



ASSOCIATION FOR CONSUMER RESEARCH

Labovitz School of Business & Economics, University of Minnesota Duluth, 11 E. Superior Street, Suite 210, Duluth, MN 55802

Creativity and Innovation: Consumer Research and Scenario Building

Laurel Anderson, Arizona State University

Paul Rothstein, Arizona State University

[to cite]:

Laurel Anderson and Paul Rothstein (2004) , "Creativity and Innovation: Consumer Research and Scenario Building", in NA - Advances in Consumer Research Volume 31, eds. Barbara E. Kahn and Mary Frances Luce, Valdosta, GA : Association for Consumer Research, Pages: 747-752.

[url]:

<http://www.acrwebsite.org/volumes/9007/volumes/v31/NA-31>

[copyright notice]:

This work is copyrighted by The Association for Consumer Research. For permission to copy or use this work in whole or in part, please contact the Copyright Clearance Center at <http://www.copyright.com/>.

Creativity and Innovation: Consumer Research and Scenario Building

Laurel Anderson, Arizona State University

Paul Rothstein, Arizona State University

INTRODUCTION

If you want innovation... "Never ask the customer what they want!" That is Rule #1 at Ziba (2002), a multi-disciplinary product development firm. Many people don't know what they want and are poor reporters of their own behavior. According to Ziba, they usually want what their neighbor has. Sherry (1995) also states that much consumer behavior is habit and consumers don't think to tell you about it. Zaltman (2002) discusses the need to get at what "people don't know they don't know." And, especially with regard to innovation, consumers may not know what is possible. Many types of innovation may not even be within their frame of reference. So how do we use consumer research to understand the consumer without asking them directly? And then, how do we use the research to generate innovative ideas for consumer experience?

Creativity and innovation are necessities in today's Era of Consumer Experience. Consumers are seeking experience and use this to differentiate between the products that they chose. Tom Peters (Hirasuna, O'Leary and Lawrence 2000), among others, sees the present as the Era of Consumer Experience. He says that quality has been commoditized and no longer serves to differentiate products. Consumer experience now serves that function.

In today's marketplace, designing consumer experiences has become a common and critical challenge for researchers and development teams in all types of markets and industries. Like never before, it has become vital to connect with consumers in significant and memorable ways. "Recognizing experiences as a distinct economic offering," note Joseph Pine and James Gilmore, authors of *The Experience Economy* (1999), "provides the key to future economic growth," which they define as an offering that focuses on engaging individual consumers in unique, personal and memorable ways (Pine and Gilmore 1999). Citing examples like Disney, the contemporary "coffee experience," and staged birthday parties, Pine and Gilmore assert that experience has become a major source of economic value in the new economy. "Experience," they note, "represents an existing but previously unarticulated genre of economic output. Decoupling experiences from services in accounting for what businesses create opens up possibilities for extraordinary economic expansion—just as recognizing services as a distinct and legitimate offering led to a vibrant economic foundation in the face of a declining industrial base" (Pine and Gilmore 1999, p. x).

To be able to innovate and develop products that lead to the fulfilling, compelling experiences for consumers, we need to have a deep, holistic and contextual understanding of the consumer. This paper addresses the question: how do we generate innovative, creative, impactful ideas for new product experiences for consumers? There is a paucity of consumer research on creativity and innovation and on using consumer research descriptively and then generatively to produce creative, innovative ideas for consumer experience. This paper presents one consumer research method that does this.

One of the authors of this paper observed and interviewed people in very creative organizations (IDEO, Hewlett Packard, Ziba, GVO, Patagonia, 3Com, Fish, Idea Factory, etc.), observing ways that they generate ideas and design products and services that create consumer experiences. A couple of themes pertinent to this paper were repeated numerous times. First, there is a whole group of people doing innovative consumer research that has not been

well represented in the consumer research literature—industrial designers. Second most of these creative firms are expert and creative at ethnographic consumer research. And third, storytelling/scenario building was extensively used. Through scenarios, the character (consumer) lives and we have a deep understanding of the consumer's activities, needs and expectations. It also enables us to identify opportunities and visualize new and innovative consumer experience ideas. Dorothy Leonard (1997) talks about this as "empathic design" in her *Harvard Business Review* article.

