

**ECODESIGN CENTRE /  
CANOLFAN ECODDYLUNIO**

**Response to the European Commission  
'Design as a driver of user-centred  
innovation' consultation  
(select responses)**

**June 2009**



## About the Ecodesign Centre (EDC)

EDC is an applied research organisation established in 2006 to build capacity and capabilities to enable effective ecodesign in Welsh industry. The setting-up of EDC was supported by the Welsh Assembly Government (WAG) as part of its statutory commitment to sustainable development. EDC was designated a Centre of Expertise by the WAG in 2008 and is recognised as the 'voice' of, and knowledge base for, ecodesign in Wales.

EDC's primary goal is to conduct international best practice research in ecodesign and eco-innovation, to disseminate and implement the results to industry and other key stakeholders (e.g. educators, policy-makers), using a variety of approaches. EDC is unique within the UK and has already established an international reputation for its innovative approaches to capacity building for ecodesign, being frequently cited as best practice. A key role of EDC is to translate policy into practice.

A key element of EDC's work-to-date was the design, management and delivery of an innovative Ecodesign Initiative. This 2-year Initiative was the first phase in building a knowledge base on implementing ecodesign in Welsh industry. The Initiative focused on enabling Welsh SMEs to develop international best practice ecodesign products. This has significantly raised the international profile of these Welsh SMEs. It has also resulted in directly influencing WAG policy through working as part of their extended policy teams.

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## **Key questions - *General role of design in public policy***

### **Do you consider design to be important for the future competitiveness of the EU economy?**

Very important

#### **Why?**

Creativity and design can play a leading role in enhancing the competitiveness of regions. Design is often the link between technology, creativity, business and the user. The role of design, as a complementary asset for competitiveness, in SMEs is especially important in the context of mature consumer markets where technological innovations only gain marginal returns. In these markets, functional and aesthetic innovations play a greater role. Design becomes a mechanism by which the intangible assets of products and services such as lifestyle, behaviours, culture, gender and needs can be considered. Therefore, in the context of sector competition based on non-price characteristics, the command of a greater array of complimentary assets can allow design-led businesses to innovate and remain competitive.

Creativity and design can also play a leading role in enhancing the competitiveness of regions by increasing the diversity and flexibility of economic activities, increasing wealth creation for a larger number of people, encouraging the sustainable use of local and preferably renewable resources, increasing the share of value added retained in the regions, increasing collaboration among regional activities while decreasing pollutant emissions and waste generation.

While sustainable development is an inherently global concern the regional scale is perceived to be particularly important for the development of innovation systems that can facilitate the transition to sustainable consumption and production. This is generally accepted because of the spatial dimension of networks, knowledge spillovers and exchange, which are understood to lie at the heart of successful innovation.

#### **What are the main areas where public initiatives in support of design could be useful, if any? Multiple answers possible.**

- Design support to organisation
- Design research
- Design education
- Other

Design education needs to prepare the designers of tomorrow for new contexts of design practice. This is not to suggest that we turn from traditional practices and commitments, such as to industry and consumers, but these commitments need to be aligned to broader commitments to society and

the environment. Design education may need to situate itself away from the traditional art or engineering setting to facilitate greater interdisciplinary learning. This repositioning of design education will allow for multidisciplinary relationships with other schools and communities such as social science, business or planning. There will be a role for the promotion of international design institutes that provide a more concentrated experience of the value of design and design education.

**Should initiatives in support of design be an integral part of innovation policy?**

Yes

**Scope for action at EU level**

**Should initiatives in support of design be taken at EU level in addition to Member State and regional level? (compulsory)**

Yes

**The following could be an operational definition for the purpose of innovation policy development:**

*Design for user-centred innovation is the activity of conceiving and developing a plan for a new or significantly improved product, service or system that ensures the best interface with user needs, aspirations and abilities, and allows for aspects of economic, social and environmental sustainability to be taken into account.*

**Do you agree with this definition as the basis for integrating design into European innovation policy?**

Yes

**The definition of design for user-centred innovation suggested above stresses the potential of design to support socially responsible and environmentally sustainable innovation.**

**How important is the use of design to achieve social objectives?**

Very important

**How can EU policy promote design that takes user diversity into account, regarding for example physical and mental abilities, education and skills?**

Some of the primary characteristics of ecodesign research and education to date have been the focus on a physical artefact. The physical artefact is

placed in the context of the full life cycle of manufacturing systems. Through consideration of this context, ecodesign aims to reduce or eliminate impacts of products and services (e.g. energy, materials, distribution, packaging and end-of-life treatment). As ecodesign thinking advanced in academia and in industry, researchers began to incorporate systems orientated definitions to include the changing perspectives in manufacturing and service development and the broader understanding of sustainability – including the social dimensions.

Improving the sustainability of products and services is not so much about changing the products and services but more about changing the way they are designed. This issue has been highlighted through the interdisciplinarity of design practice in many leading companies and the increased involvement of cultural anthropologists, styling designers, engineering designers, ethnographers, social scientists and psychologists in the design process.

