

chapter 13

## Myths of Information: The Cultural Impact of New Information Technologies

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### INTRODUCTION: LIVING IN THE INFORMATION AGE

**S**peculating about the nature of the information age is a popular pastime, not only for academics who are fascinated by the possibility that we have entered a new historical era, but also for journalists writing for the popular press who see themselves as covering the cyberspace beat. No fewer than 50 scholarly books have been published since the mid-1980s that all seek in different ways to elaborate the central dimensions of the information age based mostly on a discussion of the use of new information technologies.<sup>1</sup> The range of perspectives represented in these books is daunting. Where Dordick and Wang, for example, provided a retrospective cross-cultural perspective on the information explosion of the past 20 years, Silverstone and Hirsch examined the way in which people consume information in domestic spaces.<sup>2</sup> Although the various authors disagree about the exact nature of the social transformations that undergird in this new age, there is wider agreement on the principle that something significant has shifted for us collectively as a society tied to the rapid proliferation of information. The opinions about the consequences of this shift also vary. Some schol-

ars argue that the information age inaugurates a crisis of democracy, whereas for others it presents a series of interesting business opportunities. There is a reason people persist in referring to this transformation as a revolution of sorts—the use of the term is a rhetorical strategy for announcing a time of dramatic change. The question that emerges is: “What exactly has changed?”

To begin to address this question, I have sought to itemize the underlying set of beliefs that circulate in contemporary U.S. culture about the power of new information technologies. This study involves an extensive review of various mass media discussions about the information age, including a survey of numerous popular and academic books on the topic, and a review of the fictional treatment of information technologies in science fiction books and films. If the information age is a global movement, its epicenter is in the United States where its defining characteristics include:

- An economic philosophy that asserts that information access represents power, and relatedly, that we have moved from a gold standard economy to an information standard global economy.<sup>3</sup>
- A business logic that focuses on the accumulation, production, and management of data.
- Media claims that availability and access to information technologies represent an increase in choice and freedom for individual citizens.
- Political projections that computer-mediated communication networks can solve the problems of democracy in the United States.
- A quasi-religious hope that technology can save us from our own excesses.

These characteristics express the key dimensions of an emergent cultural sensibility whose central concerns focus on the nature of technologically manufactured information and the impact of new digital communication technologies on the everyday life of U.S. residents. These beliefs function as a set of contemporary mythologies that circulate in everyday life via print, film, television, and electronic communication networks about the meaning of a whole range of new technologies.

This chapter discusses two guiding myths of the information age. These myths express two distinct but related stories about the impact of new information technologies on individuals and on our collective political life:

1. The belief that new information technologies will empower individuals, transforming both work and leisure.

2. The belief that new information technologies will augment democratic practices.

These myths are neither true nor false; rather, they are collective accounts of our collective life. Cultures create mythologies to help members make sense of the meaning of new phenomenon. Our cultural myths have gone high-tech: Not only do they concern high technology and its role in citizens' lives, they are also disseminated via high-tech channels of communication such as the television, video screens, and the Internet. A closer examination of these myths will reveal several interesting paradoxes. On the one hand, it is clear that we are in the midst of a cultural shift on a par with the great paradigm shifts in the history of science—our understandings of basic philosophical issues are changing. We can track shifts in our thinking about the nature of reality, the nature of knowledge, and even the nature of the human being. On the other hand, there is evidence to suggest that not enough has changed in our thinking about certain philosophical issues, especially as these relate to the concept of information and ideas about originality, privacy, citizen empowerment, democracy, and community. I conclude with a list of questions that emerge from the transformation of one age to another.

#### MYTH 1: DATA = INFORMATION = POWER: FOR WHOM?

At the heart of our analysis of the transformative power of information technologies is a set of ideas about the nature of information. Business pundits make information into a fetish item—assigning to it magical properties and powerful influence. In business news weeklies, we read how information is the key to greater control, greater knowledge, and greater wealth. John Verity, writing the introduction to the special issue of *Business Week* devoted to the information revolution, had this to say: “However you define it...the capture, manipulation, transmission, and consumption of information in digital form has become a critical function in our economy—and soon, perhaps, in our civilization.”<sup>4</sup>

As several of the articles in this special issue of *Business Week* describe, information is the commodity that defines the U.S. economy. It is considered not only a business resource to be managed and protected, but, more importantly, a good to be manufactured and sold.