Ethnographic methods and frameworks provide a way to both understand (*describe*) the consumer and *generate* ideas. Ethnographic methods fit particularly well with experience (thick description, contextual) and also with idea generation. There is also increasing discussion in the literature of storytelling and scenario building (c.f. Denning 2001, Kotter 1996, Nakamae 1999, Swap et al 2001, Boyce 1996). Suri and Marsh (2000) define scenario building as "... the development of a series of alternative fictional portrayals—stories—involving specific characters, events, products and environments, which allow us to explore product ideas or issues in the context of a realistic future" (152).

The objective of this paper is to present and utilize an ethnographic consumer research framework developed by Rothstein (2002, 2001) and user centered consumer research of teens (Anderson 2002) that will creatively and innovatively build scenarios that lead to a deep understanding of consumers (*descriptive*) and scenarios that are *generative/prescriptive* of new ideas for new product experiences for these consumers. This method's focus is on extending ethnography; including its descriptive aspect and then moving to its generative aspects. It is one answer to the question, how do we generate ideas for new products for consumers. Tangently, ethnographic research has always been an analysis challenge. This method provides a way to meet that challenge by organizing and relating the messy data that results from ethnographic work.

A (X 4): A METHOD FOR UNDERSTANDING, EXPLORING AND DESIGNING EXPERIENCE

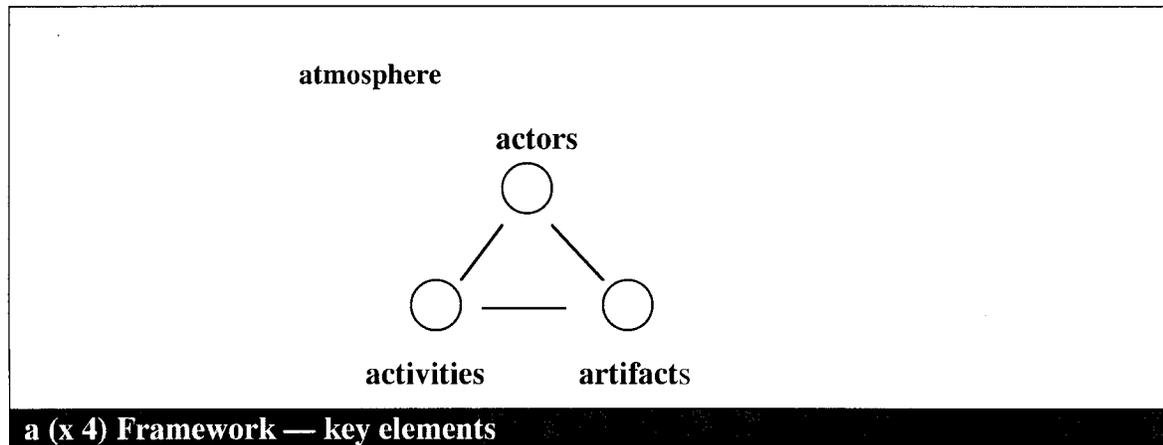
We need to look at our business as more than simply the building and selling of personal computers (that is, goods). Our business is the delivery of information (that is, services) and lifelike interactive experiences."

Andrew Grove, Intel Chairman (1996)

The next section presents a new method for researching, exploring and communicating scenarios about new consumer experiences. Called *a (x 4)*, the method is structured around the four key factors—actors, activities, artifacts and atmosphere—that animate experiences with new products, communications, environments and services. By closely examining the interaction of these factors, researchers and development teams can gain insight and inspiration for the development of new consumer experiences (Figure 1).

a (x 4) borrows and combines strategies and techniques typically found in consumer research, ethnography and design. As a multipurpose and multidisciplinary framework, it is used as a tool for data collection (i.e., consumer research), analysis and scenario-building. It features four phases:

FIGURE 1



Facts & Observations

During this phase, $a(x4)$ is used like an ethnographic coding scheme to collect contextual information about consumers and their everyday experiences. The immersion in field work has been clearly identified by many experts as critical in the scenario-building process (e.g., Suri and Marsh 2000; Couch, Sanders and Welker 1997; Ireland and Johnson 1995). The *Facts and Observations* that researchers collect result in a robust, targeted and highly useful 'information database' about the actors, activities, atmosphere and artifacts that relate to a project or study (Figure 2).

