

Verizon

Visiting Professorship  
in Business Ethics  
and Information  
Technology

# Corporate Excellence, Ethics and the Role of Information Technology

*Deborah G. Johnson*

Olsson Professor of Applied Ethics and Department Chair  
Department of Science, Technology and Society  
University of Virginia

CENTER FOR  
BUSINESS ETHICS

FEBRUARY 13, 2006

**BENTLEY**

*www.bentley.edu*

**BENTLEY is a national leader in business education. Centered on education and research in business and related professions, Bentley blends the breadth and technological strength of a university with the values and student focus of a small college. Our undergraduate curriculum combines business study with a strong foundation in the arts and sciences. A broad array of offerings at the McCallum Graduate School emphasize the impact of technology on business practice, including MBA and Master of Science programs, PhD programs in accountancy and in business, and selected executive programs. Enrolling approximately 4,000 full-time undergraduate, 250 adult part-time undergraduate, and 1,270 graduate students, Bentley is located in Waltham, Mass., minutes west of Boston.**

**The Center for Business Ethics at Bentley College is a non-profit educational and consulting organization whose vision is a world in which all businesses contribute positively to society through their ethically sound and responsible operations. The center's mission is to give leadership in the creation of organizational cultures that align effective business performance with ethical business conduct. It endeavors to do so by the application of expertise, research, education and a collaborative approach to disseminating best practices. With a vast network of practitioners and scholars and an extensive multimedia library, the center provides an international forum for benchmarking and research in business ethics.**

**The center helps corporations and other organizations strengthen their ethical culture through educational programming such as the Verizon Visiting Professorship.**



The Verizon Visiting Professorship in Business Ethics and Information Technology epitomizes the Bentley commitment to advancing education and knowledge at the intersection of business and the liberal arts. For more than seven years, Verizon's generous support of this initiative has furthered the work of the Bentley Center for Business Ethics, continuing to engage students, faculty and the corporate community in an important dialogue about the ethical dimension of business — especially at the limits of technological advancement.

We were honored to welcome Professor Deborah G. Johnson as our eighth visiting professor in the Verizon series. Professor Johnson is the Anne Shirley Carter Olsson professor of applied ethics and chair of the Department of Science, Technology, and Society at the University of Virginia. She is a prize-winning scholar, the author/editor of four books on ethical issues in information technology and engineering, and has published more than 50 papers in various journals and edited works.

The Center for Business Ethics will continue to strengthen the business ethics movement through programming, such as the Verizon Visiting Professorship in Business Ethics and Information Technology. We are grateful to the Bentley community, to Verizon, to Professor Johnson and to everyone connected with the center, whose support makes these initiatives a success.

W. Michael Hoffman  
Executive Director  
Center for Business Ethics  
and Hieken Professor of Business and Professional Ethics  
Bentley College



(l. to r.) Deborah G. Johnson: Olsson Professor of Applied Ethics and Chair of the Department of Science, Technology, and Society, University of Virginia; Mary E. Chiasson: Assistant Director, Center for Business Ethics; Gregory K. Miles: Director, Ethics and Business Conduct, Verizon Communications; Mark Rowe: Senior Research Associate, Center for Business Ethics.

**The Visiting Professorship in Business Ethics and Information Technology at Bentley is funded with the generous support of Verizon.**

**Verizon Communications Inc. (NYSE:VZ), a Dow 30 company, is a leader in delivering broadband and other communication innovations to wireline and wireless customers. Verizon operates America's most reliable wireless network, serving 49.3 million customers nationwide; one of the most expansive wholly owned global IP networks; and one of the nation's premier wireline networks, serving home, business and wholesale customers. Based in New York, Verizon has a diverse workforce of approximately 250,000 and generates annual consolidated operating revenues of approximately \$90 billion. For more information, visit [www.verizon.com](http://www.verizon.com).**



### DEBORAH G. JOHNSON

Deborah G. Johnson is the Anne Shirley Carter Olsson professor of applied ethics and chair of the Department of Science, Technology and Society in the School of Engineering and Applied Sciences of the University of Virginia. Johnson received the John Barwise Prize from the American Philosophical Association in 2004; the Sterling Olmsted Award from the Liberal Education Division of the American Society for Engineering Education in 2001; and the ACM SIGCAS Making a Difference Award in 2000.

Johnson is widely recognized for her work in the field of computer ethics. Her popular textbook, *Computer Ethics* (Prentice Hall, 2001), is now in its third edition. She has edited several anthologies focused on engineering and computer ethics. Johnson has published articles in numerous journals including: *Ethics*; *Science and Engineering Ethics*; *Communications of the ACM*; and *The Information Society*. Currently, Johnson is at work on a new anthology in engineering ethics titled *Technology & Society: Engineering Our Socio-technical Future*, co-edited with J. Wetmore. Johnson co-edits the journal *Ethics and Information Technology*, as well as a book series on women, gender, and technology for the University of Illinois Press.

