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IDEO: Service Design (A)

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This case was written by Ritesh Bhavnani, Research Associate and INSEAD MBA (July 2004), and Manuel Sosa, Assistant Professor of Technology and Operations Management at INSEAD, as a basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. The information in this case has been obtained from both public sources and company interviews.

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“I should have had the café latte,” thought Peter Coughlan as he sipped his strong decaf double no-fat soya latte macchiato at Peet’s Coffeehouse, just around the corner from his office. Designers and engineers from his company, IDEO, one of the world’s largest and arguably most successful design firms, often gathered here and talked. He looked up to see Dennis Boyle, another IDEO employee, glaring at his own coffee nearby. Boyle had been the project leader on the Palm V and Handspring Visor handheld computer projects, and Coughlan briefly wondered if Boyle had ever had to wrestle with the same kind of problem that he was facing now. The coffee he’d created was just terrible.

Coughlan had just come out of a four-hour meeting with David Becker, president and CEO of Portland General Health Center. Becker had chanced to see the famous *Nightline* documentary about IDEO’s design process and had been suitably impressed. Ted Koppel, the host of *Nightline*, had challenged IDEO to completely redesign the traditional shopping cart in five days, and *Nightline* had filmed the entire process. In the end, IDEO delivered a sleek and streamlined shopping cart, with modular detachable shopping baskets, a baby chair, a do-it-yourself barcode scanner and a host of other innovations. More importantly, the report had given public exposure to the famed IDEO design process, a process that had elevated the firm to near-legendary status in the design world, enabling it to win more design awards than any other company year after year.¹

Becker had come to IDEO looking for new ideas on how to improve healthcare service in his hospital. American healthcare had never been known for its design. When Tom Kelley, the general manager of IDEO and brother of David Kelley, one of the company founders, was interviewed on the radio programme *Fresh Air*, he had described a handful of things whose design “had been bad so long that you don’t even really think about them”. He mentioned irons (“The state-of-the-art method for deciding whether your steam iron is hot or not is to put your tender fingers onto the metal”), and airline tickets (“There’s all sorts of codes and 17-digits on there”).² When he came to hospital waiting rooms, no anecdotal evidence was required; everyone could picture the painfully bright fluorescent lighting, out-of-date magazines, and stiff uncomfortable chairs.

Hospitals had to deal with severe financial pressures, escalating costs and staff shortages, yet, perversely, were expected to continue to deliver state-of-the-art medical care and keep up to date with rapidly evolving medical technology. “Design” had never really been thought of as an important factor in delivering better patient treatment. The challenge that Becker put to IDEO wasn’t easy: how do you redesign a healthcare service and improve patient care in the face of limited budgets and constrained resources?

1 In 2004, the company won 10 Industrial Design Excellence Awards (IDEA), double the number of the next two firms, Smart Design and fuseproject, each of which won five.
2 Christopher Hawthorne, “The IDEO Cure”, Metropolis Magazine, October 2002, pp. 3-7.

The History of IDEO

“Good design is good business.”

Thomas Watson, CEO, IBM

IDEO was a company born of two histories. The first part of the history began in 1969, when a British industrial designer, Bill Moggridge, set up Moggridge Associates in London. In 1979 he expanded his business by opening up an office in San Francisco called ID Two, which focused on industrial design.

The second part of the history took place in the early boom days of Silicon Valley, when David Kelley, a doctorate student at Stanford University, realised that most technology companies lacked access to general product development skills. Accordingly, in 1978 he gave up writing his PhD thesis and went on to form his own company, David Kelley Design, to address the engineering design requirements of firms in the Valley.

The two individuals met in 1979 and started cooperating on joint projects. They realised early on that the field of design was evolving to such a point that an inter-disciplinary, multi-functional approach was required to provide effective service to companies.

IDEO was formed in 1991 when David Kelly Design, Moggridge Associates, ID Two and Matrix Product Design (another design company) merged. The merger brought under one roof professionals with experience in the hitherto diverse fields of mechanical and electrical engineering, industrial design, ergonomics, information technology, cognitive psychology and prototyping – practice areas that rapidly came to be considered integral to product design. Another important advantage that IDEO had was the fact that it was a transcontinental firm from its very inception.

Both founders are still closely associated with IDEO, although Kelley, formerly CEO, became chairman in March 2000, relinquishing the reins of the organisation to Tim Brown, who used to be in charge of IDEO London. By January 2005 IDEO spanned two continents with six locations (Palo Alto, San Francisco, Chicago, Boston, London and Munich) and had a staff of 350 people and annual revenues of about \$70 million. IDEO encourages the continual flow of people across locations and projects to enable the cross-fertilization of new ideas and ensure knowledge sharing. The company also believes that multiple locations gives it access not just to local business and local space, but also local talent – an important necessity for a firm that prides itself on its ability to harness the differences in people to generate creative ideas.

IDEO in 2005

The pace of technological change and ever-changing conditions in the broader business world have had the effect of radically transforming IDEO's business as well. Given the ever-increasing complexity of the assignments it undertakes today, most of its projects involve collaborating extremely closely not just with clients but with external partners on behalf its clients. These range from advertising and branding firms to contract manufacturers.

Another important change at IDEO has been its transformation from an organisational structure based primarily around geographies, to one where there is more emphasis on practice areas. According to Alan South, Service Design and Innovation principal and also head of IDEO Europe, “IDEO used to be able to be considered a loose federation of independent studios, each with their own profit & loss”, united by a strong shared culture. Today, IDEO is organised around seven practice areas (see Exhibit 1 for details), with a stronger sense of “one firm”.

The organisation of the firm around practice areas is similar to the organizational structure of more traditional consulting firms. “With practices you can talk to clients with one voice. It allows us to focus on their broader needs and serve them more effectively,” says Tim Brown, CEO.³

The IDEO Innovation Process

As such, everything is now subject to innovation—not just physical objects, but also political systems, economic policy, ways in which medical research is conducted, and even complete “user experiences”.

