



Cactus Flowers Bloom in the Desert: Reflections on Design and Innovation in India

Prof. M P Ranjan

Designer and Faculty, National Institute of Design (NID), Ahmedabad
Chairman, Information Technology, NID

Paper prepared for the National Design Summit at Bangalore on 1 December 2001. Co-sponsored by Confederation of Indian Industries (CII), New Delhi & National Institute of Design (NID), Ahmedabad.

Note on Background and structure

This paper is divided into two distinct parts. The first part deals with the opportunities that are ripe in the Indian scenario for the rapid development and deployment of design resources and its use by the various sectors of our economy, which is a critical need of the day. The second part provides a backdrop and an overview of the evolution of a unique design methodology and an attitude at the National Institute of Design through the sustained experiments in design education that has placed the Institute in a position to spearhead the challenges perceived in the first section of this paper.

Part I

An extended Definition of Design – the NID way

In my paper titled “Design Before Technology: The Emerging Imperative” that was presented in Osaka in 1999 I had argued that India needs to seriously look at Design as a critical partner to science and technology if we are to survive the onslaught of the interconnected and networked market economy. I quote *“Indian industry and Government have made massive investments in both the sectors of science and technology and in areas of management while the corresponding investment in design has been lacking. It is therefore imperative that we emphasise the role of design and provide a redefinition of such a role so that we are able to reposition ourselves to draw on the benefits of the emerging networked economy that will connect the world in new and imaginative ways.”* Unquote. I had illustrated that paper with five case studies of projects done by NID designers and students that showed the success of NID’s systems approach to the design of electronic and information technology tools of everyday use by the common man. The case studies included the design of India’s Electronic Voting Machine, INFARM, MANDALA, Apple-India Healthcare Project and CraftsBridge.com. The full text of this paper and the accompanying visual presentation are reproduced in the CD-ROM titled “Bamboo Boards and Beyond” available from the Institute.

While the need for systems thinking in high technology sectors is well understood and usually appreciated without much ado the same is not true of the use of such methodologies at other end of the technology spectrum of design applications, at the grass roots level. This time I propose to focus on this area and through this presentation I will try and demonstrate that – Design – as we have evolved the discipline at NID, deals with many layers of

the real world situation all the way from perception of basic needs and its validation through a multi disciplinary process that is part of the four stage methodology that is introduced and taught to every student of the Institute. I will illustrate this through two case studies involving projects that I have handled at NID, both dealing with fairly low technology levels but high social and economic complexities. These are the Chennapatna Toy project of 1978 and the Bamboo projects that have extended from 1979 to this day. The projects described below are offered only as examples here but NID has over the years tried and tested the processes over and over numerous experiences in education and practise.

NIDs versatile Model of Design

Need definition is a whole process by itself involving a great deal of design research and usually user groups are closely involved in the articulation and validation of the need for innovative solutions. A deep study of the user and the task scenario leads to the conceptual development of possible models for the future and these are expressed in the form of visual scenarios that can be appreciated by experts and laymen alike, enabling user participation in the process of selection and mobilisation. Such a participation by potential users at an early stage of the design process ensures the resolution of extremely complex variables, many of which are non technological in nature. A clear vision that emerges as a result of these iterations brings with it a great deal of commitment and motivation to sustain the innovative edge usually in the face of great ambiguity and frustration that is a natural consequence of the struggle to create and forge a new path ahead into an unknown future. While the risks are reduced considerably by the various design strategies and iterative processes employed by the designer, the risks are still very much there at every stage of the work as it progresses and it therefore needs to be carefully nurtured lest the spirit to innovate get lost in an ocean of mediocrity of imitative products and me-too strategies full of marketing jargons that need expensive hype to promote and advertise for very short term goals.

Alternate scenarios visualised by the designers provide valuable decision pathways for systematic product and strategy development. The clarity of purpose provided by these visions bind the partners to make the major commitments that are needed by all stakeholders for product realisation. Here the traditional skills and sensibilities of the designer is able to generate numerous concepts that suit the scenario and offer the same for executive decision and these in turn bring forth the necessary investments for implementation and testing. Tangible models are the outcome of this third stage of the NID design process. A good prototype in hand is only the beginning of the last stage involving the delivery of the product concepts through a complex pathway involving many players. It is here that the integral business model and the strategic framework that supports and gives value to the product concept come into active play. A good product without an appropriate business model once again leads to a dead end and this needs to be developed as an integral part of the whole offering in a seamless manner. We have tested this process time and again in hypothetical and in real world

settings and we believe that our technology partners and those from Industry need to understand and adopt these processes in all their initiatives to face global competition. The four-stage model for design action is expressed in the overview matrix shown below. These are iterative stages and many alternative models are examined and so are many optional details are considered at the micro level and at the Meta level of the systems model. The design synthesis and innovation is therefore a multistage process that revisits each stage several times for confirmation and review. (See visual presentation module for models and examples) (see end of file)

