

About : Inclusive Design

By Roger Coleman

Roger Coleman is Director of the Helen Hamlyn Research Centre at the Royal College of Art. He established the RCA's DesignAge programme and the European Design for Ageing Network.

In brief

Also known as universal design and design for all.

Related fields: User-centred design, human-centred design, ergonomics, usability studies, design for disability, rehabilitation design, gerontechnology, transgenerational design.

In recent years there has been a shift in attitude, away from treating disabled and older people as special cases requiring special design solutions, and towards integrating them in the mainstream of everyday life through a more inclusive approach to the design of buildings, public spaces and, more recently, products and services. This is important for social equality but is also a significant opportunity for business growth through new products and services.

Central to this inclusive approach is the challenge of understanding and quantifying the numbers of people adversely affected by decisions made during the specification and design process. This 'design exclusion' takes several forms: older and disabled people suffer from it; so do economically vulnerable groups and those affected by changing technologies and work practices.

Senior management, design managers, marketing and branding executives, and purchasing and sales personnel all have a part to play in the delivery (or non-delivery) of inclusive design, and consumers have a key role in driving

the process.

Two major trends have driven this shift in attitudes:

1 population ageing

and

2 the growing movement to integrate disabled people into mainstream society.

These trends have been accompanied by growing legislation and a convergence of consumer dissatisfaction, governmental concern and business interest around inclusivity as a social goal and a commercial opportunity.

By 2020, close to half the adult population of the UK will be over 50 years old, while 20% of the inhabitants of the United States and 25% of those of Japan will be over 65. In the UK, only the 50+ age groups have increased significantly in size over the past 100 years.

With age, people change physically, mentally and psychologically. For most people these changes involve multiple, minor impairments in eyesight, hearing, dexterity, mobility and memory. At present, such changes have a significant impact on older people's independence due to an unnecessary mismatch between the designed world and their changed capabilities.

In recent years the expectations of disabled people for social integration and participation in everyday life have escalated dramatically. This has resulted, worldwide, in an exponential growth of legislation aimed at tackling discrimination and enabling access to buildings, goods, services, information and work.

Radical changes in expectations among the disabled community and unprecedented growth in the older age groups are challenging common assumptions about how products and services should be designed if they are to meet the needs of the majority. A direct consequence of this is that mainstream consumer markets will have to

concern themselves with the substantial rise in the number of people who are less than able-bodied yet wish to enjoy an active and independent lifestyle.

The challenge is to use design as a tool for delivering on social and political expectations of equality and inclusivity, and so create a supportive environment of buildings, products, services and interfaces that makes it possible for everyone to live independent and fulfilling lives, for as long as possible. The more effectively this can be achieved, the more older and disabled people will be encouraged to spend the now considerable wealth they control on the goods and services that deliver independence and quality of life - a virtuous circle that will benefit business and society.

Examples

Identifying good examples of inclusive design is not straightforward, as there are many facets to the subject, ranging from business practice, through design process, to specific examples of environments, products and services. Because the concept of inclusive design has emerged from earlier approaches like barrier-free design, there are perhaps more examples in the built environment than in product design. An interesting recent development is the establishment of a major business network in Japan - see below.

Arts buildings

The UK National Lottery has had a significant impact on building projects supported by its Arts Panel, which has made accessibility a core requirement of grant applications. Artists have been increasingly involved in such projects, and good examples include: the carved drum and ramped entry to the Harris Museum in Preston, Lancashire, by artist/poet Ian Hamilton Finlay (1994), relief wayfinding maps for the Old Winchester Hill Nature Trail, and seating at a bird observation point on Haiden Hill near Exeter, both by environmental artist Nicholas Meech (1994/5).

Transport and mobility

Project: The new London Taxi Designers: Pentagram designers, led by Kenneth Grange Year: October 1997

The taxi can accommodate a wheelchair along with other passengers, and boasts a range of safety and accessibility features such as grab bars, which are integrated into the vehicle's aesthetic. Key to the concept is the idea that licensed London taxis constitute a public service and should therefore be accessible to all.

International designers/consultancies

Project: Good Grips Designer: Smart Design Year: first introduced in 1990

Good Grips is a range of kitchen and household tools that exemplifies the inclusive design principles of meeting the needs of a more widely defined consumer population. The product range is stylish and desirable while being functionally improved for a diverse population with differing dexterity capabilities. The Good Grips range has been included in the Design Collection of the Museum of Modern Art in New York, and received a design award from the US Arthritis Foundation.

Smart Design, New York, USA, works very closely with users, focusing on meeting their actual needs rather than on product functionality per se. Key to the company's approach is the view that 'physical design is dead' and that it is the design of experiences that now matters. This has proved a very powerful idea with regard to inclusive design.

Corporate initiatives

Project: B&Q Diversity Initiative Year: 1998 onwards

British retailer B&Q has taken a proactive approach to the Disability Discrimination Act 1996 (DDA) through a company-wide Diversity Initiative. The aim is to make B&Q stores, products, services and employment opportunities accessible to as wide a range of the population as possible, and to go beyond compliance with the DDA to make inclusive design a key business strategy and way of developing the B&Q brand. It has recently introduced new 'inclusive' own-brand products, and more are in the pipeline. Sales are impressive and the products have been featured in national papers as among the top ten DIY/power tools on the market.