Laura Weiss, IDEO⁴

IDEO’s core competence is primarily in the process of design and innovation, followed by an understanding of specific domain knowledge. According to Laura Weiss, a principal of the Service Design and Innovation practice at IDEO, clients “hire us to think about things in ways that [they] don’t think about every day. [They] hire us to bring in a sense of wonder.”⁵

On projects, IDEO views itself as a cross between a movie producer and a director – bringing together and coordinating the various “stars” (some of whom may be external) and then determining what has to be done and how. Key to its creative process is “radical collaboration”, the intense, all-encompassing way that IDEO works with the client and external partners. Unlike mainstream consulting firms who tend to camp out at the client site, IDEO usually brings the client into its own working environment. By working closely and continuously with clients and external partners, IDEO ensures that the client is intimately involved in the creative process and, more importantly, that there are no last minute surprises or costly mistakes on its part. IDEO goes as far as actually sharing its innovation process with clients, advising them on how they themselves can become more innovative (through its Transformation practice).

Another critical factor in IDEO’s recipe for innovation is the use of interdisciplinary teams. On any project, an IDEO team is usually composed of people from disciplines ranging from cognitive psychology to industrial design. IDEO employees oftentimes find themselves working with employees from other offices or on projects staffed at different office locations. This fluidity ensures that ideas have a chance to propagate through the organisation, and that

3 Bruce Nussbaum, “The Power of Design”, BusinessWeek, May 17, 2004, pp. 75.

4 Laura Weiss, “Developing Tangible Strategies”, Design Management Journal, Winter 2002, pp. 34.

5 Harold Greenberg, “Building a Better mMode”, mMode Magazine, Fall 2004, pp. 34.

the creativity within the organisation is stimulated through the continual injection of new influences.

Although the IDEO innovation process is constantly evolving (see Exhibit 2), there is an underlying “project journey” or set of steps:



Observe: IDEO functions not just through market surveys and aggregate user data, but spends a great deal of time observing and empathising with the user to truly understand their needs and requirements. This user-centric form of design is a big part of what has enabled IDEO to be so successful for so many years.

Synthesize: After generating a large number of observations and data points, IDEO steps back and synthesises all the data, distilling the information collected into cogent and succinct guiding principles for the solution to be designed.

Generate Ideas: Based on the synthesised understanding of its observations, IDEO will work to cast a wide net for possible opportunities. A commonly-used process is that of brainstorming. There are strict rules that govern the brainstorming process and they have been well codified.⁶

Refine: An oft-quoted maxim at IDEO, espoused by its chairman David Kelley, is: “Fail early and fail often.” This “culture of failure” is one of the foundation stones of the IDEO creative process: quick and dirty prototypes are created to refine ideas and ensure that they can be fleshed out early so that costly wrong decisions are avoided. Additionally, IDEO solutions are iterative loops, with each iteration being further refined and brought closer to the final solution.

Implement: Implementation is an important step of the design process. Often, design projects are carried out for commercial gain in the market, so if a design cannot be effectively implemented all the work has been wasted. Yet if IDEO’s process is followed, implementation is the natural outcome of an evolution of iterative, increasingly refined prototypes.

A typical IDEO client assignment or “project journey” follows the five basic steps described above. While the project evolution itself may be standardised, the specific tools used for a particular project will vary depending on the project.

IDEO’s approaches to gathering insights that lead to design opportunities are recorded on “IDEO method cards”, which list some of its most popular research methods and detail how and when they are to be used (see Exhibit 3 for some examples). They are one of the mechanisms of sharing knowledge used by the company. Another mechanism for knowledge transfer is their “Tech Box”, a veritable treasure chest of gadgets, materials and mechanisms that are meant to spark creativity and aid in the communication of new concepts. Each office

⁶ For details on IDEO’s brainstorming refer to Kelley, T. *The Art of Innovation* (chapter 4), 2002.

has a “Tech Box” and there is a “curator” who ensures that the collection is refreshed and continually growing.

Unlike traditional large companies, IDEO’s knowledge sharing is more organic and less structured, with a greater reliance on informal, even social, mechanisms. “Some organisations rely on big databases to disseminate information,” says CEO Brown. “We disseminate our knowledge through stories.” In Monday morning meetings held across the firm, regular leadership meetings, lunchtime show-and-tell sessions, and other meetings, the sharing and communication of ideas and best practices is done through stories. “People hold stories in their heads better than other forms of information,” says Brown.

“Knowledge management at IDEO is largely organic and, by definition, chaotic. It’s a Darwinian process,” says Alan South. “Only the fittest – that is the strongest ideas – survive.” However it is done, the sharing of knowledge across its people and offices is critical to a company like IDEO. The company prides itself on its ability to leverage its process across any industry; indeed, it sees as one of its core strengths its ability to be a ‘knowledge broker’, leveraging information gleaned in one industry and applying it effectively to another.

Service Design

“...the design of intangible experiences that reach people through many different touch-points, and that happen over time.”

live|work website⁸

Service design is a relatively young field which has come into the spotlight due to the increasing and continuing importance of the service sector in most developed economies. Additionally, even traditional product companies are realising that by designing not just the product, but also the process and the service interface, they can add value and maximize profit through the entire value chain. This places a greater degree of emphasis on the service end of the entire cycle and, as a result, more emphasis is being placed on service design.

According to G. Lynn Shostack, who has chaired the task force on service marketing of the American Marketing Association, “Traditionally, service design had been characterised by the lack of systematic method for design and control.” As a result, new services were usually developed by trial and error: in the absence of a detailed design there was no metric to gauge whether the service was complete, rational, and fulfilled the original need.

