

Forecasting the Frontiers of Design

by James Woudhuysen

The criteria experts use to assess design effectiveness have, in recent years, become more subjective. James Woudhuysen questions this trend, advocating instead that the measures of design leadership be genuine improvements in how people live and work, developing vast and as-yet-untapped energy resources that do not degrade the environment, and promoting automation to reduce toil and expand opportunities for all.



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Search Amazon.com for books on leadership and you will find no fewer than 17,296 results. Could the West have a problem with leadership, by any chance? Apparently, one can lead like a servant, or like Attila the Hun. And like everything nowadays, leaders can also be toxic.¹ But for design managers, as for others interested in leadership, there are two books worth a special look.

Accenture's Robert Thomas, along with University of California professor Warren Bennis, the world doyen of leadership studies, published *Geeks and Geezers* in 2002.² Thomas and Bennis went looking for, and found, the influence of different formative eras on today's young and old generations of leaders. But they also found crucibles of leadership—intense, often traumatic,

always unplanned experiences that transformed people into leaders. In such crucibles, people had faced

- Estrangement and sexism (as an American woman working in Japan, for example)
- Anti-Semitism and racism at work
- Solitary confinement in Communist China.

1. cf. Robert K. Greenleaf, *Servant Leadership* (Mahwah, NJ: Paulist Press, 1983); Wess Roberts, *Leadership Secrets of Attila the Hun* (Northampton, UK: Peregrine Publishing Co., 1987); and Jean Lipman-Blumen, *Toxic Leaders: Why We Follow Destructive Bosses and Corrupt Politicians—and How We Can Survive Them* (New York: Oxford University Press, 2004).

2. Bennis, Warren G., and Thomas, Robert J., *Geeks and Geezers: How Era, Values, and Defining Moments Shape Leaders* (Cambridge, MA.: Harvard Business School Press, 2002).

In sum, the key skill leaders developed was an almost magical ability to get through adversity.

Also boosting the chances of leaders, Bennis and Thomas maintained, was something called *neoteny*—the retention of juvenile characteristics in the adult of a species. For corporate leaders, neoteny included:

- A fondness for lifelong learning.
- Spending weekends at play, doing far-out sports.

In the same year that Bennis and Thomas came out with all this, Daniel Goleman ventured some

similar conclusions. With two co-authors, Goleman, pioneer of the idea of emotional intelligence, wrote about primal leadership—something that meant realizing the power of emotional intelligence. Many baby-boomer American managers, he noted, now had aging parents that needed caring for. After September 11, 2001, they also had a desire to take stock. In these circumstances, if they felt trapped or bored by their work, they should reawaken their passion for it by taking a sabbatical, going to a leadership development seminar, finding an executive coach or a meaningful cause, and keeping sacred

a few hours a week, or a day or two a month, for self-examination.³

What a load of tosh! In fact, leadership does not emerge from trauma, abuse, juvenile conduct, bunking off work, or navel-gazing. For design managers, as for others, it comes out of tough projects, repeated experiment, criticism, reading, and writing. As a journalist, I have interviewed Saul Bass, Mario Bellini, James Dyson, Lou Dorfsman, Milton Glaser, Shiro Kuramata, Raymond Loewy, George Nelson, Gordon Russell, Dieter Rams, Paul Rand, and

Yuri Soloviev. They taught me that leadership in design, as elsewhere, is about rising above one's own experience and reaching for a higher sense of purpose. A leader is someone with the strength both to embody the times and transcend them.

How much the two books I've cited embody, and how little they transcend! Yet even if today's typical design manager hasn't read either book, he or she is still very likely to have been influenced by the broad therapy culture they both implicitly support.⁴ That becomes clear when we look at three issues: quality, climate change, and services.

Turning the Tide from Experience to Progress

In nineteenth-century Britain, a class of bakers known as undersellers sold cheap bread that was adulterated with alum, soap, chalk, or stone dust. Since that time, however, concern about the quality of consumer goods has been a constant feature of Western thought. In retrospect, too, the failure of the Soviet Union to provide quality products—not counting the Kalashnikov assault rifle—stands as one of the most serious economic indictments of Stalinist planning.

