

A Review of the IDEO Process

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Innovation is now the centerpiece of corporate strategies and initiatives. However, barriers to creativity abound. Innovation and structure are like oil and water. Bureaucracy does not allow risk. Experts can inadvertently block an innovation by saying, "It's never been done that way."

IDEO is a widely admired, award-winning design and development firm in Palo Alto, California. For founder David M. Kelley and his colleagues, work is play, brainstorming is a science, and the most important rule is to break the rules. The *Wall Street Journal* dubbed their offices "Imagination's Playground," and *Fortune* titled its visit to IDEO "A day at Innovation U." ABC's *Nightline* asked IDEO to redesign a shopping cart in 5 days. ABC called it "The Deep Dive." (See reference [1])

IDEO has brought the world the Apple mouse, Polaroid's I-Zone instant camera, the Palm handheld, the Crest Neat Squeeze tube with its one-twist cap and hundreds of other cutting-edge products and services. Since their start in the Stanford Design Department in 1978, IDEO has grown from a two-person office to a staff of over 300.

Teams are at the heart of the IDEO method. "Hot project" teams are infused with purpose and personality. To IDEO, teams always beat individuals. The myth of the lone genius can actually hamper a company's efforts in innovation and creativity. Loners are so caught up in their idea that they are reluctant to let it go, much less allow it to be experimented with and improved upon.

Hot Project Teams should:

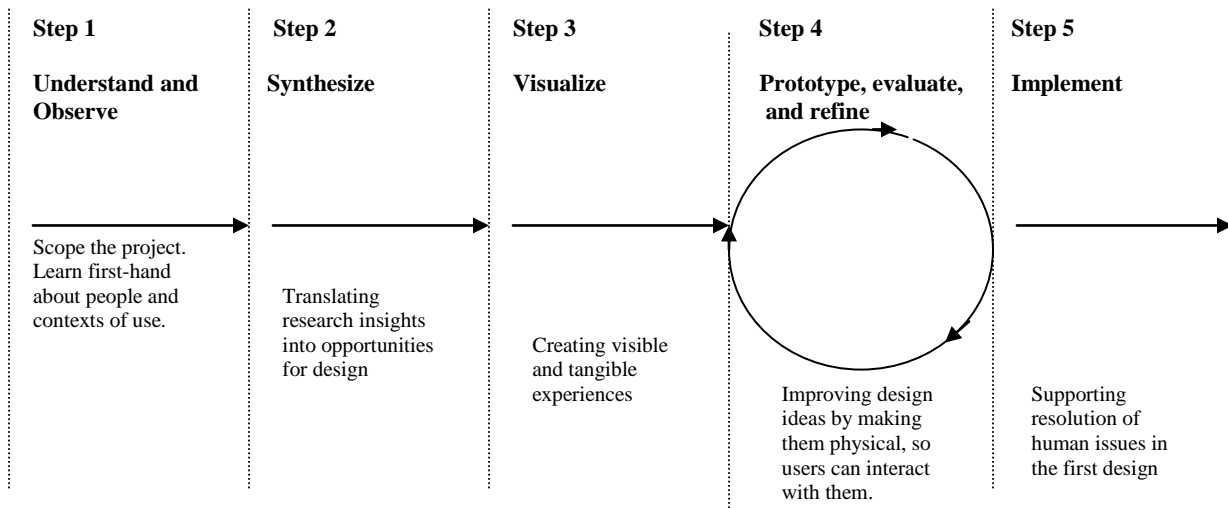
- Come from widely divergent disciplines
- Be empowered to go get whatever is needed
- Merge fun and project
- Be as small as three or large as a dozen
- Have clear, tangible goals (seemingly unreachable), serious deadlines
- Be passionate

Team members should be "crazy" characters. Consider these characters for team membership: visionary, troubleshooter, iconoclast, pulse taker, craftsman, technologist, entrepreneur, cross-dresser (formal training different from what they do).

Team members need to look the part. Consider T-shirts, sweatshirts, bicycle messenger bags, or baseball caps. Let irreverence sprout when the spirit moves you.