Active in professional organizations, Johnson has served as president of the Society for Philosophy and Technology, president of the International Society for Ethics and Information Technology (INSEIT), treasurer of the ACM Special Interest Group on Computers and Society, and chair of the American Philosophical Association Committee on Computers and Philosophy. Presently, she serves on the executive board of the Association for Practical and Professional Ethics.

# Corporate Excellence, Ethics and the Role of Information Technology

***Deborah G. Johnson***

Olsson Professor of Applied Ethics and Department Chair  
Department of Science, Technology and Society  
University of Virginia

## Introduction

As the global economy has intensified, business ethicists have turned their attention to understanding how corporations can manage their ethical responsibilities and achieve excellence in this extended, multinational, multicultural environment. When corporations “do business” in the global economy, their activities affect many more stakeholders — stakeholders across the globe, with diverse social, cultural and political beliefs and values — and they encounter new competitors and a more complex regulatory environment. These and other factors call for a rethinking of the notion of corporate excellence and corporate social responsibility.

At the core of both national and global economies is a vast network of computers, software, telecommunications lines, satellites, databases, protocols for communication and exchange, and much more. I refer here to the information technology infrastructure for doing business, which is sometimes called the global information infrastructure. This infrastructure can be thought of as the “body” of the global economy. In parallel, information technology along with other kinds of technology can be thought of as the body of a corporation. Technology constitutes the material being of a corporation: the means and material through which it performs its actions and engages in interactions with its many stakeholders. Corporations don’t just *use* information technology; they *are* their information technology. The technology shapes the nature of corporate undertakings; it shapes how corporations do business, when and where they do business, and with whom they do business. It mediates relationships with customers and clients, regulators, competitors, and all other stakeholders.

In terms of the global economy, information technology *is*, effectively, a company’s capacity to do business in that economy. Without information technology — and especially the Internet — the global economy would not exist. To be sure, there would be international business, but not on anything like the same scale and intensity.

As an aside, we could ask which came first here? Did information technology and the Internet lead to the intensification of the global economy *or* did pressures from the

globalization process lead to the development of the global information infrastructure? This is a provocative question, but not one that can be answered as an either/or.

Technology and society are inextricably intertwined. The character of technology and the character of social practices, social institutions, and social relationships evolve together; they interact with and shape one another. Thus, the question whether the global information infrastructure led to the intensification of the global economy or vice versa is comparable to the question, “Which came first, the chicken or the egg?”

Yet while technology is the body of a corporation and while technology makes corporations what they are, little attention has been given to understanding the role of technology in business ethics; that is, to understanding the role of technology in realizing the core values of a corporation, or facilitating/constraining corporate excellence.<sup>1</sup> In what follows, I hope to fill this apparent void and I hope to do so by drawing on recent work in the field of science and technology studies (STS).

Before embarking on this analysis, it may be helpful to say more about the notion of corporate excellence. First, I am not saying that technology is the only, or even primary, component of corporate excellence; rather, I am claiming that it is a key factor that has been neglected. Second, corporate excellence is a broad notion. While it would be helpful to start by delineating the characteristics of corporate excellence and then show that information technology is the means to realize these, the notion of corporate excellence does not allow such a simple analysis. Corporate excellence is a murkier, even contentious notion. A very quick review of the literature suggests at least two general views: one that emphasizes the combination of economic success and social advancement (doing good while making money) and another that seems simply to emphasize productivity and improving work processes. Information technology is an important element on either account so I am going to hedge and not worry too much about what is involved in corporate excellence. Rather, I will make what might be thought of as a prior claim that technology makes a corporation what it is and thus is essential to corporate excellence no matter what we take it to be. Technology is an important element in whatever corporations aspire to be.

### **Rethinking Technology**

I mentioned earlier that my analysis will draw on recent work in the field of STS. In the last several decades, scholarship in the STS field has taken on the task of trying to understand the complex relationship between technology and society; the field examines the relationship between technology and social/cultural values, social organization, social structure, and social practices. Broadly, this literature has critiqued the belief that technology develops in isolation, and that technological development fol-

lows a linear, logical order of development dictated by nature. Emphasizing the wide array of social and cultural factors and events that come into play in the development and endurance of technology, many STS theorists hesitate to claim that technology “determines” society. Instead, STS scholarship documents and theorizes the social construction of technology. In doing this, STS scholars do not so much reject the claim that technology determines society but, rather, they argue for a model of the technology-society relationship in which there is valence in both directions.<sup>2</sup> Technology and society mutually shape one another and are seamlessly intertwined. An important component (a corollary, if you will) of these accounts is that the technologies that we have now are not the way they have to be, or the only way they can be. Social, political and cultural factors influenced the development of existing technologies, and social will and power could make for different technologies.