More recently, however, our definition of quality has changed. The rational postwar insights about manufacturing quality from firms such as Toyota and experts such as W. Edwards Deming and John Juran are no longer celebrated much. Although Toyota goes from strength to strength, and Motorola and General Electric have, despite detractors, made good use of Six Sigma, critics have leveled three charges against them.⁵

First, regulatory standards of quality such as ISO 9000 have been ridiculed as bureaucratic and often irrelevant. Second, Harvard University's Michael Porter and the massed cadres of marketing have insisted that differentiation is central to competitive advantage, with

3. Daniel Goleman, Annie McKee, and Richard Boyatzis, *Primal Leadership: Realizing the Power of Emotional Intelligence* (Cambridge, MA: Harvard Business School Press, 2002).

4. For a wider discussion, see Frank Furedi, *Therapy Culture: Cultivating Vulnerability in an Uncertain Age* (London: Taylor & Francis, 2003).

5. For one attack on GE's Jack Welch and his commitment to Six Sigma, see Betsy Morris's "The New Rules," in *Fortune*, August 7, 2006.

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the result that quality has tended to recede in prominence. Last and most important, the customer's subjective experience of an organization's offerings has come to occupy center stage—further diminishing what was once known as the quality movement.⁶

Some might see this new centrality of experience as a simple consequence of the rise of the Internet and of the monotonously cited iPod. However, the idea that the user's experience is a kind of unrecognized key to corporate success has been the mantra of design for perhaps two decades now. Anthropology, ethnography, and storytelling are the methods of choice,⁷ and *aesthetics, brands, emotions* and *values* the preferred buzzwords.⁸ Broadly, the user is conceived as going through a moment-to-moment flow of sensations, hopefully ending not just in satisfaction, but a narrative, delight, the euphoria of play, a willingness to spread corporate reputation by word of mouth, and, most recently, meaning.⁹

Of course designers should take detailed note of users' experiences. But what is forgotten in the more ecstatic versions of user-centered design is that the old-fashioned criteria for quality—price for performance, cost of ownership, reliability, ease of maintenance, durability—still count with people.

To downplay these things is, ironically, to forget all about being user-centered. It is to relegate to insignificance not just objective standards of quality (for example, mean time between failures), but also engineering excellence and technological innovation. That is all too convenient

at a time when the initiative for innovation has broadly begun to pass from West to East.¹⁰

In economics, many are now critical of growth, and prefer to talk about measuring happiness. In the literature of the management of innovation, the design, mapping, prototyping, and personalization of individual experience, apprehended as the co-creation of value between consumers and companies, is given a high premium.¹¹ In IT, too many discussions are held with the condescending but unabashed view that the user is interested only in the experience of interaction—that he or she cares nothing about what goes on “under the bonnet.”

To break out of these confinements and establish new frontiers, the more far-sighted design managers will eschew the impulsive and fashionable, but narcissistic, desire to make the world more touchy-feely. For if they don't transcend their own emotions on this matter, they will lose the right to be leaders, and instead allow purely relativistic judgments to be made on new designs.

The best design managers will be forced one day to shoulder responsibility for the historic mission of design—to *contribute to progress*. They will work closely and vigorously debate with the best scientists and technologists, not just marketing people or devotees of the arts, so that *all* these forces can bring about universal quality improvements in living and working standards.

Only the best is good enough.

Today's younger generation of designers knows more about technology than earlier

6. See, for instance, B. Joseph Pine II and James H. Gilmore, “How to Profit from Experience,” *Wall Street Journal*, August 4, 1997, and, more famously, Pine and Gilmore's *The Experience Economy: Work Is Theatre and Every Business a Stage* (Cambridge, MA: Harvard Business School Press, 1999). See also Berndt Schmidt's *Experiential Marketing: How to Get Customers to Sense, Feel, Think, Act, Relate* (New York: The Free Press, 1999).