The Hot Project Team uses the IDEO Process. This process enables the team to identify opportunities for innovation and is foundational to the development of its unique innovative products and services.

The IDEO Process is made up of 5 steps:



The reference of the above version is [2].

A slightly different version is found in reference [3]. It identifies the 5 steps as: 1. Understand, 2. Observe, 3. Visualize, 4. Evaluate and Refine, and 5. Implement. That version separates the first step into two steps, 1. Understand and 2. Observe but includes synthesize as part of the second step.

Each of the five steps is defined below.

Step 1: Understand and observe. Understand the market, the client, the technology, and the perceived constraints on the problem. Observe real people in real-life situations to find out what makes them tick, what confuse them, likes and dislikes and latent needs not addressed by current products or services. Go to the source not the “experts” inside an organization. Inspiration comes from observation.

- Start with a “what do you know” session
- Do an intense “state of the art” review
- Seeing and hearing things with your own eyes and ears is a critical first step in improving or creating a breakthrough product or service
- Focused observations of people, New ideas come from seeing, smelling, hearing-being there

- Good, insightful observation combines careful watching with occasional well-chosen “why” questions to get at the underlying psychology of a person’s interactions with products and services. (Do not use focus groups)
- Often the most interesting insights come from the gap between what is said and what actually happens
- Observe people who break the rules rather than follow directions perfectly

Step 2: Synthesize. All information from Step 1 is collected in the project room. This room becomes the key tool for translating the information into opportunities for design. Photographs, diagrams and drawings are all mounted on the wall to prompt discussion and illustrate key insights. The room becomes a tool for sorting and recording the ideas that develop.

Step 3: Visualize. Be visual is a primary rule of IDEO brainstorming. Visualize new-to-the world concepts and the customers who will use them. Consider the following:

- Intensive brainstorming session (Brainstormers)
 - 60 minutes only (90 max)
 - Playful, visual
 - No notes, don’t take turns
 - Fill all walls and flat spaces with butcher paper, use post-its and Sharpie markers (the power of spatial memory)
 - Sketching, mind mapping, diagrams, stick figures
 - Watch for chances to build and jump
 - Number your ideas
 - Vote on best ideas

There are six ways to kill a brainstormer:

1. The boss gets to speak first
2. Everybody gets a turn
3. Experts only please
4. Do it off-site
5. No silly stuff
6. Write down everything

Creating visible and tangible experiences is enhanced with computer based rendering, physical model, or prototypes (example: concept car).

Step 4: Prototype, evaluate, and refine. Prototypes shape your ideas. Prototyping is the shorthand of innovation.

- A series of quick iterations (fail early and fail often, but learn from those failures)
- Don’t get attached to the first, what counts is moving the ball forward, achieving some part of the goal, not wasting time

- Even prototype a bad idea and shoot the hell out of it (when all else fails, prototype till you're silly)
- There's no stopping, you stop when you have to meet the deadline and get it out in the marketplace

Step 5: Implement. Design changes can be systemic or highly localized. Implementation is the longest phase and most technically challenging.

Time to complete the above five steps could be from a few days to six months.

Over the years IDEO has identified some important practices. These are:

1. Watch customers and noncustomers—especially enthusiasts.
2. Play with your physical workplace in a way that sends positive body language to employees and visitors.
3. Think “verbs” not “nouns” in your product and service.
4. Break rules and “fail forward” so that change is part of the culture, and little setbacks are expected.
5. Stay human, scaling your organizational environment so that there's room for hot groups to emerge and thrive.
6. Build bridges from one department to another, from your organization to your prospective customers, and ultimately from the present to the future.

Moreover, thousands of projects have taught IDEO some valuable lessons. Some of them are:

1. Make a great entrance
2. Make metaphors
3. Think briefcase (Make the customer emotionally attached to the product)
4. Color inspires
5. Backstage pass (Let customers know what's going on behind the curtain)
6. Make your product or service work faster and simpler
7. Make it goof-proof
8. First, do no harm
9. Make a checklist of the “essentials” before you begin a project
10. Great accessories can carry a product (the right small touches)

A Case Study: DePaul Healthcare

DePaul Healthcare Systems was in the midst of developing a new patient care model. The hospital asked IDEO to work with them to review and develop design concepts around the existing patient care delivery system, researching their current use of space, technology, services, and staffing.