The co-shaping/co-construction theme is played out by different theorists in different ways. Whether the unit of analysis is a community, a domestic practice, a cultural notion, politics, or a business, attention to technology reveals that technology shapes the character of the unit. Langdon Winner’s seminal piece, “Do artifacts have politics?” addresses the relationship among technology and systems of power and authority.<sup>3</sup> He argues that particular artifacts cannot exist (function) without particular kinds of social arrangements. Hence, adoption of a particular technology means adoption of a particular social order; e.g., nuclear power necessitates a complex, hierarchical system of decision-making. Winner also illustrates how artifacts can enforce social biases and agendas. His discussion of the bridges of Long Island — designed by Robert Moses to be at a height that prohibited public buses from reaching the beaches used by the wealthy white elite — has reverberated in the STS literature for several decades now, pointing to the connection between technology and social arrangements, especially social biases and hierarchies.

More familiar to those who study information technology will be Lawrence Lessig’s claim that architecture — the architecture of computer systems and the Internet — is a form of regulation.<sup>4</sup> Lessig identifies four different ways that social behavior is generally regulated: law, social norms, markets, and architecture. In *Code and Other Laws of Cyberspace* (1999), Lessig uses “architecture” to refer to computer code and his focus is on how code is law. However, the point more broadly refers to physical structures and material objects. Behavior is regulated through buildings and roads and the design of everyday objects. Of the four forms of regulation, architecture may be the one that is least recognized as such. Those whose behavior is regulated by architecture may be unaware of its influence. We drive on roads, stopping at stoplights; we use our fingers to press buttons on phones, and so on without thinking much about how the built environment and design of objects tell us what to do. Yet our built envi-



ronment and the technologies that are now seamlessly a part of our lives embody important values. Lessig illustrates the differences computer architecture makes for universities. The lesson is easily transposed to corporations.

The architecture of the information systems that a corporation adopts shapes the corporation: The system constitutes the social organization and social structure of the corporation. Sometimes the architecture of the system is intentionally designed with this in mind; other times not. Some corporations are aware of the powerful role of information systems in shaping corporate structure, organization, operations and values. Indeed, they may take this carefully into account when they decide which and how information systems will be selected and implemented. Other corporations are less aware and less thoughtful about their technology choices. In any case, the point to be made here is not about corporate awareness of the way in which technology affects corporate activity, but rather the awareness of business ethicists as to the role of technology in business ethics.

In order to use STS concepts and theory in business ethics, it is helpful to note two shifts in thinking that are called for in STS literature. STS theory calls for a shift in conceptualizing technology and, consequently, a shift in the unit of analysis for the study of technology. First, STS theory rejects the notion that technology is merely material objects or artifacts. Artifacts are one component of technology. STS scholars argue that technology is a combination of artifacts, social practices, social arrangements, and systems of know-how. An artifact alone has no meaning or function; it becomes a “something” and it becomes functional through the social meaning and social practices attached to it. Artifacts cannot exist, cannot be used, and cannot have effects without social practices, social organization, relationships or arrangements. Likewise, many social organizations or practices could not exist *as they do* without artifacts. Human-made material objects never come into being or exist in a vacuum; they are never used in a vacuum; and they never have meaning or effects in a vacuum. They are created in a social context, function in a social context, and are shaped and reshaped around complex social practices.

Interestingly enough, when the inseparability of artifacts from social practices and social organization is fully recognized, it becomes clear that the artifact alone – as an independent entity – is a kind of abstraction. When we focus on the artifact alone, we mentally separate it out from all the things that make it what it is, including the context in which it was made and the context in which it is used, the systems required to distribute, service, and dispose of it, and the cultural meaning associated with it.

The second shift follows from the first. Because technology is the combination of artifacts, social practices, social relationships, and social and cultural meanings associat-

ed with the artifacts, the unit of analysis for technology studies should be socio-technical systems or socio-technical ensembles.<sup>5</sup> These are combinations of things and social arrangements and social practices. Actor-network theorists argue that technology should be viewed as systems or networks.<sup>6</sup> Most importantly, they emphasize that both nature and artifacts exert influence in the system, just as the behavior of human actors in the network exerts influence. Thus, actor-network theorists propose that we think of all of the nodes in a network (a socio-technical system) as “actants”; no one actant should be more privileged than another.<sup>7</sup> Nature and artifacts are actants in the network; they have power and exert influence in the network. In focusing on technology as a network or system composed of human and non-human actants, we are able to see how technology and society are seamlessly intertwined and shape one another.