7. See, for example, Tom Kelley and Jonathan Littman, *The Ten Faces of Innovation: IDEO's Strategies for Defeating the Devil's Advocate and Driving Creativity Throughout Your Organization* (New York: Currency/Doubleday, 2005).

8. On aesthetics, see Virginia Postrel's *The Substance of Style: How the Rise of Aesthetic Value is Remaking Commerce, Culture, and Consciousness* (New York: HarperCollins, 2003), and my critique, “Who's Afraid of Virginia Postrel?,” in *Blueprint*, April 2005, on

www.woudhuysen.com/index.php/main/C1. On emotions, see Donald Norman's *Emotional Design: Why We Love (or Hate) Everyday Things* (New York: Basic Books, 2004).

9. For a discussion of flow and play, see my article “Play as the Main Event in International and UK Culture,” in *Cultural Trends*, Issues 43 & 44 (London: Policy Studies Institute, 2003), pp.95-145, on www.woudhuysen.com/index.php/main/C2. For a brief treatment of the user search for meaning, see my article “Innovation: On the Horizon,” *New Design*, August 2006, on www.woudhuysen.com/index.php/main/article/91.

10. See, for example, Jon Sigurdson, *Technological Superpower China* (Cheltenham: Edward Elgar, 2005).

11. See, for example, C.K. Prahalad and Venkat Ramaswamy, *The Future of Competition: Co-Creating Unique Value with Customers* (Cambridge, MA: Harvard Business School Press, 2004).

ones. Yet there are no grounds for complacency. A firmer grasp of physics would be a good place to start.

Climate Change: Ending Misanthropic Disgust

Few can doubt that design for low greenhouse gas emissions will become the dominating ethic in years to come. Yet on no subject are designers more given to emotion than on climate change. The issue, however, is no longer whether such change exists, but how we want to deal with it.

Take the example of the UK. In April 2006, Chancellor of the Exchequer Gordon Brown addressed the United Nations about the need to turn off consumer goods left in standby mode. More recently, David Miliband, Secretary of State for Environment, Food and Rural Affairs, has told manufacturers that the government will take products with low energy efficiencies and “regulate them out of existence.” But to believe that energy-efficient consumer products represent revolutionary new industries, based on serious breakthroughs in technology and design, is to dumb down innovation. It is to let sentiment triumph over science.

In energy and in emissions cuts, as elsewhere, innovation is not just about efficient products, but also—and much more—about efficient *processes*. Britain has built no new power stations since 2000. Just as scandalous, Battersea Power Station, in south London, has been out of use since 1983. When British designers insist that

Battersea’s owners abandon longstanding plans to turn it into a leisure center and instead return it—at today’s levels of energy and carbon efficiency—to its original function, a frontier really will have been crossed. There will be plenty of design and design management to be done around the re-equipped and refurbished facility.

The design community loves to beat its breast about how it is every individual’s responsibility to do something about climate change. But it’s not the individual’s responsibility to save the planet. It’s society’s responsibility to develop risk-taking process innovations, based on what Adam Smith would recognize as a better division of labor.

The stampede to partial and often irrational measures around the environment is another lapse into the emotional register. The example of London Mayor Ken Livingstone’s internationally admired congestion charge again shows why impulsive policy reactions are no substitute for coolly analytical design leadership.

In 2003, in an effort to reduce inner-city traffic congestion, Livingstone imposed the charge on motorists driving in to central London. Initially set at £5 a day, it now costs £8, rising to £10 if you don’t pay until the day after you drive into town, £50 if it takes you 14 days, £100 for 28 days, and £150 thereafter. On top of all this, to try to pay the charge through its website is to encounter one of the world’s most



Some 70 polycrystalline photovoltaic solar panels, made by Sharp and covering 66 square meters, on homes owned by the Queen’s Cross Housing Association, Panmure Street, Glasgow, Scotland. Unfortunately, they only generate about 8.75 kilowatts—enough to power 87 100w lightbulbs. Photo courtesy Currys.