Service suppliers must be prepared to cope with the unexpected. While it is possible to blueprint the process through which the customer passes, the blueprints are rarely able to take account of the variability inherent in people-related processes. Richard Eisermann, formerly of IDEO and now director of Design & Innovation at the Design Council in the UK, agrees: “The trick in service design is its subjective nature: that’s difficult to codify and capture. The best you can do is give guidelines for people to follow. You can make millions of identical razors, and the four hundredth razor will be identical to the four hundred thousandth razor. It’s

7 Catherine Fredman, “The IDEO Difference”, Hemispheres Magazine, August 2002, pp. 56

8 <http://www.livework.co.uk/home/research0/glossary.html>

easy to make a deliberate controlled experience for users. But if you are a service company, how can you attempt to brand that experience, make it standardised, make it consistent?"

Today, in addition to in-house departments within large firms, several companies are focused on serving the increasing demands of clients for service design. Companies like live|work in London, Design Continuum near Boston and Ziba Design in Portland all compete with IDEO for service design work.

IDEO and Service Design

Whilst IDEO had been thinking of entering the service design field for strategic reasons to broaden its practice offerings, its actual entry into service design was opportunistic. In 1997 Amtrak approached IDEO to do an assessment of the designs for the train cars that it was building for Acela, its new high-speed rail service that was to run from Washington D.C. to Boston. IDEO realized that in order for the service to be successful Amtrak needed to be thinking about the entire customer experience, of which the train car was but one part. In other words, to design the train cars they first had to design the service. Recalls Eisermann, who was the IDEO project manager for the Amtrak project:

"There was considerable nervousness amongst the engineers in Palo Alto when we undertook this project. I remember pulling David Kelley (CEO of IDEO) aside and asking him for advice. He said that all we have to do is focus on the users, get the story out of them and build a solution out of it – that if we stick to what we know best, it'll be fine."

The design of both services and products is based on the same fundamental principles outlined earlier in the IDEO process section. Projects follow the basic steps of observation, synthesis, idea generation, refinement and implementation. "Service design is not fundamentally different from product design. The fundamental methods we use in service design don't differ, they're just tailored," says Laura Weiss.

Service design projects also tend to have different staffing requirements due to the difference in the nature of the projects. Whilst service design is inherently user-centered, it also requires a systems-oriented approach and "big picture" thinking due to the large number of implications that a service has across an organisation.

Amtrak (1998)

When Amtrak was doing market research for the launch of its new Acela high-speed trains service serving the North-East corridor in the United States (Boston–New York–Washington D.C.), it discovered that people still loved trains but were sick of them being treated like a commodity. According to Barbara Richardson, Executive Vice President of Amtrak, "People love the notion of traveling a long distance, relaxing, looking out of the window," but "what was discouraging to us was that none of that translated to Amtrak. We were viewed like a utility."⁹ Looking to provide a better passenger experience, Amtrak turned to IDEO to work on what would be one of its first service design projects.

9 "Acela", @ Amtrak Magazine, pp. 25

IDEO's initial mandate was to design only the armchairs for the trains, which in itself was no trivial project given that most people view journey comfort as the most important criteria when they travel on trains. IDEO quickly realised that the seat was but one component in the overall customer experience; if Amtrak's new service were to be successful the entire consumer experience would have to be tackled.

As part of its research, IDEO embarked on several different strategies during its empathic observation phase. First, IDEO human factors experts¹⁰ "shadowed" a broad range of rail travellers: retired grandparents visiting their grandchildren, a businessman on a business trip, a young couple with kids going on vacation. For each group, IDEO tried to understand where the existing service was substandard, and which aspects of the service could be improved. They even shadowed a person in a wheelchair through the station and during the journey to get a feel for what he went through to get on the train and use it. But the observations didn't just stop at the customers. IDEO also surveyed train employees – everyone from conductors and train drivers to senior managers and station operators – to get more information not just about customer usage patterns and complaints, but also about what the train staff required to do their job better.

IDEO discovered that, in the customer's mind, a train journey started long before they actually boarded the train, and extended for a period of time after they had disembarked. To better understand the different stages of travel, IDEO created a "customer journey" map which articulated the 10 steps that people went through on an Amtrak train ride, as follows:

- | | |
|---------------------------------------|-----------------------------------|
| 1 Learning (about routes, times etc.) | 6 Waiting |
| 2 Planning | 7 Boarding |
| 3 Starting | 8 Riding |
| 4 Entering | 9 Arriving |
| 5 Ticketing | 10 Continuing (on their journey). |

IDEO realized that in order to provide customers with the service they were seeking it would have to design all 10 steps in the customer's journey, not just the train ride. "We wanted to create a seamless journey," says Richard Eiserman, IDEO's project leader on Acela. "Riding on the train was actually the eighth step. The 10 points became the core of what we tried to do. We wanted to look at design implications across the board."¹¹

The customer journey framework has proved to be an enormously successful tool within the IDEO repertoire of service design methods. Essentially, a customer journey map is a blueprint for all the steps a user must go through in a service. The act of documenting the service is one that is highly useful, though not widespread. Observes Dr. Hollins, "Unlike manufacturing organisations, in the service design field specifications...tend not to be written."¹² The customer journey framework enables a service designer to think about every step the user will take through a service, and also to account for all the different service "touch-points", i.e., the points within the service environment when the user interacts with particular service

10 Human factors specialists, according to IDEO's website, employ a range of observational and empathic techniques to understand the issues people face and are an integral part of interdisciplinary design teams

11 "Acela", @ Amtrak Magazine, pp. 27.

12 Dr. Bill Hollins, "About: Service Design", www.designcouncil.org.uk, pp. 11.

components. Concur with Fran Samalio, another London-based principal of the Service Design Practice within IDEO, “A large component of service design is trying to make tangible the interactions that occur during the provision of a service.”