Business networks

Project: IAUD Year: 2003

IAUD, a network of more than 120 Japanese companies, including major household names and SMEs, was launched in Tokyo on 28 November 2003, with the Crown Prince of Japan as its patron. Consumer organisations and key individuals in design and research are also members. Many Japanese companies have a longstanding interest in inclusive and universal design and modern Japanese cities are renowned for their accessibility. This network represents a significant step in advancing inclusive design practice and is likely to have a major influence worldwide, as Japanese products become increasingly user-friendly. UK businesses should take note.

Facts and quotes

Facts

Population ageing By 2020, 50% of Britain's adult (16+) population will be aged 50 or over (easily remembered as 50:50 in 2020). Over the course of the 20th century, life-expectancy rose by in excess of 2.5 years per decade on average. During the same period the only real growth in the population was in the 50+ age groups. In effect, every new consumer on the street will become an older consumer, and this has been the case for the past 100 years.

Across Europe, and in other countries where the process is well advanced, large numbers of people are now in retirement and embarking on new careers and pursuits to fill their longer lives. This trend will impact strongly on consumer markets and has extensive design implications, while the similar increase in those aged 80-plus has significant implications for welfare and healthcare systems.

The news is not all depressing. World Health Organisation (WHO) figures for the USA indicate that despite population ageing, the rate of growth of seriously disabling health conditions such as cardiovascular disease and arthritis is slowing significantly. This is due to both healthcare improvements and to lifestyle changes. If we can support and strengthen this trend through design interventions, then the prospects are good at a social and personal level.

Disability Currently, one billion people worldwide have a noticeable degree of functional impairment.

In the UK, 8.7million people come under the remit of the Disability Discrimination Act 1995 (DDA). Fewer than five per cent are wheelchair users. Collectively they have an estimated disposable income of £45-50 billion.

There are 6.2million disabled people of working age in the UK, equivalent to 18% of the working population (Labour Force Survey, summer 1998).

One out of every four consumers is disabled or has a disabled person in their immediate circle.

In the UK, 7.2million people work as carers or personal assistants and so are sensitised to issues of access and usability as they impact on those they assist and care for.

Quotes

'Design for the young and you exclude the old; design for the old and you include the young.' The late Bernard Isaacs, founding Director of the Birmingham Centre for Applied Gerontology

'The power of the web is in its universality. Access by everyone regardless of disability is an essential aspect.' Tim Berners-Lee, Director of W3C and inventor of the World Wide Web

'We know that the way to our manager's hearts is through their tills and the way to our Board's heart is through our profits. Therefore we home in on what they relate to. So you say to your manager "If you make your store accessible, you will get x amount more people shopping there. We know it works and we know there is a huge business case for it", so you drive it through the business case.' Sue O'Neill, Co-ordinator, B&Q Diversity Initiative

'We are in the midst of one of the most profound social revolutions of all time - the Age Revolution. The 20th century saw life expectancy rise by 30 years. This is its great legacy, and our gain, but it brings enormous challenges too, and how we respond will determine the quality of our now-longer lives and the cohesion and economic well-being of society.' Baroness Sally Greengross, Former Director General of Age Concern England, and the National Council on Ageing, in *Living*

Longer: a new context for design, Design Council, 2001

'The challenge for business and industry is to create a world that is age-friendly, accessible and affordable, without being boring, stigmatising or over-protective. The way to meet that challenge is through design, and design is something in which we in the UK pride ourselves on leading the world. We have the talent - the task is to put it to work.' Baroness Sally Greengross, Former Director General of Age Concern England, and the National Council on Ageing, *Living Longer: a new context for design*, Design Council, 2001

'The growth [in the number] of older people will increase during the first quarter of the 21st century under the effect of two baby booms, the first immediately after the war, and the second in the late 1950s and early 1960s. By 2020, half the UK adult population will be 50 or over, and a significant change in attitudes is likely to have taken place.

'Collectively older people command a substantial disposable income and control a significant proportion of the country's wealth and savings. If sufficient of that wealth goes back into circulation it will generate business and employment opportunities that will help to keep the economy healthy.

'What scope we have to enjoy our extra years will depend crucially on how products, services and environments are designed. The design challenge is more to do with enabling people to cope with, respond to and take up the opportunities of a changed society, than it is to do with increasing numbers, although the numbers make the case more compelling to business.' Roger Coleman in *Living Longer: The new context for design*, Design Council, 2001

'Looking forward to 2020, emphasis on "Design for Active Healthy Living" will lead to products and services which not only meet the needs of a niche market, but have

added attraction to wider audiences. Preparing to actively include and target the larger number of older customers is sound strategic planning and makes good business sense. Taking account of the diversity of older people, and designing for active, healthy living will help the producers of products and services to meet wider market needs.' DTI Foresight Ageing Population Panel, 'Design for Living' taskforce draft report

'It will be profoundly difficult to transform our deep rooted, unrealistic and discriminatory attitudes to age, just as it has proven to be in relation to sexism and racism. Whilst anti-ageism legislation will not be the answer alone, it should be introduced as symbolic of society's commitment. All design and marketing curricula should include a compulsory module on the implications of living longer, and the requirement to think differently about designing for the future.' Melanie Howard, Co-founder, The Future Foundation

Challenges

Rather than a series of discrete design challenges, there is a single, overarching challenge to business, public and private services, government and other institutions.

