Inclusive design toolkit

This PDF was generated from the What is inclusive design? section of www.inclusivedesigntoolkit.com

This toolkit was developed by the University of Cambridge, Engineering Design Centre, sponsored by BT.

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What is inclusive design?

Every design decision has the potential to include or exclude customers. Inclusive design emphasizes the contribution that understanding user diversity makes to informing these decisions, and thus to including as many people as possible. User diversity covers variation in capabilities, needs, and aspirations.

This page first presents an example set of 'Product performance indicators' and discusses how users' needs fit into this set. It explains how delivering breakthrough advances across the whole set of performance indicators requires understanding diversity within the population and responding to this diversity through Inclusive design. Comparisons with 'Design for all' and 'Universal design' are also presented.

On this page:

The "What is inclusive design" section was authored by Sam Waller, Ian Hosking, John Clarkson and Roger Coleman.

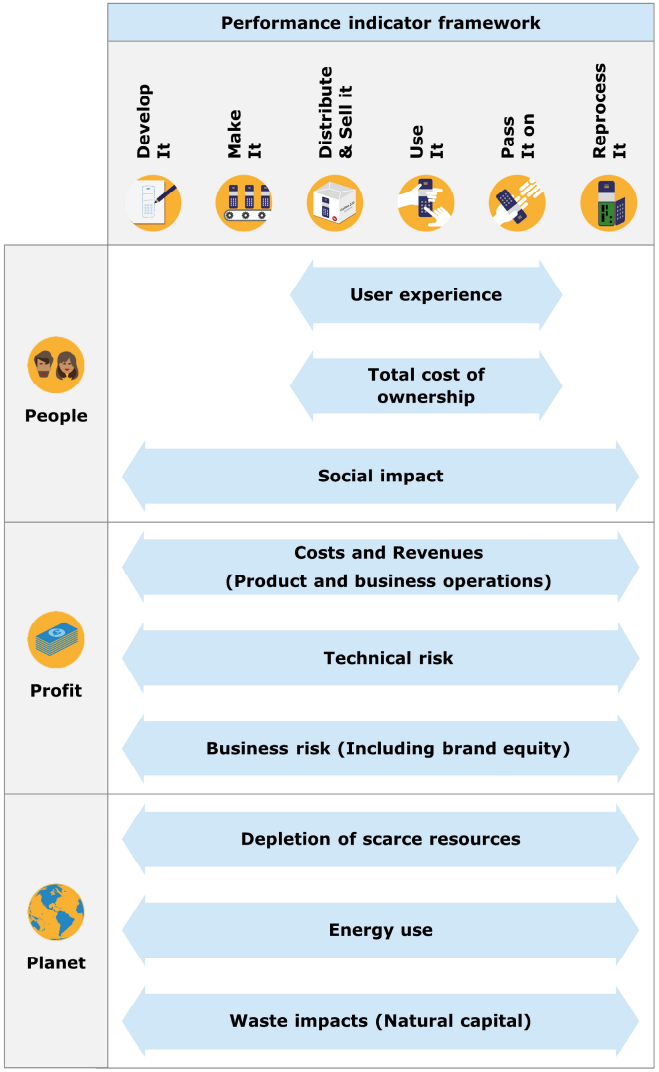
Product performance indicators

Inclusive design focuses on the diversity of people and the impact of this on design decisions. However, the complete set of performance indicators should consider a wider set of aspects concerned with People, Profit and Planet, as described in the 'Performance indicator framework' diagram shown opposite.

The performance indicators should examine how the different aspects have an impact across the **whole life-cycle** of the product. This life-cycle typically involves the stages:

- Develop it
- Make it
- Distribute & sell it
- Use it
- Pass it on
- Reprocess it

For most current products, the user 'Passes it on' by throwing it in the bin, and 'Reprocess it' represents storage in landfill. However, recycling and refurbishment represent other alternatives for these stages.



These performance indicators are described in more detail within the Designing Our Tomorrow website.

Further information

- The Designing our Tomorrow website has a section on performance indicators which provides definitions of the indicators and describes how they fit together into a 'Performance indicator framework'

Understanding user diversity

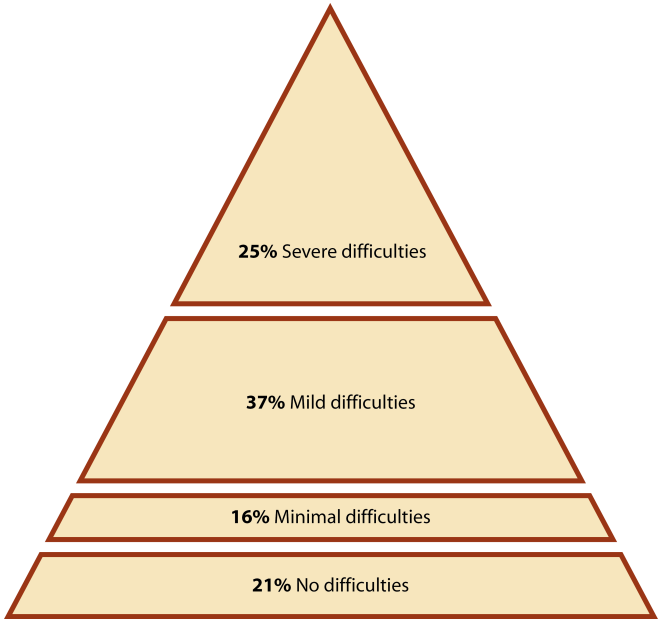
Failure to correctly understand people can result in products that cause unnecessary frustration and exclusion, which reduces commercial success because of increased returns and customer support.

