Paradox of Technology: Consumer Cognizance, Emotions, and Coping Strategies

DABID GLEN MICK
SUSAN FOURNEIR*

No one eludes technology—the telephone, the computer, the airplane and others. Technology is a power in its own right, fundamental to the historical trajectory of western civilization. Without technology, the contemporary culture (work, art, science and education) is unthinkable. Most work has emphasized the antecedents, rates, and act of technology adoption. Only a minuscule amount of research has been devoted to customer behavior after technology has been acquired.

CONCEPTUAL BACKGROUND

Technology in Western History and American Society

The term “technology” can encompass both material and non material things (e.g. laws). In narrower sense, technology refers to artificial things and more particularly modern machines: artificial things that require engineering knowledge for their design and production. Science and technology have been pivotal to Western societies ever since. During the last 150 years the modern period has been characterized by a surge of technology to unprecedented levels of performance and sophistication (e.g. medicine, communication, transportation). Indeed, the word that may best define modernism is “progress”.

Post modernity and paradox

Modernism’s faith in progress through science has faded in recent decades. The pace, complexity, and unintended consequences have played major roles fermenting a postmodern age in which the human condition is characterized, in large part, by paradoxes. From the logician’s viewpoint, a paradox is a statement that appears self-contradictory. Although the paradox concept has been elaborated in different ways over the years, particularly outside the field of formal logic, it has always centered around the idea that polar opposite conditions can simultaneously exist.

The Paradoxes of Technology

Technology has been elemental to both modernity and post modernity. Technology provides freedom, control, and efficiencies in time and labor, to the extent that twentieth-century consumers have appropriated at their fingertips deific qualities of omniscience, omnipresence, and omnipotence.

In the contrast of pure polemics, some observers have argued that technology itself is paradoxical. It is important to emphasize that the concept of paradox is not simply a relabeling of the cost-benefit equation that has dominated psychology and consumer research. Typically, costs and benefits are qualitatively distinct issues.

Psychological and Behavioral Responses to Technology Paradoxes

Early analytical psychologists theorized the mind as nexus of overlapping tendencies of approach and avoidance toward one or more objects. They were pioneers in elaborating the mental force of paradox and its proximate outcomes of conflict and ambivalence. The conflict and ambivalence precipitated by paradoxes lead, in turn, to anxiety and stress.
Structural Framework Linking Technology paradoxes and Consumer Coping Strategy

On the basis of the premises that paradoxes of contemporary life are endemic and irresolvable, the only viable response is to accept them and attempt to cope. As yet, however, the paradoxes of technology have not been linked to specific consumer coping strategies. Eight central paradoxes of technological products:

1. Control/chaos
2. Freedom/enslavement
3. New/obsolete
4. Competence/incompetence
5. Efficiency/inefficiency
6. Fulfills/creates needs
7. Engaging/disengaging

METHODOLOGY

Data Collection

This article conducted pilot research through four depth interviews and a focus group with a convenience sample of adult volunteers from a local charitable organization. The purpose was to initiate to customers’ terminology and perspective on the meanings of “technology” and related products.

The authors fielded a mail survey to convenience sample of middle-aged adults from local communities (n=89, ages 25-45, 37 males). The richest data came from the phenomenological interviews, averaging 90 minutes each, that we conducted in natural settings of product ownership and use.

Data Analysis

The authors analyzed the sentence-completion data through standard content analysis, developing coding categories and then training two graduate students to independently code the responses. Analysis of the interview data took place during and after data collection, to take advantage of opportunities to follow up on insights before interviewing was completed and to draw insights from the entire corpus of data.

The technology paradoxes from prior literature served as a priori codes. Connections between these first-stage coding were explored independently by each researcher (called axial coding), and then a joint meeting was held to discuss and improve the axial coding accordingly.

FINDINGS

Findings are organized into two major sections:

1. Consumer cognizance and experience of technology paradoxes
2. Associated coping strategies
Cognizance and Experience of Technology Paradoxes

Sentences completions in the survey revealed cursory evidence of customer sensitivity to paradox of technology. For example, one sentence stem “I would describe technological product as …..” while the modal response category (24 percent) was efficiency (e.g. “getting the job done quicker”), 16 percent of the responses were classified in a contradictions category, which explicitly revealed consumers’ recognition of the dialectical character of technology, including such replies as “helpful and hurtful”, “double-edged sword”, and “a blessing and a curse”.