The key challenge In the past, disability and ageing were seen to have welfare and healthcare implications, but no broader market significance. This is no longer the case. We are currently in a period of rapid convergence between the market push of ageing populations and the consumer pull of equal rights legislation and a vocal and demanding disability lobby. These factors will play a major role in shaping the future commercial and public service landscape, and unless both sectors respond rapidly and appropriately, the consequences will be serious for the economy and society as a whole.

Changes are needed at every level in how organisations in both public and private sector behave, and how they adjust their consumer offers to reflect the new/emerging reality. The organisational challenge is cultural rather than design-specific, but this new reality also represents a significant opportunity. By moving swiftly to ensure that products, services, environments and communication systems are supportive of and accessible to older and disabled people, UK industry and government are in a position to take a lead and reap the benefits of the innovations that will result.

The response: a four-stage process

audit > understand > improve > innovate

By moving through these stages, manufacturers, retailers, service providers, communications companies, voluntary bodies, etc, can begin to recognise how and where their current practices and consumer offers are deficient. They will also be in a position to respond rapidly by taking steps to rectify the deficiencies, and then to adjust their

business plans (and cultures) in such a way as to benefit from changing market conditions and exploit opportunities to innovate.

Key players/sectors, whose involvement is essential for success are: directors and senior managers, design managers/directors, new product development (NPD) and innovation managers, designers, marketing and branding executives, purchasing and sales personnel, educators and consumers.

Action list: senior management (board level)

- Champion the issues within the company and push for the necessary shift in culture and business practices.
- Set up a cross-organisation 'change team' to research the background of demographic change and shifting consumer expectations, and plan the response.
- Audit the consumer offer and understand the key issues by bringing in experts (and expert users) to work with company personnel, transfer the necessary skills and support a group of internal 'champions'.
- Understand the potential impact of existing and upcoming legislation, standards and guidelines across the company's markets. Take action to challenge prejudices and stereotyping within the organisational culture.
- Giving the change team sufficient authority and influence to ensure that all employees recognise and understand the issues and their importance to the future success of the company. Put training programs in place (if necessary) and ensure that new employee induction pays adequate attention to the key issues.
- Put longer-term strategic planning in place to reflect the context of major market shifts and future opportunities for growth and competitive advantage.

- Identify new opportunities by involving employees and disabled and older customers in a proactive search for improvement in the quality of the company's consumer offer. Also, strengthen links with the older and disabled community as part of Corporate Social Responsibility programmes.

Action list: design managers, new product development and innovation managers, marketing and branding executives

- Understand exclusion (how many consumers are inadequately catered for or discouraged), by auditing current consumer offers (and premises where applicable) against the specific needs and aspirations of older and disabled people. This may require the engagement of experts from the research and consumer communities.
- Build appropriate knowledge and skills within design and marketing teams. This may require the engagement of specialists, attendance at appropriate conferences and workshops and collaborations with the research community.
- Acquire a better understanding of users/consumers in terms of lifestyle and aspirations, by forming alliances with organisations of disabled and older consumers, in particular local University of the Third Age (U3A) groups, and also by tapping into the specialist knowledge of researchers working in academia and consultancy.
- Initiate collaborations with design consultancies and design schools with a track record of inclusive design. Consider sponsoring appropriate design competitions, events and conferences as a way of getting a feel for new design directions.
- Capitalise on the potential for differentiation in the marketplace through improved/increased

usability/accessibility. This is important in terms of interaction design as applied to products and to ICT services, corporate websites, etc, and the management of buildings and other resources.

- Develop an understanding of the tools and techniques necessary for delivering inclusive design and make sure that design teams are aware of these and have access to them.

Action list: design educators/organisations

- Build into design management courses, at all levels, modules on inclusive design and the importance of social change as a driver for new ways of living and working. An understanding of these issues should be a core competence for professionals working in design, construction and industry, and also in public services.
- For professional organisations - Royal Institute of British Architects (RIBA), Chartered Society of Designers (CSD), etc - the challenge is to ensure that an understanding of inclusivity and related user issues becomes central to professional practice. The acquisition of appropriate skills and competencies could be made a requirement both for professional qualification, and of continuing professional development in order to maintain qualifications.
- Such initiatives should be supported by appropriate resources, information and tools available via the internet, and special collections at key research institutions.

Future trends

Population ageing and disability rights are two well-established and highly predictable trends that will not go away. Population ageing began in the UK some 150 years ago, and is now a widespread characteristic across the developed world, with Japan currently the most mature nation in the world. This trend is driven by increased longevity due to design, engineering and technology-based improvements in the built environment, the packaging and preservation of food, etc., medical advances and lifestyle changes. Another factor is reduced birth rates, now very low in countries such as Italy, due to social developments and the changing status of women.

Ageing populations The longer-term consequences in the developed world will be contracting populations, as fewer children are born into each generation, and significant shifts in the ratio of over-50s to under-50s. This has profound implications for business and government finances. Inevitably, people will work for longer, reversing a long-term trend towards early retirement. Larger numbers of older people will fuel lifestyle change amongst older generations, and ageing baby-boomers will have a dramatic effect on our expectations of later life.

