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### Accounting in the 21st Century

Robert K. Elliott

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## ACCOUNTING IN THE 21st CENTURY

by  
**Robert K Elliott**  
**Partner, KPMG LLP**  
**November 2, 1998**

[Introductory note: Robert K. Elliott is a partner in KPMG LLP in New York. He is the vice chair of the AICPA Board of Directors for 1998-1999, and will serve as chairman for 1999-2000. He currently chairs the AICPA Strategic Planning Committee and Strategic Planning Advisory Subcommittee. He previously chaired the AICPA Special Committee on Assurance Services ("Elliott Committee") and the Oversight Board of the New York City Elections Project. He has served as a member of the AICPA Board of Directors as well as several committees of AICPA. He has also served as a vice president of the American Accounting Association and as a member of the SEC Advisory Committee on Capital Formation and Regulatory Processes and the Accounting Education Change Commission. He is currently a member of the Board of Trustees of the KPMG Foundation and the Big 5 National Steering Committee for Legislative Action.

Named as one of "The 100 Most Influential People in Accounting" by Accounting Today for four consecutive years, Mr. Elliott was profiled as a "Leading Big Six Professional" by Professional Services Review in 1995. He is the recipient of numerous awards and honors, including the AICPA Gold Medal Award for Distinguished Service (1997) and the Journal of Accountancy Literary Award (1995). He holds an AB from Harvard University and an MBA from Rutgers University, and is the author or co-author of more than 80 books and articles.]

Thank you for coming out this evening and for giving me a chance to talk to you about accounting in the 21st century.

What I want to do for the next 45 minutes or so is go through four areas. I want to talk about the accounting profession's past, which I would characterize as a glorious past. Then, we will come to the present, which I would characterize as parlous or somewhat dangerous, because we face significant choices. If we make the right choices, we can look forward to a fabulous future as a profession. Then I want to spend a little bit of time on what it is that we're going to have to do in order to get to that future and realize those opportunities.

Let's start with a very short history. If you think about it very much at all, you realize that it would have been impossible to have an industrial revolution without an adequate accounting infrastructure. Accounting enabled large-scale enterprises to form.

If you think about the debits and credits, the debits in accounting transactions represent the benefits that company gets in an exchange transaction, and the credits represent the sacrifices. So by making these simple credit and debit entries, we can track contracts from agreement to partial execution to full execution, and it gives us a very convenient way to keep track of a large bundle of contracts. A large bundle of contracts is nothing more or less than a corporation, and a corporation is what's required in order to aggregate the capital, build the factories, or outfit the ships, to have a mercantile and industrial revolution. I don't say that accounting caused the industrial revolution, but I do say there could have been no industrial revolution without an accounting infrastructure to support it.

The accounting infrastructure permitted the companies to measure and communicate, both within and outside. It facilitated planning and decision making, and it allowed enterprises to fulfill their accountability obligations.

Those are all good things. And later on, auditing practice added to accounting. You can find references to auditing in the Bible and before that, but auditing as we know it today developed in the 19th century as a way of adding additional reliability to accounting reports for the benefit of absentee owners. They needed to make sure that the managers on the spot were not ripping the owners off.

The audit also provided another set of benefits. I already pointed to the ability to do planning and control. Another benefit is that releasing high quality information reduces corporations' cost of capital. Think about people who are putting money into an enterprise. Whether they are investors or creditors, they want to be rewarded for the risks that they are taking. So they want to charge an amount for the capital that's proportionate to the risk that they are assuming. Part of the risk is economic risk, and part of it is information risk; that is, it's the risk premium that investors and creditors have to charge because they are not sure about the true facts about the enterprise. They put in a risk premium to compensate for that. The more high quality information the enterprise gives, the lower the information risk, the lower the price investors and creditors charge, and, therefore, the lower the capital cost of the enterprise. That's a huge benefit.