Design policy and subsequent support mechanisms need to focus on building capacity and competencies for the new contexts of design practice. The new social contexts mean that designers require new competencies in terms of transformation and participatory design, socio-entrepreneurship, social innovation, user-centred and ethnographic design.

### **How important is the use of design to achieve environmental objectives?**

Very important

### **How can EU policy promote design that takes environmental aspects into account, such as resource efficiency, durability, reuse and recycling?**

There are a wide collection of design and management frameworks and tools that are geared towards providing insights on the outcomes or analytical processes of designing in a more sustainable manner. These frameworks generally include support for considering knowledge outside traditional areas of design expertise such as material toxicity, recyclability, full life cycle considerations such as 'upstream', 'downstream' and end-of-life considerations. Within the wealth of literature there are a number of areas that often remain overlooked such as adaptations needed for organisations to put this knowledge into practice and the key competencies required by designers to implement these frameworks and tools.

Over, the last decade a number of regional and local consulting programmes on ecodesign and sustainability issues for SMEs across Europe have been developed. While these programmes took many forms, the primary mechanisms of intervention included the provision of information services, demonstration projects, R&D financing, grants, establishing co-ordination bodies and 'brokering' services.

Although longitudinal data is lacking, research suggests that many interventions do not facilitate second order additionality or sustainable changes in SME ecodesign practice. Previous research by the Ecodesign Centre identified potential reasons for this including limited project scope, restrictive budget cycles and fragmented support mechanisms.

O'Rafferty et al also suggested that these interventions were based upon linear, neoclassical interpretations of innovation. This allowed interventions to occur without consideration of the wider institutional context. This linear model of innovation is broadly contested and has given way to the recognition that innovation is an interactive, dynamic and non-linear process. It is therefore important to establish a framework of analysis that can incorporate the richness and interactivity of innovation in the context of national and regional innovation systems.

In relation to ecodesign, eco-innovation and sustainability there is a need to:

- improve supply and demand side policy coherence (e.g. in relation to environment)
- facilitate higher order innovation (e.g. organisational and managerial innovation)
- balance a technology focus with other forms of innovation
- provide inspirational platforms that allow for interactive learning
- improve formal and non-formal education systems for sustainable innovation
- set framework conditions that enable open innovation - and potentially disruptive innovation
- identify focus areas (not spots) for intervention - from a product/service life cycle perspective
- build capacity in existing and mainstream business support infrastructure
- embed ecodesign in HE, FE, vocational training and CPD for designers and engineers
- build capacity in the professional design sectors (design consultancies and design service providers are often underrepresented in business support programme)
- establish commercial support partners/networks (creating meaningful linkages within industry already applying ecodesign)
- conduct research - basic, strategic and applied (knowledge creation and transfer)
- establish policy learning processes (monitoring and evaluation)

(for academic references please contact the Ecodesign Centre)

Design may be an innovation activity with untapped potential, especially in SMEs, low-tech companies and the service sector, where design usage is comparatively low.

## Is there a need for a more targeted policy for these three groups of organisations?

	Yes	No
For SMEs: (optional)	<input checked="" type="checkbox"/>	
For low-tech organisations: (optional)	<input checked="" type="checkbox"/>	
For service organisations: (optional)	<input checked="" type="checkbox"/>	

## Should such targeted policy exist at EU level?

Yes

## Does the current economic climate affect the relevance of design?

Yes

## What should be the role of design policy in response to the crisis, if any?

Design policy should create the right conditions that allow design led innovation to occur. This can be achieved through creating the right market/price signals, reducing risk and providing direct support.

Recent Ecodesign Centre case studies with Welsh SMEs from industrial sectors have shown that ecodesign is good design and good business practice, even in times of economic crisis. For example, implementing ecodesign enabled Orangebox ([www.orangebox.com](http://www.orangebox.com)) to become the first European Company in their sector to achieve Cradle to Cradle accreditation, diverting large volumes of waste material from landfill thus making huge cost savings, win an international furniture product of the year award, go beyond compliance in terms of product remanufacturing and crucially achieve significant product launch sales for the ecodesigned Ara chair.

The Commission is already involved in a number of design-related initiatives. What is potentially lacking is an explicit integration of design into European innovation policy.

## If there were to be a policy for design in Europe, how should it be related to innovation policy?

Design should be part of European innovation policy

## **Why?**

Innovation is presented as a key mechanism for productive growth in the economy and there is an increased understanding of the interface between innovation and sustainability. Until recently, design as a creative process and business strategy has been underrepresented in the innovation literature and policy discussion. Design has also been underrepresented in the sustainable development and sustainable consumption and production literature.

The general focus in the literature on technological innovations fails to prevent a complete picture of the role of design insofar as many innovations are based on novel designs or concepts as opposed to technical novelty. While the 3rd revision of the Oslo manual has extensive treatment of innovation outside of or ancillary to the development or use of technology it remains limited in scope.