Snapshots

With an 'information database' established, $a(x4)$ is next used to create sets of *Snapshots* (organized according to the four factors) to illustrate and communicate key insights, relationships and conclusions. The *Snapshots* involve summarizing essential information gleaned from field studies and often includes highly visual representations using photos, video, drawings and diagrams. As a semi-structured visual exercise that intentionally taps into intuition and imagination, the *Snapshots* compel researchers and development teams to focus on communicating information that relates directly to the key factors that influence new experiences. These are the *descriptive scenarios*.

Visualizations

The third phase involves using the four key factors to create a highly visual, speculative image (or set of images) about a proposed consumer experience. *Visualizations* are fundamentally a precursor to more specific and defined scenarios. This preparatory step is important because it helps researchers and designers remain free from project-specific constraints and limitations which, if imposed too early, tend to stifle and suffocate innovation and creativity.

Scenarios

With all of the previous phases completed, detailed *prescriptive scenarios* about new consumer experiences can be developed. The development team proceeds with substantial knowledge about actors, activities, artifacts and the context (i.e., atmosphere) in which these all interact. The form of the scenarios varies greatly, including: text-based narratives, storyboards, play-acting and, increasingly, highly effective multimedia videos.

Thus, the $a(x4)$ demonstrates how a combination of ethnographic approaches and creative exercises can be used to generate 'real-world' data and fuel speculations about the future of consumer experiences (Figure 3).

TEEN CASE

This research utilizes the user-centered methodologies of photo essays, metaphor development, textual and collage analysis to gain an understanding of teens (Gen Nets) and their computers. These methods are used to get at what teens "don't know they know." The focus is on the descriptive and generative scenarios created while using the $a(x4)$ framework and including actors, activities, artifacts and atmosphere data.

At their peak, this Gen Net group will exceed the number of baby boomers (Tapscott 2000). They are important for us to understand. This research aims to add to that understanding by seeking to understand at a level that these teens may not be aware. According to Jerry Zaltman (2002), "A lot goes on in our minds that we're not aware of...Most of what influences what we say and do occurs below the level of awareness. That's why we need new techniques: to get at hidden knowledge—to get at what people don't know they know."

This data is used here to first illustrate the development of descriptive scenarios. Analysis of the data from this research reveals different groups of teens (Anderson 2002). Utilizing Rothstein's $a(x4)$ framework, data from one of the groups of teens is analyzed and used to develop descriptive *and then generative scenarios*. The data will be examined using the four components: actor, atmosphere, activities and artifacts. The $a(x4)$ phases of facts and observations, snapshots, visualization and synthesis are followed.

Research

The research was conducted in collaboration with eighth grade Language Arts teachers in middle school. The concept of metaphor was taught in the teens' Language Art classes. Then the teens were asked to develop a metaphor for their computer, create a collage that depicts their metaphor, and describe this metaphor. They were also asked to write a "wish list" that completes the sentence..."I wish my computer could..." And lastly, they constructed photo essays that showed what their computer meant to them. There were 150 teen participants in this user-centered research.

Snapshots

Analysis of the data found different groups of teens. The data from one of these groups will be utilized in the subsequent phases. The snapshot phase provides a thick description (Geertz 1973) of the group studied. A *Snapshot* is effective in analyzing the collected data. *Snapshots* involve organizing, summarizing and communi-