What we do also improves liquidity. What is liquidity? Often, people think that liquidity is a function of having lots of buyers and sellers in the market. If you have that, you have a liquid market, but it's really more subtle than that. Liquidity has to do with the size of the bid-ask spreads and number of transactions. Where you have wide bid-ask spreads, relatively few transactions take place, and you have illiquidity. Where you have narrow bid-ask spreads, lots of transactions take place. Let me give you a couple of examples of that. I have an oil painting by Rembrandt and I'd like to sell it to you. Now, you're thinking, "If it's really by Rembrandt, and if he is telling the truth, it's worth a great deal of money; but if it's not by Rembrandt, it may not be worth much money at all." What are you going to do when you make me an offer for it? You're going to provide for the possibility that you don't have the right information. You're going to have a low-ball bid; I know you're going to do that, so I raise my asking price. A big bid-ask spread opens up, and what you can notice in the market for old master oil paintings is that the bid-ask spread is typically a third of the price or more. As a result, very few of them change hands.

It's a very illiquid market. Why? Because buyers and sellers have very different information from each other about the quality of the goods. That's called information asymmetry.

Look at another market, the market for Government bonds. There, both buyers and sellers have lots of information, and, in fact, they each have the same information. Therefore, what you see in the trade of Government bonds is that the bid-ask spread is measured in a few basis points. These transactions take place all the time. The bonds trade in the trillions of dollars a year. You have a liquid market as a function of low information asymmetry.

In effect, what we do as a profession by providing both buyers and sellers of securities with relatively similar information about the securities is we reduce bid-ask spreads, making a more liquid market. Is that good or is that bad? What happens is the liquidity in the marketplace permits capital to seek its highest and best use.

Let me give you some examples from other economies. In Germany, capital is not essentially allocated by a transparent stock market. It is essentially allocated by the banks, and you have a very opaque environment. There isn't much disclosure, and the banks tend to sit on investments. What happens, therefore, is the German economy is essentially an industrial economy. You think about German products and you think about automobiles, steel, and chemicals.

Look at the Japanese economy. Although there is a stock market, that's not really where the capital is

allocated; it's allocated by the Keiretsu. A group of companies take care of each other; mistakes are forgiven; and they too sit on investments for a long time, whether they are good investments or not. So you don't have a lot of capital movement, and it's basically another industrial economy, making things.

In the United States economy, where we have very liquid markets and where capital can seek its highest and best use, capital has moved away from industrial enterprises toward post-industrial enterprises, away from U.S. Steel and toward Microsoft. High liquidity facilitates redeploying assets to their most productive uses. So the United States economy, the most advanced economy, the most post-industrial economy in the world, is largely that way as a result of the liquidity in the financial markets, which is a function to some extent of the high quality of accounting and auditing information available in that marketplace.

The audit function also adds market trust. Traders can go into the market and trade with confidence that they are facing a fair game.

I tell you these things, that accounting has created enormous benefits, but then I am an interested observer, right? I'm one of those CPAs myself. How do you know that I'm not putting it on here?

I'm going to share a couple of quotations from the May/June issue of *Foreign Affairs*. This is a high-brow magazine that's oriented to people who are interested in foreign affairs, diplomacy, and so on. If you picked up a copy of that magazine, would you expect to see much information there on accounting? Probably not. But I'm going to cite quotes from a single issue of this magazine just to illustrate my point.

In one article on Japan, the author says, "Meanwhile, a variety of other gimmicks have appeared to improve balance sheets and thereby prevent public recognition of weakness or insolvency." What the author is saying is that the lack of high quality accounting leads to a situation where there isn't a facing up to the bubble economy, to the bad debts on the banks' balance sheets, and so forth. The author is attributing a lot of the financial malaise in Japan to a lack of high quality accounting.

An article on India in the same journal says, "Retail investors are scared away by the stock market scams. The resulting high cost of capital makes Indian industry in exports less competitive." Remember I said earlier that high quality information reduces the cost of capital? Here's a perfect example. Here's an economy in which people don't believe the information they get. They charge exorbitantly high costs to lend capital or invest capital in companies. It means that Indian companies have very high capital costs, so they are not competitive with companies in other countries.

The third quotation from *Foreign Affairs* is about Russia. It is by Grigory Yavlinsky, who says, "Open accounting that meets international standards is a prerequisite to controlling corruption." A different angle, right? You can't have an honest business environment if you don't have honest, high quality accounting. So another benefit of high quality accounting is that it helps prevent corruption.