The understanding of design is reaching beyond traditional perspectives on the design of products, services and brands towards more strategic considerations. This is also reflected in the discussion on the role of design and sustainable development. The discussions have evolved from primarily ecological concerns to integrated discussions on sustainable consumption and production, social innovation and economic development in the broadest sense. Added to this the issue of capacities and competencies for ecodesign is increasingly important in the discussion on public policy interventions to improve the sustainability of design practice.

## **How could other EU policies or initiatives - for example in the fields of internal market, research, social inclusion, education or culture - be instrumental in supporting design? (optional)**

Within the context of sustainable development, there is no single actor that can solve the various and increasingly complex design problems. It is increasingly important to develop a shared framework of design competencies born out of mutual values and understanding of sustainable development, ecodesign practice and design education. This shared understanding needs to be developed across these policy domains.

## **What would be the best forum to discuss policy on design for user-centred innovation at EU-level?**

An existing forum

The EU should capitalise on the best of the existing forum while incorporating new channels of discussion through current technologies. The combination of forums should be as inclusive and transparent as possible.

A key objective should be to incorporate the voice of the general public – i.e. non-specialist end-users of design.

## Which are the most serious barriers to the better use of design in Europe, if any?

- Lack of common definition of the word 'design'
- Lack of statistics and statistical analysis on design
- Lack of awareness and understanding of the potential of design among policy makers
- Lack of awareness and understanding of the potential of design among potential design customers, i.e. private and public organisations
- Lack of designers/design companies with the right skills and/or capacity
- Lack of design skills and understanding among other professions
- Lack of research in the area of design

## Are there any other serious barriers?

Research has highlighted a number of barriers specifically relating the implementation of ecodesign. More recently, O'Rafferty and O'Connor presented a framework of barrier to ecodesign from the perspective of **systems failure** in a recent research publication.

(O'Rafferty, S. & O'Connor, F., 2009. *Regional perspectives on capacity building for ecodesign - insights from Wales*. In Facilitating Sustainable Innovation through Collaboration. The Netherlands: Springer-Verlag New York, LLC.)

### Infrastructure

- Low representation of ecodesign indicators in government R&D programs
- Low levels of investment in ecodesign related R&D
- Inadequate numbers of ecodesign support providers
- Low awareness by firms of emerging ecodesign related issues in key markets
- Lack of exposure to formal and informal ecodesign education and training
- Lack of alignment between ecodesign providers and industry
- Low utilisation of external knowledge providers
- Lack of support for intermediary organisations to build capacity in ecodesign
- Unclear market signals and demands

### Institutions

- Actors can not or will not act due to uncertainty and poor appropriability
- Competing policy rationales (e.g. environment and innovation)
- Government information asymmetries
- "Public-good" nature of investment
- Lack of policy supply and demand coherence leading to uncertainty and investment inefficiencies

- Regulators inflexible and too slow to change
- Regulators lack resources and expertise to address ecodesign issues
- Time lag between R&D intervention and commercialisation

### **Interaction and networks**

- Little structured co-ordination of public-private partnerships or triple helix networks
- Lack of external support (training, advisory services etc.) to develop ecodesign led innovations
- Organisational thinness in innovation and ecodesign support
- Lack of information on potential markets (niches)
- Limitations of the local markets (too small, low expenditure)
- Fragmented value chain structures
- Low levels of collaboration between technology commercialisers, international partner and R&D providers

### **SME capability**

- Fragmented product development process in SMEs
- Lack of managerial and operational resources
- Failure of managers to harness the strategic considerations
- Lack of viable technology options or alternatives
- Lack of awareness of viable technology options
- Lack of clear internal ecodesign or innovation strategies

### **Culture**

- Lack of top management commitment
- Lack of awareness, training, and motivation of employees
- Sustainability (environmental and social) viewed as periphery of core business
- Poor perception of ecodesign by investors
- Risk averse attitudes and resistance to engaging in new business opportunities through ecodesign
- Low levels of trust in intermediary and business support organisations
- Focus on short-term investments

### **What can be done at EU level to address these barriers specifically?**

- use and develop local knowledge networks and partnerships
- facilitate longer-term trust-based relationship between businesses and intermediary organisations
- support more demand than supply side of innovation
- recognise innovation system characteristics (strengths, weaknesses, problems, development potential)
- learn from previous experience (e.g. from evaluation results)
- enhance interventions by taking into account the richness and complexity of innovation processes
- support stakeholders to co-ordinate their activities in and beyond their policy field (horizontalisation)

**The following vision is the result of a European innovation policy workshop organised with experts in design and design policy in Marseille, in June 2008:**

*To build on our existing strengths and our heritage to make Europe a reference for design excellence, whether for research, education and skills - attracting and retaining the best talents, for high-end design and excellence, and for breadth and depth of design usage in private and public organisations.*

**Is this a good vision for European collaboration in the area of design?**

Yes

**What could alternatives be?**

We would suggest the incorporation of direction and orientation towards sustainable development - with an emphasis on global equity. i.e. for the betterment of Europe and the world

**Other comments**

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