FIGURE 2

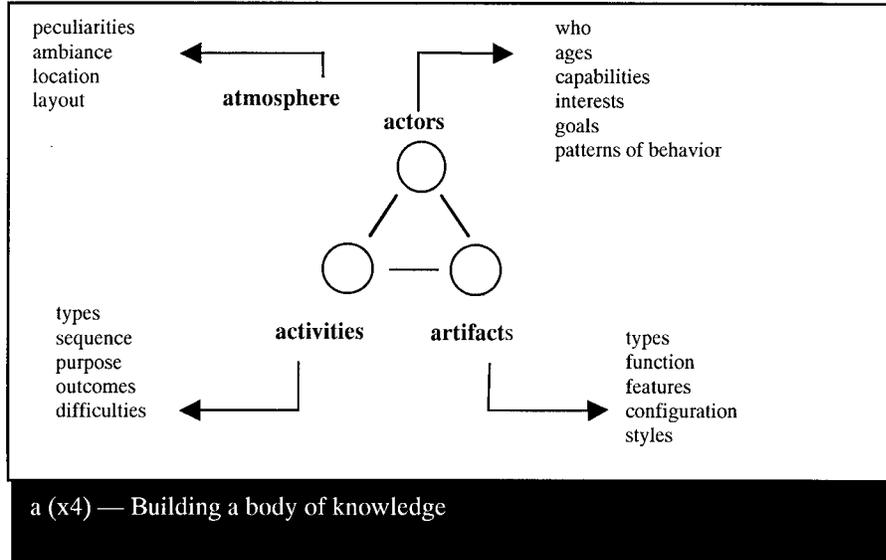


FIGURE 3

Dimension	descriptive (present)		prescriptive (future)
a(x4) scenarios	facts and observations	snapshots	visualizations
Process	research →	analysis →	synthesis →

cating data that has been obtained about the four key elements: actors, artifacts, activities and atmosphere.

Data from the metaphors, wish lists and photographs from the teens in this group (which we later called Toolman) was employed in this phase. In the Toolman group, the participants used the following metaphors for their computer among others: bookshelf, scrapbook, mothers, parents, diary, toy box, dog, friends, food, ant hills, malls, flashlight, superman, teacher, etc.

The following are a few illustrative examples of the paragraphs written by the teens describing their metaphors:

“There are lots of things computers can be described as. A metaphor for my computer is, computers are malls. They’ve got so much in common. They’re both places where you can relax, shop and talk. Both are great inventions. Why do you think malls and computers are alike? Both are places where you can relax. You relax in malls by walking around and relax by sitting and typing on the computer. You

can shop both at the mall and on the computer logging on to store websites or visiting the stores at the mall. Talking is a major part of shopping with friends and talking online for fun. Can you think of any more reasons why malls are computer?”

“My computer is my parents. They both make me look good. They make all my papers look professional. They correct my spelling, check my grammar, and keep things neatly filed. Both my parents and my computer introduce me to new people from different places. My computer and my parents give me interesting facts on many different cultures. They guide me when I am trying something new, or installing something new. My computer is a parent because it is never too busy when I need help, unless someone else is using the computer or my sister is bugging my parents.”

“My computer and my parents also try to make things as easy as possible for me and don’t try to overwhelm me. They can

both entertain me when I am bored, and neither one will ever turn its back on me. My parents are getting older, and so is my computer as technology improves. My computer and my parents are always teaching me new things. The one bad thing my computer and my parents have in common is that they can both give me a headache after awhile. Those are some of the things I can think of that my computer and my parents have in common.”

“My computer is Superman because of all the great things that they can do! First of all Superman can fly, shoot laser out of his eyes, has super strength, and great intelligence. I believe that these traits compare with what my computer can do...almost! What is so great about my computer? Let me tell you what my computer can do and how much it rally means to me.

Alright, so like I said, my computer is Superman, well it does a lot of awesome things that I think compare with the good deeds that Superman does. For example, my computer allows me to talk to people using the Internet. I can type essays with it like I'm doing now. On my computer, I can play music, not to mention also playing DVD's and video games! That equals five different reasons that I love my computer. In my opinion, that's enough reasons that my computer is just as great as Superman, in fact, it is Superman!”

“I said that my computer was a tool. This was my metaphor because my computer helps me do all sorts of things. My computer lets me go places in the internet. I can check my email so I can keep in touch with my friends that don't live in Arizona.

I can play games on my computer to keep me busy when I'm bored. I can do reports by typing on my computer to make it look more nice. For my reports I can also get research off the internet. It also helps me if I can't buy something at stores I can go to the stores website and order it. Basically if I didn't have a computer things would be harder, like school and socially it would be harder.”