The shift in unit of analysis to socio-technical systems or networks sets the scene for a better understanding of the link between technology and business ethics. This can be illustrated through the analysis of an artifact that, when adopted by a corporation, changes the character of the corporation. Consider a workplace monitoring system, adopted by a corporation for use by those who supervise employees doing work on computers. Note first that the monitoring system cannot be thought of merely as an artifact or merely as several million lines of code. The lines of code can’t do anything alone. The idea of a “workplace monitoring system” doesn’t have any meaning except in relation to companies with hierarchical organizational structures that value efficiency and control. Of course, the lines of code also require for their usefulness other artifacts; most importantly, computers with particular configurations. The software and hardware together require extremely complex social organizations to manufacture and distribute them. The software and hardware are as they are because of patent law, because of complex distribution chains, and so on. Even after we take into account the production, distribution and installation of the software system, the system is of no use unless there are people who are trained in how to use it. And the training must involve a variety of social practices; that is, those trained in how to use the system will have to be trained in how to interpret and use the data the system provides. The data will be used in the social practices that constitute supervisor-supervisee relationships and more generally employer-employee relationships, and the character of these relationships is in turn shaped by company policies as well as national and state law with regard to employer-employee relationships. The individuals who are part of the social practices that constitute the workplace monitoring system must have been socialized in particular ways so as to have adopted the relevant informal social norms.

In short, the employee monitoring system is constituted by an endless variety of social practices and social conceptions. It works because of a combination of human and

non-human components. The system can be delineated in any number of ways and when we think of it simply as software or software and hardware, we miss that it is a socio-technical system and not just an artifact. When we conceptualize it as an artifact or a piece of software, we fail to see, for example, that the design of the software and the design of the social practices around the software must be thought of together. The lines of code that constitute the software are actants in the socio-technical system; they exert influence. Of course, so do — or should — the people in the corporation. In fact, the adoption of a new information system (or a change in an existing information system) involves a negotiation among actants. System designers negotiate with various individuals and groups as to how the system will be implemented.

Recognizing the social and human components of technology is critically important and many corporations have learned the lesson of not acknowledging this. The focus of this analysis is not so much on whether corporations recognize the role of technology in making them what they are, but rather what the implications are for business ethics. Insofar as technology constitutes corporations, shaping their character and their values, it plays a role in business ethics. For example, in decisions about the design or implementation of technology (and here I include the artifacts as well as social practices around the artifacts), the core values of the corporation are at stake and may be realized or impeded. Recognizing that workplace monitoring systems are socio-technical systems moves us closer to understanding the connection between technology and business ethics by showing us that socio-technical systems constitute and shape the social organization, social practices and social relationships of a corporation. What are the implications for business ethics?

### **Implications for Business and Business Ethics**

The analysis I have just provided suggests not just that business ethicists should pay attention to technology and its role in corporate excellence, but additionally that business ethicists should use the framework of socio-technical systems to do the analysis. The point is that the notion of socio-technical systems should be used to understand what constitutes a corporation. Socio-technical systems should be the focus of attention in understanding the ethical character of corporations and their excellence.

There are at least two different ways to do this. First, in recognizing that corporations comprise socio-technical systems, we can examine particular socio-technical systems and see in particular how the artifacts (software, hardware, information system designs) are shaping the ethical character of the corporation. In particular, I think business ethicists (and corporations) should be interested in how choices in technology have ethical implications and contribute to — or work against — excellence in busi-

ness. The point of emphasizing the artifacts is not that they are more important than social arrangements, relationships and practices (formal and informal patterns of behavior), but rather that they have been neglected in past understandings of corporate excellence, ethics and social responsibility.

A second way to use the notion of socio-technical systems is to view corporations themselves as socio-technical systems. Corporations are combinations of things and people; they are buildings, machines, telephones, the Internet, heating systems, as well as social hierarchies, lines of authority, and a wide range of formal and informal social practices. This is true of e-business as well as brick-and-mortar businesses. Corporations shape and are shaped by technology. Because of the nature of corporations — corporate culture, ends, structure, etc. — certain kinds of technologies have been developed. Likewise, the character of corporations has been shaped by the availability of certain kinds of technology. The best example of the latter is the Internet and global corporations. Corporations are global in the way they are in large part because of technology. There couldn't be multi-national and global corporations without the transportation and communication systems we have; at least these corporations wouldn't be of the kind that they are without the Internet, the connection of computers and telecommunication lines, and other artifacts that make it possible for a single corporation to keep track of and manage operations across the globe.