badly designed experiences.¹²

Interventions such as the charge reek not just of Puritan austerity, but of a behaviorism that would make B.F. Skinner, the controversial American advocate of behavioral psychology, blush: reinforcement and reward of the right consumer “responses” through the “stimulus” of taxation and credits. The magnanimity toward human beings that we find with great design, great art, even religion—this is absent. So is any designerly commitment to relieving congestion by building roads, tunnels, bridges, underpasses, or better signage. Instead, in a recent and visceral lashing-out against the hated sports utility vehicle, Mayor Livingstone has threatened its owners with a £25 fine, not so much for congestion, but for... carbon emissions. So while driving alone in a low-emission Toyota Prius meets no charge, to drive a family of four people three miles around London in a BMW X5 will be to face a levy equivalent to £25,000 per ton of CO₂.¹³

Should design managers assent to this kind of state intervention into personal energy lifestyles? Should they really go about endorsing official campaigns to “raise awareness” and induce “change management” in consumer behavior, in the misanthropic, disgusted manner that Ken Livingstone proposes? Will the future of graphic design, for example, merely consist of longer, more regulated product labeling about greenhouse emissions, with more languages and logos per label?

This low-tech, patronizing, authoritarian version of progress will not be trendy forever. In April 2002, Dr. Ferdinand Piëch, chairman of Volkswagen AG’s board of management, got inside a secretly-developed one-liter VW prototype car, so called because it was designed to run 100km on a liter of fuel. Piëch then drove the 3.47x1.25x1m two-seater 230km through the rain—from his company’s plant in Wolfsburg to its 42nd annual general meeting in Hamburg. His fuel consumption, at an average speed of about 47 mph, was 260mpg.

There will come a time when design managers hail this achievement as a sign of the genuine automotive progress that is still possible not just with streamlining, materials, and engines

12. See <http://www.cclondon.com/index.shtml>

13. Tim Harford, “Green Taxes and Posturing Politicians,” *Financial Times*, July 21, 2006.



Energy monitor screen on the 2003 Toyota Prius. Although Toyota is hard to beat as an example of real excellence in engineering and build quality, the size and detail of this display hints that, for motorists, thinking about energy ought to be nearly as important as paying attention to the road.



The BMW X5. Is this car really the epitome of evil—something design managers should get their rocks off criticizing?



Ferdinand Piëch, in 2002 chairman of Volkswagen AG, boards a VW prototype designed to run 100km on one liter of diesel. Photo: Heribert Proepper/Associated Press.

(product innovation), but also with new, highly refined transport fuels from unexpected sources (process innovation).¹⁴

The more thoughtful we are about energy supply processes and the emissions that attend them, the more thoughtless and unaware we can afford to be about the consumption of energy. And yes, when consumer energy devices become as ubiquitous and as liquid in their effect as mobile phones, there will be a myriad of truly exciting design management tasks to pursue.

Of course, design managers can always find modest new markets and even some newish technologies around the consumption of green products. But the leading design managers of tomorrow will be searching out, designing for, and advocating more radical innovations, around production processes.

To open new frontiers for the twenty-first century, design managers will remind our misanthropes of all the process innovations, not to mention the really revolutionary industries, human beings devised around the start of the last one.¹⁵ It can certainly be argued that, even with the Internet and biotechnology, we have yet to prove as continuously and radically innovative as our predecessors. United Nations estimates suggest, for instance, that the world needs more than 100,000 homes built every day for the next 25 years. If design managers don't take up cudgels for a new industry devoted to mass-manufactured houses, they will be shirking their responsibilities.

A Critical Attitude to Design for Services

With the decline of Western manufacturing employment, the advent of R&D and product design centers in the East, and today's cultural prejudice in favor of experiences, design for

services has begun to achieve prominence.¹⁶ At one level, this expansion in the role of design is a good thing. Just as, through Windows Live, Microsoft's chief software architect Ray Ozzie wants to add "software as service" to software as a licensed product, so new design tasks are bound to emerge around services.