Although not prepared for this age shift, the developed world has the advantage of the resources and wealth to adjust, whereas the developing world is not so well placed to deal with the consequences.

While there are clear threats to the welfare system, pensions and healthcare provision, there are also significant design and business opportunities to deliver the products and services that will help to support older people in an independent and enjoyable life. Anticipating and exploiting these opportunities is a major challenge for design and business.

Disability rights The international growth of legislation supporting the rights of disabled people is typified by recent developments in the UK, where in 2004 the Disability Discrimination Act (DDA) comes fully into force - see 'FAQs' for more details. Companies that fail to comply could find themselves facing unquantifiable future liabilities if individuals take them to court.

Earlier this year the Draft Disability Bill passed its period of Parliamentary scrutiny and is now on its way to becoming law. Like the Race Relations Act, this will place significant obligations on employers, and is likely to be followed by anti age discrimination legislation as part of a worldwide trend.

The inclusive response Legislation will play a significant part in the move to include older and disabled people in mainstream society, and the Department of Trade and Industry (DTI) has identified inclusive design as a key mechanism for achieving this.

In the past, the focus was on accessibility and 'barrier-free' design in the built environment - hence the wheelchair symbol used to identify 'disabled' facilities. It is now recognised that products, services, and importantly, information can be inaccessible to large numbers of people who are effectively disabled by poor design. This shift in emphasis, away from aids and adaptations - fitting the person to the environment - to a more dynamic, 'social model', based on equal opportunities and participation - fitting the environment to the person - requires a fundamental rethinking of buildings, products, services, interfaces and information. Hence the emphasis in inclusive design, on understanding the range of capabilities across the whole population, and the way these change over the life course and under different conditions.

The future focus will be on encouraging and supporting

businesses to respond in a rapidly changing market place to needs highlighted by social and demographic change. In response to these trends, inclusive design is developing as a progressive, goal-orientated process, and an aspect of business strategy and design practice. As part of this development, a new British Standard (BS 7000-6) on inclusive design management will be published in late 2004.

Current Government policy

The key international pieces of legislation include the US Americans with Disabilities Act 1990, the Australian Disability Discrimination Act 1991, the UK Disability Discrimination Act 1995, which is fully enforceable from 2004, and the UK Draft Disability Bill which is on its way to the statute books.

With comparable legislation either in place or on its way in many countries, the key thing is to recognise the accelerating pace of legislation relating to age and disability and what this holds for the future. In an era when, as Francis Fukuyama says, 'the demand for equal recognition of the dignity of all members of the human species is the dominant political passion of our time', we can expect the scope of legislation to extend beyond the built environment and service provision to impact on the design of vehicles, domestic and consumer products, and workplaces and associated equipment.

Glossary

This glossary is arranged not in alphabetical order but in a sequence progressing from socio-political areas to design approaches and research methods. One intention is to familiarise newcomers with key terms and expressions, and their evolution. Another is to give an overview of the theory and practice of inclusive or universal design, and how that relates to social and political developments and the changing attitudes of older and disabled people.

Civil rights - Disability activists increasingly see access and participation as basic human rights, which can only be guaranteed by effective and enforceable legislation. Especially important in the US, where civil rights are enshrined in the constitution.

Social inclusion - A Europe-wide political objective, aimed at combating social discrimination, marginalisation and conflict due to age, disability, poverty or ethnicity. Particularly important due to the diversity of ethnic groups in the enlarged EU.

Medical model - The medical model of disability and ageing implies that people are disabled as a consequence of their own condition, and seeks to either remedy the impairment through medication, rehabilitation and surgery, or through adaptive aids and equipment.

Social model - In contrast, the social model, which has superseded the medical model, sees people as disabled or enabled by the social context in which they function and proposes that changes in the social context or environment can remove or alleviate disability.

WHO standard model - First published by the World Health Organisation in 1980, and based on the medical model, this described a cascade of effects from impaired capability to handicap, shifting the emphasis away from medical to environmental and social conditions.

Revised WHO model - The standard model was replaced (Nov 2001) with a new International Classification of Functioning, Disability and Health (ICF). This shifts the focus to life quality and how we function in social and other contexts, which can be improved by design.

Health condition/status - Terms used by the WHO to group disease, congenital and other factors previously dealt with in more strictly medical terms, allowing them to be seen as falling within a continuum of health conditions which all impact on life quality and capability.

Impairment - Health conditions, ageing, and traumatic events can all result in impaired capability. Whether this gives rise to disability is determined by social and environmental factors, and importantly the design of environments, products, systems and services.

Disability - In the past, people were seen as disabled by their condition. Now the move is towards understanding disability as the result of a mismatch between individuals and their social and physical environment. PC terminology differs from country to country.

Ageing - The ageing process is characterised by the acquisition of progressive multiple minor impairments predominantly related to sight, hearing, dexterity, mobility and cognition. In combination these can lead to high levels of disability and dependency.

Independence - For older people independence is crucial. This can be compromised by inappropriate design, and is conditional on being able to carry out daily living activities like bathing, dressing, cooking, contact with family and friends and social participation.