The customer journey framework is useful because it enables service designers to make the invisible visible. The information gleaned through the processes used above guided the development of IDEO’s three main deliverables:

- Train layout and design
- A set of station concepts (to deal with the other aspects of the customer journey)
- A brand strategy and image platform (done in coordination with a branding strategy firm)

IDEO subsequently worked closely with Amtrak on the implementation of the train layout and design, overhauling everything from the bathroom experience to the system for luggage handling. To appropriately prototype the various components of the service, IDEO built half a train car within its studio in Boston. They used the train car to mock up the passenger section, the service car and even the bathroom. All the prototyping was “quick and dirty” using foam core¹³ to represent virtually everything. As part of the prototyping, IDEO got actual service personnel from Amtrak and potential passengers to walk through the mocked-up cars and make comments and suggestions.

Recalls Ilya Prokopoff, an IDEO designer involved on the project:

“For Amtrak, this was not just business as usual. They really needed to understand what their customer needs were, and organise the disparate elements of their system in a way that hadn’t been done before in order to meet those customer needs. We had to take a wider view and think about systems design and not just at the object level. We had to understand how everything connected together and focus on linkages, as the service straddled many intermediate steps captured in the customer journey framework.”

“We did a great job on building the hardware, because that’s what we know how to do well. We didn’t really focus on enabling the people who were delivering the service and training them to do so. That’s something that has changed in IDEO over the past few years.”

Juniper Financial (1999)

When a group of former employees of Wingspan, one of the first online banks, left to start Juniper Financial, they called on IDEO to help them define and establish their strategy, determine the suite of product offerings with a consistent service proposition, and create the interface for the company’s website.

IDEO realized that the founders of Juniper needed to decide who their customers would be, what those customers wanted, and how they currently managed their finances. According to

13 Foam core is also a sheet material, like cardboard and is used extensively in art and design projects.

Fran Samalionis, the IDEO project leader, “The founders of Juniper...wanted to solve everything that was wrong with banking.”

The IDEO team was composed of a mix of people specialising in human factors, business factors, environments design and more traditional product and industrial designers. Says Samalionis:

“Even though most of the people were experts in one particular area, most of them had developed significant exposure and experience in another field. That’s true about service design in general: you need to turn up the volume on the T-shapedness of the people – people who have both a breadth of experience and a depth of expertise...For most service design projects it’s useful to bring ‘systems’ thinking people into the team – physicists rather than engineers. They need to understand how systems are designed, how they interact, how one component will affect the others.”

The first step was to understand the customer and the customer experience. IDEO and Juniper could then translate the customer experience into the value proposition for the customer, and use that to determine the specific service offerings.

To understand customers and their needs, IDEO conducted interviews in cities across the US. In contrast to traditional methods of market research such as focus groups and surveys, IDEO used techniques that were more in line with empathic research. Members of the IDEO project team acted like “flies on the wall”, watching how people used online banking, closely noting how they navigated through the interface, which functions and offers were used and how frequently. IDEO also walked through their homes and got people to show them what items they associated with money.

Another method used in this project was an empathic exercise known as “Be a bill”. IDEO team members examined how bills would move through people’s homes to try and understand the rituals around finance based on these patterns. The “Be a ...” method enables IDEO designers to get a perspective on an entire system by choosing an inanimate object within the system and observing the path it takes and the interactions that occur through the system. According to Samalionis, “It was amazing to see how defined these patterns were. Bills would enter in the mailbox, then get passed into the kitchen and on to the bedroom or the study where they would get stacked until they reached a certain height before they got paid.”

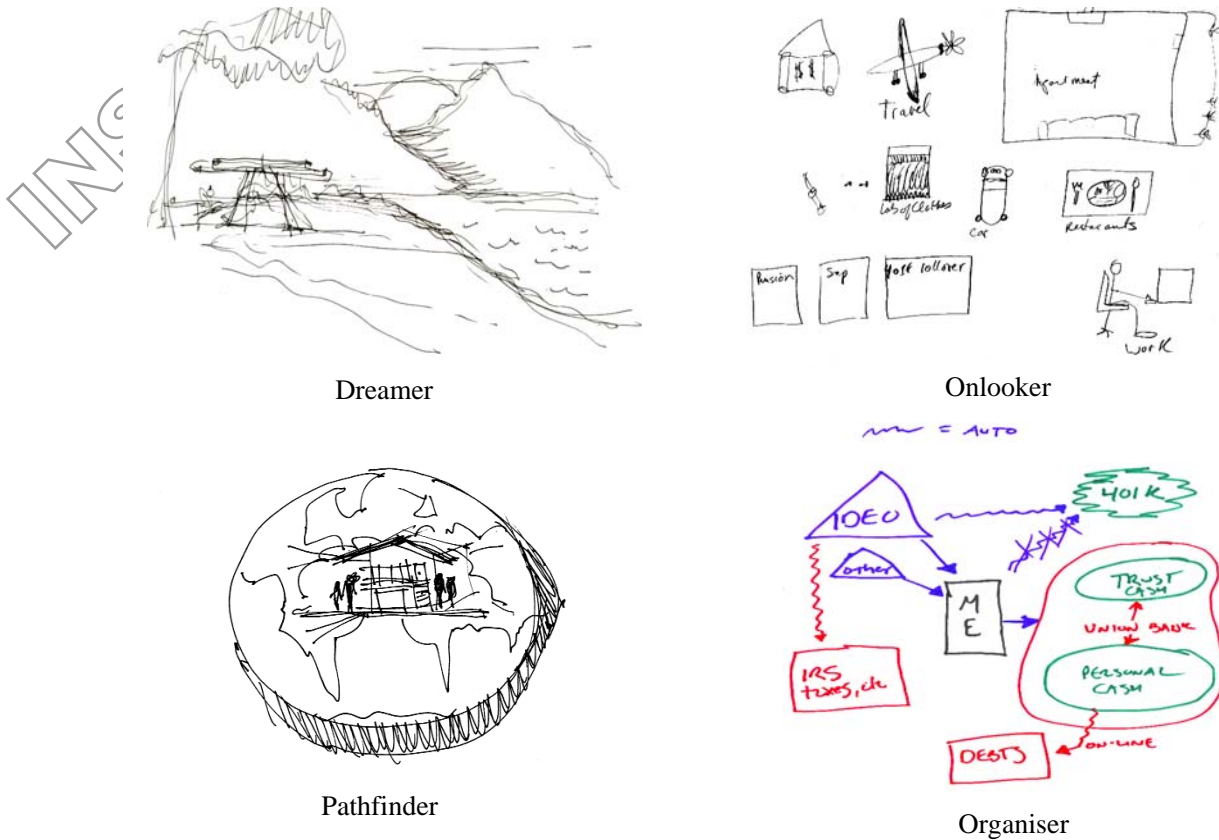
Another method IDEO used was to ask people to “draw their money” to get a better understanding of what emotional ties people had to their money and finances.

