (particularly consumer goods) companies with an opportunity to influence the adverse impacts associated with their products. Environmentally conscious innovation aims to integrate environmental consideration into innovation and thereby facilitate more environmentally conscious decisions within innovation processes. Whilst numerous concepts and innovation tools can be found in the literature, merely providing innovators with new processes and tools is rarely sufficient to ensure they are fully implemented and embedded into innovation processes. To achieve this it is vital to have the support and commitment of employees. This can only be achieved through their participation within any development initiatives from the start. Indeed employee participation can provide a number of benefits: greater employee awareness, support, commitment, empowerment and motivation, greater awareness of employee needs and expectations, increased information provision, improved communication networks, resources used in development are not wasted, greater integration of environment and innovation and wider acceptance of decisions and initiatives.

Despite this, the use of participatory processes within company decision-making has remained limited. This paper proposes that employee participation provides an opportunity for companies to improve environmental consideration within innovation and that innovators should participate in the development of new processes and tools for innovation to ensure that their needs are met and that the initiatives are widely accepted, utilised and effective.

The initial phase of this participatory process is to ascertain employees' concerns and needs. Drawing upon the findings of a study undertaken at Unilever, the paper identifies the main factors that need to be addressed by any new developments to ensure that innovators can effectively consider the environment within innovation. They must focus upon information provision and improving individuals' awareness through relevant training, guidance and specialist support and must place the emphasis on how to consider the environment rather than why it is important. Additionally new initiatives should be developed as part of a participatory process; this should eliminate barriers between specialists and innovators, and also between innovation groups. Environmental consideration and innovation can then be integrated, thus facilitating more environmentally conscious decision-making within innovation.

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