Participation - Participation and social integration are key factors. Some severely disabled people prefer the help of a personal assistant where activities are time-consuming to perform. Priorities for younger disabled people are fulfilment and social involvement.

Design for disability - There is a significant tradition of design for disability, mainly focused on aids and adaptations. Related to the medical model of disability (and ageing), the underlying intent is essentially prosthetic, originating in rehabilitation of war veterans.

Assistive Technology - Also referred to as rehabilitation design, and closely related to the above, but primarily focused on enabling social participation of people with severe impairments. Much work in this area has been concerned with developing one-off solutions and specialist equipment for small numbers of people.

Barrier-free design - The original focus of disability campaigners and architects was on barrier-free access to buildings and public environments - kerb cuts, textured paving, ramped entry, wider doorways, corridors and accessible toilets - all denoted by wheelchair symbol.

Accessibility - In addition to physical access, sensory access to buildings, services and information, via speaking browsers, sign language animations, Braille, etc. Now a legal requirement under disability discrimination legislation in the US, UK, etc.

Universal access - Access for all to information and communications technology (ICT). Also used in assistive technology to refer to specialist interfaces and control devices to make ICT products accessible to people with high levels of impairment.

Universal design - Term originating in the USA and underpinned by seven principles set out by architect and designer Ron Mace. Taken up enthusiastically in Japan. Extends barrier-free design and universal access to include access to products and services.

Transgenerational design - Concept developed by Prof James Pirkel and colleagues at the University of Syracuse, USA. Proposes that designs should work for people of all ages. Replaces universal design emphasis on disability

with a market-led approach. Resulted in quality book of the same title.

Design for all - EU term equivalent to universal design, but with an emphasis on information. Current goal is the establishment of national centres of excellence in design for all education and dissemination across Europe. These are envisaged as virtual rather than physical centres.

Gerontechnology - Concept developed at Technical University of Eindhoven, Netherlands, with US and Finnish colleagues. Combines human factors, social sciences, gerontology and engineering. Applying technology to address age-related factors. Consumer/market oriented approach.

Inclusive design - Process-driven approach by designers and industry to ensure that products and services address the needs of the widest possible consumer base, regardless of age or ability. Emphasis is placed on working with 'critical users' to stretch design briefs.

User-(age, disability) friendly - Products, packaging, manuals, information, services, environments, and interfaces, etc, that have been designed for simplicity and/or ease of use, and are marketed, and promoted in ways that highlight user-(age, etc) friendly features and operations.

User-centred/focused design - Approach that places users at the heart of the design process, and involves and engages with users in ways that make them part of or integral to the design process itself. Similar terms, such as co-design, are used in architecture and planning.

EQUAL (Extend Quality Life) - R&D programme funded by UK research councils. Primary goal is to improve the life quality of older and disabled people by developing the necessary research base and technical expertise and transferring appropriate skills and technology to industry.

i~design - EQUAL research project on inclusive design. The aim is to develop and disseminate tools and guidance for design managers, to enable them to understand and respond to the design implications of disability and population ageing to achieve a more inclusive society.

i~design team - An interdisciplinary, multi-centre team from the Design Council, the Engineering Design Centre at Cambridge University, the Design for Ability unit of the London Institute, and the Helen Hamlyn Research Centre at the Royal College of Art.

Design exclusion - Term developed by the i~design team to focus attention on those excluded by design features. The team has developed ways to quantify design exclusion based population data. If users must be excluded, such decisions should be rational and justified.

Inclusive design cube - A model developed by the i~design team which shows how four design approaches (described below) are needed to accommodate the needs of the whole population, in particular in product and interface design. Groups the following four design approaches within an inclusive design methodology.

User-aware design - Mainstream design that understands user needs and aspirations and so maximises the number of people who can use a product, service, or interface. This can only ever include a proportion of the whole population, making additional approaches necessary.

Customisable design - Computer-aided manufacture makes possible the customisation of individual products in production. A wide range of users can thus be accommodated within the overall specification of a product delivered as unique items matching individual requirements.

Modular design - Designs which, by virtue of interchangeable units or add-on elements, can be

configured to meet a wide range of requirements, particularly with regard to the user interface, thus extending the range of users served by a single design or product.

Carer-assisted design - It is important that people who are reliant on carers are considered part of the whole population. This implies considering the needs of both user and carer. Importantly, older people are often cared for by spouses and relatives who are also elderly.

User research - Understanding users is key to inclusive and user-aware design. User research can be carried out by designers themselves, in which case it is likely to be based on empathic interaction with small groups of extreme users, supplemented by observation.

User research methods - There are several publications on user research methods including The Methods Lab (RCA) and USERfit (HUSAT for the EU). User-research is also carried out by specialist organisations such as RICAbility, market research companies, and academic groups.

Ethnography - Observing users in real-life situations and interacting with products is highly revealing. Small video cameras and desktop editing software make this a fertile and expanding form of research in social sciences and among the design community.

What do I do next : Inclusive Design

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FAQs

1 Why should my company be interested in older consumers? Given the unprecedented growth in the older population worldwide there is no doubt this will have a significant impact on consumer markets and inevitably on your bottom line.

