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## Book Review

**Simeon Keates, John Clarkson, 2003.**  
**Countering Design Exclusion. An introduction to inclusive design.**

Berlin: Springer. ISBN 1-85233-699-4.  
€ 119.95 (VAT excluded)

A good practical guide to inclusive design (or, depending upon your geographical location, known also as 'design for all', 'universal design', or 'accessible design'), written for decision makers in the mainstream consumer services and durable products sector, has been a long time coming. As the authors of *Countering Design Exclusion – An introduction to inclusive design* state, "this book aims to make companies and their designers aware of the needs of the full range of user and provide an introduction to how they can develop more inclusive products." Other works in this class mainly have focussed upon accessibility of the built environment, with rather scant attention paid to manufactured products and service delivery. The present offering, therefore, fills an important gap in the literature.

"Inclusive design is about maximizing the market potential of your products by making sure the maximum number of people can use them. The more people who can use a product, the more products you can sell and the more profit you can make." This opening statement locates the primary incentive for inclusive design clearly on the bottom line of the profit and loss account. The book then essentially is a roadmap for mainstream product developers and manufacturers to maximize the net profit opportunity created by serving the widest

possible user base, which includes older people and those with disability.

The introductory chapter includes an eclectic survey and critique of current attitudes in mainstream design, illustrating this with a liberal selection of inappropriate or bad design examples. In counterpoint, the authors present several examples of good design, covering transport, kitchenware, telephones and VCR machines. In chapter two, titled "Why the interest in inclusive design?", the authors introduce various arguments, under the main headings of the ethical case and business case, which they suggest mandate the adoption of inclusive design. These arguments are presented from the perspectives of societal and sociological issues, legislation, and technological and financial incentives.

The race of 'time to market' is correctly identified by the authors as one of the central issues in mainstreaming inclusive designed products: "Inclusive design is perceived to be time-consuming and thus extending the time to market." (p. 38). Indeed, on the face of it, the cutthroat competitiveness of mainstream consumer product manufacture appears to leave precious little time for inclusive design considerations; what many in the industry probably still consider as a navel gazing activity, not to be taken too seriously. The authors, both at Cambridge University's Engineering Design Centre, systematically analyse this and other perceived market barriers and present clear and persuasive arguments exposing currently held misconceptions concerning accessible design.

The third chapter, describing common design strategies and influencing factors. These include pressure of time-to-market, cost cutting, 'feature frenzy' (the phenomenon of indiscriminately increasing product features – whether useful or not – in an attempt to differentiate the product from the competition), and product branding. The second half of this chapter discusses, in brief, current attitudes of industry and enumerates the common objections of decision makers unwilling to accept or incorporate the inclusive design approach in their product development strategy. In the section titled "Encouraging the uptake of inclusive design", the authors concede that legislation, regulation, and government initiatives currently are the principal methods that so far have succeeded in motivating industry to accept inclusive design. However, as the authors rightly suggest, the

legislative stick is liable to result in the minimum accepted level of compliance, which likely will set the parameters for a de facto lowest common denominator design standard. Consequently, the authors emphasise the importance of facilitating the transfer from the research to the community to industry of sound inclusive design methodologies; in particular, those that "offer the maximum effectiveness for minimum disruption and cost".

The authors are astute in noting in the fourth chapter (Understanding design exclusion) that 'extreme' user requirements (of people with significant handicap) are unlikely to be met purely by a bottom-up design approach, i.e., taking a product designed initially for mainstream users and afterwards introducing additional features that render the product more inclusive. The pragmatic approach inevitably is that of combining bottom-up and top-down design approaches, the latter addressing specific needs of special populations. It is this sort of pragmatism, in contrast with the evangelical and uncompromising stance of some other introductory texts on the subject, that probably will make this book useful to designers and makers of real products for the mainstream market.

In chapter 5 the reader is introduced to the authors' innovation of the Inclusive Design Cube (IDC), an intuitive visualization aid, probably familiar to most of those working in the assistive technology and design-for-all field. The IDC graphically illustrates the design exclusion process in mainstream products, with respect to users with increasing severity of impairment. The IDC reappears in various manifestations later throughout the book where for example (in chapter 7) it is used to describe product exclusion from the perspective of sensory, cognitive, and motor capabilities, where each faculty is represented respectively on one of the three axes of the cube. The process for defining measures of 'inclusive merit' (p73-74) provides rough, but useful, ratios for evaluating the market potential for inclusively designed products.

Chapter 6 (Knowledge transfer in inclusive design) and chapter 7 (Knowing the user) present techniques for requirements capture and analysis. Chapter 8 (Functional impairments) essentially is a tutorial on disabilities and their prevalence. Though obviously closely connected to the discussion of requirements in the preceding chapters, this

generic and mainly statistical information perhaps more appropriately should have been included in the appendix on user information.