Personal application of the NID Model: Chennapatna Toys

My personal move into the crafts design sector took me to Bangalore in 1978 when I designed a collection of toys for Chennapatna, which are still in production at many centres across India. At this stage our vision of the design process had not matured as much as it has now in terms of the theoretical frameworks that we have evolved over the years. However the seeds of this methodology were sown in these early projects and helped develop our convictions that these indeed work and produce dramatic results if applied sensitively and in a sustained manner. The product strategy that was developed for the Chennapatna craftsmen took into account the complexity of their social and economic reality and the universe of products that were examined for the craftsmen led to the selection of a set of simple toy rattles as the vehicle for social and economic development. In the past twenty years the seeds of the design strategy that were planted in Chennapatna have spread throughout the country and have provided gainful employment to large numbers of craftsmen in many clusters without any subsidies or government initiatives to spread the message. How did this spontaneous entrepreneurship thrive and flourish? Was it an accident or were the seeds really good and having been cast at one location they provided models for others to follow and emulate. These products provided many affordances that helped the craftsmen mobilise their entrepreneurial spirit and kick-start an economic activity with little or no investment at all. What I am showing you is not a simple wooden toy, which it is in any case, but it is also a powerful tool for the social and economic emancipation of a highly exploited community that is trapped in layers of control and apathy. That design could unleash such a positive effect was a tremendous area of learning for us and many such initiatives in the crafts sector have now led to an acceptance of our repeated claims. The State Government of Rajasthan was the first to accept our premise and help set up the Indian Institute of Crafts and Design at Jaipur to use the power of design to mobilise the hidden potentials of the sector as a whole. Today these toys are made in many crafts clusters across India and they empower individual craftsmen who have a streak of entrepreneurship to liberate themselves by using the power of design and the embedded knowledge in this particular design synthesis to help them change their lives and those of their families.

The Bamboo Journey: Testing the NID Model

My study of the Bamboo and Cane Crafts of Northeast India was at first dismissed as insignificant excursions into anthropology but was later accepted as a significant design research into material and culture due to the unfolding of its real meaning as our work progressed and matured over the years. Today bamboo is perceived as a major industrial material of the future thanks to our sustained efforts at NID and we have been able to make a major impact on Government policy in this sector. This was a more complex involvement that has been sustained over many independent projects and was spread over many years of field investigations and experimentation. We had to struggle to find funding to support our efforts and the NID's education system provided self-supporting opportunities to encourage students to explore this material based on the very field research and analysis. The request for the development of a vision statement for the National Bamboo Development Project for the UNDP and numerous conference presentations spread over many years provided me the opportunity to revisit the role of bamboo and design. This journey had many partners and both faculty and student participants contributed as a team to the development of our firm belief that bamboo can indeed become a sustainable industrial material for the future. Our proposal to the UNDP and APCTT offered to metaphorically prepare a good feast of new concepts and we began this project exactly a year ago and now when we look back it is very satisfying to see the major impact that our efforts have had on the perception of bamboo as a future material. Now that the feast has been consumed the participants want the recipe! Farmers from Madhya Pradesh and craftsmen from the Northeast are enthused to take a closer look at this old material with new eyes. Similarly State and Central Government Ministries have taken policy initiatives to carry this work forward to its logical conclusion. While this work is ongoing there are intermediate goals that have been met and immediate results that have been harvested.

Lessons from our experiences

In design there are no quick fixes and we need to treat it as an investment and not as an item of expense and the returns then are truly sweet. 230 other sectors of our economy (my classification) await such a sustained demonstration of the power of design processes and methodologies. The spectrum for design interventions in India is indeed vast, all the way – from the micro units of one craftsmen using one material – to sophisticated multi-layered product and engineering and business conglomerates that need highly structured design processes, all across a multitude of sectors. There is a crying need for a new National Policy on Design that recognises all the dimensions of this complex profession and this includes the need to change the Designs Act 2000 which misses the point all-together as it addresses only an insignificant aspect of design contribution having been rudely shaken up from deep slumber by the WTO since the previous Design Act was passed in 1911. This act does not recognise the complexities of the design process and is pegged at the aesthetic view of an artefact or product. There are no ready answers for this impasse but the design community must wake up and help the Government in articulating the nature of the intellectual contributions of

any design intervention and based on this articulation we could evolve norms for the protection of these critical resources in the global arena.

