

## keep it simple, stupid

THE ACRONYM 'KISS' HAS BEEN POPULAR IN BUSINESS FOR DECADES, BUT ITS MESSAGE HAS NEVER BEEN MORE IMPORTANT

*words by rob tannen*

### IN A WORLD OF

overwhelming choice, technological complexity and diminishing free time, consumers are desperate to simplify their lives. Increasingly, they would rather buy products and services that meet one need superbly rather than many needs satisfactorily. And where complexity is unavoidable – for example, on the internet – they want simpler access.

When *Businessweek* announced the winners of its 2008 International Design Excellence Awards in July, it identified “elegance and simplicity” as key trends. Many of the 205 award-winners had “designs that make complex products easier to use and often cheaper” or whose “elaborate functions were made user-friendly.”

Take, for example, the Flip Ultra digital video camera (see page 33), one of the 35 winners of a gold award. It's part of a range that has very low specifications by modern standards, recording up to an hour of video at a low resolution, with only four controls for play, record, delete and zoom. Yet, since its launch in September 2007, it has been the best-selling camcorder on Amazon.com.

The success of the Flip Ultra is due partly to a backlash against rising technological complexity. In recent decades, manufacturers, especially those in consumer electronics, have increased the number of functions that their products will perform in the belief that this will deliver

a proportionate level of value. Yet such feature-set escalation often leaves the consumer feeling baffled and dissatisfied.

In his 2008 book *Predictably Irrational* (£16.99, HarperCollins), Professor Daniel Ariely of the Massachusetts Institute of Technology describes how consumers faced with too many options focus on negative outcomes: “A friend spent nearly three months selecting a digital camera,” he recalls. “When he finally decided, I asked how many photo opportunities he had missed, how much valuable time he had spent making the selection, and how much he would have paid to have digital pictures documenting the last three months. ‘More than the price of the camera,’ he said.”

Consumers are often dissatisfied after buying overly complex products. Research by Professor Roland Rust, head of marketing at the University of Maryland Business School, has shown that many suffer from ‘feature fatigue’. Initially, they may be attracted by a product with surplus features, but after a while they “become overwhelmed by the product's complexity and annoyed by features they realise they don't want or need.” Their response is typically to “return the item, take their business elsewhere, and complain... to other consumers.”

Research by Accenture, the global professional services firm, found that only five per cent of returned products actually have a malfunction – in many cases, the buyer has simply found them too complex to set up. Another study by the University of Eindhoven, in the Netherlands, found that the average US consumer spends only 20 minutes trying to make a device work before giving up and returning it.

Increasingly, service providers are also acting to prevent customers and potential

customers from feeling overwhelmed. For example, Virgin Atlantic's ‘Upper Class’ service was designed to simplify the two most stressful parts of the typical flight: getting to and from the plane. Its limousine services and fast-track check-in have differentiated it very successfully in a space where airlines typically compete on the basis of their in-flight experiences.

The same principles apply to internal business processes. Mark Gottfredson and Keith Aspinall of Bain & Company, the international strategic management consultancy, report that 70 per cent of managers cite excessive complexity as a limiting factor in their business's profit growth. Maintaining a vast inventory, high customer-service demands and even a longer sales process can be attributed to overly complex offerings. Gottfredson and Aspinall point to various businesses that have made strides towards simplification, including the Royal Bank of Canada, which “examined the operations and results of local money marts, simple cheque-cashing operations that were thriving in low-income urban neighbourhoods, as a model for its baseline set of services.”

A more striking example was the ‘Diamond Spec’ initiative of Navistar International, a Chicago-based manufacturer of heavy goods vehicles. Under this initiative, the company's vast number of truck customisation options was simplified into a small set of ‘modules’ – a move that resulted in “120 per cent more orders during the pilot than initially forecast.”