In order to better understand population diversity, it is important to challenge the polarised separation of "able-bodied" and "disabled". Research commissioned by Microsoft (2003) to investigate the benefit of accessible technology makes the following comment:

'The concept of 'disability' may have limited the understanding of the need for accessible technology ... the IT industry must consider the wide range of people who could benefit.'

Diversity within the population is better modelled using a pyramid to model the full range of ability variation within a population. This pyramid can then be segmented to identify various categories of users. The bottom segment of the pyramid represents those with no difficulties, and the severity of difficulties increases up the pyramid. A specific interpretation of this pyramid model is shown opposite.

Population diversity has been introduced first from the perspective of ability variation, but can be further broadened to consider diversity associated with different real-world contexts, lifestyle, aspirations, gender, and past experiences. In summary, "it's normal to be different" (Lange and Becerra, 2007).



The pyramid model presents a continuum of population diversity. The prevalence data and definitions of difficulty levels are drawn from the Microsoft (2003) survey.

Further information

- A report by **Microsoft (2003)**: 'The Wide Range of Abilities and its Impact on Computer Technology' presents survey results on the range of abilities in the US population and discusses the current and potential market for accessible technology.
- A paper by **Lange and Becerra (2007)**: 'Teaching universal design in Colombia: the academic approach of two universities' discusses perceptions of disability and explains how it is 'normal to be different'. The paper is available in the Include 2007 Conference Proceedings.

Definition of inclusive design

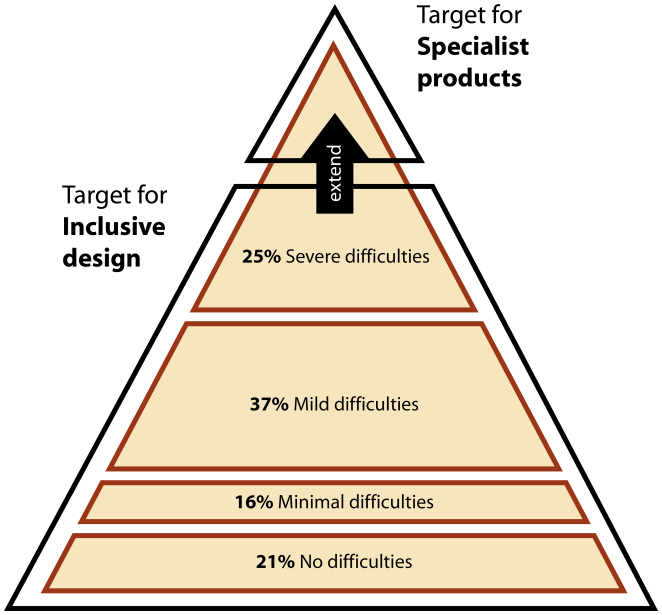
The British Standards Institute (2005) defines inclusive design as:

'The design of mainstream products and/or services that are accessible to, and usable by, as many people as reasonably possible ... without the need for special adaptation or specialised design.'

Inclusive design does not suggest that it is always possible (or appropriate) to design one product to address the needs of the entire population. Instead, inclusive design guides an appropriate design response to diversity in the population through:

- Developing a family of products and derivatives to provide the best possible coverage of the population.
- Ensuring that each individual product has clear and distinct target users.
- Reducing the level of ability required to use each product, in order to improve the user experience for a broad range of customers, in a variety of situations.

See the Case studies section for commercially successful examples of inclusive design.



The pyramid model of diversity (described previously) can be used to show how inclusive design aims to extend the target market to include those who are less able, while accepting that specialist solutions may be required to satisfy the needs of those at the top of the pyramid.

Further information

- The **British Standards Institute (2005)** standard BS 7000-6:2005: 'Design management systems - Managing inclusive design - Guide' defines inclusive design and provides guidance on managing it. It can be purchased from the BSI website.

Comparison with 'Universal design'

'Design for all' and 'Universal design' philosophies both have the same literal meaning. These philosophies originated from design of the built environment and websites, and were initially applied in the context of government provision (Design for All Foundation; Preiser and Ostroff, 2001).

In the context of product design, both 'Design for all' and 'Universal design' approaches pragmatically accept that it is not always possible for one product to meet the needs of the entire population. Nevertheless, these approaches maintain that all mainstream products should be accessible to as many people as technically possible (Preiser and Ostroff, 2001).

In contrast, inclusive design originated with product design, and focuses on choosing an appropriate target market for a particular design, and making informed decisions to maximise the 'Product performance indicators' for that target market. While inclusive design intends to extend the reach of mainstream products, it acknowledges the commercial constraints associated with satisfying the needs of the target market.

For websites and the built environment, the target population is the whole population, in which case all three approaches have an equivalent meaning.

Examples of inclusively designed products, which are usable by a wider range of users. See the Case studies section for more information.

"Good design is not simply about aesthetics or making a product easier to use ... it's an essential part of the business"

- Tony Blair

Further information

- The website of the **Design for All Foundation** provides more information about 'Design for all'.
- **Preiser and Ostroff (2001)**'s book: 'Universal Design Handbook' gives more information about universal design. (Published by McGraw-Hill, New York, USA).
- The website of the Inclusive Design Research Centre has a section on What is inclusive design which also discusses similarities and differences between inclusive and universal design.