Step 1: Observe and Understand

Photo survey. Different employees were given a disposable camera and were asked to capture different aspects of their job. A RN was asked to photograph the most important resources and tools for her job, only documented her co-workers.

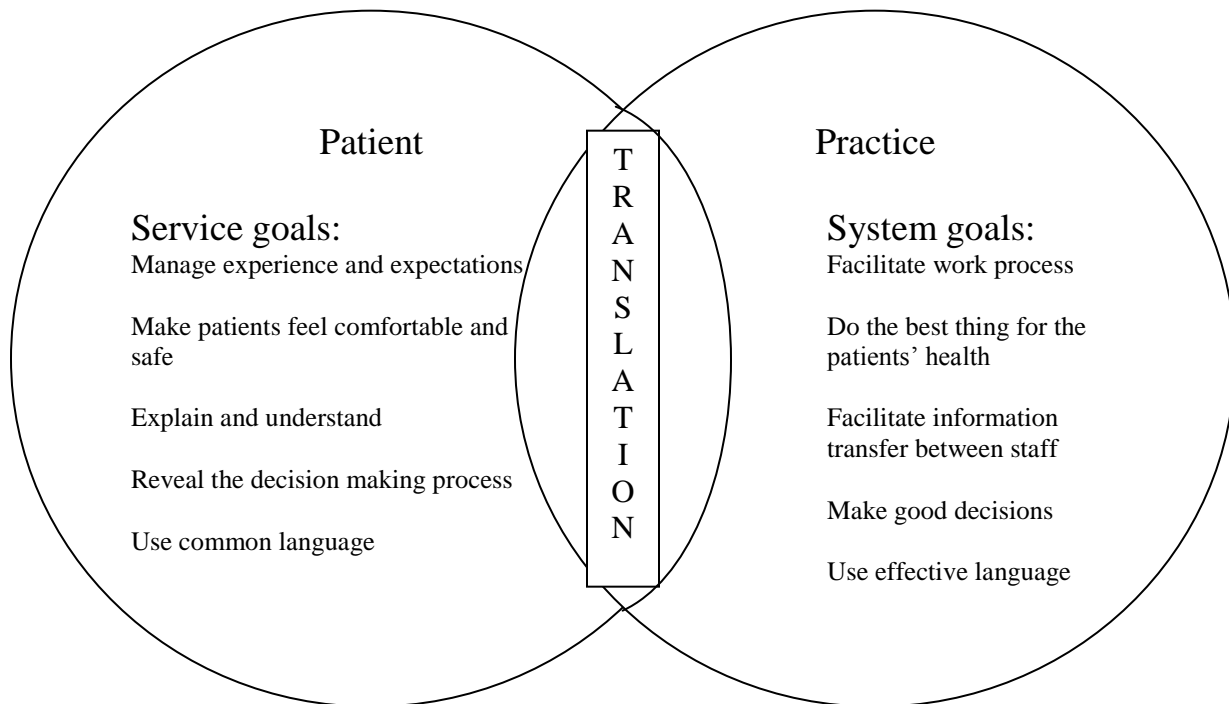
Patient Tour. A patient point of view walk through was one of the most fruitful investigations. A video of the tour was taken.

Interviews. The DePaul team combined stakeholder interviews with unit walk-throughs.

Shadowing. Team members followed and observed a variety of DePaul patients, transporters, RN's and doctors. This method of observation allows team members a way to observe unusual work-arounds and best practices at play in the field.

Body Storming. Rather than relying on interview techniques as a way to gather thought on the future of the practice, the team had DePaul employees act out the patient journey of the future. This gave a more uninhibited and creative perspectives on the problem using nonverbal ways of thinking.

These observations helped to establish the following model to illustrate the importance of *translation* between the staff focused hospital systems and the patient's "service" needs.