2 Are other companies taking the issue seriously? Yes. In the UK, companies such as Saga, Zurich, the Prudential and others in the financial services sector already have successful products in the marketplace. B&Q, Ford UK, Waitrose, Unilever and Tesco have taken action on the issues. Similar developments are taking place across Europe, in the US and in particular in Japan.

3 Is there any professional/business organisation I could get involved with? Yes, the Employers' Forum on Disability has nearly 400 members - including Abbey National, Barclays, the BBC and HSBC - who together employ some 20% of the UK workforce. Its objective is to share best practice to make it easier to employ disabled people and serve disabled customers.

4 Is my company affected by the Disability Discrimination Act (DDA), and if so what does it require us to do? The DDA 1995 makes it unlawful to discriminate against disabled people in employment, and in the provision of goods, facilities, services and the

letting of premises, whether charged for or free of charge. It applies to public authorities, charities, professional bodies, private agencies and individuals, and employers of more than 15 people. Since December 1996, it has been unlawful to treat disabled people less favourably. Since October 1999, service providers have been required to make reasonable adjustments for disabled people by changing policies and practices and the way the service is provided. From 2004, service providers will be required to make reasonable adjustments to their premises and remove physical barriers. Information will also have to be provided in an accessible form, including that available via the internet.

5 That's not our target market. Why should I take an interest? Even if you are a manufacturer of children's toys or a retailer of children's clothes, an important sector of your consumer base will be older people - grandparents in particular.

Older markets are expanding numerically, while younger markets are shrinking. In a contracting marketplace you have to work harder just to stand still, in an expanding marketplace volume/turnover will increase even if your percentage share stays the same. Ensuring your brand has appeal to older people as well as younger people is a key strategy for maintaining and enlarging turnover, market share and presence on the high street.

6 If my brand is associated with old people or disabled people won't it put the rest off? The trick is not to position your brand as an 'oldie' or 'disabled' brand, but to make it age and ability-friendly without losing style, design and youthful appeal. Older and disabled people are not from another planet - they have similar needs and lifestyle aspirations to the rest of the population. If your brand can deliver on the aspirational/desirability front and also be age- and ability-aware, it will succeed.

7 OK, but how do I convince my board? Your company cannot afford not to respond. There are two key arguments: first the carrot, then the stick. The carrot comes in the form of the argument that the demographics are very convincing, inescapable and very reliable, making the market case a very strong one. The stick is the growing legislative climate - companies will ignore this at their peril.

It is important to see 'inclusivity' on a par with 'quality', as a company-wide approach that will enhance your consumer offer and the public perception of your company. Getting this right will give you competitive advantage and protect you from costly legal action and adverse publicity.

8 What practical steps can I take to begin the process of getting up to speed? Initiate an audit of the company's current practice/products/environments, etc. Bring in appropriate experts/consultants in accessibility/usability to assist in the process, and prepare a report identifying potential for improvement, innovation and competitive advantage.

9 How do I instruct/brief my designers? Point them at what other companies are doing/have done, and in particular what your competitors are doing. Ask them to look at exemplar design consultancies and see what can be learnt from them. Involve them in the audit process and ensure that they see the importance of an appropriate response from both legal and market perspectives. Encourage them to make contact with user organisations and initiate their own user forums and other user-involvement processes. Make sure they have access to appropriate design tools and techniques.

Top tips

- 1** Take a hard look at your consumer offer, or better still bring in someone to help you do that. Is it age and ability-friendly? If not, why not? Be self-critical and ask difficult questions.
- 2** Does your business comply with anti-discrimination legislation? Contact the Employers Forum for Disability, which publishes guidance on the relevant Acts.
- 3** Develop a strategy for responding to the 'age shift' identified by the DTI Foresight report. Make yourself aware of the potential of inclusive design and business strategy as identified in the Design Council policy paper on ageing populations, *Living Longer: the new context for design*, 2001.
- 4** Embrace the need for cultural change within your company. Set up an internal change team reporting to the board and charged with auditing your company's current practice. Brief the team to identify opportunities for improvement in performance and attitude, and to identify examples of best practice and report back on how your competitors are performing.
- 5** Try to get a better understanding of the range of people who will use the product or service you are working on. Don't just make assumptions, look at the demographics and, importantly, the cross-overs between different age groups, to identify market opportunities and advantage. For example, there is a strong growth in single-person and two-person households, predominantly among young and older people, and increasingly disabled people.

Small packs of food, especially instant meals have a big market here, and need not be highly priced if they appeal to all three groups, but that means making openability a key feature. Similarly, smaller dishwashers, fridges, electric kettles and other consumer durables can be

targeted at this sector, but only if they appeal to younger people and take older people's changing capabilities into account.

This is an approachable challenge, as there is no real evidence that older people have significantly different tastes in products to younger people. What they object to is poor design and poor ergonomics.

6 Establish a group of 'critical', or more extreme users. It does not have to be large, but should consist of people who can put your products and services to the test, and challenge the assumptions of your designers. Work with them, by staging focus groups and walk-throughs to test products and environments, and use that as a way to develop in-house guidelines and checklists.

