

The IBTE is a non-profit education, research, and consulting organization promoting good business through appropriate technology and sound ethics.

Co-directors:
Albert M. Erisman and David W. Gill

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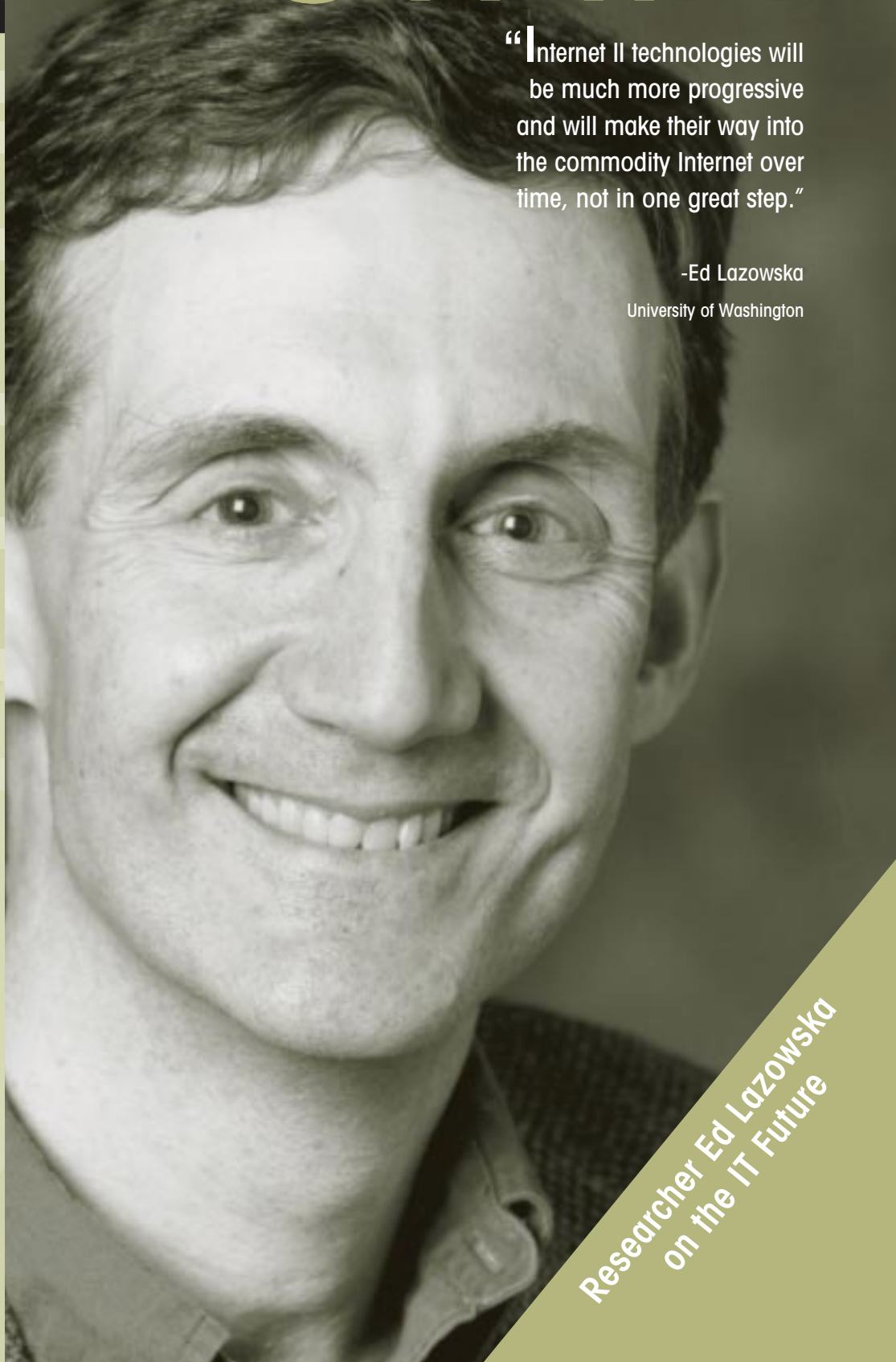
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“Internet II technologies will be much more progressive and will make their way into the commodity Internet over time, not in one great step.”

-Ed Lazowska
University of Washington



Researcher Ed Lazowska
on the IT Future

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The Institute for Business, Technology, and Ethics, a non-profit 501(c)(3) corporation, was founded in 1998. Our mission is to promote good business through appropriate technology and sound ethics.

Our method is to draw together the voices and insights of all the players on today's terrain: entrepreneurs, techies, managers, policy makers, pundits, academics, enthusiasts, and critics.

Co-Directors:

Albert M. Erisman (ame@ethix.org),
formerly Director of Mathematics
and Computing Technology for The
Boeing Company

David W. Gill (dwg@ethix.org),
formerly Professor of Ethics at New
College Berkeley and North Park
University

Contributing Editor: Gerard Beenen
Office Manager: Jennifer Smith
Graphic Design: Cinda Peters Design

Board of Directors: Cynthia Breilh,
Peter Dill, Roger Eigsti,
Albert Erisman, Doug Gibson,
David Gill, Scott Griffin,
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(www.spu.edu)

Main Office:

IBTE
P.O. Box 50474
Bellevue WA 98015
Phone: 425.269.6537

Bay Area Office:

IBTE
P.O. Box 5365
Berkeley CA 94705
Phone/Fax: 510.653.3334

FROM THE DIRECTORS

In this issue Ed Lazowska, our IBTE Conversation partner in this issue of *Ethix* (p. 6), will be well-known to many of our readers from the world of information technology and computer science. For others, this will be a first opportunity to meet one of the leading minds at the cutting edge of his field. Lazowska's look at the future of technology and his comments on information technology vis-à-vis terrorism, business, and education are both intriguing and insightful.

In our essay section, former DeLoitte & Touche CPA, now financial consultant, Greg Zegarowski contributes a "Report Card on Financial Reporting" (p. 10). AI's Technology Watch (p. 4) looks at critical factors in the success or failure of large-scale information systems in business. David's Benchmark Ethics (p. 15) makes an argument for what should be at or near the top of any company's list of ethical principles.

By the way, for those of you who have thought about writing something for *Ethix*, we have prepared some brief "Guidelines for Writers" you can find posted at our web site (www.ethix.org).

Speaking of our web site, some 80,000 hits set a new record this fall for a single month's activity at ethix.org. We continue to tinker with our site to make it as helpful as possible and we welcome your input on how both our web site and our magazine can better serve you.

As we send this issue to press, we are also reflecting on the close of 2002. This has been a banner year for business ethics violations, placing them almost continuously front and center in the nightly news. Many have talked with us about what a great opportunity this should be for us here at the Institute for Business, Technology, and Ethics. "Business ethics is a growth industry," people sometimes joke. We are not rejoicing.

First, many innocent people—from investors to customers to employees—have been hurt. Ethics is not an abstract philosophical game; it is about protecting people from harm. For the victims of unethical practices, this has been a terrible year. Second, the constant bad news, even though it concerns a small minority of businesses, has a cumulative impact that raises the level of cynicism among people, especially the young. This is not easily reversed. Third, the kind of business ethics that is prominent in this context is "damage control" ethics in its most extreme form. True triage is required.

As Greg Zegarowski's essay suggests, better systems and regulations may result from these troubling times and that would certainly be welcome. But the best that could come out of this situation would be a serious and widespread look at a richer, deeper, more positive kind of values and ethics—what we call "mission control ethics": value-embedded company cultures and principle-guided practices that promote and sustain business excellence.