The role of technology in business ethics and corporate social responsibility can, perhaps, best be illustrated by a worst-case scenario metaphor. When a corporation adopts a powerful technology such as an information system without foresight as to the changes that such adoption might bring, it runs the risk of letting a Trojan horse into its midst. The information system may make possible or even require a set of social practices that go counter to the core values of the corporation. The values and social arrangements embedded in (or made possible by) an information system should be in harmony with the values and mission of the corporation. Use of the information system might engage the business in relationships with clients, consumers or competitors of a kind that are entirely contrary to (or that undermine) the mission, values or public promises of the corporation. Yet the contrariness of the information system may not be immediately apparent. Those who understand what the information system does and *how* it does what it does may not be sensitive to the corporation's mission and values, and those who are sensitive to the mission may not understand information technology well enough to see the values at stake in its design or the connection between design issues and the corporate mission.

Admittedly, the Trojan horse metaphor is limited here since the Trojan horse was filled with enemy soldiers. Information systems are rarely enemies in the sense of being

intentionally directed at undermining a corporation or its values. Rather, information systems may carry embedded values, values that are not transparent.<sup>8</sup> The Trojan horse metaphor works here with the imagery of taking an embodied structure into your territory and later realizing that the apparently innocent object carries within it the potential to take over and destroy that which is central to your being. Because technology is value-laden and may be laden with values that are not transparent, adoption and use of technology has to be understood not just as a means to corporate ends but as constituting the corporation and its values.

A good illustration of this can be found in a mid-1990s Microsoft case in which Microsoft marketed a version of their platform for personal computers, advertising it to consumers as more flexible than it really was. Though Microsoft claimed that their Internet Explorer version 4.0 would operate smoothly with other Sun JAVA™ applications, in fact Microsoft had programmed IE version 4.0 and other types of software with a proprietary form of the JAVA code. The product would function best if it was used with other Microsoft utilities. Here, the bias in the software was not clear to buyers at the point of purchase, and it didn't threaten or undermine the buyer's values. Rather, it favored Microsoft's interests.

To avoid misinterpretation, let me say that I am not suggesting that information technology or any other kind of technology is bad or an enemy of corporate excellence. The thrust of the Trojan horse metaphor is not to say: never let horses into your city. Rather the lesson is: be very careful about *which* horses you let into your city; horses aren't neutral, and hence their adoption can promote or detract from business ethics and business excellence. Information systems are an important component of excellence in business. Hence, they are an important component of business ethics.

### **Distributing Responsibility**

To illustrate the way in which adoption of an information system may affect corporate values and ethics, let's work through a few examples. One of the advantages of the socio-technical systems approach is that it frames endeavors as combinations of things (artifacts) and people, and this, in turn, draws attention to the distribution of tasks among people and things. Technologies work and accomplish designated tasks when artifacts and people work together, each doing their own part. This lends itself to a focus on issues of responsibility and accountability.

One of the major transformations wrought by computer and information technology in corporations in the last half-century has been in the distribution and redistribution of tasks to computer systems. Of course, assigning tasks to computer systems does not

always involve taking tasks away from humans or eliminating human actors. Often the assignment of tasks to computer systems means accomplishing tasks that weren't possible before. Other times the assignment of tasks to computer systems involves changing the nature of the tasks assigned to human actors rather than eliminating them. Yet other times, the assignment of tasks to computer systems may create new tasks for humans, tasks involving the monitoring or maintenance of the system. In any of these cases, adoption or change in computer systems leads to a reconfiguration of tasks and duties among human and non-human actors.

Let us consider a series of examples. To start, take a simple example from the automobile industry. When it comes to automobile repair, computer systems have taken over the task of diagnosing malfunctioning automobiles. The introduction of these computer systems has changed what mechanics do, what they need to know, and how they interact with customers. Some of the tasks previously done by a human mechanic are now done by a computer system.

Something similar could also be said about many, if not most, of the activities in corporations. Information technology has changed what it is that sales people, human resources personnel, legal counsel, assembly line workers, administrative assistants, customer service representatives, etc., need to know to do their jobs, how they do their jobs, how they interact with other employees, customers and clients. And, of course, corporations now employ huge numbers of computer professionals to select, install and maintain their information systems, as well as provide security for these systems and manage legal rights and licenses for these systems. In some cases, tasks once done by humans have shifted to non-humans; in other cases, entirely new tasks and responsibilities have been created and assigned to computers.

Consider the case of an activity such as air traffic control, in which the issues of responsibility and accountability are especially important because human lives are at risk. If something goes wrong in air traffic control, airplanes may collide and human lives will be lost. In the last several decades, tasks formerly done by human air traffic controllers have been reassigned to software utilities. Indeed, currently there is discussion of next generation air traffic control systems involving even more reassignment of tasks to software systems.<sup>9</sup> The new systems of the future (as with the systems developed in the recent past) are likely to provide improved precision and speed, though with diminished control by human actors. When tasks are assigned or reassigned to computer systems, important issues of responsibility and accountability arise, issues that ought to be taken into account in the design of the socio-technical system.