The Snapshots phase involves descriptions of the patterns of each of the $a(x4)$ factors. For this Toolman group we found the following:

With regard to the *atmosphere* or context most of the students had computers in their bedrooms. They had the computer on in the background almost all of the time that they were in their rooms. Music was also often on. And frequently friends were there. Most often one was on the computer and one playing video games. For some, less than the above context, the computer was in a public area of the house, most often the family room. This area was not as private. And the computer was then frequently seen as an intrusion with other activities going on—television, talking, meals, etc. And more often in this case, more people were vying for the use of the computer, which created more tension.

The *actors* in this research were a group of 13–14 year old teenagers. They were middle school students taking Language Arts (a required subject). They lived in a city in southwestern United States. They saw and used their computers in a positive, very functional way. (As illustrated by the metaphors above and the description of activities below). There were sometimes other actors in their environments. They frequently had friends around using their computers. And there were sometimes family members around. This group did not talk about the presence of family members as much as other groups who often saw family members as a source of

tension with regard to the computer. This group saw the computer as helpful and positive.

The teens in this group are the multitaskers. One of the main computer *activities* that this group was involved in was communicating, mainly through instant messaging. In fact, in most cases, the computer was on in the background most of the time that the students were home. They were also heavily involved in shopping, learning, researching, entertaining games, and word processing activities. This functional use of the computer led to the title for this group, Toolman.

In the most common context of the teen's bedroom, the most frequent *artifacts* that existed were a table or desk for the computer, chair, television, video game equipment, stereo, CD's, disks, book bags and beds (on which the teen or friends were often lying) (Figure 4).

Visualization

Visualization starts the generative, prescriptive phase. The third part of $a(x4)$ involves speculating about the future of user experience by creating a highly descriptive image or set of images. Created before the development of more specific and highly defined scenarios and concepts, *Visualizations* help individuals and groups break free from overly restrictive constraints and limitations. If done properly, *Visualizations* create a broad, somewhat abstract image from which specific scenarios and concepts about user experience can later be constructed. The importance of this step should not be underestimated. As noted by Bill Moggridge (1993), effective scenario-building is based on a willingness to suspend real world concerns, free from constraints that often limit creativity.

In this Toolman teen case, we have a multitasking, heavy communicator where the computer is a constant part of their life. Interaction with their friends also is much of a constant, either in person or over the computer. With the computer there is always an open communication channel that is on. Additionally there are other major activities going on at the same time ranging from school work and learning to entertainment to shopping. It is easy to envision that, in addition to communicating, these teens become very accustomed to the constant access to the other functions of the computer. And that as they are multitasking, their friends are often a part of all their other activities. These other activities become more collaborative—either in person or virtually through the computer. So their friends also become more of a constant and are involved in their video games (witness the virtual playing of video games with participants from all over the world), school work, shopping, learning, etc. at any time that the teen is involved in these activities. The computer provides the opportunity for this activity to happen in a more constant and a more visual mode than in the past. These teens become more visual thinkers because of this constant access.

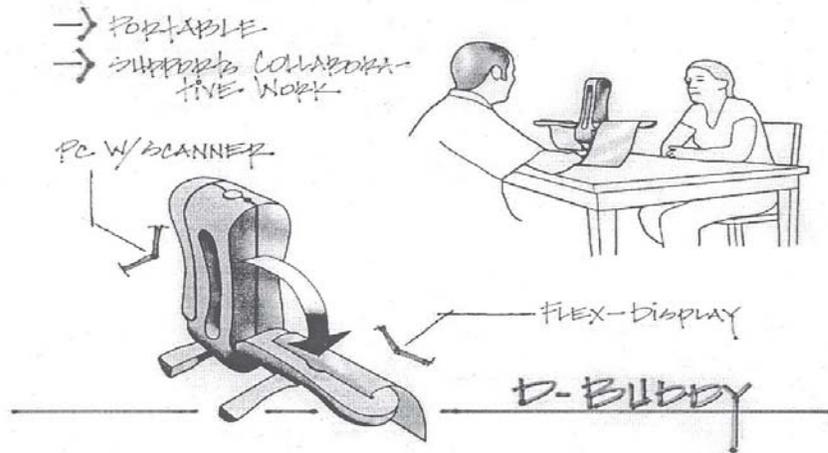
Scenarios

With the previous steps completed, specific and detailed scenarios about user experience can be developed. Researchers and designers start this activity with considerable knowledge and insight about actors, activities, artifacts and the context (atmosphere) in which these all interact. They will have conducted field research, created detailed profiles or *Snapshots*, and developed a visionary, speculative image (or set of images) about a new experience. The form of the scenario can vary greatly depending on circumstances, time constraints and/or other needs and expectations. Common types include: written stories, illustrated stories, comics, storyboards, plays and, increasingly, multimedia productions.