We look forward to a better year in 2003. Happy New Year!

David W. Gill & Albert Erisman
IBTE Co-Directors

The Link between Technology and Ethics

I just finished reading the September/October 2002 issue of *Ethix* cover to cover. What a great issue! I especially enjoyed the review section as I hadn't heard of any of those books yet! The conversation with Michael Federle was interesting—makes me want to spend more time reading *Fortune*.

Regarding the column on "Technology's Impact on the Ethics Area" all I can say is this: Now I get it! I think you do a great job of outlining how technology and ethics are inseparable in the context of most modern discussions. The two themes are really interwoven throughout much of what we see in the news. Half way through your column I was just blown away that I hadn't thought more about the relationship between the two. I've come to take technology for granted and have never really seen business function in its absence. For this reason, I had a hard time initially seeing the relationship. It's clear to me now though, that even the overwhelming forces and trends such as globalization depend on technology.

It makes me even more interested in *Ethix*. I decided that I'm going to give a subscription to a friend for Christmas. I was excited by the "Business Ethics for Business Excellence" section of this issue as well because I think it's a significant first step in telling the world what IBTE is all about—it's first rate.

Kevin Osborne
Seattle WA

letters

Dear Ethix:

Ethics Between Nations

Ethics plays an undoubtedly vital role in the integrity and unity of the nations of the world and its people. But why, day by day, is "the role of ethics" becoming inactive in southern and south-eastern Asia particularly? Is it due to the absence of ethical corporations and organizations? Can students play an "ethical role" regarding the matter? If so, how?

Nibedita Deb
India

Ethics—choosing to do the RIGHT thing—will always be a challenge in any society—in America as much as India or any other place. And the answer must be in terms of BOTH more ethical individuals (including students as well as business and government leaders) AND more ethical structures of government and business. It is not an "either/or" choice. Today's students are tomorrow's corporate and political leaders. Students can and should raise their voices today in favor of justice and ethics, but their greatest impact will come in the future when the character and wisdom they are now developing will find full expression in positions of responsibility.

References for Business Ethics

I am trying to make contacts and to create a library of possible materials on Business Ethics. If you could advise me of a web site that would provide me with some materials regarding business ethics, code of conduct, transparency issues, that would be great. For the moment I am working on development of basic guidelines for code of conduct for Kazakhstan environment.

Zhan Utkelov, Good Governance Program Assistant
U.S. Department of Commerce, U.S. Embassy, Almaty, Kazakhstan

I retired from the University of Washington 2.5 yrs ago and am now assisting three non-profit, voluntary service organizations: the local county Red Cross, chairing the ethics committee for a large elder care facility, and setting up a program for homeless women and children. A friend and college professor of business administration referred me to your web site. I am glad to know that your organization exists. Can you refer me to relevant information on core values, mission statements, policies, and procedures?

LeAna Osterman
Lyden WA

In the review section for this issue we have reviewed four web sites that should be useful.

Use of the Ten Principles

I would like to share the "Ten Principles of Highly Ethical Business Leaders" for internal company training and accountability. I noted that this information is reserved. How would I obtain permission to use this information?

Deanna Arnold
Bellevue WA

IBTE/Ethix copyrighted material may be used provided (1) you have sought and received permission from the IBTE office for the particular occasion and audience you have in mind and (2) you clearly identify the IBTE/Ethix source and copyright on the material. Quality reprints of both the "Ten Principles" and the "Nine Reasons to Run A Company in An Ethical Manner" are also available for purchase for a small fee. Another possibility is to have one of the IBTE Co-directors (Gill or Erisman) come to your company to present the Principles with their fuller background and business application. Let us know what you decide.

Customer Privacy and Loyalty

I am subscriber to your excellent publication. I recently finished my doctorate in e-Commerce, and my dissertation is A Study of Loyalty and Privacy on the Web. The study concluded that customer privacy is a critical success factor in loyalty.

Dr. James P. Lawler, Assistant Professor
of Information Systems
Pace University, New York NY



Large-scale System Failures

by Albert M. Erisman

When the technology bubble burst about two years ago, some thought it would be only a short time until technology regained its luster. Others concluded that technology had been over-hyped, and we could now go back to “business as usual.”

I believe both conclusions are wrong. Technology is still early in its impact on business, and more radical changes are coming. But the recovery will take more than simply an economic correction. There are some fundamental issues in building large-scale information systems that must be addressed as well, since for many companies the promised payoff from the implementation of large scale information systems has never been realized.

Some data from the Standish Group for the year 2000 may be surprising to those not involved in developing large information systems. About 25% of the projects from 2000 were considered failures. Another 50% of the projects overran their budget or schedule, thus eroding some of the promised payoff. Of the remaining 25%, some undetermined number failed to meet the cost savings or business transformation objectives that led to the projects in the first place. This data is hard to get since some companies simply end a large project and declare victory rather than acknowledge defeat.

Why is it that information systems projects so often fall short of their goals? After working in this field for many years, and participating in some classic failures and overruns, I have identified seven reasons why large scale information systems projects fail. I've gone out on the limb to identify strategies for dealing with these reasons.

Not surprisingly, few of the reasons are technical. Rather, information systems that accomplish the best objectives transform the business, changing job descriptions, approaches to work, and relationships between people. Hence they expose the kind of ethical and people challenges that often are unidentified when the projects begin. My seven are given here in no particular order.

1. Bad Ideas

Sometimes an information systems project looks like an interesting way to use technology, and fails to address any true underlying business need. Other times, technology is used to simply automate what used to be done without technology. Both are bad ideas.

This problem can come from the technologists who simply want to apply some “cool” new technology

without the real understanding of the business needs. But it can also come from the business leaders who are ignorant about what the technology will enable. The worst case of this is when technology is used to simply automate an old process. Since automation adds to the cost and complexity of the business without gaining a new approach for the business, I believe that automaton almost always is a bad idea.

Projects need to be examined carefully to make sure the business will be substantially better off if the project succeeds. This must include accounting for the lifecycle costs (training, support, technology management and maintenance, later upgrades, etc.) of the technology. This filter will generally catch both kinds of bad ideas.

2. Corporate Immune Systems

Good information systems projects will change the way work is done. This can lead to a (sometimes subtle) undermining of the project by people who are affected and don't want to change.

Immune systems in the body are good things, rejecting foreign intruders. The immune system of a business is also a good thing, enabling a measure of consistency and reliability. No one would want to drive a car where the automaker tried every new idea that came along. Sometimes people reject a new way of doing something with good reason: they have insight, sometimes not well articulated, about potential negative consequences from the change.

On the other hand, this same immune system blocks changes that are important to the business. As with the body, special care must be taken to allow the change to be accepted. Projects that fail to account for expected resistance from people affected by the project are almost certainly doomed to failure.

Engage people who will be impacted by the project, and deal creatively with the losses or changes that will give rise to resistance.

3. Lack of Shared Ownership

Too many information systems projects are either run by the IS department without substantial business involvement, or by the business without strong leadership from IS.

IS professionals are required for such projects because of the substantial technology issues requiring their expertise. Technology issues can be extremely subtle, and it requires a level of expertise to deal with these issues.

In 2000, about 25% of the information systems projects were considered failures. Another 50% of the projects overran their budget or schedule.