Here's an author referring to the United States 100 years ago. This author says, "The United States economy between the Civil War and the First World War was notoriously crisis-prone, nor were catastrophes like the Panic of 1873 pure accidents; they were made much more likely by a business and political culture in which petty things like scrupulous accounting were disdained." In other words, when we didn't have a good accounting infrastructure in the United States, we had an environment characterized by panic.

**Unlike Asians in particular, Americans know more or less what the is being done with their money. Accounting systems in the United States strive for clear corporate information. No other country's financial system reflects such a willingness to bring financial problems to the surface.**

My fifth quotation is again about the United States, but now we're fast-forwarding to today. This author says, "Unlike the Asians in particular, Americans know more or less what is being done with their money. Accounting systems in the United States strive for clear corporate information. No other

country's financial system reflects such a willingness to bring financial problems to the surface."

These are not the observations of accountants; these are the observations of people interested in foreign affairs who look at good accounting as part of the solution and poor accounting as part of the problem in various countries. So much for our glorious past.

Let's turn to the present, which I have characterized as parlous. I start with a megatrend from the outside -- information technology. As everybody is aware, the cost and size of all the components of information technology are plummeting. That's Moore's Law at work. Chip density doubles every eighteen months. What happens over time is you get lower and lower and lower costs for central processors, for communications, for sensors, for memory, all these components. The price is plummeting.

At the same time, the power and integration is going up. It's skyrocketing exponentially. It's hard to believe that three years ago, none of us were on the Internet. Today we take it for granted. The network has become ubiquitous. We have anytime, anywhere information. We literally have an office in a briefcase.

That's today. Think what happens if we project those same rates of change forward into the future and the enormous consequences they're going to have. People in this room have more computing power on their wrists than took the first astronauts to the moon. Think what that means if you project that forward for another thirty years, when you would literally have on your wrist or maybe even sewn into your body more computing power than exists in the world today. That's what's going on.

We all know about that, but what's important are the implications for business. Business takes information technology and uses it. The strategic leaders use it in strategic ways. They use technology to get closer to their customers. Now let me explain what I mean by that. Here we have a person at a point in time experiencing a need for something, some product or service. Here's a bunch of vendors at different points in time who can fulfill that need. Who gets the business? The one who can fulfill the need fastest, the one who can shrink the time-space gap between the emergence of a need and its fulfillment.

What is information technology about? The computing side of it is about shrinking time. It's taking calculations that used to take months and doing them in nanoseconds. The communications piece of technology is about shrinking space. It's about making it possible to do business around the world for anybody, at any time. Information technology is about shrinking time and space, and the competitive gain is about shrinking the time-space gap between the emergence of a need and its fulfillment.

Information technology is not just a tool of modern business; it is the fundamental tool. Leadership companies use the technology to get closer and closer to their customers in fulfilling their needs. They use the technology to demassify products and services.

<b>Information Technology</b>
<ul style="list-style-type: none"><li>● Cost and size down--way down<ul style="list-style-type: none"><li>○ Processors</li><li>○ Communications</li><li>○ Memory</li><li>○ Sensors</li></ul></li><li>● Power and integration up--way up</li><li>● Network ubiquitous<ul style="list-style-type: none"><li>○ Anytime-anywhere information</li><li>○ "Office in a briefcase"</li></ul></li></ul>

The whole idea of the industrial era was mass production. Everybody could enjoy driving around in a model-T Ford for only \$500 because of mass production, but the flip side was that everybody got the same model-T-black. It looked the same, and it was the same. With information technology, you can, in effect, get away from mass production to mass customization. You can provide each and every customer with his or her own model. You can go to the automobile dealer, punch the buttons on the computer, and select from literally quadrillions of permutations of make, model, style, and colors.

Under the old idea, mass production, one size fits all, the *Wall Street Journal* editor read all the news feeds and decided what went into the paper. You can take it or leave it, even today. That's the mass product, but the demassified product is logging onto the Dow Jones News Service to see all the news feeds. You set the filters in place that deliver you a daily newspaper that responds to your interest, one that's different from every other newspaper in the world.

