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THE USE OF INNOVATIVE PEDAGOGICAL TECHNIQUES to illustrate operations management concepts can be an art and a science. In the first of a series of articles, Sunil Babbar from Florida Atlantic University shares his experience of introducing the concept of product usability through a student activity. This activity is not only geared for students to “learn by example” but also to cultivate creative thinking among students. I hope to share another successful pedagogical technique in this column for a later issue.

Shaping Product Usability through Attention to Detail: From the Classroom to the Real World

by Sunil Babbar, College of Business, Florida Atlantic University

On being asked as to what he thought would be the dominant theme in technology for the year 2005, Steve Millunovich, the guest analyst from Merrill Lynch appearing on CNBC on December 13, 2004, replied “product usability.” What struck me as I watched him on the air that day was the realization that the efforts of the 1980s that had helped move the issue of product usability to the forefront via a focus on computer use and software development (Gould & Lewis, 1985; Mantei & Teorey, 1988) still lingered and seemed to be gaining momentum.

The more user friendly the design of a product, the better is the customer’s experience with the product. The linkage between user-friendly design, positive customer experience, and high product quality seems intuitive. Yet, despite all the advancements in technology and customer intelligence available to firms, consumers are often left dissatisfied and even frustrated when they use products that lack attention to design detail. For example, in some television sets the channels can only be changed using the remote. As there is no channel button to press on the TV itself, the customer is frustrated whenever the remote is misplaced. Another

example is of a phone set that does not stand level because of the placement of the jack underneath (no groove provided for the electric cord to fit nicely below the base). Yet another example is in the design of some wooden classroom doors on which the opaque glass panels prevent people in the hall from looking into the classroom. Because the builder failed to recognize the practical purpose for placing a small glass panel on classroom doors so that people can discretely check to see if the classroom is in use, students and teachers must live with the not-so-infrequent openings of the door and peek-ins by students waiting for their next class.

Understanding the user and how products and users interact is a central theme in design discourse (Margolin, 1997). Usability is now recognized as a critical aspect of product design (March, 1994; Hasdo—an, 1996; Han et al., 2000; Babbar et al., 2002). In a recent study, using the affinity diagramming methodology, my co-authors and I mapped the different dimensions of product usability that were found to cause customer dissatisfaction (Babbar et al., 2002). These dimensions include the product: (1) not providing the customer sufficient information for use; (2) not providing the customer sufficient con-



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trol; (3) needing to be constantly reset; (4) components being incompatible; (5) having a missing feature; (6) having a dysfunctional feature; (7) falling apart soon; and (8) being difficult to access.

The purpose of this article is not to engage in a general discussion of product usability but to suggest and share with you an experiential learning exercise that I have used for a number of years in operations management courses at both the undergraduate and graduate levels. These courses have included the core OM course as well as courses in quality management and service operations. The exercise is motivated in part by my own disappointment (and oftentimes, frustration) as a consumer of products because of sheer lack of attention to detail in product designs. Another motivation is to instill in my students a sensitivity for detail in product design with the consumer in mind. As the illustrative examples from this exercise will show, it does not take a technical expert to improve product usability and enhance customer experience. Enhancing positive customer experiences requires an understanding of customer needs, practical thinking, and testing of products by actually putting them to use in a variety of settings where potential customers are likely to use the product.

The Exercise

The primary objective of this exercise is to show students the importance of details of product design from the point of view of the consumer. Using an approach of experiential learning, the objective is to demonstrate by example that a refined sensitivity for product detail will lead to improved skills as future product designers. The student requirement for this exercise is a written paper and a presentation to the class.

For this exercise, my instructions for students on the course syllabus tend to read as follows.

"You are to identify and relate six separate situations which you have personally observed or experienced in a business setting that were frustrating to you and led to your dissatisfaction

as a customer or stakeholder. Each situation should be such that the cause of your dissatisfaction and frustration stems from a lack of sensitivity to detail by the provider, manager, or decision maker in serving the customer. While such problems may seem trivial at first glance, they must have important implications for customers and an obvious solution. The experiences you relate must all be real-world, and you must be very specific in presenting these expe-

riences. Identify each problem situation using a short descriptive heading, present the situation, and then address the problem by proposing a simple obvious solution."