### DESIGNED TO PLEASE

Leading companies are realising that they need to refocus on what customers actually want and need, rather than stuffing more into products and services than their rivals. Earlier this year, Jakob

< THE NANO CAR:  
Indian firm Tata has simplified numerous aspects of car design and production to create the world's cheapest family vehicle (see page 32)



## “When simplifying, it’s critical to target the right features for excision, based on the customers’ actual needs”

Nielsen, a technology consultant dubbed “the guru of webpage usability,” by *The New York Times*, published research that showed the “average business metrics improvement after a usability redesign is now 83 per cent”. There is also a growing recognition among consumers as well as technologists that elegant interfaces, such as the Apple iPhone’s touch-sensitive screen, can make life considerably easier, as well as being aesthetically desirable.

“We’re wired for direct manipulation of objects,” says Dan Saffer, an interaction designer based in San Francisco and the author of *Designing for Interaction* (£28.99, Peachpit Press). “Interactive gestures return physicality to computational tasks. While they aren’t necessarily less complex, they certainly feel more natural.” The success of products such as the Apple iPhone and the Nintendo Wii games console are largely attributable to the public’s embrace of intuitive experiences over cognitively demanding alternatives such as keyboard commands and hierarchical menus.

As consumers have become more enlightened about the high levels of usability and functionality that co-exist in an elegant interface, they have become less tolerant of bad design. They no longer accept that if a system offers more features than its rivals, it will necessarily be more difficult to use.

Many organisations are therefore marshalling internal teams and consultants to address complexity in their product and service portfolios. They are adapting their marketing accordingly – witness the slogans ‘Sense and simplicity’ and ‘That was easy!’ adopted by Dutch electronics company Philips and US office-supply retailer Staples respectively. And they are paying just as much attention to ‘clarity’ – the ease

of perceiving and interacting with the range of functions offered by a system – as they are to the functions themselves.

There are a number of ways to achieve clarity, but what they all have in common is a goal of balancing three characteristics of the user experience: guidance, comfort and sensation. Guidance is the most straightforward and refers to a product or system’s ability to clearly articulate how it works to the user. Guidance may be communicated implicitly in the design of the interface elements, or explicitly via instructions and labels. Comfort refers to the degree of fit between the user and the system. This can include the physical or ergonomic suitability and the appropriate level of cognitive demand. Finally, sensation is the ability of the system to motivate the user to interact. Ultimately, clarity is achieved when a user knows how to use a product, is able to do so comfortably and is engaged with it during use.

### AUTOMATIC IMPROVEMENTS

Automation can be a very powerful mechanism for achieving clarity when it appropriately addresses these three aspects of the user experience. Automation is not about eliminating complexity, but effectively allocating it between the user and the system. For example, the relative ease of using an automatic transmission over a manual transmission is achieved by moving the complexity of the gear-shifting task from the user to the car. But from a technical perspective, the automatic transmission is a more complex system than the manual one.

In other words, what the end-user wants isn’t simplicity *per se*, but a simple way to access complexity.

While effective, automation is limited to situations where a user’s specific goals

or preferences are predetermined or easily measured. In reality, most complex systems rely on human expertise and decision-making to function effectively. As a result, people are frequently faced with systems that provide too much information or too many choices. Achieving clarity in such contexts requires principles that are derived from human factors and psychology.

Progressive disclosure is a prime example of such principles, where the number of options and level of detail presented are driven by the user’s interactions with a system. Indeed, Barclays played a key part in the popularisation of progressive disclosure systems by deploying the first automated teller machine (ATM) at a UK branch in 1967. ATM-users still select from a range of frequently accessed functions, then make secondary and tertiary choices that enable them to impose more control over the task they wish to perform.

Various banks around the world are now taking steps to enhance the automation and progressive disclosure of their ATMs – for example PNC (Pittsburgh National Corporation), a US-based bank, enables customers to set up an ‘ATM profile’. Among other things, this profile enables customers to specify a default language and withdrawal amount to be displayed on the ATM screen, removing the need to enter preferences each time.