Control/chaos and freedom/enslavement. These two paradoxes often appeared together and were among the most salient across all data sets and informants. From computers to washing machines, technological products are often positioned as facilitating control and freedom of activities. Yet these same technologies can also breed the opposite conditions of upheaval and dependency. The paradoxes of control/chaos and freedom/enslavement were also manifest in the phenomenological interviews.

New/Obsolete. The new/obsolete paradox also surface regularly, perhaps because consumer experience it so consistently across many product classes, especially the high-tech variety. One informant, Evan, had just purchased his first portable computer, after reading computer magazines and visiting retail store. In authors interviews Evan continually talked about the most recent advancements (e.g. faster processing unit, larger memory, sharper monitors), which also made him acutely aware that whatever he bought would soon be leapfrogged by subsequent innovations.

Competence/incompetence. Faith in science has often been accompanied by the belief that the development and use of technology reflect and extend the superior capabilities of human species. However, fear of technological complexity was the most widespread concern among respondents. This finding is understandable in view of day-to-day challenges that customers face in reading instruction manuals for setting up, operating, and maintaining technological products.

Efficiency/inefficiency. Technological products not only save time but can also consume time, at minimum requiring new time commitments that consumers do not realize until after they have tried or owned the technology. This paradox relates not only to high technologies such as computers, but also to low technologies such as vacuum cleaner and dehumidifiers.

Fulfills/Creates Needs. The existential tension between fulfilling needs and creating others through technology has been raised by social critics in the context of macro technologies such as nuclear power. At the level of possessions in everyday life, this paradox is relatively subtle, although it was discussed in striking detail by a few informants.

Assimilation/Isolation. This paradox has also been alluded to by historians and social researchers, most often in relation to television and computer. It too, however, is a comparatively abstract paradox. Among all the paradoxes, salience for assimilation/isolation may have been the most gendered. Female informants seemed more attuned to this paradox, perhaps because of their generally stronger tendency to be concerned with human relations and communal issues.

Engaging/Disengaging. The paradox of Engaging/Disengaging is potentially the most abstract of all paradox. Its negative quality resides at the center of substantive theory of technology,
which asserts that human reality is so pervasively mediated by buttons and knobs that human motivation and skills have been depleted.

Summary. The preceding section suggests that, to varying degrees, consumers recognize central paradoxes such as control/chaos, freedom/enslavement, new/obsolete, and competence/incompetence may be more salient overall because they are often experienced in relation to a range of technological products that are notoriously difficult to comprehend, frequently break down, and quickly become outdated. Others paradoxes seem subtler and more associated with certain type of products.

Finally, consumers expressed a variety of emotions that provided indirect support for the proposal that paradoxes generate conflict and ambivalence, which kindle anxiety and stress. In fact, in several cases technology paradoxes wreaked emotional havoc, with feelings ranging from envy, foolishness, cautiousness, and frustration to fear, betrayal, and defeat.

**Strategic Behavior for Coping with Technology Paradoxes**

Four coping strategies:

1. Pre-acquisition avoidance strategies:
   - Ignore
   - Refuse
   - Delay

2. Pre-acquisition confrontative strategies:
   - Pretest
   - Buying heuristics
   - Extended decision making
   - Extended warranty/maintenance contract

3 Consumption avoidance strategies:
   - Neglect
   - Abandonment
   - Distancing

4 Consumption confrontative strategies:
   - Accommodation
   - Partnering
   - Mastering

**DISCUSSION**

Technological products are inescapable in contemporary life, and they harbor distinctive paradoxes reflective of wider trends in post modernity.
Implications for the Substantive Theory of Technology

The authors’ results dispute aspects of the substantive theory of technology. One of its most significant claims is that technological products are so essential to contemporary life that their nature and effects are imperceptible.

Implications for the Diffusion-of-Innovations Paradigm

The research also contributes to the diffusion-of-innovations paradigm. The diffusion paradigm has construed the influence of technology as three either/or outcomes (desirable vs. undesirable, anticipated vs. unanticipated, direct vs. indirect).

Implications for Human Coping Research

Insights from the interpersonal stress-management literature on the etiology and types of coping strategies can also be extended to the person-object realm of technology. However, is contrary to prior research, suggesting a need for further refinement to human coping theories.

Implications for the Paradox Concept

Whereas paradox has been a central concept in philosophy and growing in the social sciences, it has received limited attention in consumer behavior. Nonetheless, the paradox concept certainly applies to other domains of consumer behavior besides technology. Paradox appears to be a highly relevant and resonant concept for advancing knowledge of contemporary consumer behavior.