Transforming the Economy and a role for Design:

The best thing to happen to Indian design is the opening up of the economy and the coming of intense competition and it is only when there is such a climate does design and innovations find a place in our economic vocabulary. Further changes are afoot in the form of a transformed IPR landscape and this too bodes well for design, at least the kind that is original. The other major change sweeping the design scene is the use of Information Technology in the digital workflows that are being adopted initially as enabling tools and within some informed groups, as a way of life itself. The phenomenon of design too is being transformed by the recognition that transforming materials and economic efficiency are but one aspect of the task of creating new products, brands and services. The key concern of design is in the positive effect that the act of design and design thinking brings in the form of value to the user and in the heightened experience that the user is craving for in all such interfaces, be it physical or virtual. Design is therefore becoming the primary means of managing the interface between a human user and the built or virtual environment and in this process, the distinction between many branches of design are fading away very rapidly. In this mode the designer is more concerned with the affordances of a product, its perceived values and features, and less with its performance quality specifications since all the available technologies and statutory obligations make sure that the specifications layer is usually taken care of at an early stage of the products' creation.

Way ahead: Unfolding Scenarios:

The United Kingdom has shown us in recent years that "Design" is in itself a viable industry in the new economy. British design is today as large and as significant as any other industrial sector in the world and successful design does bring with it global leadership. That we now need to expand our operational base for design education in India is not in question today, but in the process we must not make hasty moves to roll out new programmes and specialisations without examining the generalist qualities that must be embedded in a creative individual in the making of a designer. It is here we can see that the outline of our strategy must keep in mind the building of designer attributes and abilities and draw on the experience of NID in successfully creating an effective cadre of designers in India through many years of educational innovation and experimentation. India needs to bring design education to the masses as well and it is not misplaced to call for a serious re-examination of our science and technology policies at all levels to include design as an active partner in these policies. Design is the missing element in our national policy and this needs to be redressed very quickly. On the education front, design needs to be included as a subject of study at the school level itself. While design is a professional discipline with generalist capabilities and attitudes, it is also a desirable general capability of every

human being and all our children need to be exposed to these creative ideas at an early stage of their lives.

~

Part II

Historical Note about NID's Systems Approach to Design

Looking Back over Four Decades:

Design in India has grown all these years in spite of the controlled industrial policies of the government and the neglect by Indian industry who over the past fifty years have ignored the potentials of this discipline in a climate spread over many years of 'drought', creating a literal desert for innovation and design in our country. The infrastructure for design and innovation in India and the confidence of its people in – that we can create and deliver world class products, brands and services – has taken a severe beating through all these years of neglect. Finally, fifty four years after attaining Independence, and forty years after the setting up of the National Institute of Design in Ahmedabad, India's Confederation of Indian Industry (CII) and the premier National Institute of Design have jointly signalled the National Design Summit, a one day event, to be graced by the Government of India and many Industry leaders, in a glimmer of a suggestion that Design is becoming important for India. Design professionals too were an insular lot and they were unable to put together a viable organisation to further their collective professional interests with Government and Industry. Let us look back over the past forty years or so to harvest the lessons to be gleaned therein. From this vantage we may look for directions into the future, so that we do not throw out the baby with the bath water, for there is much good there, and preserve for posterity these hard earned lessons from the past four decades of design that is unique to India.

Investments in Design Education:

The National Institute of Design (NID) was set up in 1961 and in 1979, the first ever declaration by the United Nations on Industrial Design was drafted and signed in Ahmedabad at the NID as the culmination of the UNIDO-ICSID Conference on "Design for Development". The Ahmedabad Declaration as it is called was taken seriously by all the nations of Asia-Pacific region and a number of initiatives were taken by these countries while India did next to nothing. Indian funding in science and technology continued to grow over the years and a corresponding investment in Design was sadly missing. The total investment in Design over the past thirty years may not exceed Rs. 300 crores or thereabout from all Government sources taken together, while the science and technology sectors have been endowed with a hundred thousand times that figure over the very same period. 840 Engineering Colleges have been set up across India and we now have seven great Indian Institutes of Technology (IIT's) and hundreds of scientific research labs that are located all over the country, each specialised in a particular area or sector. Similarly hundreds of Management training Institutes and six premier Indian Institutes

of Management (IIMs) have been set up in India while the design infrastructure is pathetically limited in both number and in quality. Besides the NID in Ahmedabad, the other major schools in India for design education are the three departments of design in the IITs in Mumbai, Delhi and Guwahati, eight National Institutes of Fashion Technology spread across the country, the Indian Institute of Crafts and Design (IICD), Jaipur, the Srishti School of Design, Bangalore, the Apeejay School of Design, Delhi and the School of Interior Design (SID), Ahmedabad, all of whom use NID trained designers as their core faculty.