However, large-scale information systems projects ultimately are not technology projects, but projects that bring fundamental change to the business. Unless the business leaders strongly participate in the choices and compromises required, the project will fail to meet the business needs. Too often it is the case that the business leaders have no ownership in a project until the system is built. Only then do they make it clear that the system fails to address key (unstated) requirements. *Shared ownership from the beginning, dealing with the business and technology issues, is a requirement.*

4. A Poor Requirements Process

The standard systems development process calls for gathering and prioritizing requirements before considering the technology, but this is not adequate for most large-scale information systems.

Some requirements may be useful but not critical to achieving most of the benefits from the project. It is necessary to understand the technology to understand the difference between a high cost idea and a low cost idea.

Further, most large-scale information systems use “off the shelf” software (and many that don’t, should). Trying to modify this software (or get the vendor to do so) generally leads to grief for both the vendor and the solution developer. The cost to make such changes is just the tip of the iceberg. Maintaining these changes over the life of the system through various versions of the hardware and software is another major cost impact. Finally, the delay caused by this work delays the opportunity to achieve the benefits from the system.

This principle is well understood in other fields such as architecture. One of the jobs of the architect is to understand what is available in standard window sizes, doors, electrical systems, etc. so the resulting project can take advantage of the lower costs of using these standard components. It has been a much slower process for software systems designers to learn the same lesson.

Getting an 80% solution quickly is almost always superior to a longer term 100% solution. Thus knowing what is possible from the available technology must both inform and limit the requirements process.

5. Lack of Systems Thinking

A new information system may offer great benefits to a particular department or process. However, the interaction of this process or department with others can produce surprising and costly “unintended consequences.”

A major source of failure for large-scale information systems is the “collateral damage” that is identified after the system has been completed. No matter how complete, any new system will have to work with some existing systems, organizations, and functions. A new system may solve the key problems for one group, but create problems for another group, thus undermining the potential benefits that were anticipated.

Never start a project without spending time trying to think through possible unintended consequences.

6. Fundamental Complexity

Information systems are made more complex over their lifecycle by the changing underlying hardware, the changing versions of software, and the changing requirements of the business.

Unlike many other large-scale systems (buildings, airplanes and automobiles for example), information systems must be built with continuous change in mind. The computer hardware portion of the system will become obsolete in three to five years. New hardware will be two to ten times more capable with new features. The software will undergo version changes annually. When a large-scale system requires several years to build, many of the parts will be different in the final production from those anticipated at the outset. Yet the entire system must continue to operate effectively with all of these changes.

Some have tried to address the problem by refusing to upgrade computers or software during the lifecycle of the project, but this is a losing strategy. The only real way to deal with the changes is to minimize the complexity throughout the project.

Avoid unnecessary complexity in features; keep the system as simple as possible.

7. Program Management Weaknesses

Running any large-scale project is difficult. An information system generally has multiple stakeholders with conflicting demands, and no obvious way to resolve these differences.

Because a large-scale system changes the way the company does business, and cuts across multiple lines of authority, it is often extremely difficult to resolve requirements from multiple sources. Further, new capability is always coming out from technology creating the opportunity to “take advantage of this new feature.” Finally, when a project manages to open new vistas for the business, an immediate reaction can be: “I didn’t know I could do that. Now what I really want to do is this.” Thus new “requirements” for the system can be added throughout the project. Responding to all of these new requirements will mean the system could always be better, but may never be finished. No benefits from the new system are achieved until the system is operational.

Managing such a project requires authority to make hard decisions, with a relentless focus on the end objective. New ideas can be put off until another release.

Comments to ame@ethix.org

THE IBTE CONVERSATION



The Real Information Revolution is Yet to Come

Ed Lazowska holds the Bill & Melinda Gates Chair in Computer Science in the Department of Computer Science & Engineering at the University of Washington. Lazowska received his A.B. from Brown University in 1972 and his Ph.D. from the University of Toronto in 1977. He has been at the University of Washington since that time. He chaired the UW Department of Computer Science & Engineering from 1993-2001. Under his leadership, the Department enhanced its reputation as one of the top ten computer science research programs in the nation, and received the inaugural University of Washington Brotman Award for Instructional Excellence.

Lazowska's research and teaching concern the design, implementation, and analysis of high-performance computing and communication systems. He is a Member of the National Academy of Engineering, and a Fellow of the Association for Computing Machinery, the Institute of Electrical and Electronics Engineers, and the American Association for the Advancement of Science. He was selected to deliver the 1996 University of Washington Annual Faculty Lecture, and to receive the 1998 University of Washington Outstanding Public Service Award.

Lazowska is a member of the Board of Directors of the Computing Research Association, and recently served on the National Research Council's Computer Science and Telecommunications Board, and on the NRC study committees on Improving Learning with Information Technology and on Science and Technology for Countering Terrorism. He is a member of the Microsoft Research Technical Advisory Board, serves as a board member or technical advisor to a number of high-tech companies and venture firms, and is a Trustee of Lakeside School, a co-educational independent school in Seattle.

Albert M. Erisman: *You are a true technologist and you have watched this incredible information technology revolution over the last 25 years and yet you have said that the real information revolution is yet to come. What do you see coming up?*

Edward W. Lazowska: This is difficult. There is a long litany of failed prognoses in information technology—Tom Watson saying at most five computers, Ken Olsen saying no one would want a computer in their home, and Bill Gates reputedly saying that 640k should be enough for anyone. Just to state the obvious, over the next five or ten years we are going to see digital devices that we

don't think of as computers everywhere in our lives. Intel calls that pervasive computing. Xerox's Mark Weiser called it ubiquitous computing. The important thing is that this computing cannot be a pain in the neck. It has to be something that makes our lives better, rather than making our lives more annoying. Today your compact disc player and your cell phone are examples of computer devices that actually make your life better; we don't think of them as computers.

David W. Gill: *Well, I would disagree. Cell phones often make life worse. It is a mixed bag at best.*

Lazowska: Other people's cell phones make my life worse. Mine makes my life better.

Erisman: *I agree with that.*

Lazowska: But I think that today.....

(At this very moment, as if on cue, Al Erisman's cell phone started ringing and disrupted our conversation until he found it and silenced it).

...as I was saying...today 98 percent of microprocessors go into things other than what you think of as computers and that trend will increase. Automobiles already have dozens of computers in them and they run a lot better than they did when I was learning to drive in the 1960s. So, where do the processor cycles go? There is no end in sight! There is so much progress yet to be made in things like understanding speech, image processing that understands the state of the user and his or her frustration, and real world capture. The fact is that we have enough storage these days to represent extraordinarily detailed models of the world so how do we capture, manipulate, and display those models? You can come very close now to affording physically and financially enough disc space to save the digital record of your entire life, though we have no way to index, access, and search it. All of these things will consume CPU cycles ad infinitum. We are still in the baby stages of these devices and what they can do for us.

Work is being done on a number of technologies to assist individuals with Alzheimer's. We put a lot of effort into physical accommodation of seniors but much less into mental accommodation. Suppose that you could determine when someone is wandering around aimlessly—perhaps even determine what they were trying to do based on

their patterns and movements.

Or imagine that your own health was monitored in a meaningful, private way and that if something went wrong with your systems, your doctor would actually find out without your doing anything about it.

Imagine that you had home security that actually increased your peace of mind rather than being a pain in the neck as it often is right now. Imagine a non-intrusive security system that actually made people of all ages, particularly seniors, feel comfortable in their homes. Imagine that there was technology that allowed you to communicate with your loved ones better. None of this is rocket science in itself. The challenge is making it a seamless part of the fabric of our lives rather than a pain in the neck.