Towards the beginning of the semester, I share with my students a number of illustrative examples of insensitivity to product details to set the stage for my expectations from the students for this exercise. Table 1 contains a sampling of such illustrative examples.

Problem: "Delete" Button too Close to the "Review" Button on Pager

On the pager that I use, the "delete" button is placed so close to the message "review" button that, if I am not very careful, when pressing the review button I also end up pressing the delete button. When this happens (and it happened numerous times before I learned to pay particular attention), I lose the message even before I am able to retrieve it.

Solution: Given the space on the pager, the delete button could easily have been placed further away from the review button. Also, the manufacturer should at least have put the product to test by one or more adults before introducing it to the market.

Problem: Changing the Date on My Wrist Watch a Burdensome Task

Because months differ in their total number of days, I find myself having to reset the date on my wrist watch from month to month. However, each time I do this, my patience is put to the test. To move the date just one day forward or back, I must keep turning the key and have the minute arm complete twenty-four rotations of the dial (i.e., move the arms twenty-four hours)!

Solution: Surely, in this age of technology, one would think that the manufacturer could redesign the mechanism for this fairly expensive watch such that the date could be changed without having to do all this work. I have had watches where this feature was built in.

Problem: Drenching Drive-Through Experience at a Fast-Food Outlet

Last week I went to a fast-food outlet while it was raining. Not wanting to step out of my car and get wet, I opted for the drive-through service. Pulling into the drive-through lane, when I reached the sign and microphone where customers must place their order, I realized that I needed to open my window so that I could be heard placing the order. The store provided no cover over this order station and I was quite wet placing my order. If that was not enough, when I drove up to the pick-up window, I got even more wet paying for and collecting my order with my car window open. Here again, there was no cover provided over the pick-up window. The whole experience was so uncomfortable and frustrating that I don't feel like returning to this store.

Solution: Whoever built this facility should have known that it does rain at times and should have built a cover over the stations where drive-through customers have to stop. If not the builder, management could have installed some kind of pull-out cover for use at times when it rains.

Table 1. Examples of insensitivity to product details.

On the day that the students submit their papers, they are asked to present to the class one or more of the situations they wrote about. Each such presentation opens up the topic for debate and students tend to raise additional issues, suggest alternative solutions, and share with the class similar experiences of their own. Because of the intuitive nature of this exercise, students enjoy the engaging and participative nature of discussions that accompany these presentations. An illustration of some additional examples provided by my students is reported here in Table 2.

Empirical testing of student response to a questionnaire pertaining to their experience with this exercise was quite revealing (Babbar, 1994). The students reported that an experiential learning approach was more beneficial to them than the traditional textbook- or case-based approach to learning. The exercise enabled them to better relate to differing perspectives and instilled in them a greater sensitivity for detail. It also revealed student preference for learning via the sharing of experience and discussion over simply being told what was right or wrong or what they should or should not do.

Summary and Conclusions

There are two themes to the topic of this paper and to the experiential learning exercise it presents: product usability and attention to detail. Both themes go hand in hand and can be conveyed and stressed in parallel to business students. The exercise can be used as a platform for discussing the concept of poka-yokes (fail-proofing mechanisms). It can also serve as a good platform for discussion of robust or scenario-based product design which effectively incorporates the context of the user. This exercise, with its focus on attention to detail, can easily be tailored to a service context (see Babbar and Aspelin, 1996). In some courses, I ask my students to pin down and present situations of lack of attention to detail in serving custom-

Problem: Cuts Like a Picture Frame

A beautiful picture frame recently caught my attention at a department store. It was really attractive in that it was just clear glass with no frame around the edges. It gave the illusion that the picture was floating. The glass was held up by a solid pewter base. Its beauty lay in its simplicity and elegance. However, I encountered a big problem when I got home and tried to insert a picture in this picture frame. The edges on the glass were so sharp that it cut my finger and I started to bleed.