Our Capacity to Innovate:

Those countries that paid heed to the call from Ahmedabad in '79, particularly the "Asian Tigers", today dominate the world economy having set up their infrastructures to promote Design and Innovation in all sectors of their economy. What sets these countries apart from the likes of India and the other still underdeveloped economies? These countries are able to create and deliver new brands, products, and services, as innovations to a global marketplace in a systematic and profitable manner. Their strengths are not just in offering to service and maintain existing products or to participate in trading and marketing of other countries' products and business offerings and activities as the main drivers of their economy. Government policies and those eschewed by Indian industry leaders over the years focussed on control of markets and their management rather than on open competition based on innovation. This has today left Indian industry generally bereft of the capacity to compete globally with only a few isolated exceptions. Today the global landscape has changed so dramatically that the very capacities that were built over the years in the massive public and private industrial infrastructures have become totally redundant and the policy frameworks on which these depended too have become meaningless if they are not suitably modified to meet the demands of the knowledge economy. We are now entering the era of the knowledge economy having missed on the opportunities offered by the industrial economy of the past century. ICSID, the International Council of Societies of Industrial Design, the worlds leading body for Industrial Design, are planning to drop the term "Industrial" from their name since the term itself has become quite redundant in the context of design. The CII too may in the years ahead, I hope sooner than later, will change its focus from Industry to Business since defining the term "Industry" in these days is fraught with many limitations and even so it is increasingly becoming less significant since it is the production of ideas that holds sway in global marketplaces today as production of goods alone fails to generate value.

Creating the Multi-Disciplinary Designer:

R Buckminster Fuller in his 1963 book "Ideas and Integrities" called for the emergence of the Comprehensive Designer as an answer to the over-specialising trends of both science and engineering, each failing to independently deliver valid solutions to typical design problems of some complexity. He was convinced that these specialisations could not deliver solutions to complex human problems that required integrated approaches

across many disciplines. These approaches are not achieved according to him, just by forming multi-disciplinary teams, although this is a better way than the former string-of-specialists approach, but by bringing together the knowledge and skills of many disciplines into one person, the Comprehensive Designer, along with attitudes that fostered team work and learning skills in the willingness to explore, experiment and evolve. While this ideal designer may still be a mythical being, a generalist designer with high quality skills and conceptual and team abilities along with embedded learning skills to cope with the unknown and the ambiguous is something that NID has been able to craft through its educational experiments over the past several years. The seeds of this learning can now be shared where they are needed most, across the many sectors in India in urgent need of design.

Design Foundation Programme, the NID Way:

The National Institute of Design debated these issues in the sixties and seventies leading to the creation of the Professional Education Programme in Design in 1970 at Ahmedabad. The dominant educational models that existed at that time were from the two great design movements in the west, both spawned in Germany, the Bauhaus, in Weimer and Desseau, with its focus on aesthetics and clarity of material in the twenties and thirties, and the Ulm design movement at the Hochschule fur Gestaltung, in Ulm, with its focus on form and structure based on elaborate scientific design analyses and systematic methodologies of the period. Both these schools of thought had enormous influence across the globe, in the schools of art and design alike, who adopted the foundation course and its assignments almost without any change into their curricula for training designers, in the respective countries. What NID innovated in the early seventies and thereafter strengthened with each passing year was a method of educating a designer and in bringing to this new form of design education awareness about the pressing concerns of social relevance and environmental sustainability. While Papanek raised his voice in the early seventies against the poverty of American design, India was experimenting with serious design challenges in the social sectors and in the communication of development strategies. NID's foundation programme having borrowed from the teachings of Bauhaus and Ulm went well ahead of those influences in a search for real design challenges for Indian designers and our very own and difficult environment was a rich resource for real life design problems that were barely ever tackled in the numerous design schools in the west.

Understanding our Roots with Environmental Exposure:

The first major educational innovation was the introduction of the Environmental Exposure course in the foundation programme which took young design students into our villages, in order to study in depth, their life and work environments, by living and working in groups for the duration of the course. This innovation brought home the realisation that design is centrally concerned with the user, the people and their needs, along with other insights into the nature of the design problem itself. It was clear then, as it is now, that design problems and opportunities need an integrated framework for effective

resolution and that these cannot be realised in a specialist mode within closed laboratories, even with a high level of investment support. While many courses in the foundation focussed on the sensitisation of the student to the tools, skills and materials of design research and action, the NID education included another dimension to their learning that was much debated internally, that of forming an attitude for appropriate design thinking and action. This emphasis on value systems was visible in the group processes that were innovated and put in place at NID over the early years of educational experimentation these have no parallel in India, but this aspect has unfortunately not been studied and documented nor published in any degree of detail so far. I wish that some of our alumni would find the time to share their experiences, and help articulate for a wider audience, the educational experiences and experiments at NID, that they experienced first hand.