Erismar: *What is happening with reliability and self-healing systems? When technology doesn't work all the time, it creates a high level of frustration.*

Lazowska: Mike Schroeder made a famous statement that you know you are working in distributed computing environment when you can't get anything done because of the failure of a computer that you didn't know existed. We are building these enormously large, enormously complex systems and the management overhead of those systems increases relentlessly. I see this at home. Think about how much time all of us spend in our houses as computer administrators. The question is how we move toward systems that are more reliable and require virtually zero administration.

I think in a non-obvious way Moore's Law helps us here. As transistor density increases, we can use some of those additional transistors – some of that additional computing power – to increase reliability. A very mundane example: ten or fifteen years ago you never ran a program with array bounds checking enabled – that was only for debugging. You couldn't afford to have bounds checking on during execution. Now you don't even think about it. Similarly, for decades, automatic garbage collection of memory was a joke. Real men did dynamic storage allocation. Of course, real men got it wrong, and as a result you were constantly having memory leaks and thus system crashes. These days if you look at Java and C# and .NET and Microsoft's common language run time, garbage collection is an integral part of that, and memory management errors and crashes are a thing of the past. So there are many ways in which we are going to be able to spend those additional transistors to help create more reliable single systems and collections of systems.

Erismar: *But doesn't this add to the complexity of the overall system and therefore produce other unreliability? With more going on in the system there is more that could break down.*

Lazowska: An analogy, probably too simplistic, is that your body is more complex because it can heal itself. Sometimes those feedback systems go awry. You get scabs or scars where you didn't want them, or tumors, but fundamentally our systems heal themselves in remarkable ways. Nobody has any idea how to actually do this in computer systems but it is an example of a system that is both more complex but also more reliable.

Researcher Responsibilities for Negative Uses of Technology?

Gill: *Are researchers responsible for possible misuses or unintended negative impacts of things they create? Edward Tenner's book, Why Things Bite Back: Technology and The Revenge of Unintended Consequences, catalogs at length the unintended negative consequences of even our best technologies.*

Lazowska: We think about that a lot. I don't think that we are blind to the ethical dilemmas. Every technology has both positive and negative consequences. But blasting us all back to horses and buggies it is not the solution to technology's ills. One important example today is data mining. Data mining has a number of counter-terrorism applications, some of which involve domestic surveillance. There are lots of important non-malevolent applications of data mining, too. Astronomy these days is in many ways data mining. Think about the Sloan digital sky survey; all of the data is there or will be there in repositories and your competitive advantage is whether you can extract something interesting from that data. Data mining can also detect buying patterns. You are probably happy to see it used to detect credit card fraud. Do we also want it used to detect patterns of motion or behavior around the country?

A number of us have been looking recently at privacy technologies to complement security technologies. There are technological approaches to improve and protect privacy as well as to detect patterns of behavior. I think we need to have both. The world faces a terrorist threat these days that we must tackle for our own survival but at the same time we can't sacrifice basic individual liberties, which are the foundation of our democracy.

Computer Technology in Business

Erismar: *How would you assess the impact of computer technology on the business world?*

Lazowska: A recent article in *The New York Times* magazine reflected on the dot.com bubble of the late 90s. It argued that many of these folks really believed in what they were doing, with an almost religious fervor. Their dreams and projects did not

Every technology has both positive and negative consequences.

But blasting us all back to horses and buggies is not the solution to technology's ills.

It's my view that information technology is more essential to terrorism and counter-terrorism than any other technology

always pan out as they hoped but they nonetheless drove enormous change in the country. Jeff Bezos recalled recently that in the mid-90s Amazon.com was nothing more than a bunch of servers in a garage in Bellevue. The best future anyone could imagine was that Barnes and Noble would buy it out some day and fly it into the ground so they would not have to compete with it. But last year 2.5 billion dollars worth of books were bought online—an unbelievable change in the country.

Erisman: Amazon is going through some very important changes even now in developing businesses where they no longer own warehouses full of inventory but act as an intermediary almost like E-bay. This business model takes advantage of the Internet, doesn't invest in inventory, and seems like it will work.

Lazowska: Amazon.com has put an enormous amount of effort into data interchange and data integration between their front end and these companies' back ends. A shopper on an Amazon-like site expects to know whether an item is in stock or not and whether their order has been shipped or not. A huge amount of their work has gone into defining specific interfaces and helping merchants improve their inventory management and other computer systems so that they could deal with on-line customers.

Gill: I recently bought a Kodak digital camera through Dell that was defective from day one and it has been incredibly frustrating and time-consuming to try to beat my way through the phone menus to get any help. It still isn't being repaired and at this point I wish I had just bought it at a local store. And I should note that my other purchases at Dell have been great experiences.

Lazowska: Dell has been highly innovative and successful in putting personal computer configuration, manufacture, and delivery online. But there were some mis-steps when Dell started to make it possible for you to purchase goods from other merchants through their website. You have just described an example. Internally, Dell has unbelievable back-end automation. You always know exactly where your Dell computer is on their assembly line. Then Dell started allowing you to order HP printers, Kodak cameras, and other stuff like that. When I ordered an HP color laser printer from Dell a few years ago, they had no clue if it was in stock at the HP warehouse or not, or when it was put on a truck from the HP warehouse, or where the truck was. Customers have a set of expectations, particularly from a Dell or an Amazon, and Dell was not able to fulfill those expectations when they started dealing with third-party merchants. That's the problem that Amazon has worked so hard to avoid. It is not just a business shift, it is a really significant technology shift.

Gill: I also wonder what the statistics are on banking customer loyalty as electronic banking replaces people. After thirty years, I moved all my banking from Bank of America to Washington Mutual because they have branches with real people you can actually talk to—as well as all the conveniences of ATMs—and in addition they are cheaper.

Lazowska: To each his own. I probably haven't been inside a bank in three years. We have two kids in college, and it's a real convenience to be able to transfer money to their accounts securely over the web. (Of course, we're looking forward to the day when we can stop doing this!)

Countering Terrorism With Technology?

Gill: You worked recently on a government-sponsored project on how science and technology can counter terrorism. What is the role of computer technology here?

Lazowska: It's my view that information technology is more essential to terrorism and counter-terrorism than any other technology. First, computer systems are a point of vulnerability. Second, computer systems are a potential source to detect terrorist activities. Third, as communication systems, computer systems and networks are very important. Terrorists thrive on fear, uncertainty, doubt, and misinformation.

Preventing reliable information from being disseminated exacerbates the impact of a terrorist act; facilitating good information sharing undermines these negative impacts.

Fourth, and perhaps most importantly, computer systems now control and monitor every element of our nation's critical infrastructure: the electric power grid, the air traffic control grid, the telecommunications grid, the financial grid. It would be very hard to do truly catastrophic damage to the Internet because the individual components are not that expensive. But one way to do catastrophic damage to the power grid is by attacking the control and monitoring computers. Our project focused on the vulnerability of real time control systems and the need to make those systems more secure. The pervasive and positive role that computers play in every aspect of our lives and every aspect of our economy creates vulnerabilities as well.

The Researcher's Social and Cultural Context

Gill: What do you do to add texture and background to your understanding of the place of computers and information technology in human life, history, culture, and so on?

Lazowska: Not enough! I read the paper. I try to be an active citizen of the city and country in which I live. I try to have active interchange with the business community and the political leadership in this region. Certainly I read but I don't have any silver bullet.

I have a special concern to bring attention to the fact that the nation is not investing sufficiently in computing research. The importance of this field has grown enormously over the past few decades but the level of investment has not grown proportionately. The federal investment portfolio is becoming tremendously unbalanced. That is not an argument for shifting resources but rather for adding resources. So much of the future progress in the biomedical sciences, for example, depends on progress in engineering and the physical sciences.