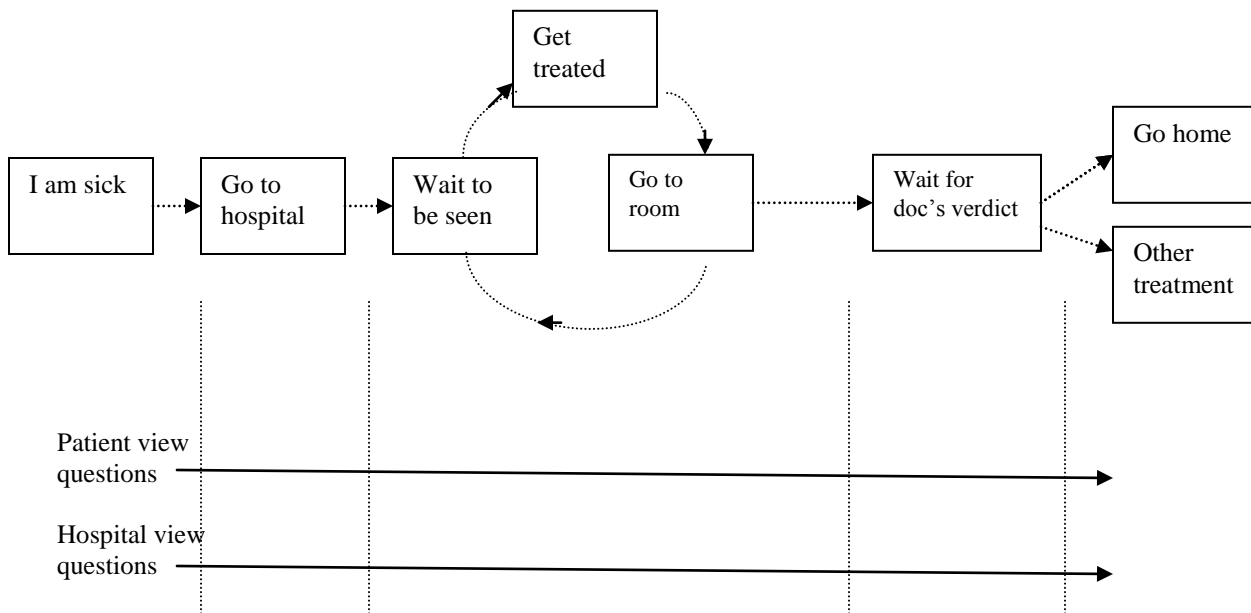
Translation can occur through

- protocols,
- spaces,
- systems

Step 2: Synthesize

Work in the project room wall evolved a patient journey diagram. Sticky notes were used to allow for the reconfiguring the diagram as the discussion warranted. As the observations began to lie out across the stages of the journey the team brainstormed questions for those stages pinning them to the wall. These questions were framed from the patient view and the hospital view and became the foundation of all subsequent visualizations.

The patient journey diagram is given below. The questions suggested opportunities for the healthcare system to translate itself for the patient. The patient journey framework is populated by questions from the patient point of view and the hospital point of view for each stage.



Based on this diagram, the team developed design principles that every future DePaul project should incorporate to insure that future spaces, systems, protocols, technologies, and staffing models help to translate the system goals for the patient. These design principles are:

1. Appropriate information at the appropriate point

- Do not bury or cloud important information with extraneous information
- Remove remnants of unsuccessful experiments or systems
- Label everything places, people, and tools
- Provide information in multiple mediums to fit with the patient's limitations and preferences
- All staff should know the basics in relation to patient and practice

2. Manage expectations

- Remove or close points of staff contact that are not maintained
- Be explicit about transaction steps and the order in which they occur
- Convey the various points of entry into the DePaul system and how they impact the patient journey
- Make it clear to the patient what they are allowed and encouraged to do for themselves

3. Reveal Process

- Allow the patient to participate in their assessment and decision making process
- Provide access to “translation” at any point in the patient journey
- Provide a view to the next step in the journey
- Provide the patient informal connection to the staff
- Let the patient know the why as well as the what
- Let the tools tell the story
- Allow the patient to understand where they are going and where they have been at any point in the journey

4. Build on the familiar

- Provide information in mediums the patient is comfortable with
- Use common language
- Make familiar objects and actions look and feel familiar
- Unify the ways of interacting with the system so that the patient only needs to learn one way of doing things

Step 3: Visualize

“Be visual” is the primary rule of the IDEO brainstorming and key to transferring research insights into design ideas. For every problem discussed, brainstorm participants are challenged to develop a solution and visualize it. The DePaul team began to use the observations and the patient’s unanswered questions as a springboard to new design ideas.