The most direct way to achieve simplicity, however, is to cut back on functionality. ‘Reduce’ is the first principle recommended by John Maeda, the president of Rhode Island School of Design, in his seminal 2006 book *The Laws of Simplicity* (£12.95, MIT Press). “When it is possible to reduce a system’s functionality without significant penalty, true simplification is realised,” he says.

Of course, it’s critical during this process to target the right features for excision, based on an understanding of customers’ actual needs, rather than perceived ones. Also important is knowing when to take responsibility for certain aspects of a product or service and knowing when another organisation is better positioned to add value in those areas.

At 37signals, a Chicago-based software developer, both principles are strongly in evidence. Here, an extreme ‘less is more’ approach is used to create web-based business applications that are very different from the feature-laden products of industry leaders such as Microsoft and SAP.

### LESS IS MORE

“Do less than your competitors to beat them,” 37signals advises in *Getting Real*, its guide to building successful applications. “Solve the simple problems and leave the hairy, difficult, nasty problems to everyone else. Instead of one-upping, try one-downing.” The company lives up to this mantra by aggressively reducing features to a minimum at the start of a product’s development phase, and adding features only after a robust basic platform has been established. This allows for faster, cheaper product launches, with greater reliability and reduced training. Witness the success of Basecamp, its web-based project management tool, which was launched in 2004 and now has more than one million users.

Whether the focus is on stripped-down software or streamlined service offerings, the underlying principles for achieving simplicity and clarity remain broadly the same.

First, companies must weigh up the short-term benefits of attracting new

customers by adding features against the long-term customer-retention effects of simplicity and consistency. Professor Rust and his colleagues at the University of Maryland developed a mathematical formula for modelling such trade-offs. It is built on the equation  $R = C - D$ , in which R is incremental revenue from extra features that derives from two perceived effects: a capability bonus (C) and a usability penalty (D).

At the same time, on the qualitative side, designers need to examine the complexity of existing products in the same and similar markets. Historical analysis of earlier-generation products can reveal overlooked features that should really be the core selling points. For example, the recent resurgence of vinyl record production and sales was influenced by the inferior sound quality of certain digital music players.

Second, companies should address existing complexity and provide clarity through principles of human-centred design, with expert help. The techniques discussed earlier such as automation and progressive disclosure represent only a small part of the methods for achieving clear, usable products and services.

Third, designers need to determine where complexity will cause problems and address them. A reasonable level of complexity is unavoidable in most circumstances, but that is an opportunity to

### > EASYJET:

one of the world’s first no-frills airlines, it simplified the holiday flying experience to make it “as affordable as a pair of jeans” (see page 33)

^ IPHONE:  
Minimal design and a user-friendly, ‘human’ interface are key reasons for the Apple iPhone’s success (see page 32)



demonstrate attention to customer needs. Pre-launch usability tests need to be conducted to identify where customers are likely to face confusion and designers need to develop responsive solutions, including communicative packaging and customer-service tools. For example, in 2002 the giant US consumer electronics retailer Best Buy joined forces with a user-friendly technical support service, Geek Squad, to address the under-served need for in-home product installations. And, in 2007, Geek Squad formed a partnership with The Carphone Warehouse to offer similar help to consumers in the UK.

**DON'T OVER-SIMPLIFY**

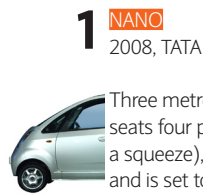
Finally, companies must ensure they don't simplify products and services too much. "Simplicity is about limiting information and choices," says Nathan Shedroff, chair of the design strategy MBA at the California College of the Arts. "Most people lack the necessary organisational, verbal and visual skills to make things clear, so cutting out choices is usually the direction taken. For designers, this mistaken approach often leads to poorer solutions and offerings, not better ones." It is the quality of design, he argues, that has the most impact on a product or service's success.