Here in the State of Washington, we are failing to make the choices that will leave our kids the kind of region that they need. Our transportation system is a mess. Our higher education system is a mess as well. We rank 48th in the nation in public bachelor's capacity per capita. Only two states are behind us. But we rank 5th in the nation in employment of people with recent bachelor's degrees in science and engineering and 6th in the nation in employment of recent master's degrees in science and engineering. Our economy is creating jobs for which our education system is not preparing our kids. It's an enormous issue for this state and

we don't have any discernible plan. So that's where I have been trying to put my efforts: waking people up to the realization that we are sacrificing the next generation in order to make our own lives easier in the short term.

Why the Delays in Deploying New Technologies?

Erisman: *On a visit to a doctor recently I noticed shelves of paper folders containing medical records. Even 1980s technology could help that office a great deal. What is the reason for the long delays between the availability of technology and its use in such obvious situations?*

Lazowska: There has been enormous progress in the use of medical technology for diagnosis and treatment. I think the folders are becoming much less common in major research medical centers than they used to be.

Erisman: *When I broke a shoulder skiing and came to the UW Medical Center I had to fill out seven sheets of paper which included my Social Security number five times.*

Lazowska: I don't know why the basic business is still so forms-based. You would think there would be cost advantages using computers. Maybe the up-front investment gets killed by cost containment mandates. Or maybe it is the classic "too busy building the house to build any tools."

Erisman: *The company doesn't want to change its ways and ignores the issue until a competitor forces their hand.*

Lazowska: There are also enormous privacy issues related to medical records. One thing that protected our privacy in the past was simply that it is so laborious to assemble a complete picture of us when it resides in lots of little file folders all over the place. In some sense it is a blessing that we have not gone completely to on-line record-keeping since we have not yet developed and deployed

privacy technologies and policies that give us appropriate control over our personal information.

Erisman: *Medical records are just an illustration of the lag issue I raise. A small construction firm could also use even a ten-year-old technology to manage a project and save enormous amounts of time, but they prefer to do it the old way. Boeing had departments that could have been helped enormously but some kind of inertia and resistance to change decides things. Good new technology is rejected by the "immune system" of the company.*

Lazowska: What is on the critical path of a particular company? A basic tenet of the health systems in America is that the patient's time is worth zero. Having you fill out the same forms seven times with your Social Security number doesn't bother them at all. It bothers you like crazy because you value your time.

Twenty years ago a graphics guy here, Tony DeRose, spent a half-year at Boeing, and it opened his eyes totally. He was a world-class graphics and computer aided geometric design guy, but he realized that while the research problems he was working on were really interesting and intellectually important they were not on the critical path to computer-aided geometric design as practiced by the Boeings and GMs of the world. The technology they were using was a decade behind but he discovered, after a week or two on the job, that in terms of the bottleneck tasks of designing an airplane, he could offer a factor of 10 improvement on something that represented to them one percent of the problem.

So one aspect of the lag time in adopting technology is certainly some form of intransigence, the immune system you describe. But another factor is that they have a notion of what their critical path items are and what their costs are. Almost every business is competitive and if people can actually find a way to cut their costs, they will. But something that looms large to me and you may not loom large to them.

Why the University Environment?

Choosing a career in the university instead of industry is all about how you feel that you personally best achieve impact. If you do something exciting in a computing company like Microsoft, it can wind up on millions of desktops. If you create something great at Boeing, millions of people can be flying on it.

At a university, it's all about producing new generations of people. My undergraduate mentor at Brown University, Andy van Dam, plucked me out of an introductory computer science course, got me working 80 hours a week on research projects, and totally changed my life, and many other lives. There was a time, for example, when the computer science department chairs at Washington, Maryland, Princeton, MIT, and Waterloo were all his former undergrads, as were Brad Silverberg, who headed Windows 95 and Internet Explorer at Microsoft, Andy Hertzfeld, who did about 1/3 of the original Mac operating system, and John Crawford, who oversaw the whole X86 architecture family at Intel. This shows the impact of a university professor investing in people. That's why I got into the job.

The other reason has to do with innovation. Industry, academia, and government are essential partners in driving high-tech innovation. All three legs of the stool are needed. Almost all of the information technologies on which we rely can trace a significant part of their lineage back to federally-funded, university-based research programs. Universities may not have directly created many e-commerce companies, but all of those companies rely essentially on the internet, web browsers, public key cryptography, and back-end parallel and relational data base systems. The university lineage of all of those technologies is absolutely clear.

Ed Lazowska

Telecommunications Lags: Why?

Erisman: *On the telecommunications side, an incredible growth in bandwidth has actually caused a glut in the telecommunications industry. Yet, on the computing side, the tremendous growth of computing power seems to have been absorbed by the users. Why is there this difference?*

Lazowska: We still have a "last-mile" problem in this country and around the world and that, in some sense, keeps us from getting to the glut. We have a growth in backbone bandwidth and somehow you have to get to that backbone.

Erisman: *Wasn't a company like Terabeam going to address the last-mile issue with a wireless connection to the last-mile?*

Lazowska: Yes, but Terabeam's free-space optics solution, in its present incarnation, is point-to-point. That means it's a tremendously cost-effective way to hook up a business that's off the fiber right-of-way, or whose fiber has been destroyed by a disaster such as 9/11, but not for hooking up a neighborhood of homes. Terabeam

Continued on page 16

The Report Card on Financial Reporting

Greg Zegarowski is President of Financial Leadership Corporation (www.FinancialLeadership.com), a consultancy offering financial strategy, process improvement, and training to businesses and organizations. Formerly a CPA with Deloitte and Touche, Mr. Zegarowski has served as CFO of an international medical equipment company and has provided consulting services to a wide range of companies including banks and manufacturers. He holds both an MBA and a Masters in Theology.

Whoever thought they would see the day when talking about what accountants do for a living would find its way into the media and social gatherings? To say that the U.S. financial reporting system is in flux understates the tidal wave of attention that is currently being devoted to the subject. The report card on the quality of financial reporting in the business community shows a mixed picture of achievement.

While it is easy, in light of all the recent business scandals, to criticize the existing financial reporting system, we must remember that it has, by no means, been a complete failure. We have extensive publicly reported information, many well-trained professionals—and an independent press to catch the system when it falls short.

Many of the scandals that we have witnessed recently could be attributed to governance failures and flagrant executive fraud. There is plenty of blame that can and should be absorbed by key executives. Nevertheless, improving our overall financial reporting system is essential. This is so not only for individual investors but also for our economy as a whole. Without confidence in the numbers and the counters, trade and investment, the mother's milk of our economic system, will dry up.

Sarbanes-Oxley

In response to the financial reporting crisis in corporate America, Congress passed the wide-ranging Sarbanes-Oxley Act of 2002. The Act affects almost everyone associated with public companies, including management, audit committees, independent auditors, lawyers, and security analysts. The Act, among other things, requires:

- Establishment of a five member Public Company

Accounting Oversight Board that will oversee the audits of the financial statements of public companies through registration, standard setting, inspection and disciplinary programs.

- Quarterly and annual certifications by CEOs and CFOs regarding the annual reports and internal controls of their companies.
- Corporate disclosures requiring board audit committees to include at least one member who is a financial expert.
- Restrictions on public accounting firms from performing certain additional services for audit clients such as financial system designs and implementations.