There are some entertaining developments in the pipeline.

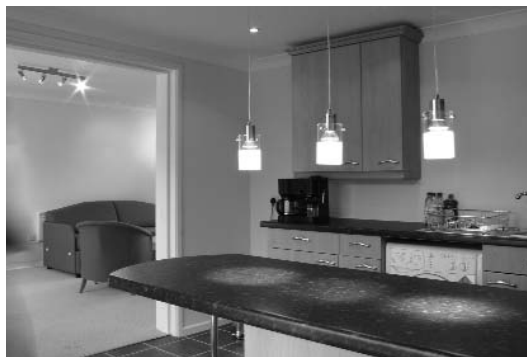
- On Pendolino trains traveling at up to 125mph in the UK, Virgin will use QinetiQ Rail to provide WiFi, HSDPA, WiMax and satellite connections to users of mobile phones, with connection speeds of at least 20Mbps
- On Airbus planes, British Midland International, Air France, and Portugal's TAP begin trials in 2007 of satellite-based systems, developed by OnAir, that enable passengers to use mobile phones when in the air.

Clearly service providers in transportation are adding new services. But so, as we know, is

14. See, for example, Brad Lemley, "Anything Into Oil," *Discover*, vol. 27, no. 4 (April 2006): www.discover.com/issues/apr-06/features/anything-oil/?page=2

15. The "second" industrial revolution, around 1900, included electric power and motors, organic chemistry and synthetics, the internal combustion engine and automotive devices, and precision manufacture and assembly-line production. See David Landes' *The Unbound Prometheus: Technological Change and Industrial Development in Western Europe from 1750 to the Present* (Cambridge: Cambridge University Press, 1969), p.235. In product innovations, one could mention the diesel locomotive, the gyro-compass, and the safety razor.

16. For an overview, see Bill Hollins' article "About: Service Design," on http://www.designcouncil.org/webdav/servlet/harmonise?Page/@id=6004&Session/@id=D_ONjl8IPjf2AGVedDK7bP&Section/@id=1322.



The beginning of the future: The British company Verbus has brought in a prototype, mass-manufactured home from a Chinese factory to a site in the West Country, UK.

many a specialist product manufacturer. Once they have keyed in the code they find on the drinks they buy, German users of Cokefridge vending machines can take pictures of themselves and send the results to friends, or get games, logos, and ring tones downloaded to their mobile phones. As the Cokefridge interactive screen says, “Every Coke and every Code is an experience!”¹⁷

This is progress, but only of a sort. It is striking that the most publicized developments relate to mobile communications; and though ingenuity and utility are present, there is also a strong whiff of “Me, Me, Me.” We hear much less about how, say, UK manufacturers of business-to-business equipment have survived competition from the East over the past five years by adding sophisticated business services to their offers. We hear much less about how design can make a difference to logistics and global supply chains.

Design managers, if they are interested in the fullest forms of innovation, should take a critical attitude to the romanticization of services—just as much as they take a critical attitude to artifacts. They should also note that the environmentalist doctrine of natural capital, pioneered by Paul Hawken, Amory Lovins, and L. Hunter Lovins, has strong implications for services.¹⁸

Hawken and his colleagues believe that wealth originates more in the natural world than in the creations of humans. So what counts is not labor productivity, but economy in the use of natural resources. The result is that automation in things is downgraded in favor of the multiplication of labor-intensive services.

In the environmentalist’s future, everyone will sort everything and recycle everything. We will run around

- Switching off sources of energy
- Attending to energy meters
- Getting up on the roof frequently to fiddle with solar panels that only provide half a house’s electricity (installed by Currys, a major UK electricals retailer, in a three-bedroom house for an average of no less than £9,000).

How busy we all will be in Green Heaven!