Chapter 9 further develops the theme of user requirements introduced in chapters 6 and 7 by describing techniques, such as checklists, user trails and interviews, and simulation, for assessing systematically how inappropriately designed products exclude users. Chapter 10 explains how the results obtained by implementing the techniques for assessing design exclusion can be quantified and used to estimate the impact of design changes and outlines a review process for inclusive design. The authors caution that "design changes do not always provide the benefit that may be expected. Some people will always be excluded by any specific design if the crucial reason for exclusion has not been identified or justified".

The, mainly theoretical, discussion of Chapter 11 introduces various approaches for countering design exclusion and explains the advantages and drawbacks of each. The authors propose a synthesis of these existing methods into a new, 7-level, design approach, which dovetails naturally with the authors' model of inclusive design and the IDC, introduced earlier in book. Chapter 12 describes how the 7-level approach is applied in practice and illustrates this by means of a case study on the design of an automated information and service kiosk system developed for the UK postal service.

The final chapter discusses potential strategies for systemic reduction in design exclusion or, as the authors put it, "to encourage a culture of inclusivity within companies and service providers". Proposals begin with external mechanisms, which include regulation and legislation, procurement policies, standards and accreditation, and 'people power'. Examples of internal mechanisms (i.e., those within the control and purview of the product or service developer) include a best practice guide and users' representatives in the company or design team. Finally, the option of outsourcing is included.

Likely to be quite useful to product developers new to the field of inclusive design, is an appendix on user information. The data included there provide product developers with a convenient rough guide to functional capabilities in the population, across age groups. However, for more detailed and

comprehensive anthropometric data of this type, especially for application during the advanced stages of product definition, the primary sources (included in the recommended further reading) such as 'AdultData' and 'Older AdultData', published by the UK Department of Industry, should be consulted.

Inevitably for first editions, the book contains minor editing errors. However, there is also room for substantive improvements in future editions. Besides the handful of examples mentioned in the introduction and the case study of the postal service kiosk in chapter 12, certainly it would not have been labouring the point to include, scattered among the other chapters, several more specific examples of inclusively designed products; particularly considering that, after all, this is intended as an introductory text for the uninitiated. International balance too could be improved upon. Although the case studies (in grey sidebars) in Chapters 2 and 3 are based on US product brands, the statistical information on populations and disabilities is drawn exclusively from European (in particular UK) data sources. Ironically, for a book on design, the visual presentation is let down noticeably by the mediocre quality of the photographic work.

These easily correctable shortcomings do not sufficiently detract from this book's important contribution to help put the record straight before industry decision makers, regarding the major economic and societal potential for the inclusive design approach in mainstream products.

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## ISG Business

### *Smart aging in Nagoya*

The 5<sup>th</sup> conference on Gerontechnology is to be held in Nagoya (Japan) May 24-27, 2004. Venue will be the Nagoya Congress Center. The Conference is organized by the Gerontechnology Group of the Japanese Ergonomic Society. The Conference is the first hosted by an Asian country. Japan is one of the most aged countries in the world and, in this sense, is a most appropriate place to hold this Conference. Nagoya locates in the central part of Japan and has excellent access from all over the world. The 2005 World

Exposition, AICHI (Main theme: Nature's Wisdom) will also be held in Nagoya from March 25 to September and can be visited.

Recognizing that a considerable part of older people are living in uncomfortable conditions due to illness or disabilities, aging with dignity and healthy and creative daily life should be ensured for every older person by the development of modern technologies. This drives the Organizing Committee to hold the Conference under the main theme of '*Technology for smart aging – for a long and happy life with health and self-esteem*'. Key notes, special symposia and sections with posters, special symposia and sections with posters and free communications will address the following issues and both researchers and professionals are urged to give presentations on these topics.

- (i) Health and Self-Esteem
- (ii) Housing and Daily Living
- (iii) Mobility and Transportation
- (iv) Communication and Governance
- (v) Work Conditions and Workability
- (vi) Geriatrics and Dementia Care
- (vii) Leisure
- (viii) Robotics for Human Support
- (ix) Universal Design
- (x) Standards for the elderly and the disabled

### Abstracts.

Abstracts of up to 200 words prepared in Microsoft Word format should be submitted to Conference Secretariat not later than October 15, 2004 together with a registration form through the WEB site: <http://www2.convention.co.jp/5isg/>

### Full papers.

Authors will be notified of acceptance of their abstract by November 15, 2004. Proceedings manuscript of 4 pages for camera-ready copy is due to be prepared by Januari 15, 2005.

### Organization

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### ISG Regional Representatives

To integrate international and national activities in Gerontechnology, to support the formation