

Data, Design, and Soulful Experience

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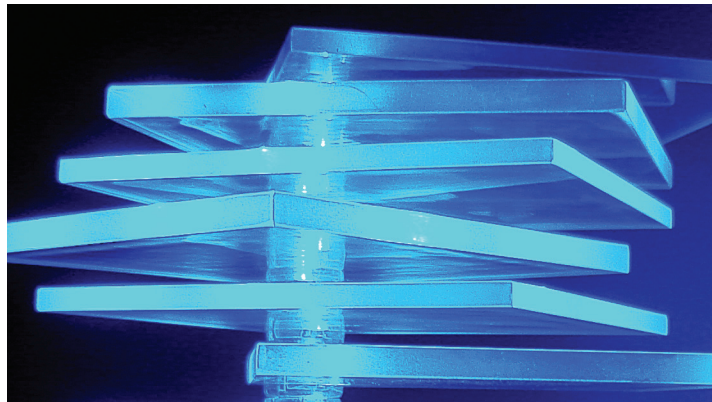
"We let the math and the data govern how things look and feel."

—Marissa Mayer, VP of search and user experience at Google

"Good design adds value of some kind, gives meaning, and, not incidentally, can be a sheer pleasure to behold; it respects the viewer's sensibilities and rewards the entrepreneur."

—Paul Rand, legendary American graphic designer, *Design Form and Chaos*

Recently, the user experience blogosphere was ablaze in controversy over the value of data-driven methods in making design decisions. Not an entirely new topic, but it came up again with the sudden departure of Google's first visual design lead, Douglas Bowman. He wrote a brief yet critical summary of his rationale for leaving, citing the paralyzing forces of excessive data-driven decision making, to the point of data "serving as a crutch" for changing shades of colors or widths of borders [1]. Alternative views emerged online, with adamant defenders of both sides of the "data versus design" battle—which, as Web-design strategist Luke Wroblewski cautions, is an unfortunate label, since each should ideally inform the other in a productive balance.



► An iPhone, Ikea table lamp, and Starbucks coffee cup are examples of what the author calls beautiful design, which not only feed the "aesthetic consciousness" of consumers but also invoke loyalty and trust.

In this piece, instead of rehashing the almost religious tones of this heated debate, I want to focus on the implicit issues burning under the surface and suggest a noble imperative for which designers should strive—in favor of “soulful experiences”—as a means of advancing the field and elevating our discourse. I do not offer a quick formula or easy recipe. These are “wicked” questions to be examined for each particular design problem and context. By exploring them, we will gain a better understanding of our central task as designers of digital experiences and the cultures within which we operate.

As an eclectic, diversely opinionated community of designers, developers, and business leaders pursuing high-quality digital experiences, certain shared points offer common ground. For instance:

- Design is a complex activity born of a magnanimous vision yet humbled by user research and feedback. Henry Petroski, the engineer-scholar, put it well: “Designing anything involves satisfying constraints, making choices, containing costs, and accepting compromises” [2]. There is no perfect design, yet an ideal vision motivates iterative attempts.

- Design involves change, as Nobel Laureate Herb Simon explained in *The Sciences of the Artificial*, yet change can be quite scary. People may naturally react against change out of fear. Thus, we prefer habituated routines that offer comfort and familiarity.

- Management folks—with their decision-driven attitude of assessing feasible, profitable

alternatives—demand copious data and fear risk and uncertainty. And what can be more uncertain than a messy, iterative design cycle that instigates change! This is simply a fact of their role in driving the success of the business via market growth, revenue goals, and shareholder value. Numerical data provides a desired sense of security, a perceived guarantee of success grounded in “hard” numbers.

Data is fundamental for gathering feedback to evaluate multiple options of seemingly equal value (or wildly divergent paths). Data can provide a benchmark to be tweaked over time with further studies and population samples. Data is great for incremental, marginal “long tail” types of optimization at the micro level of interaction and visual design detail, rigorously applying scientific formulas (i.e., GOMS, Fitts’ Law, eye tracking, etc.). Search engine optimization (SEO) tactics and Web analytics offer tidal waves of undeniable click-traffic data, ripe for extensive analysis and interpretation.

Ah, there’s the rub—*interpretation*. All data is subject to human interpretation, and humans, as we all know, are imperfect. As Jared Spool once said, “Any piece of data can be whipped to confess to anything” [3]. In the end, data is used either to support or repel one’s argument. Indeed, design is an intensely deliberative human activity, grounded in debate—even manipulation—toward some reconciling of viewpoints into an outcome. Maybe it’s consensus, or a compromise, or simply a mandate. Either way,

how data is leveraged is a valid concern for everyone.