Says Samalionis:

“The ‘draw your money’ had face validity. It wasn’t statistically significant in terms of market research, but the exercise proved to be enormously useful in segmenting the customer base. People are amazingly articulate when it comes to drawing stuff. And if nothing else, the technique stimulates conversation. The “draw your <whatever>” method is just a different way of tapping into the emotional aspects of a service. When it came to Juniper, we realized that people had very different emotional responses to money. Some weren’t very engaged with their money – they viewed money as a means to an end...Others were very engaged with the management of their money, and what money meant...People’s

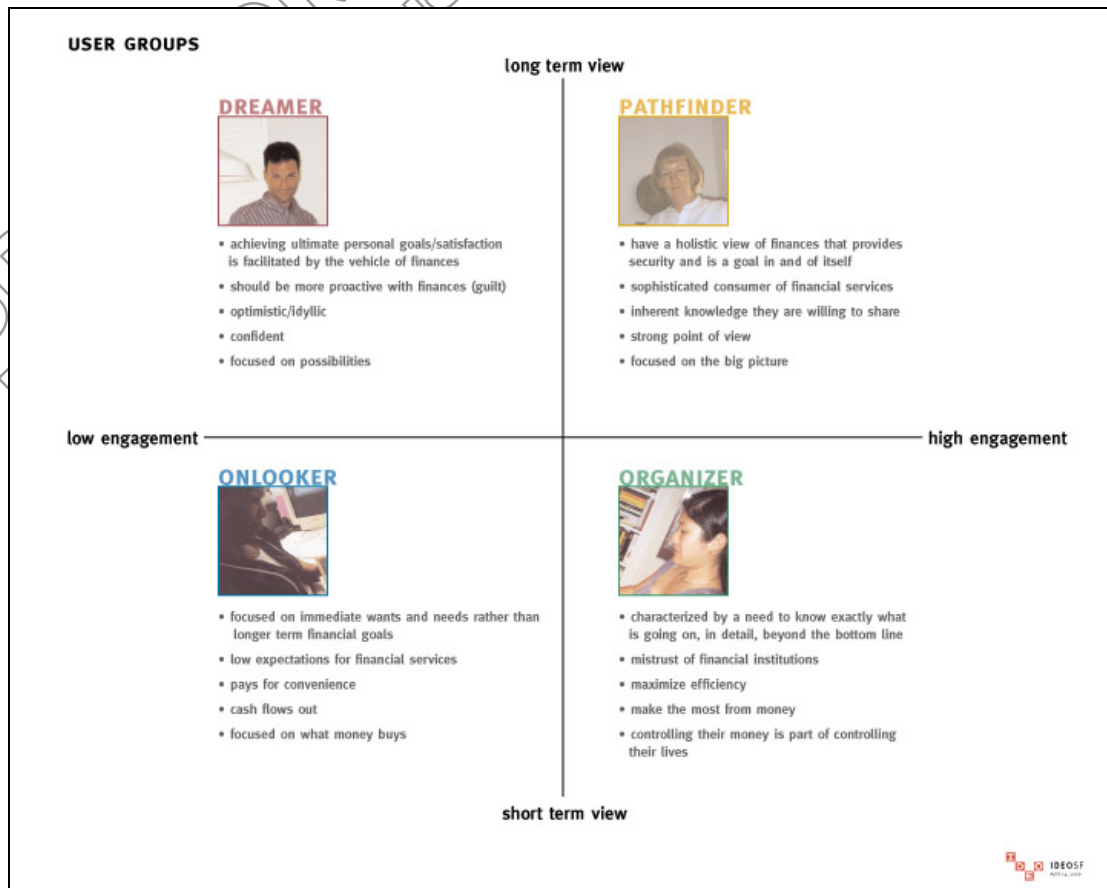
perspectives on money also varied over time: some had a very long-term outlook on money, and others had a much shorter-term view on money.”

Figure 1
Draw your Money Segments



Based on the “draw your money” exercise and the other empathic research, IDEO came up with four customer segments for Juniper. They divided up the potential customer base according to the level of engagement people had with their money, and the time horizon for their involvement with money.