The team was challenged to start to map the ideas not to stages in the patient journey but to the existing spaces and systems of the hospital. The three spaces were: space of waiting, space of practice, and space of recuperation. Accurate photo-documentation of these representative spaces became the blank slate for idea development.

The team then assembled and connected design ideas to various spaces. This prompted further expansion of ideas i.e., “Well if we do this then we would need this...”

Some ideas generated for each of three spaces are:

1. Space of waiting:
 - Urgency cards*-Color-coded and time-stamped
 - Self-diagnostic posters*-Allows patient to understand the urgency of his symptoms
 - Patient journey punch card*-Allows patient to know where they've been and what is next
 - Simple self treatment*-Vending machines dispense aspirin, bandages, etc
 - Managed views*-Live feed into the Emergency Room
 - Patient hotline*-Instant connection to staff
 - Valet parking*-For easy arrival when it really matters
 - Local Hospital Tour*-Tours while the patient is healthy
 - Frequent Flyer Cards*-Return patients' needs, preferences, and rewards are acknowledged automatically upon registration

2. Space of practice:
 - Patient journey punch card*-Allows patient to know where they've been and what is next
 - Patient garment with information badges*-Additive badges allows the staff to get a brief history of the patient visually
 - Modal diversion*-Patient has automatic control over everything from important information to personal soundtrack
 - Information transfer doorway*-A place for a simple log of patient interactions, patient photos and useful tools
 - Patient hotline*-Instant connection to staff
 - Patient manuals*-Track the patient journey based on their specific illness
 - Staff cross-training*-To help anyone in contact with the patient to answer simple questions and help in basic matters

3. Space of recuperation:
 - Patient journey punch card*-Allows patient to know where they've been and what is next
 - Bedside web device*-Patient has multiple forms of information
 - Information transfer doorway*-A place for a simple log of patient interactions, patient photos and useful tools
 - Staff cross-training*-To help anyone in contact with the patient to answer simple questions and help in basic matters
 - Visiting hours and accompanying clock*-System rules are accompanied by the information needed for patient and family to make appropriate decisions
 - Hello assessment*-All mediated staff interactions happen through the phone because it is a familiar interface
 - Patient/staff water cooler*-Spaces planned for incidental connection between patients and staff
 - Wireless staff badges*-Allows the patient to have a general idea of where their assigned staff member is so delays become more understandable
 - Financial consultant*-Come to patient's bedside to alleviate concerns
 - Patient care package*-Continues to help the patient understand and contextualize their hospital stay into their lives