Penalties for violations of the Act are stiff and can include imprisonment. Congress has sent a message that integrity in financial reporting is a serious matter. It is hoped that the provisions of the Act will strengthen the financial reporting system. The SEC is charged with fleshing out specific rules for some of the provisions of the Act. It remains to be seen how positive the impact of the Act will actually be. By many accounts, the SEC is under-funded and under-staffed.

Further complicating efforts at reform is that, at the time of the writing of this article, we are without leaders in both the Securities and Exchange Commission (SEC) and the newly formed Public Company Accounting Oversight Board (PCAOB). We can only hope that ethical credibility, rather than political interests, will decide the leadership of these key agencies.

Who Controls Financial Reporting?

The financial reporting system up until recently has rested on organizations such as the Financial Accounting Standards Board (FASB), the Accounting Standards Executive Committee (AcSEC) of the American Institute of Certified Public Accountants (AICPA), the Emerging Issues Task Force (EITF), the International Accounting Standards Board (IASB) based in London, and the SEC.

Among these various entities there has been increased discussion about finding convergence. Convergence means finding consistency in the rules promulgated by the various bodies. Despite the plethora of existing rules and policies, though, rules have not been

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We cannot regulate away every opportunity for individual avarice. Neither can we assume that the personal virtue of executives can overcome or compensate for all of the weaknesses in our financial reporting system.

developed fast enough to keep up with the current complexities of business transactions and arrangements. For example, the FASB has accelerated their deliberations on special-purpose entities (remember Enron).

Moving from Rules to Principles

Certainly, having more rules makes life a little easier for some people. With increased maturity, however, people (hopefully) develop greater moral sensibility. Parents, for example, cannot turn to specific rules for every decision facing them in raising a child. Parents must rely on their best judgment based on general principles and values.

Since today's financial system is characterized by constantly increasing innovation, principle-based standards can help guide practitioners where specific rules are not yet defined. Robert Herz, chairman of the FASB, addressed this issue in a speech delivered at the Financial Executives International Conference on Current Financial Reporting Issues on November 4, 2002 (entire speech can be found at www.fasb.org): "While rules are sometimes unavoidable, the intent is not to try to provide specific guidance or rules for every possible situation. Rather, if in doubt, the reader is directed back to the principles."

Regarding a recent FASB proposal that is awaiting public comment, Herz said: "In short, it requires preparers, auditors, audit committees, and boards to be willing to exercise professional judgment and to resist the urge to seek specific answers and rulings on every implementation issue and to view accounting and reporting as an exercise in good communication and not just compliance."

Online to the Future – Taking Advantage of Technology

Part of the overall improvement to financial reporting may take a decidedly technological tack. The Nasdaq, Microsoft, and PricewaterhouseCoopers have joined forces to develop a new platform for corporate reporting over the Internet. (For a demonstration of this new technology go to www.nasdaq.com/xbml/).

The technology will allow easier analysis and comparison of financial information from public companies in three broad categories:

- Financial measures – e.g. total revenue, net income

- Ratios – e.g. return on investment
- Financial statements – e.g. balance sheet and income statement

The new technology can help inform investors about the relative strengths of different companies. However, if there is a lack of integrity in the numbers that go into published information then investors could still have their judgments adversely affected. The responsibility for achieving this integrity resides with the entire financial reporting system, especially financial executives and auditors.

A New View of the Boardroom

The impact of the recent scandals has found its way to the top of the corporate ladder. Some board candidates are thinking twice before accepting positions. Stephen Fowler is President of Boardseat.com, a retained search firm that focuses exclusively on board director and advisor searches. In a recent conversation with the author, Fowler noted that there are several reasons that contribute to board candidates currently being less inclined to accept board positions. These include:

- Sarbanes-Oxley legislation
- Recent high profile scandals
- Concerns about liability (more perceived than real except in the case of fraud)
- Stock market decline that has made stock options less attractive (there is a sense among many that the rewards don't now match the perceived risk)
- A lot of CEOs are fully engaged with their own poorly performing companies and don't have the time to devote to outside boards
- Some investors are putting pressure on CEOs to take fewer outside board seats (for the same reason)

According to Fowler, there is now a general consensus that sitting on a public company board is a serious responsibility requiring a lot of work. Fowler commented, "It is fair to say that the atmosphere in some board rooms a couple of years ago probably resembled that of a country club rather than that of a board room. With the recent changes, I am sure that is no longer the case."

Corporate vs. Individual Responsibility— a Both/And Game

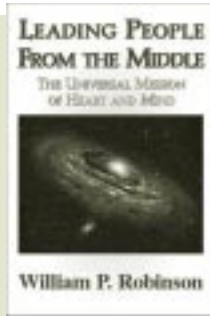
We need better systems and we need more individual integrity throughout the financial reporting process. We cannot regulate away every opportunity for individual avarice. Neither can we assume that the personal virtue of executives can overcome or compensate for all of the weaknesses in our financial reporting system.

This essay has concentrated on the current state of affairs from a corporate or systemic perspective. We must, however, applaud and support efforts in business schools as well as in the corporate sector that foster growth in individual integrity and in ethical leadership. It is a both/and, not an either/or, game.

As a business community and as a society we have been rocked by the recent high profile scandals. Accounting professionals, Congress, and businesses have already taken steps to improve our reporting systems.

The upside to the business community is that we may emerge from the recent disasters with better and timelier information to judge and manage companies. However, there are always strong tendencies to return to "business as usual." Therefore, in addition to supporting systemic improvements to our financial reporting system we must maintain our individual resolve to build successful businesses through sound ethics.

interview



Leading People from the Middle: The Universal Mission of Heart and Mind by William P. Robinson. Provo: Executive Excellence Publishing, 2002. 256 pp.

Bill Robinson has been President of Whitworth College for the past decade. Few leadership scholars are actually leaders, and few leaders are leadership scholars, so the author has a rare perspective to offer, a unique blend of academic theory and practice. The title comes from the common theme of the book: leaders get isolated when they lose touch with the people they lead. Decisions can suffer, accountability can disappear, and leadership failure is the result.

Robinson presents serious ideas packaged with a marvelous sense of humor. Key points of the book are broken out in clearly delineated form, not as simplistic answers but as guides to the arguments. Frequent illustrations offer both clarity and insight into the principles. Robinson is very comfortable with ambiguity and paradox, recognizing the messiness of leadership in "real life" tough situations. He analyzes many well-known styles and attributes of leaders (eg., personality driven, participatory, authoritarian), but concludes leadership calls for many of these tools applied at the right time, rather than choosing a single answer. It is important for the leader to understand when to apply which tool. He pulls many of the ideas together in a chapter entitled "Follower-Driven Leadership."

Robinson uses illustrations, often personal. But just when you think he might be suggesting he "has it all together" as a leader, he tells an embarrassing story on himself to underscore a point.

A nice feature of the book: the author shares musings from his personal journal at the end of many chapters. In these sections, he acknowledges the difficulties, struggles, and ambiguities in tough issues. That gives a strong feeling of reality. The author is unabashed about his Christian faith, yet does not preach or impose his views on others. Rather, he sometimes calls on his faith position in defining personal conclusions.

Quibbles? The book would have benefited from another editing pass—it has too many typos. You can read past them, but it may interfere with market acceptance, which would be a shame. I found the book insightful, challenging, and fun to read, and I recommend it highly.

Reviewed by Al Erisman

No Logo: Money, Marketing, and the Growing Anti-corporate Movement by Naomi Klein. New York: Alfred Knopf, 1999.