Reality Contact with Project Based Education:

The further education into the individual disciplines was modelled on a project based approach from the very beginning and this brought a clear focus on achieving tangible results that is the hallmark of good design education anywhere. These projects were initially hypothetical since nobody understood design in those days and the support from industry was almost non-existent. However students and faculty still found challenging assignments in many sectors of our economy (mostly non-industrial) and worked out means of getting closer to the user in the methodologies that were adopted to develop the nascent profession in India. It was one of these tentative explorations that Naipaul saw at NID and added to his tirade against India as a whole, perhaps a case of missing the wood for the trees. Naipauls' critique is perhaps valid at one level but when the rest of the Indian media continue to use this passing missive as a whip to ridicule the efforts of innovation without any application of mind or any deeper investigation into the wealth of discoveries in a young profession struggling to survive and flourish in a hostile environment, one wonders how far our message is reaching out in spite of all our efforts to make a lasting and positive change in the ocean that is India.

Staying Connected with Craft Documentation:

It was in the face of such scepticism that the Textile designers at NID launched the next major innovation in design education in India. Ironically it was once again dealing with people and distant places through the introduction of a course called Craft Documentation. This course has been sustained to this day and it has influenced many disciplines at NID to incorporate the lessons learnt from these explorations that brought so much value to the design debate at NID. This course has produced hundreds of original, but still unpublished, documents that chronicle the crafts of India in a vivid mosaic that covers the length and breadth of India. Designers from NID were being exposed to the realities of village and urban crafts and the economics of the handcrafts sector as a whole. The realisation that crafts is an enormous industry for India was quick to follow and this led to a re-examination of the term Industry itself much to the chagrin of many managers from the organised sector.

Strategic Concerns with Systems Design:

This brings us to another innovation in NID's education programme. That design dealt with complex issues and carefully selected processes was quite clear from our numerous contacts with real life non-industrial challenges in rural and urban design opportunities. The design of Public Toilets for the Ahmedabad Municipal Corporation and the design of Tree Guards for the same client demonstrated the social and administrative complexities in resolving seemingly simple technical tasks of cleaning and protecting a simple public facility. The task was not a simple one at all, nor could they be broken into neat administrative packages since the decisions to be taken had to cope with the synthesis of many complex variables that could not be isolated in the usual one-thing-at-a-time administrative refrain. The systems nature of design was recognised as a significant phenomenon and many disciplines at NID innovated courses that required students and faculty to grapple with the so-called "wicked" problems of design using tools borrowed from management and operations research. Stafford Beer, management consultant and guru of operations research was as much an intellectual hero at NID as was Alvar Aalto, the architect and designer whose face appears on a currency note from Finland as a sign of National recognition. We need to understand that in the process of creating a new solution or opportunity all factors must come into play simultaneously. However while implementing a well laid out plan or a well-conceived design, the sequential tasks can and will be divided into manageable units, all within the framework of the larger vision or strategy. This is one of the reasons why line managers sometimes do not understand design managers, which in any case is a rare breed in India. Incidentally, none of the few hundred, large and small, management schools in India teach the subject of Design Management today. Tom Peters is perhaps the only management guru who identifies design as a critical resource for business and perhaps we should revisit his studies of excellence in many global corporations and build case studies for promoting design, yes, design needs to be nurtured and promoted for it to take root in the psyche of our managers, technocrats and the public at large.

Systems thinking for dealing with Complexity:

Systems design at NID drew on many streams of intellectual organisation and modelling traditions to become a culminating course for almost all students of the Institute just as the introductory course of Design Methodologies which was renamed as Design Concepts and Concerns, in order to dispel the idea that, these procedures provided a neat formulae for quick action. Such complex issues need complex solutions that resolve technological, social and economic issues all at once and this requires a complex process of problem resolution in a creative manner. This then is the emerging role of the designer and rolled together with the other threads of change due to the emerging mega-trends of globalisation, liberalisation and democratisation gives us a clue about the new directions that we need to take. Our technological capabilities are as important as our sensitivity to human concerns and aspirations. Similarly, our ability to shape natural and man-made materials

and give it form and structure are as important as our ability to shape the virtual experience of an online shopper. When design is taken at this level of implementation it usually produces fantastic results, reduces cost by many magnitudes, increases convenience and sometimes creates a whole new industry or should I say business model that nobody in the past had hitherto apprehended or let alone realised. Such an application of design at the strategic level can only function at the highest levels of decision making in any design led organisation or business. Design is an integrative process and draws upon the tools and concepts of all of human knowledge in the resolution of human needs and aspirations. Design action requires a particular kind of organisation and attitudes that are significantly different from that of the specialist scientist, engineer or manager. For instance poor (design) quality of software is reportedly costing the world economy \$170 billion per year in lost productivity according to Jacob Nielsen the Internet and software usability guru.