Meanwhile, of course, simmering in the back of the designer’s mind is the fact that users don’t always know what they want. The trite saying “The customer is always right” is highly inaccurate, since users often don’t know how to articulate what’s missing or incorrect, or what’s best for the entire service-product ecosystem. Ordinary people are not trained in aesthetics or balancing trade-offs. Given the choice, most users might just say make it red, bold, and blinking with a loud buzzer sound—the Staples Easy Button!

As John Seely Brown says, “It can be dangerous to just listen to what users say they need” [4]. Well of course, users lack the judgment and sensitivities to basic behavioral, cognitive, and aesthetic principles like hierarchy, emphasis, and affordance. So how can they help designers pick a direction? And yet there’s tremendous reliance upon user data to “pick the right design” to assure guaranteed success. It is a sticky mess of contradictions we’re in.

Data is not the final answer, due to subjective interpretation. Users don’t always know what they want, nor can they imagine something they didn’t know was missing (i.e., the Walkman, the iPhone, TiVo, Prius, etc.). Change is an inherent part of designing, but it is scary to some people (especially executives anxious about quarterly results). Let us consider the primary issues underlying the debate.

What Is Meant by “Data”?

The popular assumption is that “data” is limited to usability-lab

[1] Douglas Bowman’s Stop Design, <http://stop-design.com/>, “Goodbye, Google” post, March 20, 2009.

[2] Petroski, H. *Small Things Considered: Why There Is No Perfect Design*. New York: Knopf, 2003.

tested numerical stats or click traffic or some scientific formula. However, Luke Wroblewski highlights other kinds of metrics—qualitative and quantitative—such as market share, audience growth, customer satisfaction, and smart estimates [5]. Plus, with ethnography, affective research, and story-based methods, it's clear that the boundaries of what constitutes data are broadening.

Indeed, just as valuable, if not more so, is the data of our experience: the empirical, observational, and anecdotal types arising from watching and listening to people in their actual context, which adds richness in terms of the nuances of goals and subtleties of problems, beyond what Web analytics can provide. Debra Dunn, of Stanford's Institute of Design, says that adhering to Web analytics "makes it very difficult to take bold leaps; it is more from engaging with users, watching what they do, understanding their pain points, that you get big leaps in design" [4].

Another type of data that shapes design decisions is the designer's own evolved sense of judgment, perception, and informed intuition, after several years of working with clients/projects across diverse contexts. For such seasoned designers, this is a vital kind of data from actual field experience in leveraging past mistakes, lessons learned, patterns identified, and drawing upon that reservoir accordingly.

Digging deeper, however, we see that underlying this bias toward usability lab-gathered data is an assumption of providing isolated pieces of design

solutions as scientific truth, absolute and final. This contrasts sharply with approaching design as a holistic demonstration of an idea for iteration and evolution in cyclical fashion. There needs to be greater appreciation of the fact that data is not truth, but is merely one point in the deliberation over what is appropriate for a context, shaped by healthy skepticism. A productive approach requires a liberal interpretation of data, recognizing multiple flavors as valid and legitimate, for different phases of a project.

Bases of Design Knowledge

When surveying the outputs of designers amid the maelstrom of a messy, iterative process, outsiders may typically presume that designers just make up stuff through some mystical channeling of their ego or riffing on the style of the day. Design may be a messy activity, but messy does not mean mystical. User-centered design methods provide rational coherence and legitimacy, yet any veteran designer knows that walking through the canonical steps of UCD will yield only marginally improved mediocrity, rather than novel, imaginative breakthroughs. Sometimes you have to make lateral leaps or skip steps. So how does a skilled designer know that what she's doing will result in something compelling yet appropriate?