Naomi Klein is an award winning Canadian journalist with articles in *The NY Times*, *Newsweek*, and

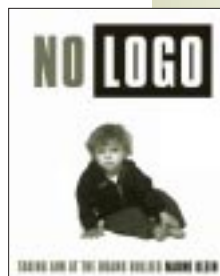
elsewhere. *No Logo* is a classic articulation of anti-corporate, anti-globalization sentiment, remaining relevant through the events of 9/11 and the corporate accounting scandals. *No Logo* has four sections: "No Space" details the world of marketing and "branding" and its expansion into public space. "No Choice" details the merging of news, entertainment, and consumerism. "No Jobs" analyzes how jobs are changing, and owned factories are discarded in favor of more casual employment relationships. "No Logo" summarizes how these trends fuel the anti-globalization movement.

On modern marketing and branding, Klein quotes Nike CEO Phil Knight: "For years, we've thought of ourselves as a production-oriented company, meaning we put all our emphasis on designing and manufacturing the product. But now...the most important thing...is market the product" (p. 22). The companies most aggressively marketing their brands also distance themselves from running stores and manufacturing products. Developing a brand is creating an exciting lifestyle statement. So we arrive at a Logo—the one word "brand" that symbolizes and creates good feelings (and buying impulses).

This branding/marketing is overtaking what used to be public space and public discourse. Klein asserts that serious social movements, such as civil rights and efforts to expose and correct injustices around the world, have simply become fodder for branding. "Though girls may indeed rule in North America, they are still sweating in Asia and Latin American, making T-shirts with the "Girls Rule" slogan on them ..." (p. 123). "The Tibetan people seem nonplussed by their popularity with the Beastie Boys, Brad Pitt, and designer Anna Sui, who was so moved by their struggle that she made an entire line of banana-print bikini tops and surfer shorts inspired by the Chinese occupation" (p. 85).

In "No Jobs," Klein asserts that "our" jobs being sent overseas are not just the same jobs at lower pay arriving in a third world country. The jobs themselves morph into something quite different--short-term, casual, yet predatory, labor contracts, requiring overtime as well as residence in crowded, isolated dorms near the factories. Klein argues that lots of documented evidence accuses the garment and footwear industries, in particular, of harassment and abuse by supervisors seeking increased production, poor ventilation, poor safety standards, and violent suppression of unionizing attempts.

In "No Logo," the final section, Klein draws these various strings together, explaining "The volatility is the unintended consequence of brand managers striving for unprecedented intimacy with the consumer while forging a more casual role with the workforce... These companies may have lost



something that may prove more precious in the long run: consumer detachment from their global activities, and consumer investment in their economic success” (p. 335). *No Logo* is an important read if one is to see beyond the media focus on the demonstrations and violence of the anti-globalist movement.

Reviewed by Tim Gammel

Business Ethics Web Resources

Reviewed by David W. Gill

www.ethics.org

Ethics.org is the web site of the Washington DC based Ethics Resource Center. The institutional roots of ERC are in American Viewpoint, founded in 1922 to help immigrants to the US get oriented to American culture and values. In 1977 the mission was refocused under the Ethics Resource Center rubric. The vision is to foster a more ethical world. ERC publishes a monthly electronic newsletter called Ethics Today. ERC sponsors research on individual ethics (especially character development), organizational ethics (especially for business), and global ethics. This is a great organization with a web site that is a gold mine of helpful information on business ethics. They don't seem to do a lot on the technology side of business and ethics but you will notice that under that topic they have placed a link to IBTE's www.ethix.org. www.ethics.org is well worth book-marking and visiting periodically.

www.business.com/management/business_ethics

Business.com is a major web site (“The Business Search Engine”) for anyone seeking links to information on almost any topic in business today. The sub-section on business ethics (in the management section) is a large and valuable catalog of organizational web sites, some offering sample codes of ethics or ethics consulting and education services, some linking you to university centers and professional associations focused on business ethics. A line or two of description is given for each link but no evaluation or rating helps a first-timer to know which sites are better or worse, more or less reliable, etc.. This is a very helpful site.

www.ibe.org.uk

ibe.org.uk is the web site of the non-profit Institute for Business Ethics, established in 1986 in London.

Part of the value of this site is that it provides a perspective from outside the USA. Most of the concerns are common to businesses in most parts of the world, of course. The IBE web site provides some simple, very concrete outlines and strategies for companies wishing to formulate and implement ethics policies, procedures, and codes. The IBE sponsors various seminars and discussion groups and publishes material on various business ethics themes. The IBE view of ethics tends to focus on dilemma and crisis resolution rather than on broader issues of mission, values, and corporate culture, but this is a good organization with something to teach us.

www.eoa.org

[Eoa.org](http://eoa.org) is the web site of the Belmont, Massachusetts, based Ethics Officers Association, founded in 1992.

The EOA, with 860 current members, is the leading organization of corporate ethics officers, with a significant and growing presence among Fortune 100 companies. Based on the EOA's own reports at their web site, their ethics officers have many more lawyers among them than people trained in ethics. The EOA was formed initially as a way of putting compliance programs in place in companies not only to prevent wrongdoing but because companies with such programs in place had their fines reduced by as much as 95%! One of the EOA's current major projects is to develop a comprehensive Business Conduct Management Standard by which compliance can be measured. This “damage control ethics,” as we call it at the IBTE, is now being augmented by more holistic approaches as the EOA expands its contacts and partnerships beyond the legal departments to include individuals and organizations trained in ethics. EOA membership is open to individuals for \$750 per year and to organizations for \$3000 per year. The EOA sponsors various conferences and courses for ethics officers. The web site makes some interesting information available to non-member visitors but it is rather meager. This is a young organization with a growing importance and some *Ethix* readers will want to get involved.

THE **ethiX** FORUM™

Add your perspective to *The Ethix Forum*—on earlier topics (see the Forum archive at www.ethix.org)—and on our next question (see page 16). All submissions are subject to editing and we cannot, of course, post every response submitted. Address your e-mail to: dwg@ethix.org.

ethiX 27 Forum Topic

In what ways have information and telecommunications technologies affected, for better or worse, the ethical challenges faced by organizations?

Carl Mitcham

Professor, Colorado School of Mines

Author, Thinking Through Technology

The single biggest problem is speed. The new info/telecommunications technologies regularly up the speed of communication in ways that force instant responses and undermine reflection. On hot days I sometimes get over a hundred emails to which I am expected to respond quickly, almost without thinking.

With postal letters, just the process of opening them slowed us down, and there was seldom a sense of urgency in replying.

After all, the post office would take days to deliver them anyway. We had time to think and digest the contents.

Now the expectation is that we should respond daily if not hourly. Time to think and reflect evaporates. Even the telephone is a slower medium, because in talking we can have pauses, we can think out loud with someone, and our interlocutor can begin to get a sense by our tone and hesitations about the difficulties we might see, and then appreciate it when we say, "Let's think about this and talk again tomorrow."

I'm reminded of opera and the invention of aria. The earliest operas (e.g., Jacopo Peri's *Euridice* of 1600) were composed exclusively of non-reflective recitative sung dialogue that moved the action forward. It was a great invention to set action dialogue to music and thus heighten its intensity. But an even greater invention was the reflective aria, in which time stops enabling a character to interpret action and events and sing to us about how she or he feels about what is happening.

The two forms of operatic dramaturgy are further contrasted by the "secco" or dry accompaniment of only one or two instruments for recitative, and full orchestral accompaniment of the aria.

The reflective pause of time does indeed enrich experience.

This enrichment of experience is what the speed of the new info/telecommunications technologies regularly and too quickly throw away. We need to reinvent the aria in cyberspace.