FIGURE 4



FIGURE 5



For the teen Toolman group, a new computer product (adapted from a concept originally developed by Ryan Brown, a 2002 graduate of Arizona State University’s product design program) might be envisioned to support experiences like learning, collaboration with friends, visual communication with friends and mobility—all of great importance to this teen consumer group. As such, the product concept might feature a portable, lightweight PC with an integrated scanner and removable flexible displays. For the Toolman user group, a computer like this would allow them to learn, create and collaborate with friends in a wide variety of environments and circumstances. It would be easy to take this PC with them. The mobility of the product allows the teen the access that they have become accustomed to with the multiple functions of the computer. Also, the scanner and visual displays are highly compatible with the

visual thinkers that these Toolman teens have become. This PC is the mobile tool that allows the teens constant access to the many different functions of the computer, most especially those that increase visual capabilities (Figure 5).

REFERENCES

Anderson, Laurel (2002), “Me and My Computer: Through Teen Eyes,” Working paper.
 Boyce, M.E. (1996), “Organisational story and storytelling: a critical review,” *Journal of Organizational Change Management* 9, 5, 5-26.
 Couch, James, Elizabeth Sanders, and Kate Welker (1997), “To Understand the User/Design Scenarios,” *Innovation*. Fall edition, 24-27.

- Denning, Stephen. 2001. *The Springboard: How Storytelling Ignites Action in Knowledge-Era Organizations*, Boston: Butterworth Heinemann.
- Geertz, Clifford (1973). "Thick Description: Toward an Interpretative Theory of Culture." In *The Interpretation of Cultures*. New York: Basic Books.
- Hirasuna, Delphine, Noreen O'Leary and Peter Lawrence (2002), "Tom Peters on Design," *@Issue*, 6,no.1, 2-5.
- Kotter, John (1996), *Leading Change*. Cambridge: Harvard Business School Press.
- Ireland, Christopher and Bonnie Johnson (1995), "Exploring the Future in the Present." *Design Management Journal*. Spring edition, 57-64.
- Leonard, D. A., and Jeffrey Rayport (1997), "Spark Innovation Through Empathic Design." *Harvard Business Review* 75, no. 6 (November-December): 102-113.
- Moggridge, Bill (1993), "Design by Story-telling." *Applied Ergonomics*, vol. 24. no. 1, 15-18.
- Nakamae, Tadashi (1998), "Three Futures for Japan: Views From 2020," *The Economist*, Vol 346, No. 8060, 25.
- Pine, Joseph and James Gilmore (1999), *The Experience Economy*. Boston: Harvard Business School Press.
- Rothstein, Paul D (2002), "a (x 4): Combining Ethnography, Scenario-building and Design." *2002 Design Research Society International Conference* .
- Rothstein, Paul D. (2001), "Telling the Story of User Experience." *Innovation*, winter edition, 24-27.
- Sherry, John (1995), *Contemporary Marketing and Consumer Behavior: An Anthropological Sourcebook*, Thousand Oaks, CA: Sage.
- Suri, Jane Fulton and Matthew Marsh (2000), "Scenario Building as a Ergonomics Method in Consumer Product Design." *Applied Ergonomics*. Vol. 31, 151-157.
- Swap, W., Leonard D., Shields, M., and L. Abrams (2001), "Using Mentoring and Storytelling to Transfer Knowledge in the Workplace", *Journal of Management Information Systems* (18:1), Summer, 95-114.
- Tapscott, Don (2000), *Growing Up Digital: The Rise of the Net Generation*, New York: McGraw-Hill.
- Ziba (2002), "Twelve Rules for Contextual Design," in *Birdhouse Project Field Book*.
- Zaltman, Gerald and Gardiner Morse (2002) "Hidden Minds," *Harvard Business Review* Vol 80, No.6(June).