7 Establish a small team of consumer champions drawn from different sections and levels of the company and reporting to you. Encourage them to take a proactive role in gathering information, making contacts, identifying problems and proposing solutions. Give them a specific amount of time each week for this activity and ensure that their input is valued by the company and acted on.

Reading list

An extensive bibliography of UK and EU publications, standards and guidance will be added later this year to support the new BS7000-6.

J Clarkson, R Coleman, S Keates and C Lebbon (eds), *Inclusive Design: design for the whole population*, Springer Verlag, 2003, ISBN 1852337001

Comprehensive, international and authoritative coverage of all aspects of inclusive design.

J Clarkson and S Keates Countering, *Design Exclusion: an introduction to inclusive design*, Springer Verlag, 2003, ISBN 1852336994

Explores key concept of 'design exclusion', and describes methods for measuring and quantifying exclusion based on UK population data.

INCLUDE 2003 papers and conference

CD-Rom and DVD containing complete papers, selected interviews and short video of international conference on inclusive design. Published by and available from Helen Hamlyn Research Centre at the Royal College of Art, London. Email inquiries to

hhrc@rca.ac.uk

R Coleman and D J Pullinger (guest eds), *Designing for Our Future Selves*, special edition of Applied Ergonomics, Vol 24, no 1, Butterworth-Heinmann, 1993

Benchmark collection of papers from the first UK conference on design and ageing.

P Laslett, *A Fresh Map of Life: The emergence of the Third Age*, second edition, Weidenfeld & Nicholson, 1996, ISBN 0674323270

Study of societal response to demographic change.

Describes the emergence of the Third Age, and presents a general theory of the Third Age. Also discusses the economic problems of older people.

S Goldsmith, *Designing for the Disabled: The new paradigm*, RIBA Publications, 1998, ISBN 0750634421

Thorough guide to all types of building for the full range of disabled needs, including anthropometric and space requirement charts.

J Gill, *Access prohibited? Information for designers of public access terminals*, Royal National Institute for the Blind, 1997, ISBN 1 86048014 4

Clear, detailed analysis of problems people with impaired vision, mobility, dexterity, hearing or cognition have in using public terminals such as ATMs and information systems.

W Preiser and E Ostroff (eds), *Universal Design Handbook*, McGraw Hill, 2000, ISBN 0071376054

Based on selected papers from two 'Design for the 21st Century' conferences on Universal Design held in New York City in 1998 and Providence, Rhode Island in 2000, this book attempts to draw together the key strands within the discipline from around the world. Academic in style, but a reference book of great breadth.

R Coleman, *Living longer: The new context for design*, Design Council, 2001

One of a series of policy papers published by the Design Council. Sets out the background to population ageing and proposes an inclusive design approach as the most appropriate response by business, design and education.

T Kirkwood, *Time of Our Lives: The science of human ageing*, Weidenfeld & Nicholson, 2000, ISBN 0195139267

An authoritative account of the nature, causes and circumstances of human ageing. Advances the theory that

we age because of our genetic make-up, and in particular as a result of trade-offs between cell and DNA maintenance and other priorities such as reproductive success and the rearing of children.

DTI Foresight, *The Age Shift: Priorities for action*, report of the Foresight Ageing Population Panel, Department of Trade & Industry, 2000

One of a series of reports on research priorities. It advocates inclusive design as a key strategy for responding to population ageing and covers significant consequences of population ageing, on finances and healthcare, etc, but takes a positive approach by outlining strategies for business and government as well as for research and technology development. Read with the report of the Design for Living Taskforce of the Population Ageing Panel.

J Cassim (ed), *Innovate 1, 2, 3: The journal of the Small Business Programme of the Helen Hamlyn Research Centre*, Helen Hamlyn Research Centre, 1999

The journal argues the case for inclusive design, presents case studies of business successes and the results of an annual competition organised by the programme and the Design Business Association (DBA). The results are innovative exemplars of how better and more inclusive design can serve the needs of young disabled people.

website:

www.hhrc.rca.ac.uk/resources/publications

Further information

Design and research organisations

Helen Hamlyn Research Centre - centre for inclusive design Based at the Royal College of Art in London, the centre organises conferences and events, publishes extensively, and runs annual competitions for student and professional designers. The flagship Helen Hamlyn Research Associates programme teams talented RCA graduates with industry and public/voluntary sector partners to develop inclusive designs and solutions. Also maintains an extensive special collection at the RCA library with an online catalogue.

website:

www.hhrc.rca.ac.uk

Human Sciences & Advanced Technology Research Information for Consumer Ability (HUSAT) HUSAT specialises in research and consultancy in the human factors aspects of advanced technology.

website:

www.lboro.ac.uk/research/husat

Research and Information for Consumer Ability Research and Information for Consumer Ability conducts consumer research.

website:

www.ricability.org.uk

The Future Foundation The Future Foundation does trend forecasting based on the British Household survey.

website:

www.futurefoundation.net

Everyday Lives Everyday Lives conducts innovation development research based on everyday lives.

website:

www.edlglobal.net

The Centre for Accessible Environments The Centre for Accessible Environments provides information on how the built environment can best be made or modified to achieve inclusion by design.

website:

www.cae.org.uk

Information on web usability and colours for blind people

Usability First Usability First provides information and resources for key issues related to usability in website and software design.