"Simplicity can be elusive in certain cases and some things can never be made simple," concedes John Maeda. This is why it's vital to clarify which features customers value most, and which can be safely trimmed away. ●

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**Simple success stories**

Research shows consumers make better choices when faced with fewer, clearer options. These case studies highlight how simplicity has become a must-have feature in both products and services



**1 NANO**  
2008, TATA

Three metres long, it seats four people (five at a squeeze), does 65mph and is set to revolutionise the lives of millions living in India. At just 130,000 rupees (£1,555, €1,974, US\$2,768) on the road, the Tata Nano is the world's cheapest car, designed to provide affordable all-weather transport for India's young middle-class families. Its engine is small and light, there's only one windscreen wiper and the interior is unashamedly no-frills. But Tata chairman Ratan Tata points to the current alternative: four people balanced on a scooter – father driving, young child standing in front, and wife behind holding the baby. Competitors are already scrambling to produce their own budget runarounds. The petrol Nano is due to launch by the end of 2008 and Tata promises the diesel version will not be far behind.



**2 IPHONE**  
JUNE 2007, APPLE

When Apple launched its groundbreaking iPhone in 2007, simplicity stole the show. The design was minimal: only one button beneath a glossy black screen. And the control system was refreshingly human, relying on finger touches and gestures rather than the complex keypads of rival phones. Apple wasn't the only company to benefit from the launch: other makers of 'smartphones', such as Canada's Research in Motion, with its ubiquitous BlackBerry, also saw sales rise as the public learned more about the sector. But the manufacturers of all types of handheld gadgets are now scrambling to simplify their designs. In the fourth quarter of 2008, the BlackBerry accounted for 41 per cent of the US smartphone market, while the iPhone had already built a 28 per cent share.



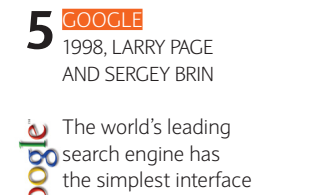
**3 EASYJET**  
1995, STELIOS HAJI-IOANNOU

Greek Cypriot Stelios Haji-Ioannou created his no-frills, low-fare airline from scratch, jettisoning high costs such as in-flight meals to fly hitherto grounded passengers to short-haul destinations they'd scarcely heard of, at prices they never dreamed possible. Now the easyJet phenomenon has given rise to a shift in spending patterns, identified by US management consultants Michael J Silverstein and Neil Fiske in *Trading Up* (£9.99, Portfolio). They highlight the 'new luxury' socioeconomic trend in which middle-market consumers elect to trade down on one product to trade up on other, premium purchases. So, tourists may choose to save money on travel and fly easyJet, then trade up on accommodation and holiday in a five-star hotel. The airline has also been wooing the business market since the beginning of the decade and business travel now accounts for 20 per cent of its passengers.



**4 FLIP VIDEO MINO**  
JUNE 2008, PURE DIGITAL

The Flip Video Mino promises to tap into younger consumers' fast-food appetite for capturing their lives as they happen, then sharing them online. Designed for the YouTube generation, the Mino is the successor to Pure Digital's Flip Ultra, which has already captured 14 per cent of the US camcorder market with more than one million units sold. At just 3oz in weight and a super-slim 100 x 50 x 16mm in size, the Mino is 40 per cent smaller than its sibling, yet it still packs a powerful punch for a camera costing around £120. With just four buttons – play, record, delete, zoom – its pop-out USB plug enables the user to plug in to any modern computer for immediate video editing, and then to upload the results instantly to MySpace, YouTube or AOL Video. Real life, real time (almost).



**5 GOOGLE**  
1998, LARRY PAGE AND SERGEY BRIN

The world's leading search engine has the simplest interface imaginable: one box for text entry, on a plain white background. It has left this homepage relatively unchanged since it launched 10 years ago. Yet the underlying technology is highly complex, designed to rank webpages based on the number of times they have been cited by online sources. Most people can work out how to use Google effectively within a few minutes, and almost all computer systems can access it, thanks to its text-based pages. Moreover, there's a simple business model at Google's core – the juxtaposition of paid advertisements next to equivalent search results. This activity contributed the major part of Google's US\$10.5bn advertising revenues in the first six months of 2008.

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