Robert Hollies

CEO, Lampstand Computing, San Mateo CA

First, email has been a great productivity enhancement because communication is not dependent upon both parties being present. The asynchronous nature of this communication means that many people can communicate with me while I am in other meetings. So, it effectively increases my communication bandwidth. Cell phones and text messaging also provide a productivity enhancement. However, here the

benefits are greater for those people who work in the field, or for people whose jobs require realtime contact with others. I think of a guy who runs a small construction firm. Without a cell phone, he would be spending his evenings talking with people trying to work out the problems from the day. However, with a cell phone he can work out the problems in real time and get problems fixed faster and with smaller negative consequences.

From an ethics perspective, email probably has the greatest impact because of the potential liability issues of having a record of the communication. Bill Gates and some of the Wall Streeters have experienced the direct effects of having communications recorded, much like President Nixon experienced with the Watergate tapes. Essentially, having communications recorded is a plus for ethical behavior because it reduces the ability for individuals to have deniability.

Troy Winslow

*Product Marketing Manager, Intel Corporation
Sacramento CA*

Technology should not change our ethics (our values and principles), but it does have an effect on our ethical behavior in everyday interaction. Communication technology is a double-edged sword. On the positive side it gives us access to a global community with instant and secure communication anywhere in the world, along with offering tremendous flexibility and safety in our workplace and lives (anywhere computing and communication). Regrettably, it also gives people an opportunity to lie, mislead, or get away with laziness or ineptness. "I never got your email...my PC crashed and lost the data...my cell phone battery died so I couldn't return your call". Not much different from the "dog ate my paper" excuse many of us used in elementary school, but believable enough in today's business to hide the truth and challenge our ethics.

Organizations need to recognize the pressure these factors put on their employees. As email pagers, wireless PDA/Handsets, and remote access proliferate throughout organizations, the excuses will grow at an alarming rate. Instilling values and creating practical guidelines on how employees are to deal with communication technology is critical. More important, however, may be just reinforcing the basics of communication etiquette, e.g., the courtesy of a timely reply. These are vitally important challenges organizations must face if customer service and employee performance are not to decrease as fast as the capacity of our email inbox.



The First Principle of Ethics

What if we tried to come up with a list of the most basic principles and guidelines of a sound ethics that could be widely shared by the world's population? What would be included? *What would be first on the list?*

The ancient Greek "Hippocratic Oath" of physicians (probably 6th century B.C.) makes "do no harm" the first principle of ethics. But embedded in this principle is the deeper point that *people have worth and value* (and therefore must be protected from harm). I would argue that the foundational principle of any sound ethics is this is something like this:

Treat all people as unique and valuable individuals.

Why do people have value? There are instrumental reasons, i.e., people have value because of what they can do for us. It is great when others contribute good, constructive things to our lives, terrible when they contribute grief and garbage to our existence. But people are not just valuable for what they can do for us but for intrinsic reasons. People have value per se, in and of themselves, not just when they are useful to us. The great religions and philosophies argue this position. The Enlightenment philosopher Immanuel Kant argued that it was a "categorical imperative" to treat people as ends and never as means only.

Why view individuals as unique? The fact of our nature is that each of us really is unique (both by nature/genetics and by nurture/socialization). We deserve to be recognized and treated as such. In fact we crave such treatment and recognition of our uniqueness and value. We respond with enthusiasm to such positive treatment. It is hard on us to be viewed as replaceable, dispensable, with no distinctive individual identity.

How do we treat people in the workplace and marketplace as valuable and unique? Here are some ideas.

- organizational structures, policies, and operations are designed and regularly reviewed so that they do not harm, ignore, or disempower people; rather they enable people and facilitate the exercise of their individual gifts and expertise.
- across the board, up and down the organization, serious efforts are made so that each employee, colleague, and leader is known, recognized, supported, and encouraged by others, especially by those to whom they report and with whom they work.
- business discussions seriously ask "how will this new product affect the health of those who make it and those who buy it?" Technology R & D

operations allow no projects to proceed very far without serious brainstorming about what could go wrong and hurt people, what the unintended consequences and trade-offs look like.

- personnel practices guard the dignity and value even of those who apply but are not hired and those whose performance is inadequate and must be let go. Recognition and rewards (including financial compensation) are distributed in ways that recognize the uniqueness and value of each person on the team. Performance reviews try to help people move into positions where their unique gifts and capabilities can flourish.
- employees regard their managers and leaders as unique, valuable individuals, rather than stereotyped "enemies"; managers regard their employees as unique, valuable individuals, not as chattel to be used for their own purposes.

These are just ideas to stimulate our moral imagination and our conversation. There can be no standardized formulas showing how to observe the first, great ethical principle. Each company and circumstance calls for careful analysis and creative imagination of how to treat people as unique, valuable individuals. What is essential is to get this general but powerful principle on the table where it can affect our decisions.

Of course, there are counter-examples of victories won (however temporary) by company leaders and cultures that intimidated and used their people without regard for their uniqueness and value.

Many of us have worked in such contexts at one time or other. But even if the first principle was violated in the past without apparent repercussions on some offending company, do we really believe this can work in today's environment? Won't employees, managers, and customers gravitate toward companies where they are treated with dignity and respect as valuable, unique human beings? Do we really think people will give their best to a company culture that disrespects them? "Valuing people and treating them as unique" may seem obvious to the point of triviality but it cannot be taken for granted.

Comments to dwg@ethix.org

The fact of our nature is that each of us really is unique (both by nature/genetics and by nurture/socialization). We deserve to be recognized and treated as such.

...CONVERSATION from page 9

also has a new RF technology which is one-to-many rather than point-to-point. There might be an opportunity for new business models here as well as new technology. A number of cities, including Seattle and Portland, have community wireless networks, as an example. An interesting question is whether you could have networks that grow organically and provide at least say 10 megabit or 50 megabit connectivity to a big pipe for a cluster of people. There are apartment buildings in New York with essentially their own ISPs. There is lots of room for both technological and business innovation here. I cannot imagine the technological solution being anything other than wireless. We do have a serious chicken-and-egg problem. Very few consumers, relatively, have broadband access. Thus, there isn't much broadband content. Web sites and media services are stuck with the least common denominator. Today the majority of users have 56-kilobit modems that actually deliver 30 kilobits or something like that, so this is what web sites are geared for.

Internet II

Erisman: *Internet II, the next generation of Internet, will be a great leap forward over the standard Internet that we now know. When will this reach the public? And will it have a comparable impact to the arrival of the first Internet in the early and mid-90s?*

Lazowska: I believe we are at the stage now in the Internet where we are going to see progressive enhancements rather than another great leap. The Internet began in the 1960s and doubled and doubled and doubled every few months, below everybody's radar screen. Then suddenly: Boom! The Internet II technologies—vastly greater bandwidth, the ability to control quality of service, sets of new services—will be much more progressive and will make their way into the commodity Internet over time, not in one great step. Part of this is due to the last-mile problem once again. Businesses and universities have pretty good connectivity these days—and individuals have pretty lousy connectivity. Since people are the market for cool services, that means cool services don't really exist because you have to have a way to get it to people.

U N C U T

For the entire IBTE Conversation with Ed Lazowska, including his comments on educational technology and on university research agendas and funding, go to www.ethix.org.

...join the discussion

What do you think



**Is it possible for unethical companies—
and individuals—to change and
become ethical? How?**

*E-mail your comments to: dwg@ethix.org
by February 5, 2003. Selected replies will
be posted at our web site and/or published
in Ethix 28 (March/April 2003).*