Design at the Knowledge Edge:

The knowledge revolution too brings major changes to design processes. The already intellectual activity is being de-skilled at one level by the advent of new tools but we hope that designers are not being de-sensitised by these changes. We are keenly aware of the role of the tactile stimulation in building cognitive modelling capabilities, which is a recognised phenomenon in basic design education assignments, many of which will not, and should not be changed in the near future. How then are we to use these new tools and procedures and the complex softwares available to us now without losing the critical sensitivities of the designer? What are the new digital workflows that we need to master and assimilate as a creative team of people working in a high-pressured and competitive environment; over a networked workspace – in a time space discontinuity? Will these facilities and investments give us the cutting edge of discovery in the accelerated time frames that will be required to produce wealth for many partners and stake-holders of every business entity that we serve? Will these help stave off the impending disasters of runaway pollution and un-sustainability that many unthinking industrial and consumer practices hold for all of us? We now need to experiment and innovate programmes that can assimilate IT capabilities in our education, research and consulting roles of design educator, researcher and practitioner. These experiments will require considerable funding which I am sure will be forthcoming in the new age of design renaissance in India.

Flashback and Flashforward: Climate Change and the Design Renaissance:

The valiant efforts of the NIDs' faculty, students and its graduates in a desert like landscape of Indian policy and absence of supportive infrastructure has slowly but surely turned the gaze of sceptics into admiration and recognition for the lasting quality that is being delivered by almost all the design interventions that were made over the years when the disbelievers far outnumbered those who took design seriously. Designers are now being taken seriously in the Indian economy and there are signs of positive change

being reported by our graduates in the field as well. The Businessworld magazine has in several recent issues showcased Indian design achievements like never before and other Indian journals are now taking a cue from these presentations. I believe and the tide has now turned for the design profession in India and there are rain clouds in the desert and the desert cactus will indeed bloom and evolve into a forest or a valley of flowers? With this promise looming large, how do we forge ahead?

~

References:

1. Charles and Ray Eames, The India Report, Government of India, New Delhi, 1958, reprint, National Institute of Design, Ahmedabad, 1997
2. Richard Buckminster Fuller, Ideas and Integrities: A spontaneous autobiographical disclosure, Prentice Hall, Englewood Cliffs, 1963
3. Thomas Maldonado, Gui Bonsiepe, Renate Kietzmann et al., eds, "Ulm (1 to 21): Journal of the Hochschule fur Gestaltung", Hochschule fur Gestaltung, Ulm, 1958 to 1968
4. Hans M. Wingler, The Bauhaus: Weimer, Dessau, Berlin, Chicago, The MIT Press, Cambridge, Mass., 1969
5. Victor Papanek, Design for the Real World, Thames & Hudson Ltd., London, 1972
6. Stafford Beer, Platform for Change, John Wiley & Sons, London, 1975
7. V S Naipaul, India: A wounded Civilization, Penguin Books Ltd., Harmondsworth, Middlesex, 1979
8. M P Ranjan, Nilam Iyer & Ghanshyam Pandya, Bamboo and Cane Crafts of Northeast India, Development Commissioner of Handicrafts, New Delhi, 1986
9. Alver Aalto, The Architect and Designer whose face appears on a 50 Fennian Mark currency note from Suomen Pankki (Finland), Finlands Bank, 1986 (in the authors collection - distinctive no. 3065173509)
10. Herbert Lindinger, Hochschule fur Gestaltung - Ulm, Die Moral der Gegenstande, Berlin, 1987
11. Kirti Trivedi ed., Readings from Ulm, Industrial Design Centre, Bombay, 1989
12. Donald A Norman, Design of Everyday Things, Doubleday Books, New York, 1990
13. Tom Peters, Liberation Management: Necessary Disorganization for the nanosecond Nineties, Pan Books, London, 1993
14. J A Panchal and M P Ranjan, "Institute of Crafts: Feasibility Report and Proposal for the Rajasthan Small Industries Corporation", National Institute of Design, Ahmedabad 1994
15. M P Ranjan, "Design Education at the Turn of the Century: Its Futures and Options", a paper presented at 'Design Odyssey 2010' design symposium, Industrial Design Centre, Bombay 1994
16. National Institute of Design, "35 years of Design Service: Highlights – A greeting card cum poster", NID, Ahmedabad, 1998
17. M P Ranjan, "The Levels of Design Intervention in a Complex Global Scenario", Paper prepared for presentation at the Graphica 98 - II International Congress of Graphics Engineering in Arts and Design and the 13th National Symposium on Descriptive Geometry and Technical Design, Feira de Santana, Bahia, Brazil, September 1998.
18. S Balam, Thinking Design, National Institute of Design, Ahmedabad, 1998
19. Jeremy Myerson, Britain's Design Industry: The design workshop of the world, The Foreign & Commonwealth Office, London, 1998
20. Gui Bonsiepe, Interface: An approach to Design, Jan van Eyck Akademie, Maastricht, 1999