Figure 2
Juniper's Customer Segments

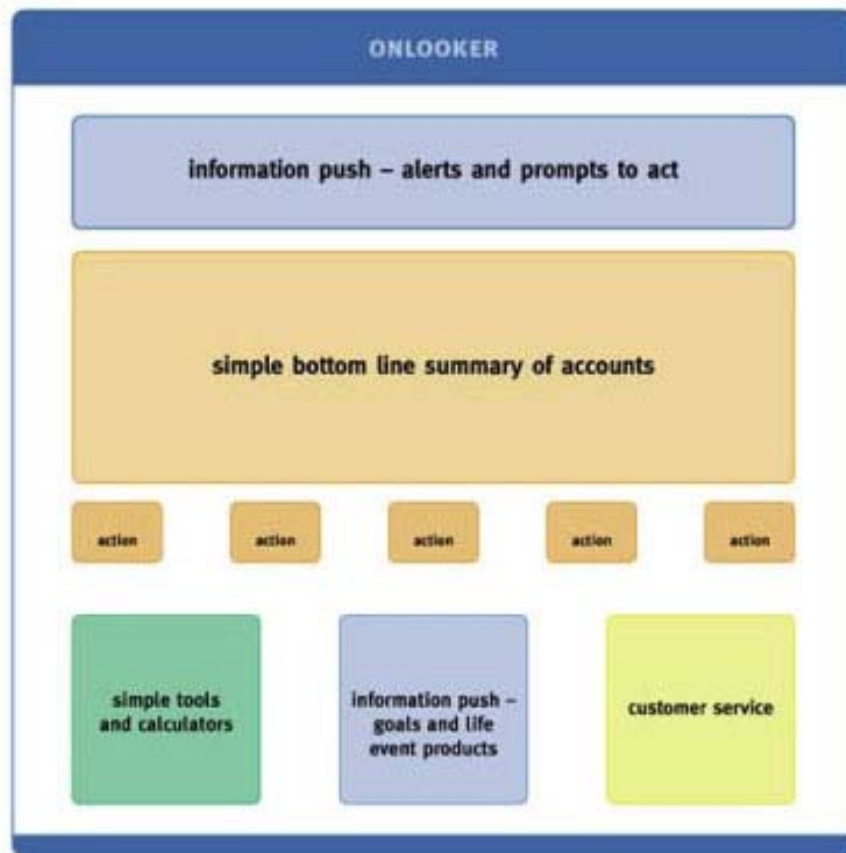


Juniper then had to decide which customer segment they would target first. IDEO created giant posters of people representing each of the different customer segments. In a meeting in Wilmington (Delaware), IDEO got all the Juniper employees together in one room (at the time there were about 25 of them) and went through each of the segments to identify which ones Juniper would chase after. In the end it was decided that Juniper would target the Onlookers: they needed the most help with their finances and were most likely to be loyal to services that they liked, attitudes that resonated well with the ethos at Juniper.

The service definition flowed from the customer segment decision. According to Samalionis, “The customer segment decision then drove all our subsequent decisions: it determined what features we would offer as part of the service, what the interface would look like – everything.” For example, IDEO realized that Onlookers were least likely to pay their credit card bills on time. Thus, they would appreciate and depend on message alerts to remind them when payments were due.

Based on the customer segments, IDEO came up with an “experience architecture” schematic for the company and the service offering. This was a visual representation of the customer’s online experience at the Juniper website. Similar to a customer journey, the experience architecture enabled service designers to map out and visualise all the major service “touch-points” during a customer’s interaction with the service. The experience architecture dictated the specific nature of the service offerings, and how they interacted with each other.

Figure 3
Experience Architecture



Another method that IDEO utilised for the Juniper project was the “path to participation”. While an experience architecture prototyped one single interaction between the user and the service, the path to participation was meant to chart the evolution of the repeated interactions between the user and the service over time.

Figure 4
Path to Participation



The subsequent design of the website, both in terms of functionality and form, was largely driven by the customer segmentation and experience architectures developed.

Recalls Samalionis about the service design process:

“Having had four more years of experience with service design, would we do things differently? Probably. A couple of basic steps that we do these days are experience and information audits right at the beginning of a project. An experience audit is when we look at the various touch-points for a particular service and audit them, both from the perspective of the user and the organisation, to get a better idea of what’s working and what’s not. An information audit is used to figure out where the information in an organisation resides and how it moves through the organisation. After all, at the end of the day it is information that enables the provision of a service.”

AT&T mMode (2003)

In January 2003, AT&T Wireless asked IDEO to assist it in designing a new, easier-to-use interface for its mMode service. mMode was the GPRS service¹⁴ launched in 2002 to enable users to surf the web, conduct transactions, send and receive messages, and carry out a host of other data-driven functions. Says Sam Hall, a vice-president at AT&T Wireless, “It was clear that we had reached beyond the classic 35-year-old early adopter. We saw our customers are now moms and teens and older folks.”¹⁵ The new design was supposed to help AT&T Wireless make the service appealing to the wider mainstream market.

IDEO was tasked with providing a new user interface for the mMode service and a style guide that would be passed to content partners to guide them in the development of third party content for the service.

IDEO usually hosts a project kick-off prior to the start of the actual project itself in order to get the client to buy in to “the IDEO way” and get an understanding of its innovation process. For this project, IDEO took the AT&T Wireless managers on a scavenger hunt in San Francisco. Executives were shuttled around San Francisco in cars, and asked to conduct basic errands such as finding a book or buying an aspirin. Whilst everything they were asked to do were theoretically possible using mMode, they were allowed to use any means they wanted to accomplish the tasks.

The executives quickly found out that it wasn’t as easy as they thought it would be. For starters, the mMode service went down midway through the game. Eventually, frustrated by their inability to use the mMode service effectively, they resorted to traditional methods like looking up a phone directory, or asking someone on the street.

Says Laura Weiss, one of the leads on the AT&T project, “The aim of the scavenger hunt was to get the AT&T people to start thinking from the user’s perspective. The scavenger hunt was very effective in showing them just how difficult the service was: they got a first hand view of what worked and what didn’t.”

14 GPRS stands for General Packet Radio Service, and is traditionally considered as 2.5G, enabling data to be transferred wirelessly at speeds of up to approximately 500 Kbps.

15 Harold Greenberg, “Building a Better mMode”, mMode Magazine, Fall 2003, p. 34.

The problem was that whereas the mMode service, much like other mobile data services at the time, had been designed as a portable web browser, the cell-phone was a vastly different medium from the computer and needed to be designed for accordingly.