The accountability issues here are both theoretically and pragmatically daunting. Can computer and information systems be accountable? Can the human actors who work with, monitor or maintain the non-human systems be accountable for the system behavior? Can these human actors be accountable even though they do not understand what goes on in the system? Can they ever be accountable for failing to override the system? If not, then a powerful but somewhat invisible shift has been made in moral responsibility. Tasks that were done by humans and for which the humans were held accountable are now done by non-humans who bear no responsibility. If this stands, then corporations have adopted socio-technical systems in which there are tasks, but no responsibility.

The issues of accountability that arise in air traffic control have parallels within corporations. When tasks are automated, the human actors working with the automated behavior may not understand what is going on in the artifacts. If their responsibility for the system calls for them to intervene when the system malfunctions, they may have great difficulty figuring out whether and when to act. Safety is not the only value at stake in the distribution of responsibility in corporations. If corporations have core values, their practices should exhibit these core values. If these practices involve computer systems or other artifacts, then the character of the artifacts and the influence they exert on corporate social practices may significantly affect corporate values. Yet, responsibility for the values embedded in the artifacts, and thereby in the socio-technical systems of the corporation, may be far from transparent to the human actors in the system.

An example closer to home is that of *Turnitin.com* and other devices used to detect plagiarism on student papers. Here the example is not corporate. It is used here to illustrate how the incorporation of new artifacts in a socio-technical system can affect issues of responsibility and accountability and the core values of an institution. *Turnitin.com* allows teachers to check student papers to see if the student copied material from the Internet, including other papers there. While it might be argued that the introduction of this new artifact (new information technology tool) does not shift responsibility away from students, it certainly provides a new option to teachers, an option that makes it easier for teachers to check the integrity of student work. Education is a socio-technical system and the incorporation of a new artifact changes the system. The potential effect of the changes from the new artifact is to undermine the value of trust that seems to be a core value of academic institutions. Instead of a “community of trust,” *Turnitin.com* contributes to the transformation of educational institutions from communities of trust to communities of surveillance.

These examples — automobile repair, air traffic control, *Turnitin.com* — show how technical choices affect the internal moral character of institutions such as corporations. Technical choices shape the capacity of corporations to interact with all of their stakeholders, internal and external. The role of information systems in shaping relationships between a corporation and its stakeholders cannot be underestimated. The idea of computers and information systems as mediators works well here. Information shapes the character of these relationships and computers and information technology regulate the amount and kind of information that stakeholders have, as well as the amount and kind of information that the corporation has about its stakeholders.

So, I have tried to make the argument for acknowledging both that corporations are themselves socio-technical systems and that they comprise multiple socio-technical systems. This way of thinking about corporations brings the importance of technology into focus. It suggests that technological choices are moral choices. The choices that corporations make in adopting and integrating technology into their operations affect the mission and values of the corporation and are an important component of the moral character of the corporation.

### **Conclusions: Corporate Excellence, Ethics and Information Technology**

The thrust of my analysis is to draw attention to the role of technology, especially information technology, in business ethics and corporate excellence. Corporations are socio-technical systems. They are constituted by socio-technical systems; that is, combinations of people and things functioning together to achieve tasks. This means, among other things, that artifacts are implicated both in corporate wrongdoing and in corporate excellence, as well as the abundance of corporate behavior that falls in between. It means that information and communication technology as well as other technologies are key components in what a corporation is and how it relates to its stakeholders and how it fulfills its social responsibilities. To achieve corporate excellence, attention has to be paid to the “the bodies” of corporations; that is, to the technologies that constitute corporations, and the values embedded in those technologies.

Thank you.



## References

- <sup>1</sup>For a review of business ethics literature focused on technology, see K. E. Martin and R.E. Freeman, "The Separation of Technology and Ethics in Business Ethics," *Journal of Business Ethics*, Vol. 53, No. 4, 353-64, 2004.
- <sup>2</sup>D. MacKenzie and J. Wajcman, "Introductory essay: the social shaping of technology" in D. MacKenzie and J. Wajcman (eds), *The social shaping of technology*, 2nd ed., pp. 3-27, Open University Press, 1999, and W. E. Bijker, "Sociohistorical Technology Studies" in S. Jasanoff and G. E. Markle and J. C. Petersen and T. Pinch (Eds.), *Handbook of Science and Technology Studies*, pp. 229-256, London: Sage, 1994.
- <sup>3</sup>L. Winner, "Do Artifacts have Politics?" in *The Whale and the Reactor*. The University of Chicago Press, 1986.
- <sup>4</sup>L. Lessig, *Code and Other Laws of Cyberspace*. Basic Books, 1999.
- <sup>5</sup>J. Law, "Technology and Heterogeneous Engineering: The Case of Portuguese Expansion" in W.E. Bijker, T. P. Hughes, and T. Pinch, *The Social Construction of Technological Systems*. MIT Press, 1987 and W. E. Bijker, "Sociohistorical Technology Studies." In S. Jasanoff and G. E. Markle and J. C. Petersen and T. Pinch (Eds.), *Handbook of Science and Technology Studies*, pp. 229-256. London: Sage, 1994.
- <sup>6</sup>J. Law and M. Callon, "The Life and Death of an Aircraft: A Network Analysis of Technical Change." In W.E. Bijker and J. Law, *Shaping Technology/Building Society*. MIT Press, 1992.
- <sup>7</sup>M. Callon, "Some elements of a sociology of translation: domestication of the scallops and fishermen of ST Brieuc Bay." In J. Law (Ed.). *Power, Action and Belief*. London, Routledge, 1986.
- <sup>8</sup>Useful examples of embedded values can be found in B. Friedman and H. Nissenbaum, "Bias in Computer Systems," *ACM Transactions on Information Systems* July 1996, 330-334.
- <sup>9</sup>See D.G. Johnson and T. M. Powers, "Computer Systems and Responsibility: A Normative Look at Technological Complexity," *Ethics and Information Technology*, forthcoming, 2005.