There are several bases of design knowledge:

1. Patterns. Christopher Alexander established the notion of design patterns with his book *A Pattern Language*,

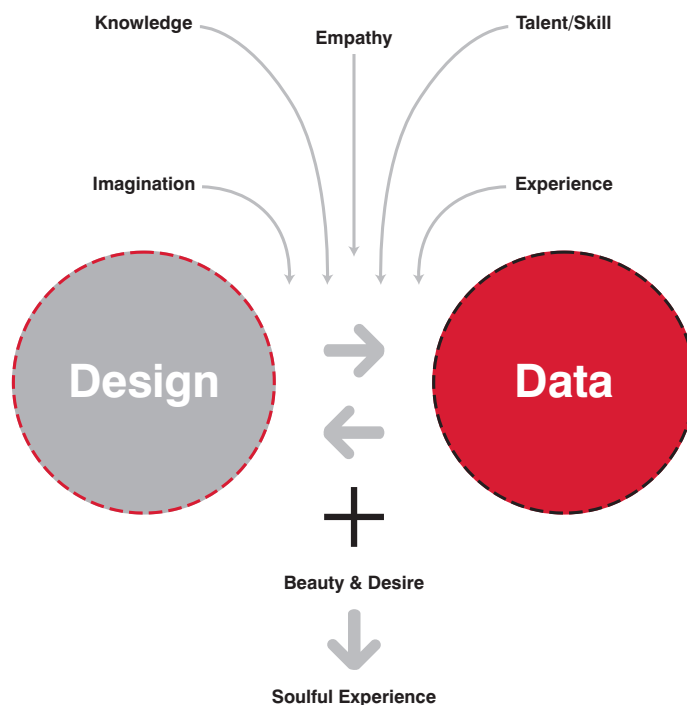
having influenced not just architects and urban planners but also software engineers and interface designers. More recently, Jenifer Tidwell's book *Designing Interfaces* provides an excellent compendium of visual and behavioral patterns covering the past 20 years of GUI-based computing with well-stated reasoning and examples. Erin Malone has recently documented patterns for social applications in *Designing Social Interfaces*, and was instrumental in establishing the popular Yahoo Pattern Library, which has been a great boon for Web designers and developers alike. These patterns were robustly tested and demonstrated with live code for share and reuse. Other companies like Salesforce, Oracle, and SAP create and maintain design pattern libraries for internal use, as well.

2. Principles. Donald Norman's infamous *The Psychology of Everyday Things* (POET) has long been a guidebook on effective human factors, as is Mullet and Sano's *Designing Visual Interfaces* for visual design principles drawn from graphic design—harmony, balance, grids, typography, and color. Tufte's series of elegant books is another revered source of visual examples. Design is not mere black magic—it is certifiable in the evidence of one's own experience, and it is based upon logical reasoning from geometry and optics. Cultivating an internal sensitivity of how to apply and bend such principles in practice is the mark of a great designer; such texts provide that basis. Indeed, even usability guru Jakob Nielsen admitted

[3] Spool, J. Interaction'09 Conference, held February 2009 in Vancouver.

[4] Helft, M. "Data, Not Design, Is King in the Age of Google." *New York Times*, May 9, 2009, Business section.

[5] Luke Wroblewski's *Functioning Form*, <http://www.lukew.com/ff>, "On Data and Design" post, May 11, 2009.



that “visual design is as complex and organized as engineering,” not random magic [6].

3. Guidelines. Apple’s human interface design guidelines, a legendary contribution to the interaction design field, are still a highly valuable resource for designers of all types, not just for the Macintosh or iPhone platforms. From modal dialogs to tool palettes to save/cancel flows and state persistence, these guidelines serve as yet another resource and source of evidence for designers in the heat of conflicts with team members.

4. Personas and Scenarios. There is tremendous debate about the details of creating and using them, but these devices (the former as character archetype, the latter as narrative technique) improve a designer’s

empathy with the intended audience—understanding their problems and goals—given the context of use. Done well, they shape a view into a person’s way of living and the possibilities for improvement. Contextual inquiry is another method of cultivating this kind of empathic knowledge essential for smart design decisions.

Finally, it is worth mentioning again that for the seasoned, well-intentioned designer, informed intuition, judgment, and thoughtful insight gleaned from general research and experience serve as a legitimate source of authority and knowledge.

The Role and Value of a Designer

Amid the contentious debate over data versus design, I found

myself wondering the subtext of held beliefs and attitudes regarding the designer’s place on development teams. For either position held, it suggests a certain attitude toward designers and perhaps the level of trust and respect for that role.

For example, for those who adamantly defend a data-driven philosophy, I would guess that they view designers as tactical pixel-pushers, short-order cooks answering solely to user test results. User said “x,” so do “x.” Hence the phrase “data-driven design”—incremental, hill-climbing targeting of specific feature optimization to yield marginal profitability. There is little to no room for a holistic, inspirational design vision arising from a designer’s prior knowledge and experience. Something of that sort may be dismissed prematurely.