In designing the user interface for the phone, IDEO needed to understand exactly what a mobile was meant to do – from the users' perspective, naturally. Says Weiss, "When we're doing the research for a particular project we try and look for 'extreme users' - i.e. people who fit a particular profile, use (or are likely to use) a particular service fairly often, and hence will be able give interesting results fairly quickly." In the case of mMode, IDEO talked to a range of extreme phone users from teenagers in school to businesspeople on the go. In addition, IDEO had to consider a whole other set of stakeholders as well, says Weiss:

"We had to talk to the third party content developers and ensure that the newly designed user interface would meet their requirements as well as those of end users. In service design projects you end up dealing with an ecosystem and not just the end users. And if you don't deal with all the stakeholders, you don't have a great service solution. The business element in a service design project is probably more important than in product design projects. Designing a service is as close to designing a business as you can get. Thus, it's more critical to introduce the business factors into the design process as early on as possible."

The third party content developers were critical to the success of mMode: if they were not happy with the new service design, or their requirements were not accommodated, then they wouldn't develop services for mMode, and users wouldn't use their phones as much.

The insight gained from the interviews and observations allowed IDEO to create a set of unified design principles that would act as a platform for the development of the new user interface and the accompanying style guide for the mMode service. The three guiding design principles were:

Social: This was based on the notion that data services needed to provide connectivity between people, the way voice is able to, but also go beyond and create rich communities and social networks.

Figure 5
 "Social" Design Principle (note the phone display as well)



TimeSlice: Interacting with data on a mobile phone is fundamentally different from surfing the Web on a PC. On a mobile phone, people are more task-oriented and stay online for small slices of time instead of surfing for long, sustained periods. Thus, the interface needs to be able to support services that can be done in 20 or 30 seconds, with a greater focus on immediacy and access.

Figure 6
 "TimeSlice" Design Principle (note the phone display as well)



Relevance: The mMode services needed to be relevant, not just from a geographical and contextual perspective, but also relevant to the individual. A person's phone is as personal as their wallet. The relevance of the service could be best expressed through two main tenets:

- *Customization* (e.g. the four most frequently used functions were organized together for faster and easier navigation)
- *Personalization* (e.g. a personal storage space on the service to store ring-tones and screensavers for the phone)

Based on the three design principles listed above, IDEO created a style guide, the codified set of design rules that third party developers were expected to adhere to when developing content for the mMode service. The user interface developed by IDEO for the mMode service was based around the design principles and style guide it had itself created.

For every screen IDEO would mock up several variations using a cardboard cutout phone and printed pieces of paper depicting the screen. The IDEO team would storyboard the navigation and user interface through the use of these screens, quickly and cheaply, without the need for expensive programming. IDEO would create several variations for each screen and test the variations with users to see which ones worked best. The final user interface implementation was based on the selected prototypes.

In the two months after the launch of the new and improved mMode service, AT&T Wireless realized initial success around three critical measures: an increase in page-views-per-visit (a good indicator of the time users are spending online), an increase in m-commerce (a good indicator of the overall sales of premium content for content partners), and compliance by an overwhelming majority of third party developers with the newly-issued style guide, a testament to the quality of work done by IDEO, especially considering that the developers themselves had to bear the costs of changing their existing designs to conform.

The Portland General Health Center Project

Coughlan ruminated about the Portland General Health Center project. The healthcare industry was not completely unknown to IDEO though: a significant number of its projects and a large share of its revenues came from the design and engineering of medical devices – products such as Lilly’s insulin pens, the Heartstream ForeRunner defibrillator, and the Oral-B Gripper toothbrush. Even so, IDEO had no direct experience in the design of healthcare *services*, and that made the project even more challenging. Coughlan was confident that the IDEO process could be easily transposed to healthcare services, just as it had to the other service design projects in the past. Besides, IDEO was always eager to expand into new practice areas and expand its design process by exposure to new industries.

Coughlan had been asked by Becker to focus on the patient experience at the hospital and suggest steps for improving the quality of the healthcare service. Additionally, the project’s budget constraints meant that IDEO would have to work within the existing hospital parameters: quick and cheap incremental innovation would be required.

IDEO had come a long way in the five years it had been involved in service design. It had a fairly robust process and had developed a full suite of methods to be used in the design of a service. As Coughlan drained the dregs of his coffee, he wondered how best to approach this particular project. What process would he follow? Which of the established IDEO methods would he use, and at which stages? Wrestling with these thoughts as he finished up his strong decaf double no-fat soya latte macchiato, he went back upstairs to meet with Tim Brown.

Exhibit 1
IDEO Practice Areas as of January 2005

Practice Area	Description
CxD	Consumer Experience Design, focused on creating emotional connections between people and companies, applying IDEO's "from think to build" concept to experiences.
SX	Experiences revolving around the design of software experiences based on PC, internet, mobile and emerging platforms.
Health	Healthcare related projects.
Transformation	A change consultancy practice, teaching clients how to foster innovation within their own companies.
Zero20	Focused on designing products and services for children.
Smart Space	Focused on the emerging field of environment design.
Service Design	Centered on service design and innovation.

Exhibit 2*IDEO's Product Development Process*

This is the *IDEO* Way

Five steps in the process of designing a better consumer experience

1. OBSERVATION

IDEO's cognitive psychologists, anthropologists, and sociologists team up with corporate clients to understand the consumer experience. Some of *IDEO's* techniques:

SHADOWING Observing people using products, shopping, going to hospitals, taking the train, using their cell phone.

BEHAVIORAL MAPPING Photographing people within a space, such as a hospital waiting room, over two or three days.

CONSUMER JOURNEY Keeping track of all the interactions a consumer has with a product, service, or space.

CAMERA JOURNALS Asking consumers to keep visual diaries of their activities and impressions relating to a product.

EXTREME USER INTERVIEWS Talking to people who really know – or know nothing – about a product or service, and evaluating their experience using it.

STORYTELLING Prompting people to tell personal stories about their consumer experiences.