Step 4: Prototype, evaluate, and refine

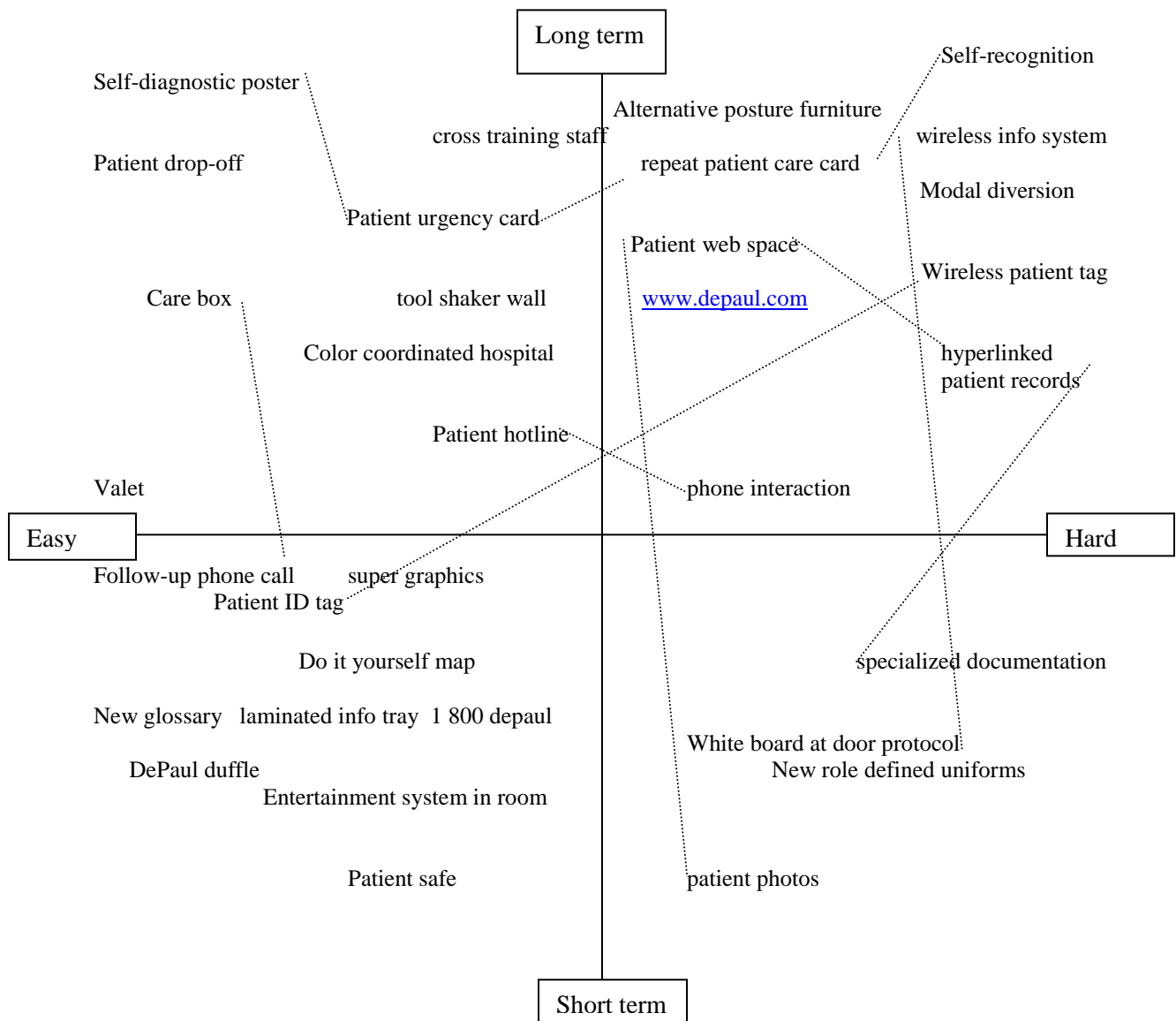
A quick prototyping exercise around the patient call button yielded a wide variety of good and not so good ideas. Key attributes began to be developed that could lead to the development of final design recommendations and a design requirements list.

Under patient information system, a more streamlined and appropriate way to manage this information. Simpler frameworks, more personalized documentation and a unique physical structure were all developed as part of this prototyping exercise.

Prototyping around the new roles included new uniform, new tools for patient conveyance and ultimately a more conducive hospital environment.

Step 5: Implement

Design changes can be systemic or highly localized. Implementation of changes may be easy or hard and fast or slow. The design team created a matrix of easy to hard and short term to long term to understand what projects might be easily approachable and what might be better long-term goal. By connecting and grouping the projects across the matrix, it becomes clear that projects begin to assemble into trajectories; i.e. small steps towards a systemic change. Additionally it is possible to understand some easier projects as prototypes for more sophisticated and complicated projects. The matrix is reproduced on the next page.



References:

1. ABC News (1999), *The Deep Dive*, ABC News Home Video of Nightline on 2/9/99.
2. IDEO San Francisco (3/29/2001), DePaul Healthcare Innovation and Design Plan
3. Kelly, Tom (2001): *The Art of Innovation, Lessons in Creativity from IDEO, America's Leading Design Firm*, Doubleday, NY