website:

www.usabilityfirst.com

Usability Net Usability Net promotes computer-related usability, user-centred design and process improvement, resources, tools and methods for designers.

website:

www.usabilitynet.org

BT Exact Technologies A site that illustrates what it's like to have various colour deficiencies and sight problems.

website:

more.btexact.com/people/rigden/colours

Educational organisations and resources

Universal Design Network Monthly online design educators' newsletter and UD network

website:

www.universaldesign.net

Trace Center College of Engineering University of

Wisconsin-Madison The Trace Center is currently working on ways to make standard information technologies and telecommunications systems more accessible and usable by people with disabilities.

website:

www.trace.wisc.edu/

Disability-related organisations

Half the Planet Information and news for disabled people.

website:

www.halftheplanet.com

The Employers Forum on Disability The UK employers' organisation focused on the issue of disability in the workplace.

website:

www.employers-forum.co.uk

RADAR RADAR campaigns for equal rights for disabled people, promoting good practice and legislation that enables them to live independently in the community.

website:

www.radar.org.uk

The Joseph Rowntree Foundation The UK's largest independent social policy research and development charity.

website:

www.jrf.org.uk

Disabled Living Foundation General information and up-to-date database of disability equipment in the UK.

website:

www.dlf.org.uk/

Youreable.com Supplies information, products and services for disabled people.

website:

www.yourable.com

Royal National Institute for the Blind

website:

www.rnib.org.uk

Royal National Institute for Deaf and Hard of Hearing People

website:

www.rnid.org.uk

Access2go Site giving information on accessible places.

website:

www.access2go.co.uk

Many more disability-related links.

website:

www.eddp.edf-feph.org/edf/links.html

Governmental resources

Foresight Access to PDFs of reports by foresight teams

website:

www.foresight.gov.uk

Disability Rights Commission

website:

www.drc-gb.org

USA statistics on disability

website:

www.census.gov/

UK National Health Survey

website:

www.cdc.gov/nchs/nhis.htm

Policies relevant to achieving work-life balance

website:

www.dfee.gov.uk/work-lifebalance

Annual events

Helen Hamlyn Research Centre, Research Associates Symposium and Show Royal College of Art, London, October of each year.

website:

www.hhrc.rca.ac.uk/programmes/ra

INCLUDE 2005/7/9 Biennial conference hosted by the Helen Hamlyn Research Centre at the Royal College of Art, London, March/April, alternate years.

website:

www.hhrc.rca.ac.uk/programmes/include

Cambridge Workshop on Universal Access and Assistive Technology (CWUAAT) 2004/6/8 Biennial conference hosted by the Engineering Design Centre (EDC) at the University of Cambridge, March-April, alternate years.

One-offs and less frequent events

Designing for the 21st Century - Rio de Janeiro, Brazil, 8-12 December, 2004 Biennial/triennial international conference on universal design hosted by the Centre for Adaptive Environments, Boston, Mass, USA.

website:

www.designfor21st.org

Competitions

Design Business Association (DBA) Inclusive Design Challenge and Awards Top design companies work on an inclusive brief with 'critical' users. Annual collaboration with the Helen Hamlyn Research Centre. Results showcased at the Royal College of Art, London, in December each year.

website:

www.hhrc.rca.ac.uk/events/DBAChallenge/

RSA Design Directions Awards - Inclusive Worlds Collaboration Annual student design competition with results posted to the RSA website and available on CD-Rom in June of each year. Website also contains link from Inclusive Worlds brief to RSA Toolkit for Inclusive design - an extensive web-based resource for designers.

website:

www.rsa-design.net

Design for Our Future Selves UK graduating students' work on four inclusive design briefs with older and disabled users.

website:

www.hhrc.rca.ac.uk/programmes/cp/competition

Standards and regulations

BS 7000-6 Guidance for Inclusive Design

Management This new standard is currently being drafted and is due for publication in late 2004.

BS 8300:2001 Design of buildings and their approaches to meet the needs of disabled people.

Disability Discrimination Act UK 1995 Became effective in 1996, with codes of practice effective in 1999 and 2004.

Building Regulations 1999 parts M & K

Recommendations of the Centre for Accessible Environments.

Recommendations of RNIB, RNID and RADAR.

For detail see appropriate websites (see 'Further information'), and guidance notes on legislation at:
website:

www.access2go.co.uk/sources/sources.html

Tools

RSA Inclusive Design Toolkit This resource consists of a wide range of material on inclusive design and gives speedy access via a single interface to some 250 items and several thousand pages of information. It has been developed for design students and their tutors, professional designers, design managers, and policy makers. The intention is to introduce newcomers to key concepts, information, and design/research methods, and also to support practitioners in undertaking individual projects and gathering together the information, examples and inspirational material they may need.

website:

www.rsa.org.uk/inclusivedesign

Userfit D Poulson, M Ashby, S Richardson (eds), *UserFit: A practical handbook on user-centred design for assistive technology*, HUSAT Research Institute for the European Commission, 1996

Comprehensive handbook on user centred design and associated user-research methods, complete with forms for documenting research, analysing results and for later evaluation. Includes worked examples of washing-machine design and design of an assistive device for communication.

website:

www.stakes.fi/include