## **Below are the highlights from Deborah Johnson’s question-and-answer session with Bentley students, faculty and guests.**

### **Question:**

You indicated that technology has certain values embedded within it. Could you amplify that thought in reference to the *Turnitin.com* technology? In particular, does the fear of undermining trust as a core value mean that *Turnitin.com* would never be used at your university, the University of Virginia?

### **DEBORAH JOHNSON:**

UVA doesn’t have a policy. This is what happens with new technologies — you can’t anticipate exactly what it means up front. I know that some of my colleagues use it and others don’t. When I say that there is a value embedded in *Turnitin.com*, you have to understand that I’m thinking of *Turnitin.com* as a socio-technical system. Of course, putting it bluntly, it’s designed to be used by professors to check if their students are lying. So that’s what I mean by its being value-embedded. Essentially, it amounts to surveillance of students; I could give you a long pitch as to why surveillance in that context is so contrary to what we are trying to do. If you ask me what UVA should do, I think prohibiting its use would be counter to individual freedom, but I certainly would discourage faculty from using it.

### **Question:**

In reference to your Trojan horse example, I was wondering if you could comment on the situation that Google finds itself in right now: having the company motto “Do no evil,” and having collected some of the most intimate thoughts of millions of people all over the planet, it is now being subjected to FBI requests for all that information. It could conceivably create, in a sense, the worst evil in the history of the Internet.

### **DEBORAH JOHNSON:**

To be honest, I find it outrageous that any company would say our motto is “Do no evil” or claim that they do no evil. That is just such a non-human thing to say. We are all flawed; for them to claim that they know what evil is and what right is, that just makes me mad. The technology is a technology of surveillance. I don’t know how they get around this, having all that data. I agree that it is absolutely in their interest, and it works for users as well, for Google to fight disclosure in order to keep that data private. We wouldn’t use Google’s services as much if we didn’t think we had privacy. You could have predicted that this was going to be an issue. When I’m on the Internet, I’m also bothered by that little warning you get sometimes that says, in effect, “If you proceed, you are acknowledging that you might be monitored.” It’s a kind of extortion. I can choose not to click through but I might need the information. They don’t give you the choice to do so anonymously or not anonymously. It’s just, “Do it or don’t do it.”

**Question:**

Perhaps I can take the last question a step further, with your Trojan horse metaphor still in mind. Do you think there are situations that are so serious that they might undermine our trust in the Internet, and make us rethink how we use it?

**DEBORAH JOHNSON:**

Yes, that's what I think is quietly happening now, in different ways. First, spam, pop-ups and all the other junk seem increasingly hard to filter and control. But I also think there is a kind of naïveté, and people are encouraged in that naïveté. And, thinking again of Google, as a philosopher the more interesting issue for me is that of censorship in China; whether Google should modify its search engine for use in China in order to satisfy the Chinese government. This raises a fundamental moral question about respect. If I respect you, then can I impose on you what I think is good for you? In the Google case, we're concerned with respect for another country and its value system. Actually, I think Google is probably doing the right thing by setting up *google.cn* in the way the Chinese government wants it set up.

**Question:**

Technology is increasingly designed to support multiple different processes. So for example, e-mail and web servers and web browsers can be used to support many things. Companies originally invested in e-mail to have a communications device. Now it's used as an advertising medium, as a document-sharing tool and all these other things. So, as technology is used increasingly for secondary, and maybe tertiary, processes beyond their original purpose, what do you predict will be the ethical implications?