This frantic kind of bliss is not just the property of radicals, however. In Europe, electricity utilities now want to follow Enron—without the fraud—and offer not simply energy, but also energy services. In America Wal-Mart is also a convert to the theories of Paul Hawken and Amory Lovins.¹⁹

The international unanimity around fetching and carrying in order to save the planet is impressive. But if services are not to descend into servitude, design managers should dissent from it. With scientists and technologists, the

17. Jenny Wiggins, “Coke slots in extras to new machines,” *Financial Times*, June 27, 2006.

18. See Paul Hawken, Amory B. Lovins, and Lovins, L. Hunter, *Natural Capitalism: The Next Industrial Revolution* (London: Earthscan, 1999); and Jeffrey Sachs (ed.), *Investing in Development: A Practical Plan to Achieve the Millennium Development Goals* (London: Earthscan, 2005), on www.unmillenniumproject.org/reports/fullreport.htm.

19. Marc Gunther, “The Green machine,” *Fortune*, August 7, 2006, Europe edition, p.39.



Adding software as service to its vending machines: Coca-Cola’s Cokefridge, Germany

leading design managers will want, instead, to open up a new, more ambitious frontier of less toil, more economies of scale, more centralized facilities and—not least—more automation.

Since the 1960s, the international design community has held uncritical attitudes toward services and the decentralized, localist, small-is-beautiful approach that often accompanies them. In a world of burgeoning foreign direct investment (Indians, Russians, and Chinese included), and an era of robots, RFID tags, Internet protocols and biometric technologies, the design manager who wants to lead will argue for global, not local, supply chains, and will have startling improvements to make to them, too.

Conclusion: Design by the Third World

Replying to the Royal Society of Arts “Manifesto Challenge” to advance global citizenship, John Thackara, a noted European writer and organizer in design, asked a London audience: “Why does it take seven people to sell you a railway ticket in an Indian railway station? I don’t know, and I don’t really care, because those seven people have something to do and they have reasons for being there and I have no idea how they came to be there, but if it’s seven people to sell me a railway ticket rather than one clunky and egregious ATM or a mobile phone, I’ll take the seven people any day. We can discuss that.”²⁰

Thackara is right. In fact, we *must* discuss that. In that strange and varied land, the Third World, issues of progress, climate change, and services are at their most poignant.

The primacy of emotions in popular discourse on the Third World was well captured in the summer of 2005, when the pop singer Bob Geldof famously said, on the occasion of the Live 8 concert that he held on Africa’s behalf, “Something must be done; anything must be done, whether it works or not.”

Well, whatever his strengths as a self-publicist, and whatever his appeal to middle-class Western youth, Geldof is no design manager. For the design manager of the future will be very, very concerned whether what is proposed for Africa and elsewhere “works or not.” He or she

20. Thackara, John, “Solidarity economics and design: Life after consumerism,” *Royal Society of Arts Journal*, December 12, 2005, available as www.thersa.org/acrobat/thackara_121205.pdf



Globalization imposes costs, but also benefits—not least, the growth of research, development, and design in the Third World. Here, a woman at a Brother Industries printer assembly plant in Shenzhen, China, conducts inspections leading to improvements in product design that are made on-site. Photo: Ray Hatley

will not be concerned to save a conscience.

Research, development, and design make a substantial difference to the Third World; donkey-pulled plows, which British nongovernmental organizations so often push on Africa, promise only to perpetuate backwardness.

In developed economies, it will be politically impossible to win mass consent for a continuously holy approach to consumption. One of the reasons: Simple calculations show that even drastic and unanimous changes in personal behavior would make little difference to greenhouse gas emissions. In the same way, a noble-savage approach to design, agriculture and irrigation in the Third World will not work. It imposes a labor-intensive regime on everyone, in exchange for a delusory feel-good factor.

The leading countries of the Third World will not accept such a constraint upon their development. And the leading design managers of tomorrow will not accept it, either.

It is time for design *by* the Third World, not for it.

It is time to take a stand against the prevailing dogmas of our day, and instead lead the way to a truly humanistic perspective.

It is time to extend the frontiers of design fundamentally. ■

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