How does information get turned into a commodity? We know that it is now possible to mass-produce information. In fact, a well-rationalized organizational infrastructure has emerged for the automatic accumulation of information, based on the automatic production of data. Patterns

of human activity are translated into bits of data that are, in turn, packaged and sold as information about people's consumption habits, such as consumption patterns, viewing patterns, travel patterns, and eating patterns. Through the use of automated recording devices, data are unobtrusively (some would say covertly) collected from people as they go about their daily business. Aggregate accounts of people's consumption patterns are useful information for businesses that make money from those behaviors, namely those who provide consumer goods and services. The use of mainframe computers enables the recording of mass-produced data about consumer habits, which in turn can be organized as databases that can be searched and sold. Wells Branscomb called this the "information market-place."<sup>5</sup>

The process of gathering information about people's behavior in order to predict and influence that behavior is the conceptual foundation of the advertising industry—and certainly not a new cultural phenomenon. What is new is the fact that the production of information has exceeded the needs of the advertising industry. Just as happens with the mass production of material goods, when production exceeds demand, consumption must be stimulated somehow. This is where those cultural myths of information come into play. Demand for information is stimulated by promoting the notion that individuals—not just businesses and industries—need information in order to get better jobs, gain a competitive edge, enhance their quality of life, and even be responsible citizens. Like advertisements more broadly, these myths first provoke an anxiety and then offer solutions for its arrest.

A topic for another paper is a discussion of the issues surrounding the mass production of information and the resulting public concern for consumer privacy. Suffice it to say that the use of electronically accumulated information is a contested terrain, both legally and ethically. My purpose in this discussion is to elucidate the misconceptions embedded in the myths about information and individual empowerment, focusing here on the nature of information, not from the point of view of a commercial interest, but rather from the perspective of the individuals who are being cajoled to join the information revolution.

When people are solicited to join one of the many online services, they are promised access to new people, new information, new communication services, and new social spaces. For example, America Online's (AOL's) software envelope announces these benefits: "EXCHANGE ideas with people who share your interests; DOWNLOAD over 60,000 files and software programs; SEND and receive e-mail anywhere in the world; CHAT with other members in live conversation; CHECK the latest news, weather and sports instantly; ACCESS the World Wide Web the easy way!" In short, connectivity (via an AOL account) provides access to

interactive networks and electronic databases that in turn allow access to vast storehouses of information.

There are several layers of irony in this solicitation, not the least is the exhortation to chat live online with other members. As is the case for most advertisements for online services, the slick promotions often fail to address two important issues from the user's perspective: the veracity of information and the experience of information overload. Concern about the reliability of information made available through these services is slowly beginning to become an issue for network users. When one searches the Web for simple factual information—a product specification or a zip code, for example—reliable information providers are easy to find—such as the vendor or the appropriate government agency. But when the information sought is less factual and more subjective, how does one verify the accuracy of the information? What kinds of extratextual signals can people rely on to make sense of the veracity of information (i.e., institutional address and professional identity)? Online services already show their concern for the quality of information exchanged through their services. For example, some services instruct chat room moderators to monitor (and censor) the use of improper language. Although it is beyond the capacity of any service provider to guarantee the accuracy or propriety of the information made available through its cyberspatial services, it is also clear that services are interested in maintaining certain informational standards for their clients. To date, these standards have more to do with topics of debate than with the quality of information exchanged. For instance, Branscomb reported that some services have arbitrarily delimited discussions on homosexuality and on internal pricing procedures.<sup>6</sup> No online service provider would be willing to monitor information exchanges based on notions of accuracy or quality; instead, these judgments are left to individual users. However, it is exactly these judgments that are increasingly difficult to render. Given the rate of Internet growth and the phenomenal expansion of the World Wide Web, people are confronted daily with a greatly expanded information landscape. As more and more people become connected to these information networks, the capacity for misinformation also grows. Finding reliable information is not easy, even with the best search engines or the most sophisticated knowledge of network navigation, because the issue is not about navigation; it is about the mistaken belief that information is inherently meaningful, or inherently valuable.

At the most basic level, the production of data does not naturally yield useful information. Second, the accumulation of information is not equivalent to the construction of meaning. Information has no context; data have no telos. The construction of meaning is a complex human

behavior that is dependent on the embodied knowledge of individuals—in short, embodied literacy. Literacy cannot be reduced to the skills of data recognition or information accumulation. Literacy is the ability to make significant connections, to form interpretations, to evaluate situations, and to provide context. Information processing does not promote deep thinking; rather it is an act of mechanized—albeit highly ritualized—consumption. It is reactive, not reflective. The claim that access to information networks will empower individuals is based on a misguided notion that information is equivalent to knowledge, and relatedly that access is enough. The production of knowledge is a much more complex process. Information has to be interpreted to be meaningful; interpretation is an analytical process. Simple access is not enough to guarantee more knowledge, more power, or more insight. What is needed is a foundation of literacy, where users are taught how to evaluate the quality of the information, to make connections between different categories of information, and to assess the veracity of information based on an understanding of the conditions of its production. At the base, this assertion has implications for education—at all levels—from K-12 (pre-college) through college. More importantly, it is a reminder that access to technological networks of information cannot substitute for education about the process of knowledge construction.