**DEBORAH JOHNSON:**

One of the really interesting and intriguing themes in the STS (science and technology studies) literature runs counter to the idea that technology develops in a linear, logical way. It shows that users actually shape the technology. Instead of having a linear development, it's all over the place. IT is no different from any other technology in that respect, although it is more malleable than most. I think it is going to continue to evolve in ways that we can't necessarily anticipate, in the absence of too much regulation. However, the law frequently intervenes to protect intellectual property rights and the like, and that does make the technology less malleable.

**Question:**

I think there are some risks associated with evolution [of information technology]. Think about RFID [Radio Frequency Identification] and how Wal-Mart and the Department of Defense mandated its use by their top suppliers. They sold them on it

by telling them they were going to save all this money; what their suppliers may not know is that Wal-Mart (or the DoD) can track what they're doing and then dictate the way the supply chain works, based on the suppliers buying into the technology. Do you have any thoughts on this?

**DEBORAH JOHNSON:**

Microsoft was like the Trojan horse example: you got hooked on Microsoft and discovered you didn't just let the horse in but other things as well. There are so many trends going on there. I don't really have any predictions, except that I do think, unfortunately, there will be more regulation. The future will really test the idea of computing as a kind of counter-culture that resists regulation; that, by its very nature, is free and open. It seems to me that this notion is already being tested.

**Question:**

In light of the numerous corporate scandals we've seen, how does IT play a role in helping companies rebuild trust? You might say that IT has been responsible for depersonalizing business interactions. How do we avoid that and shift the focus back onto human relationships?

**DEBORAH JOHNSON:**

IT has a great capacity for promoting transparency by making information more readily available, which promotes accountability. So there's some potential there to reengage trust. I've done some work on trust and things like anonymity, and on trying to understand the difference between trust in face-to-face and mediated communication. It turns out that trust in face-to-face communication is enormously complicated! Often, we get it all wrong. In electronic communications, of course, we now have digital signatures, which can promote trusting commercial relationships. Modern technology tends to make us more and more interdependent, and often we're relying on systems we don't fully understand.

**GREG MILES**

**(Director, Ethics and Business Conduct, Verizon Communications):**

This is more of a comment than a question, picking up on the issue of trust. As a corporate executive, I think a lot about trust. In a large corporation such as mine, you always convey to your employees that you trust them to do the right thing. You have a code of business conduct and you expect everyone to comply with it. You talk about confidentiality, conflicts of interest and all the other sensitive issues that can confront them. But you have to be realistic, knowing human nature, and the company must take steps to protect itself. We need to have oversight mechanisms — some utilizing information technology — to ensure that people do behave as we expect them to and

that they're complying with the (company's) code and the law. Of course, I would love to be able to say to all the employees, "We undoubtedly trust you in whatever you do," but unless we did more we'd be opening ourselves up to a lot of problems. Interestingly, one of the company publications that employees most look forward to reading is a quarterly report in a newsletter from our Security people. It gives sanitized versions of actual cases where employees have committed misconduct, and says what happened to them. Everyone looks forward to it! So it's a very delicate balance, giving people the autonomy they need to do their jobs and at the same time ensuring we protect employees; they are entitled to expect a work environment that's conducive to professional behavior and is harassment- and discrimination-free.

**DEBORAH JOHNSON:**

I think it's similar to *Turnitin.com*. It's about trust and accountability. In other words, nobody is saying trust without any accountability; it's finding the right balance. But you really want people who are capable of making decisions, being critical and using judgment. The literature suggests that if you have people who live in a world in which they are being watched all the time, they don't develop that capacity. Instead, they adopt the view of the watcher. If you're in a prison being watched 24 hours a day, and you know there are repercussions, you adopt the view of the prison guard and you don't develop your own capacity to make decisions. But I agree with you, it's definitely a back-and-forth, a balance.

**Question:**

Some corporations have in effect been able to monopolize the IT market: Microsoft, for example, and Google in a sense. Can their success be attributed to nothing more than simply meeting the ideals and desires of the market? So, has technology really adapted to us, rather the other way around?

**DEBORAH JOHNSON:**

You mentioned Microsoft. Microsoft is generally put up as the example of a company that has managed to succeed without serving its customers very well. I think that is a good illustration of how we've accommodated to technology. It offers us certain benefits with certain costs and since nobody else was able to get in there and offer us the same benefits with fewer costs, we accommodate. But who knows? I don't know exactly how to characterize Microsoft. But it is certainly a good example of the company shaping the consumer rather than the consumer shaping the company.



**BENTLEY**

*www.bentley.edu*

**CENTER FOR  
BUSINESS ETHICS**

175 Forest Street, Waltham  
Massachusetts 02452-4705

Center for  
Business Ethics

Tel: 781.891.2981

Fax: 781.891.2988

E-mail: [cbeinfo@bentley.edu](mailto:cbeinfo@bentley.edu)

On the Web:

*[www.bentley.edu/cbe](http://www.bentley.edu/cbe)*