Solution: This picture frame should never have been sold in this condition. Better attention to detail would have prevented this problem. The manufacturer should have made the glass with beveled edges or smoothed out the edges so as to prevent accidents such as mine from occurring.

Problem: The Sunny ATM

The Automatic Teller Machine (ATM) that I frequently use has an annoying problem. The digital screen has orange lettering. When the sunlight hits the screen, the entire screen lights up orange making it nearly impossible to read instructions and I end up performing my transaction by memory. I use this ATM often and so I remember all of the steps. However, what if I made a mistake? I could end up doing something with my money that I didn't intend to do and create a rather serious problem.

Solution: For accurate ATM service, the bank must make sure that customers are able to read the digital screen at all times. The sun is not going to go away. If the bank had paid more attention to details, it would have recognized this problem and fixed it with a very simple solution. It could have placed the ATM in a location shielded from the sun, or it could build an overhang above the ATM so as to provide shade for the screen and enable customers to read the lettering at all times of the day.

Problem: The Candle and Candlestick Combo

I recently purchased a candlestick from a chain store that came with a candle that was too large to fit in the candlestick. I ended up having to shave about a fourth off the bottom of the candle to make it work. It ended up being more trouble than it was worth.

Solution: The designer and/or the manufacturer of this product should have checked the size of the candle before packaging and selling the two items together. They could either have made the hole in the candlestick bigger or the base of the candle smaller so as to fit. Another solution might be to simply not sell the candle with the candlestick.

Table 2: More examples of insensitivity to product details.

ers, half of which should relate to manufactured goods and half to service experiences. The exercise also lends itself for use across disciplines, be it marketing, information systems, or engineering.

Business schools are often times criticized for losing touch with reality (Byrne, 1990; Deutschman, 1991). Such an exercise helps bridge the gap between theory and practice. Moreover, it is fun, gets students involved and excited, and

helps get the point across in a manner that is habit forming. Our students will go on to be future employees, managers, decision makers, and leaders. Caring for the customer and enhancing customer experience is not something left just for boardroom discussions and mission statements. This exercise serves as a catalyst for getting students to buy into the concept of product usability and recognize the importance of paying attention to details from the viewpoint of

customer experience by drawing and learning from their own real-world experiences. I have had past students come back years later and relate how their experiences in class, by “paying attention to detail,” and “looking at things from the customers’ viewpoint” has become part of their daily thinking. Imagine the difference that this could make in organizations if infusion of these themes was a cultural trait among managers!

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Placement Services Coordinator Vacancy Announced

The Decision Sciences Institute is seeking a new Placement Services Coordinator for a three-year term beginning after the 2005 Annual Meeting in November.

The Institute operates a placement services Web site at <http://www.decisionsciences.org>, which includes a database that provides listings of academic positions and applicants. The coordinator is responsible for the content and smooth operation of this site. This includes working with DSI staff to refine the design and layout of the site, updating instructions for its use, and responding to questions from users. Although the coordinator is not directly concerned with the technical aspects of

the Web site or the database, it would be helpful for him or her to have some knowledge of databases and Web-based information systems.

In addition to overseeing the Web site, the Placement Services Coordinator also plays a critical role in planning and running placement activities at annual meetings. Therefore, the coordinator's presence at November annual meetings is absolutely essential.

Questions about the position may be directed to the current coordinator, Gerard Campbell of Fairfield University, at (203) 254-4000, x-3118 or gcampbell@mail.fairfield.edu. All interested parties should submit the following to Carol Latta at the Decision

Sciences Institute, College of Business, Georgia State University, 35 Broad Street, Atlanta, GA 30303, by no later than April 1, 2005:

1. Curriculum vita
2. Statement of activities and service provided to the institute
3. Statement of interest and availability to serve a three-year term
4. Statement of qualifications and experience related to the position
5. Description of institutional commitment for the support of the coordinator's job functions for a three-year period. ■