## MYTH 2: THE INFORMATION REVOLUTION AND TECHNOLOGICALLY ASSISTED DEMOCRACY

An equally invigorating, if not so widespread discussion taking place in the popular press concerns the relationship between new information technologies and democratic practices. Techno-advocates argue that new information technologies will deliver democracy by making more information available to network-savvy citizens. Again, founding assumptions such as the beliefs that more information is better and that increased access is empowering are rarely questioned by these advocates, who end up arguing, often quite persuasively, that the development of faster information distribution systems is a moral imperative for the United States.

According to communication historian James Carey, these claims made daily in the U.S. press about the information age echo those made about the telegraph and the railroad 100 years ago—it is, from Carey's view, the most recent manifestation of an old American dream.<sup>7</sup> In fact, as Carey carefully demonstrated these ideas are woven deeply into the founding documents of this country, such that we can understand, following Carey's lead, how the United States was built in part on a dream

of technologically assisted democracy and the promise of an information revolution.

The United States was, to flirt with more deterministic language, the product of literacy, cheap paper, rapid and inexpensive transportation, and the mechanical reproduction of words—the capacity, in short, to transport not only people but a complex culture and civilization from one place to another, indeed between places that were radically dissimilar in geography, social conditions, economy, and very often climate.<sup>8</sup>

In his historical study of the Federalist Papers, Carey illuminated how James Madison (the “author” of the Federalist Papers) attempted to resolve the contradictions facing the new union produced by its geographic and cultural diversity and displacement.

The problem of continental democracy was to be solved by the press and the art of transportation engineering. A constitutionally protected technology would amplify the debate of democracy and serve as a check on government. Engineering and communication would bind the nation together, collect representatives to public functions, and disperse them to constituencies, and give a vivid presence to a continent-wide public discourse.<sup>9</sup>

Reading carefully, we can hear the resonance with more recent proclamations made about the civic role of the information highway in revitalizing U.S. democracy. Note the familiar sound of this paraphrase: The problem of modern democracy will be solved by the Internet and the art of information engineering. The difference is that, in 1996, geographic dispersion is more virtual than real (a matter of time, not space); the notion of a national union has been replaced with the idea of political parties, ruling ideologies, and economic interests; constituencies are more commonly identified as audiences and target market groups; and there is no form of public discourse that is not technologically mediated.

Although additional issues relating to the notion of electronic democracy are posed in terms of information access, the infrastructure of communication networks, and the education of technologically literate citizens, it is clear that there is still a strong belief in the civic service potential of information technologies. The difference in our thinking about the information revolution and the role of new communication technologies now from at a previous moment in U.S. history concerns the particular form of technology under discussion. What remains similar is the underlying set of beliefs about the capability of information technologies to produce desired social changes, to reinvigorate an ideal

of human community, and to overcome misuses of power and political advantage.

Social change is produced when people act in concert with one another to accomplish an agreed-upon objective. The question that remains to be addressed in the light of these claims is: How (exactly) does access to greater amounts of information enable people to act in socially responsible ways such that desirable social changes are enacted? It seems just as likely that such access could be counterproductive, disabling, and overwhelming to a person's ability to discern important information and act accordingly. Indeed, some social critics argue that the information explosion has done more harm than help to the democratic process because, when confronted with the sheer volume of information available through various media, people cannot find the information they need to make insightful decisions. What this myth fails to address is the "Tower of Babel" effect that happens when each citizen's voice now becomes a broadcast channel. How is rational debate and discussion supposed to take place over the din of voices that take the form of textual junk mail? Does more bandwidth guarantee more democratic discussion or more confusion? Adding to the difficulties is the fact that rational debate among informed citizens, the key process of democracy, is often sabotaged by the manufacture of pseudoscientific findings in the form of opinion polls and market research, which, as additional sources of information have the net effect of confusing people about the issues being debated.

As the myth would have it, more information enables people to make better choices. In many cases, though, access to more information does not mean that better decisions are being made, or that people better understand the nuances of the issues being debated. Furthermore, the myth of technologically assisted democracy obscures the process whereby choices are constructed for people. Whereas the guiding myth of the information age proclaims that citizens have access to all the information they need, what is rarely discussed is the mechanism whereby information is encoded, manipulated, packaged, and selectively disseminated. In short, we often fail to appreciate how our choices are already constructed for us by the kind of the information made technologically available.

