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James Utterback (MIT, USA)

Bengt-Arne Vedin (Mälardalen University, Sweden)

Eduardo Alvarez (VICIX, Inc.)

Sten Ekman (Mälardalen University, Sweden)

Susan Walsh Sanderson (Rensselaer Polytechnic Institute, USA)

Bruce Tether (University of Manchester, UK)

Roberto Verganti (Politecnico di Milano, Italy)

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PREFACE

Our purpose in writing *Design-Inspired Innovation* is to explore the ways in which communities of art, design, and innovation are merging and influencing each other in the world of material culture to create great new products. What makes products great? What is the role of design firms in creativity and innovation, and how is this role changing? What accounts for design firms' successes? How are the processes of innovation and design changing? Does a focus on design inspire innovation and enhance chances of competitive success? What strategies might result in more inspired design and innovation?

This book reports the results of a study undertaken to explore these questions, which included interviews with the founders of nearly 100 design firms in four countries — Sweden, Italy, England, and the United States — and in several industries. The sample ranged from three divisions of the largest international design firm to some of the smallest and newest firms working in their local areas. We have looked broadly at contributions to advancing innovation and design in several types of products, including consumer electronics, devices for personal mobility, and others.

Manufacturers are responding to changes in technology and market demands by trying to introduce new products into the market more

rapidly. They struggle with new and converging technologies that create opportunities for developing entire new product categories and with the entry of new types of competitors. Larger firms enjoy great resources in technology and science, but these resources seem to be growing more available and open to all. Smaller groups and organizations derive greater innovative capabilities from the widening variety of sophisticated design resources available, such as computer-aided design, simulation, and visualization techniques.

We conclude that products, to be successful, must be distinguished by more than sufficient function, consistent quality, and low cost. Our findings and examples imply that considerable competitive advantage might be gained by reconsidering traditional products with a fresh eye and approach that employs newer materials and design techniques. Why do only a few of the welter of products on the market seem to account for the bulk of sales and profits in many categories? We believe it is because these products emphasize customer delight, elegance, and enduring value. They may even acquire increasing value over time.

Our work could be said to have begun with a puzzle posed in 1980. Sweden's larger firms were dramatically reducing employment within Sweden while expanding abroad. At the same time, the formation of new firms in Sweden was in marked decline. Where were the growth and jobs to secure the future of the economy to be found? Could a way be found to stimulate the development of new products and new companies and thus secure the future?

Jim Utterback and Bengt-Arne Vedin became part of a team of Swedish and American researchers asked to conduct a study to address sources for future growth. Their working hypothesis was that the creation of new firms based on technological innovation might lead to a net creation of wealth, jobs, and exports. They proceeded to study 60 new firms in Sweden — about half the population of technology-based start-ups founded in the previous 15 years — and a similar number around Boston for comparative purposes.¹

The American firms matched Jim and Bengt-Arne's expectations, although their export performance was relatively weak. A mere quarter of the Swedish firms, however, were truly based on new technologies as their main competitive advantage. Another quarter identified their advantage as "design." Jim and Bengt-Arne found these firms to be almost the entirety of the sample enjoying rapid growth. Firms lacking advantages in technology or design tended to grow slowly or not at all. If anything, the firms stressing design were the most successful in the sample.

At the time, Jim and Bengt-Arne did not follow up on this provocative idea, but the study was the start of a long friendship and conversation.

Later, Jim and Bengt-Arne met Susan Sanderson, who was pondering a similar puzzle among firms in Japan that produced portable music players. Among the myriad models being offered, only a few lasted more than briefly in the market and those few garnered the lion's share of all sales and profits. Most were produced by one firm, Sony, and seemed again to emphasize design in addition to function. In fact, the name of

Sony's product — the Walkman — became almost the generic name for portable music players.

A sabbatical at the Harvard Business School in the fall of 1997 gave Jim a chance to share an office with Roberto Verganti. Roberto was part of a larger group of researchers investigating the role of designers and design firms in the economic health and growth of Milan and Lombardy. Could excellence in design be a key ingredient in ensuring a vibrant economy?

An invitation to join the advisory board of the Centre for Research on Innovation and Competition (CRIC) at the University of Manchester led Jim to find that Bruce Tether was in the midst of analyzing data from firms that had received the Millennium Design Awards in the United Kingdom. The awards were given for the most notable new products to appear in the country. While many were indeed highly innovative in a technical sense, an even greater source of success seemed to be either the formal or implicit effort toward excellence and balance in design.

When Bengt-Arne joined the Department of Innovation, Design & Product Development at Mälardalen University, headed by Sten Ekman, Jim and he decided that the time was right to act more directly on their hunch that outstanding product design offered an unappreciated means to competitive and economic success. Our first meeting led to an agreement to conduct a parallel study, with each of us working intensively in our own countries. We were joined by a number of students along the way, one of whom, Eduardo Alvarez — a talented designer and entrepreneur — also became a partner in our work. Coordination took

the form of two meetings each year rotating among our various universities and at several conferences where preliminary work was presented. Heads of local design firms participated enthusiastically in several of these gatherings, notably in Milan and Sweden.

While we were searching for general themes we were immediately struck by how diverse the environments and ways of working seemed to be in our different countries. These observations have taken root in our discussion of the differing nature of the design systems and networks in each area studied. We also discovered a sharp difference of opinion within our group around which variables and relationships might hold greater sway in creating value. Should excellence in function and cost weigh more heavily, or might people be more attuned to symbols and to the meanings conveyed in their use of various products? The issue of combining balance and wholeness in a user's experience is indeed the crux of the problem. After presenting our evidence, we attempt to answer this question in the final chapter.²

Endnotes

¹J. M. Utterback, M. Meyer, E. Roberts, and G. Reitberger, 1988.