However, it would be better to describe the primary role of a designer as one of an “informed visionary” who leverages the multiplicity of data (experiential/observational/anecdotal plus statistical) with intuition and judgment to intelligently shape a vision of positive change. This involves owning the imaginative, empathic aspects of product development, and being a leader who is fully engaged in substantive conversations with QA, engineering, product management, customer support, and usability as part of the dialogue of design. Advocacy, education, interpretation, and facilitation are the principal activities of a fully engaged designer. And non-designers must play their part in this multilateral dialogue.

[6] Mullet, K. and Sano, D. *Designing Visual Interfaces*. Upper Saddle River, NJ: Prentice Hall, 1994.

Toward “Soulful Experience”

A longtime critic of design, Don Norman has lately been applauding the emotional value of beautiful design, even declaring “attractive products work better.” In *Emotional Design* Norman cites a study involving ATM machines with various layouts, which revealed that the pleasing layouts performed better, whether in Japan or in Israel. The cognitive faculties are influenced by the affective or emotional aspects. So when in a positive, relaxed mood, the user is more likely to work out difficulties if they arise, rather than anxiously panicking and getting frustrated, worsening the usability. And let’s not forget the negative impressions from an unattractive design, which affect trust, confidence, and loyalty. Social commentator Virginia Postrel has noted the rise of aesthetic consciousness among customers with the increased purchases of Starbucks coffee, Target housewares, and IKEA furniture. In fact, consumers now more than ever make purchasing decisions based upon a sense of style as an indicator of trustworthy product quality. Just ask your product manager why he drives a BMW M5 instead of a Pontiac.

Designers, of course, have long known this. But amid feature creep, “death march” schedules, and data-driven methods, the designer’s voice of hope is being drowned out, sadly to the detriment of consumers. How do extensive numerical data studies enable the aesthetic character, the humanizing quality, the elusive wonderment that makes a design resonate with one’s dreams and desires, thus

breathing life into the efficiently mundane?

There is a need for aesthetic character, a defining quality that lends tone and personality amid the numbing grayness of marginally optimized functionalism. Otherwise, the resulting product will be imbalanced, an incomplete argument lacking the range of sensory and affective appeals to a customer’s sense of emotion, beauty, and desire beyond raw utility. Such a product can be functional and usable but undeserving of the emotional connection that leads to repeat use and shared testimonial—and thus, utterly soulless. Quite simply, it is a bore.

Instead, let us strive for vivid, rewarding encounters that make digital experience worthy—something that fulfills our goals, values, and attitudes for living. As ex-Apple design leader Robert Brunner says, “We must go beyond usability to create a product people will desire.” [7] This is a necessary moral duty for designers; failure to strive for this is a mark of cowardice and weakness. It takes a genuinely inspired and talented human being to elicit such qualities in pixels and matter, through a complex mix of culture, language, and style. There is an ineffable quality that transcends mere numbers, suggesting a poetic elegance—a kind of equipoise. Hundreds of numerical studies will not provide this, no matter how rigorous or detailed. It takes the judgment, inspiration, experience, and talent of a good designer to resolve a cohesive blend of the rational and the imaginative into something that people will enjoy using.

In Summary

Data in all its forms is valuable and ultimately informs a design vision. But in the drive for timeless, emotionally resonant products that speak to human aspirations and values, designers must champion their vision and serve their moral duty, to go beyond what the data says and strive for a culturally expressive balance—what is fair, just, and good. To do otherwise only reduces the value of design, damaging public understanding of good design and weakening design’s overall position in society.

Designers have imagination, empathy, and intuition, which are just as legitimate as statistical data and are grounded in knowledge and principles. Design is an argumentative process, and as the design must be argued for, so too must the data. Neither is the final answer or the truth; instead there’s a process of discovery and understanding.

[7] Brunner, R. *Do You Matter? How Great Design Will Make People Love Your Company*. Upper Saddle River, NJ: FT Press, 2008.



ABOUT THE AUTHOR

Uday Gajendar is a prolific interaction designer. His work has spanned enterprise software, creative tools, Web and mobile apps, and VOIP devices at Oracle, Adobe, Cisco, and other Silicon Valley firms. A graduate of Carnegie Mellon’s IxD Program, Gajendar advances the design field with discussions about beauty, leadership, and strategy, for venues like IDSA, IA Summit, and Silicon Valley Codecamp. He has also taught interaction design at San José State in California. For further musings on design, visit his blog at www.ghostinthepixel.com.