Another factor that complicates the issue is the fact that there are few identifiable agents of misinformation misbehaving with our databases. The process of encoding and manipulating information is a consequence of the information processing infrastructure: When information-handling responsibilities are dispersed among several agents, such as survey writers, journalists, advertising professionals, or information managers, it is extremely difficult to determine who is the responsible

agent for the selective encoding and dissemination of information. The cultural purpose this myth serves is to focus attention on the amount of information and to deflect attention from questions about the kind and the quality of information disseminated through new communication technologies.

### CONCLUSION: AN IDENTITY CRISIS OR PARADIGM SHIFT

Cultural myths about the information age often sound more like hopeful projections of where we want to be than realistic accounts of where we are. Although there is certainly something different about U.S. culture, wrapped around the notion of information most statements about the impact of new information technologies record mundane truths: These new technologies do provide people with access to more information. What other impacts can we observe? The following statements suggest a set of questions that I argue should be considered in discussions of the consequences of the information revolution. They concern issues of information ownership, the relationship of individuals to personal information, ideas about originality, and the nature of human beings in a technological era.

#### Information Ownership

When information is treated as a commodity in a legal sense, we are forced to rely on a system that is not designed for such a nonmaterial commodity form. What are some of the difficulties of applying a system of rules and regulations built for the regulation of durable goods and tangible services to information as a commodity? How does one account for the production conditions of information so as to determine issues of ownership, veracity, and context? What rights do individuals have vis-à-vis the information they produce in the course of their daily lives? What is the relationship between individuals and descriptions of their identities (collected as demographic data), descriptions of their behaviors (collected as taste indices) and descriptions of their economic exchanges (collected as consumption patterns)?

#### Originality and Authorship

When information can be electronically replicated with little or no deterioration in the quality of the reproduction, what happens to the notion of the original? What is the relationship between the individual who

produces the original information (the code, the work) and the multiple copies made of it? How do collaborative working relationships change the nature of work compensation? How does one assign authorship to work that is collaboratively produced? What is the nature of the work that guarantees an owner? Why can't other people's material—in whatever form—be borrowed, transformed, and revised?

### Human Identity

At a basic level, our thinking about the human being is changing. The individual has been redefined in terms of biological information systems and clusters of biomechanical parts. This is to say, we are starting to think of the human being through the information paradigm. Biological information systems can be decoded; biomechanical parts can be replaced with technological components. What does this do to our notion of the human being? What rights do individuals have vis-à-vis the biological and genetic information they embody? What is the notion of privacy in the information age? How is privacy being redefined as a property of data access and identity codes?

Given the projections about the continued development of digital technologies, it is clear that additional cultural changes are on the horizon. To address these adequately, we will have to refashion our thinking about knowledge, truth, and democracy. Changes in educational programs and pedagogies will also be required. Notions of literacy will have to be expanded and refined. My criticism of these guiding myths is that we are not yet enough of an information age. Too much information is never collated; too few people are taught how to use information intelligently and responsibly; too much time is spent accumulating information and not enough on seeking its meaning. The cost of this revolution is high, in that it not only requires that we abandon outworn notions of individuality, originality, and information as a commodity, but also notions of personal privacy and democratic debate. The purpose of the myths of the information age is to convince us that there is no price to pay. However, if we were forced to consider the price, I wonder if we would be so enthusiastically willing to embrace the changes.

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# Contents

Foreword

vii

## Part I. Implications for Modern Management

1. Measuring Information Age Business  
 Gary S. Tjaden 3
2. Knowledge Capital: Management Principles for Every Organization's Five Most Valuable Assets  
 William H. Read 23
3. Mass Customization in the Age of Information: The Case for Open Engineering Systems  
 Timothy W. Simpson, Uwe Lautenschlager, and Farrokh Mistree 49

## Part II. Implications for the Workplace

4. Workplace Changes: Psychological Perspective  
 C. Michael York 75
5. Office Productivity: The Impacts of Staffing, Intellectual Specialization, and Technology  
 Peter G. Sassone 87
6. The Impact of Groupware: Work Process Automation and Organizational Learning  
 William M. Riggs, W. Hagood Bellinger, and David B. Krieger 119

## Part III. Implications for Academic

7. Universities and Information Technologies for Instructional Programs: Issues and Potential Impacts  
 Gary W. Pochlein 139
8. Revolutionary Change in the Electronic Publication of Science  
 Scott Cunningham 149