UNFOCUS GROUPS Interviewing a diverse group of people. To explore ideas about sandals, *IDEO* gathered an artist, a bodybuilder, a podiatrist, and a shoe fetishist.

2. BRAINSTORMING

An intense, idea-generating session analyzing data gathered by observing people. Each lasts no more than an hour. Rules of brainstorming are strict and are stencilled on the walls:

DEFER JUDGMENT Don't dismiss any ideas.

BUILD ON THE IDEAS OF OTHERS No “buts”, only “ands”.

ENCOURAGE WILD IDEAS Embrace the most out-of-the-box notions because they can be the key to solutions.

GO FOR QUANTITY Aim for as many new ideas as possible. In a good session, up to 100 ideas are generated in 60 minutes.

BE VISUAL Use yellow, red, and blue markers to write on big 30x25-inch Post-its that are put on a wall.

STAY FOCUSED ON THE TOPIC Always keep the discussion on target.

ONE CONVERSATION AT A TIME No interrupting, no dismissing, no disrespect, no rudeness.

Exhibit 2 (Cont'd)**3. RAPID PROTOTYPING**

Mocking up working models helps everyone visualize possible solutions and speeds up decision-making and innovation. Some guidelines:

MOCK UP EVERYTHING It is possible to create models not only of products but also of services such as healthcare and spaces such as museum lobbies.

USE VIDEOGRAPHY Make short movies to depict the consumer experience.

GO FAST Build mock-ups quickly and cheaply. Never waste time on complicated concepts.

NO FRILLS Make prototypes that demonstrate a design idea without sweating over the details.

CREATE SCENARIOS Show how a variety of people use a service in different ways and how various designs can meet their individual needs.

BODYSTORM Delineate different types of consumers and act out their roles.

4. REFINING

At this stage, *IDEO* narrows down the choices to a few possibilities. Here's how it's done:

BRAINSTORM in rapid fashion to weed out ideas and focus on the remaining best options.

FOCUS PROTOTYPING on a few key ideas to arrive at an optimal solution to a problem.

ENGAGE THE CLIENT actively in the process of narrowing the choices.

BE DISCIPLINED and ruthless in making selections.

FOCUS on the outcome of the process – reaching the best possible solution.

GET AGREEMENT from all stakeholders. The more top-level executives who sign off on the solution, the better the chances of success.

5. IMPLEMENTATION

Bring *IDEO's* strong engineering, design, and social-science capabilities to bear when actually creating a product or service.

TAP ALL RESOURCES Involve *IDEO's* diverse workforce from 40 countries to carry out the plans.

THE WORKFORCE Employees have advanced degrees in different kinds of engineering: mechanical, electrical, biomedical, software, aerospace, and manufacturing. Many are experts in materials science, computer-aided design, robotics, computer science, movie special effects, molding, industrial interaction, graphic and Web information, fashion and automotive design, business, communications, linguistics, sociology, ergonomics, cognitive psychology, biomechanics, art therapy, ethnology, management consulting, statistics, medicine, and zoology.

Source: Bruce Nussbaum, "The Power of Design", BusinessWeek, 17 May 2004, p. 71.

Exhibit 3
IDEO Method Cards

IDEO Method Cards show some of the ways that IDEO puts people at the center of the design process. These methods are typically used at the earliest stages of the design process to support observation-based research and learning consistent with the firm's user-centered design process. The techniques are not proprietary and have been adapted from various established human and social research methods. Initially compiled to inspire and inform IDEO's own design teams, the cards are now available publicly to inspire creative teams in almost any context.

Shadowing

How: Tag along with people to observe and understand their day-to-day routines, interactions and contexts.

Why: This is a valuable way to reveal design opportunities and show how a product might affect or complement users' behavior.

Extreme User Interviews

How: Identify individuals who are extremely familiar or completely unfamiliar with the product and ask them to evaluate their experience using it.

Why: These individuals are often able to highlight key issues of the design problem and provide insights for design improvements.

Draw the Experience

How: Ask the participants to visualize an experience through drawings and diagrams.

Why: This can be a good way to debunk assumptions and reveal how people conceive of and order their experiences or activities.

Fly on the Wall

How: Observe and record behavior within its context, without interfering with people's activities.

Why: It is useful to see what people actually do within real contexts and time frames, rather than accept what they say they did after the fact.

Role Playing

How: Identify stakeholders involved in the design problem and assign those roles to members of the team

Why: By enacting the activities within a real or imagined context, the team can trigger empathy for actual users and raise other relevant issues.

Character Profiles

How: Based on the observations of real people, develop character profiles to represent archetypes and the details of their behavior or lifestyles.

Why: This is a useful way to bring a typical customer to life and to communicate the value of different concepts to various target groups.

Exhibit 3 (Cont'd)

Bodystorming

How: Set up a scenario and act out roles, with or without props, focusing on the intuitive responses prompted by the physical enactment.

Why: This method helps to quickly generate and test out many context and behavior-based concepts.

Camera Journal

How: Ask potential users to keep a written and visual diary of their impressions, circumstances, and activities related to the product.

Why: This rich, self-conducted notation technique is useful for prompting users to reveal points of view and patterns of behavior.

Narration

How: As they perform a process or execute a specific task, ask participants to describe aloud what they are thinking.

Why: This is a useful way to reach users' motivations, concerns, perceptions and reasoning.

Quick-and-Dirty Prototyping

How: Using any materials available, quickly assemble possible forms or interactions for evaluation.

Why: This is a good way to communicate a concept to the team and evaluate how to refine the design.

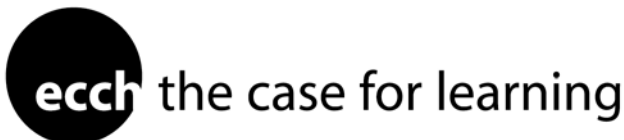
Source: IDEO Method Cards deck.

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