²The range of questions covered in our interviews is provided in Appendix A. In most interviews, we covered only a selection of these questions.

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Bengt-Arne Vedin notes that Professor Hans Rausing, KBE, has been a probing discussion partner throughout the project, and that Marcus Seppälä deserves kudos for the sketching series in Appendix B.

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The students in the Department of Innovation, Design & Product Development, Mälardalen University, created a lot of ideas and models for the multi-sport wheelchair project featured in Chapter 7. As inspiration and for a deeper understanding of designing wheelchairs, Sten Ekman and Susan Sanderson had a great deal of support from Professor Rory A. Cooper at the University of Pittsburgh and from lead users and product firm managers Bob Hall, Jalle Jungnell, Bo Lindkvist, and Tommy Olsson. We are grateful too to J. Douglas Field, Vice President for Product Development at Segway, who provided insight into the development of the iBOT.

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The authors are most grateful to have had the skills of our outstanding editor, Scott Cooper, to help us in finishing our project successfully. A project involving so many authors with so many perspectives, as well as differing cultural and language traditions, presents special challenges. In addition to resolving many of the technical issues related to publishing a book, Scott has worked patiently with each of us to be sure that our work speaks with a unified voice and style. He has much improved the book by helping to draw themes consistently through the various chapters in a logical and cumulative manner. And he has helped the book to be clearer by debating the meanings and nuances of the work while being militant against jargon.

Finally, we are grateful to the people of the design firms and other organizations interviewed. We value the time and effort they invested on our behalf. Representatives of IDEO were interviewed in Boston, San Francisco, and London and of Design Continuum in Boston and Milan. Other American design firms interviewed included Altitude, Bleck Design Group, Herbst Lazar Bell, Manta Product Design, The Massachusetts Institute of Technology Media Laboratory and its AgeLab, Synectics, 9th Wave, Product Genesis, Product Insight, and Walt Disney. Italian companies interviewed included Artemide, Flos, Alessi, Kartell, B&B Italia, 3P3più, Snaidero, Mantero, Ferrero, Bang & Olufsen, LEGO®, Michele De Lucchi Design, Makio Hasuike, and Future Concept Lab. Swedish design firms interviewed were A&E Design, Caran, Ergonomidesign, Formbolaget,

Formtech, Go Solid, Hampf Design, Myra, No Picnic, Nya Perspektiv, Peekaboo Design, Propeller, Reload, Semcon, Stilpolisen, Struktur Industriedesign, Ytterborn & Fuentes, White Design, Zenit Design, and Ångpanneföreningen. Representatives of the internal design facilities of Electrolux and Softronic were interviewed. Several clients of industrial design firms were also interviewed, including ABB Robotics, Artemide, ETAC, INSU Innovation Support, Tedak, the Swedish Telecommunications Museum/Telia Research AB, and Senseboard.

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ABOUT THE AUTHORS

James M Utterback is David J McGrath jr (1959) Professor of Management and Innovation in the Sloan School of Management and Professor of Engineering Systems in the School of Engineering at the Massachusetts Institute of Technology. He is a Fellow of the Royal Swedish Academy of Engineering Sciences and a Member of the Board of Governors of Argonne National Laboratory.

Bengt-Arne Vedin is Professor of Innovation Management at Mälardalen University in Eskilstuna, Sweden. He is a Fellow of the Royal Swedish Academy of Engineering Sciences, the Swedish Society for International Affairs, the Swedish Academy of Verbovisual Communication, and the World Academy of Art & Science.

Eduardo Alvarez is a graduate of MIT, where he did his thesis on *Managing Creativity for Effective Innovation*. He is a designer and entrepreneur and is President of VIGIX, Inc, which he founded.

Sten Ekman, Doctor of Industrial Ergonomics, is at the Department of Innovation, Design and Product Development at Mälardalen University in

Eskilstuna, Sweden. He has been honored as “The Entrepreneur of the Year in Academic Leadership in Sweden 2001” and also for the Mälardalen Program on Innovation Management as “The Entrepreneurial Program of the Year in Sweden 2000.” He is the head of an international four-year project “University Business Development Centres at Ukrainian Universities” from 2005.

Susan Walsh Sanderson is Associate Professor at the Lally School of Management at Rensselaer Polytechnic Institute in Troy, New York. She is recipient of the Boeing Outstanding Educator Award and the Hesburg Award for Educational Innovation.

Bruce Tether is Professor of Innovation Management and Strategy at the Centre for Research on Innovation and Competition, Manchester Business School and a Ghoshal Fellow of the United Kingdom’s Advanced Institute of Management Research.

Roberto Verganti is Professor of Management of Innovation at the School of Management and at the Faculty of Design of Politecnico di Milano, and Director of MaDe In Lab, the laboratory for Marketing, Design and Innovation of MIP-School of Management of Politecnico di Milano. He is a Member of the Scientific Committee of the European Institute for Advanced Studies in Management, and Member of the Advisory Council of the Design Management Institute, Boston. A project *Sistema Design Italia* in which he participated as a Member of the Scientific Organizing Committee was awarded the most prestigious design award in Italy, the “*Compasso d’Oro*” in 2001.