21. M P Ranjan, "Design Before Technology: The Emerging Imperative", Paper presented at the Asia Pacific Design Conference '99 in Osaka, Japan Design Foundation and Japan External Trade Organisation, Osaka, 1999
22. Martin Downie, Barry Hepton, Matthew Hopper & Sabine Kazich, Thinking About Me & Design: A design primer for 'A' level school education, Liverpool John Moores University, Liverpool, 1999
23. Neil Gershenfeld, When Things Start to Think, Hodder & Stoughton, London 1999
24. M P Ranjan, "From the Land to the People: Bamboo as a sustainable human development resource", A development initiative of the UNDP and Government of India, National Institute of Design, Ahmedabad, 1999
25. M P Ranjan, "Rethinking Bamboo in 2000 AD", a GTZ-INBAR conference paper reprint, National Institute of Design, Ahmedabad, 2000
26. Tom Peters, "The Hottest Jobs of the Future: Tom Peters on which careers will flourish – vanish", in TIME Asia, Hong Kong, vol. 155, no. 20, 22 May 2000 pp. 38 – 43
27. M P Ranjan, "Digital Design? What is it? There is more to IT than meets the eye!", in Young Designers 2000, National Institute of Design, Ahmedabad, 2000 pp. 104 – 107
28. John Chris Jones, "The Internet and Everyone", Ellipses, London, 2000 and website <http://www.softopia.demon.co.uk>
29. Thomas T K Zung, ed., Buckminster Fuller: Anthology for the New Millennium, St. Martin's Press, New York, 2001
30. M P Ranjan, Yrjo Weiherheimo, Yanta H Lam, Haruhiko Ito & G Upadhayaya, "Bamboo Boards and Beyond: Bamboo as the sustainable, eco-friendly industrial material of the future", (CD-ROM) UNDP-APCTT, New Delhi and National Institute of Design, Ahmedabad, 2001
31. Tom Kelley & Jonathan Littman, The Art of Innovation: Lessons in creativity from IDEO, America's leading design firm, Doubleday Books, New York, 2001
32. Vidya Viswanathan & Gina Singh, "Design makes an Impression: Indian Industrial Design gets ready to hit the big time...", in Businessworld, New Delhi, 22 January 2001 pp. 20 – 31
33. K Sunil Thomas, "Better By Design: India finds itself at the crossroads of a revolution...", in The Week, Kochi, 23 September 2001 pp. 48 – 52
34. Jakob Nielsen, "Poor Code Quality Contaminates Users' Conceptual Models", Jakob Nielsen's Alertbox, October 28, 2001 <http://www.useit.com/alertbox/20011028.html>
35. Liz Sanders & Robert Saurez, A New Attitude for the Next Generation of Designers, SonicRim at core77.com website, 2001 http://www.core77.com/research/intro_sonicrim.html
36. M P Ranjan, "Web Usability: What is it?", NID – NetKraft Web Usability Research Lab (W-URL™) working paper 01, National Institute of Design, July 2001
37. M P Ranjan, "Usability through Affordances: Why designers think affordances and engineers do specifications", NID – NetKraft Web Usability Research Lab (W-URL™) working paper 02, National Institute of Design, August 2001

~



Cactus Flowers: M P Ranjan 2001



About the Author



Bio Data Summary: November 2001

M P Ranjan

Designer and Faculty, National Institute of Design, Ahmedabad

As a member of the faculty since 1976 he has been responsible for the creation and conduct of numerous courses dealing with Design Methodology, Product and Furniture Design and Digital Design. He has conducted research in many areas of Design Pedagogy, Industrial and Craft Design and on the role of design in various sectors of the Indian economy. He has held many administrative positions at NID and is currently Chairman, Information Technology at NID. Besides publishing several papers on design and craft he has edited numerous volumes of NID publications and a major book titled "Bamboo and Cane Crafts of Northeast India" (1986) and a CD-ROM titled "Bamboo Boards and Beyond" (2001).which contain all his papers and reports on bamboo and on design. He was responsible for the creation of the Indian Institute of Crafts and Design at Jaipur and he acted as its Director in the formative stages.

