P. John Clarkson, Roger Coleman. History of Inclusive Design in the UK. Pages 235-247,

The UK Design Council describes Inclusive Design as neither a new genre of design, nor a separate specialism, but as a general approach to designing in which designers ensure that their products and services address the needs of the widest possible audience, irrespective of age or ability. Inclusive Design (also known [in Europe] as Design for All and as Universal Design in the USA) is in essence the inverse of earlier approaches to designing for disabled and elderly people as a sub-set of the population, and an integral part of a more recent international trend towards the integration of older and disabled people in the mainstream of society. This paper describes the development of Inclusive Design in the UK, from its early beginnings, through its subsequent adoption as a topic of academic research, leading to its recent emergence embodied as a framework and toolkit for design.

**Keywords:** Inclusive Design; Universal Design


Design for All is more than an appealing point of view. It is a concept that offers a set of challenges capable of generating innovation and giving design added value and weight. In the Scandinavian tradition, the concept has developed from a purely social dimension to a design topic that is discussed both in terms of its business potential and in relation to Corporate Social Responsibility, CSR. This article gives a State of the Art of the development of Design for All in the Scandinavian countries: Denmark, Norway, Sweden and Finland during the past 15 years, beginning with a common review and joint Scandinavian projects, followed by an overall review country by country which include selected case studies over the past 15 years.

**Keywords:** Design for All; Inclusive design; User-driven innovation; Universal design; Scandinavia

Keiji Kawahara, Masafumi Narikawa. The unique achievements of Japanese industries in the super-aged society. Pages 258-266.

Unique efforts of the Japanese industries in meeting the needs of the super-aged society are introduced through their association with International Association for Universal
Design (IAUD). Considerations are made on how successes were brought about, what can be learned as well as what issues should be addressed in the future.

- **Keywords:** Super-aged society; Universal design; Inclusive design


The paper considers the evolution of thinking and practice of inclusive design in the United States since 1993, the year of the first special edition of Applied Ergonomics on inclusive design. It frames the examination initially in terms of the US social mores that substantially influence behavior and attitudes from a defining individualism to legal mandates for accessibility to the nation's ingrained obsession with youth and delusional attitudes about aging. The authors explore the disparate patterns across the design disciplines and identify promising linkages and patterns that may be harbingers of a more expansive embrace of inclusive design in the years ahead.

- **Keywords:** Universal design; Design education; Socially sustainable design


TheAlloy have been working together with British Telecom (BT), as their product design consultants, for over ten years. During that time BT have undergone a key transformation which has had a profound impact on their design focus. This transformation has seen BT actively embrace inclusive design as a core driver for their business objectives. As part of that journey, TheAlloy have in turn developed core competencies which have not only supported BT’s transition, but impacted the consultancy’s ability to offer these services to other clients. This paper reflects on the development of that relationship and those competencies through a series of project case studies.

- **Keywords:** Inclusive design; Product design; Consumer centric design; Telecommunications; Telecoms

Mark Chamberlain, Jacqueline Esquivel, Fiona Miller, Jeff Patmore. *BT’s adoption of customer centric design*. Pages 279-283.

Between 2005 and 2010 BT underwent a major transformation from a company with a special section devoted to ‘older and disabled consumers’ to a company with an inclusive design strategy. The mainstreaming of these issues responded to a demand for better, more user-friendly communications products and growing awareness of the importance of previously marginalised consumer groups. It also took place alongside the development and publication of BS7000-6, a guide to inclusive design management. Based on several product design case studies, this paper reflects on how and why this transformation was seen as necessary for future success, and how the transformation was achieved. The evolution of BT’s approach has continued since, but this paper looks back in time, and documents the transformation up to 2010 and reflects the state of the company in 2010 rather than at the time of publication.

- **Keywords:** Inclusive design; Business transformation; Inclusive products; Customer centric design

Over the last twenty years, research on inclusive design has delivered a wealth of publications and initiatives, forming an emerging knowledge base for inclusive design. The inclusive design knowledge base breaks down into two discrete areas – understanding end users from many different perspectives, and understanding the information needs of the knowledge users (e.g. designers) who are involved in promoting and delivering inclusive design solutions. Much research has focused on the end users, but in recent years, understanding the needs and the characteristics of knowledge users has added a new dimension to the research task. This paper focuses on the knowledge users of inclusive design. It discusses the different types of knowledge users and their knowledge needs. The research programmes undertaken by the Inclusive Design Research Group (IDRG) are used to illustrate the process of understanding knowledge needs of designers, developing different types of tools to meet those needs and evaluating their effectiveness. The paper concludes with a discussion on how to adopt an inclusive design research methodology to effectively engage the knowledge users in the development of inclusive design tools.

- **Keywords:** Inclusive design knowledge base; Knowledge users; Knowledge needs; Tool development and evaluation


The DBA Inclusive Design Challenge and the Challenge Workshops organised by the lead author has exposed numerous design teams to the benefit of working with extreme users – this paper will analyse the challenges and benefits of this approach to inclusive design and suggest how the lessons learned from competition can be transferred into design practice.

- **Keywords:** Inclusive design; User engagement; Participatory methodologies

Sam Waller, Mike Bradley, Ian Hosking, P. John Clarkson. Making the case for inclusive design. Pages 297-303.

This paper describes the University of Cambridge, Engineering Design Centre's (EDC) case for inclusive design, based on 10 years of research, promotion and knowledge transfer. In summary, inclusive design applies an understanding of customer diversity to inform decisions throughout the development process, in order to better satisfy the needs of more people. Products that are more inclusive can reach a wider market, improve customer satisfaction and drive business success. The rapidly ageing population increases the importance of this approach. The case presented here has helped to convince BT, Nestlé and others to adopt an inclusive approach.


Understanding the needs and aspirations of a suitable range of users during the product design process is an extremely difficult task. Methods such as ethnographic studies can be used to gain a better understanding of users needs, but they are inherently time consuming and expensive. The time pressures that are evident in the work performed by design consultancies often make these techniques impractical. This paper contains a discussion about the use of ‘personas’, a method used by designers to overcome these
issues. Personas are descriptive models of archetypal users derived from user research. The discussion focuses on two case studies, the first of which examines the use of personas in the car design process. The second examines the use of personas in the field of ‘inclusive design’, as demonstrated by the HADRIAN system. These case studies exemplify the benefits ‘data rich’ personas contribute as opposed to ‘assumption based’ personas.

- **Keywords:** Personas; Inclusive design; User-datasets

**Pat Langdon, Daniel Johnson, Felicia Huppert, P. John Clarkson.** *A framework for collecting inclusive design data for the UK population.* Pages 318-324.

Successful inclusive product design requires knowledge about the capabilities, needs and aspirations of potential users and should cater for the different scenarios in which people will use products, systems and services. This should include: the individual at home; in the workplace; for businesses, and for products in these contexts. It needs to reflect the development of theory, tools and techniques as research moves on. And it must also to draw in wider psychological, social, and economic considerations in order to gain a more accurate understanding of users’ interactions with products and technology. However, recent research suggests that although a number of national disability surveys have been carried out, no such knowledge currently exists as information to support the design of products, systems and services for heterogeneous users. This paper outlines the strategy behind specific inclusive design research that is aimed at creating the foundations for measuring inclusion in product designs. A key outcome of this future research will be specifying and operationalising capability, and psychological, social and economic context measures for inclusive design. This paper proposes a framework for capturing such information, describes an early pilot study, and makes recommendations for better practice.

- **Keywords:** Disability; Inclusive design; Design for all; Disability survey; Capability measurement