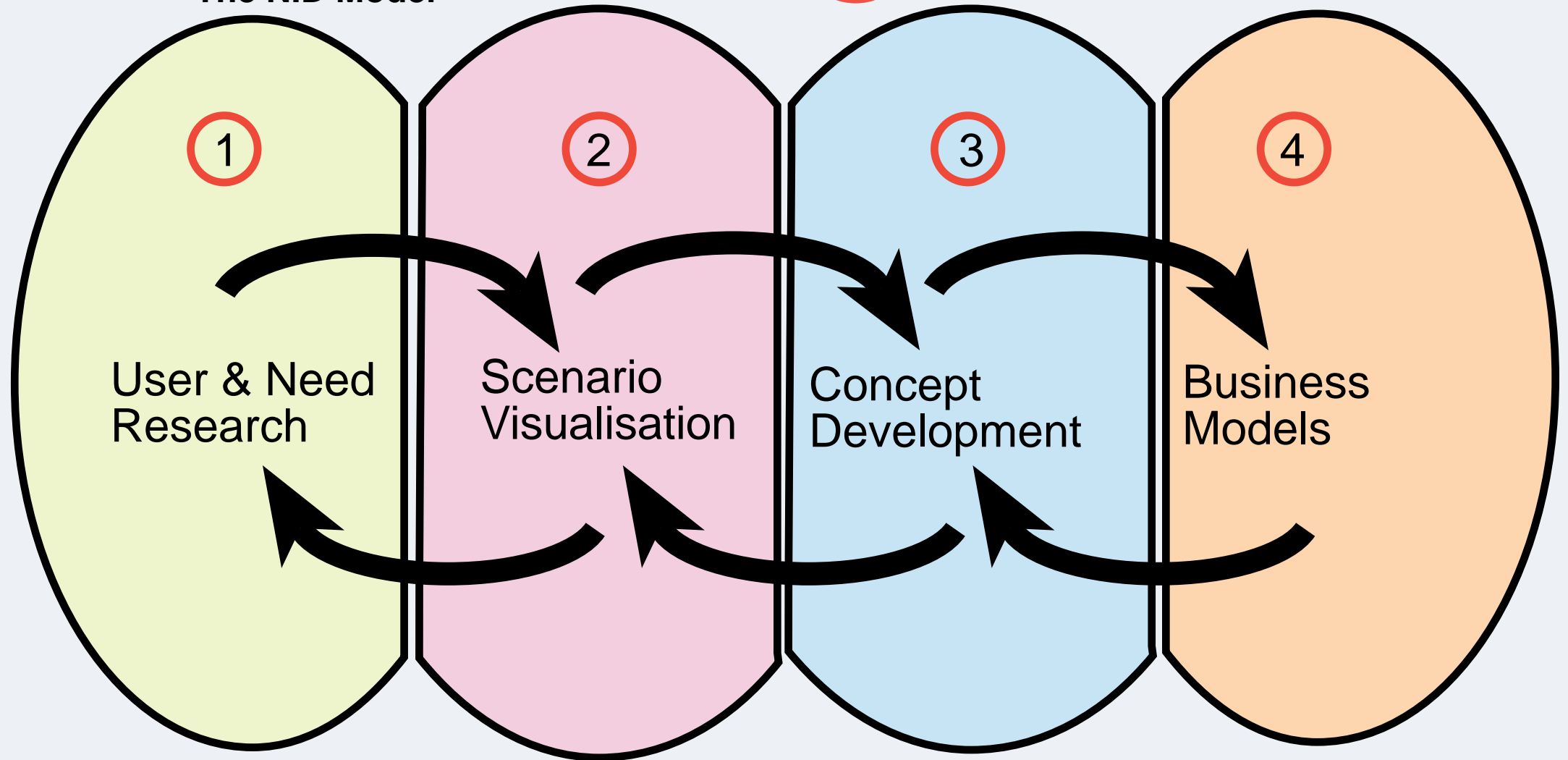
As a professional designer he has handled many design projects for industry and government agencies in areas of product design, interior design, exhibition design and craft design. As Chairman of NID's consulting Design Office from 1981 to 1991 he was responsible for managing over four hundred professional design projects handled by the Institute in that period. He recently completed a major project for the UNDP to demonstrate the role of Bamboo as a sustainable industrial material of the future. This led to the creation of new strategies for the use of bamboo in India. He is an advisor to many State and Central Government Ministries in formulating strategies for the future use of bamboo and design.

M P Ranjan was born in Madras in 1950 and after his schooling and junior college there he joined NID as a design student in 1969. He joined the Faculty at NID in 1972 and for a short while between 1974 and 1976 worked as a professional designer in Madras before returning to NID in 1976.

~

Systems Design

The NID Model



Empathy
Observation
Interaction

Imagination
Articulation
Convictions

Form Giving
Detailing
Developing

Entrepreneurship
Diplomacy
Committment