I could add many examples, but you get the point. You use the technology to deliver a different product or service to every single customer. Then, of course, you use the technology to improve quality, to constantly, continuously improve quality, and to go global and have world-spanning organizations. That's what the strategic leaders do.

Now the followers are faced with this dilemma: They can learn to do these things themselves, emphasize quality, decrease the cycle time to get designer products to market and deliver them to the customers. They can use the technology to focus on the creation of value, go global themselves, downsize, get rid of excess resources, go into partnerships and alliances to pick up the resources that they are missing, and make strategic use of it themselves. That's one choice. They can elect to do that, or they can go broke; that's the other choice.

Now let's focus, in this new environment, on the financial statements that we prepare under generally accepted accounting principles. These financial statements have been designed by the FASB and its predecessors to describe the industrial-era enterprise, the enterprise that creates value by physically manipulating tangible property like raw materials and turning them, by the application of energy and labor, into finished goods, then pushing the finished goods down the line to customers physically. What you see on those financial statements are the very tangible assets of that process. You see the raw material, the work in process, the finished goods. You see machinery and equipment. You see the buildings and the land.

That's what's on the financial statements, but post-industrial enterprises run on a different set of assets. They basically run on intangible assets, such as the capacity of innovation, research and development, human resources, information and know-how, brand equity, relations with customers and vendors, and relations with employees. These intangible assets drive the post-industrial firm, and none of them are on the balance sheet at all. We don't account for them.

Now you're thinking, "Okay, but those are just the post-industrial enterprises. Most of American economy is still making things-automobiles, steel, food." Well, let me tell you, two percent of the American work force is involved in growing things on farms, and ten percent of the American work force is involved in making things in factories. The rest of the work force is doing something else.

Seventy percent are involved in the creation, distribution, or use of information. The economy has basically become information-oriented. Even industrial enterprises are no longer strictly tangible-goods companies.

Let me give you an example: Motorola. It's a manufacturing company, so it should be described by an industrial accounting model. Let's look into that. Say you go down to the store and buy a Motorola

#### **Post-industrial enterprises run on intangible assets...**

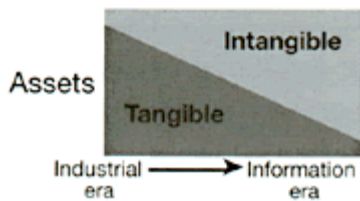
- Information
- Research and development
- Capacity for innovation
- Human resources

**...which are *not* in the financial statements**

cellular phone that costs \$100. How much of the \$100 was for the physical content of the phone? There is less than a penny's worth of sand, turned into silicon. There is less than two cents worth of copper, to make the wires to connect things. There is less than a nickel's worth of oil, turned into a plastic box. What is the rest of the \$100? Software, research and development, innovation, brand equity, information. Manufacturing companies are putting out more and more products that are post-industrial. They too run on assets that are not in the financial statements.

Let's look at it graphically, on this slide. In the past, a company's value-producing assets were largely tangible. There were intangible assets, but tangible assets dominated. So at this end of the spectrum, think of United States Steel. You've got steel mills, blast furnaces, land, piles of coal. But the emergent economy is basically working on intangible assets.

### Shifts in assets...



At the other end of the spectrum, think Microsoft and think of Microsoft's balance sheet. I guarantee you, Microsoft's balance sheet has nothing of interest on it whatsoever. What are the assets of Microsoft that comprise the balance sheet? A couple of diskettes, probably not even much land. Where is the some \$300 billion of Microsoft's market value? It's between the ears of Microsoft's people, not on the balance sheet.

Don't get me wrong; I'm not saying that we should take these intangible assets and turn them into debit and credit entries, but I am saying that ignoring them in the accounting model is a fatal mistake, because what we're doing with these grand financial statements is producing what's in the left-hand column. We're producing periodic historical cost basis financial statements, five terms to describe what we provide as accountants, but look at the right-hand column and you will see the way in which people are used to getting information in every other information domain besides accounting.

Periodic? No. People don't want periodic information. They want to log on and get the information they want on demand. They want up-to-the-minute, if not forward-looking, cost bases. I'm not saying they want to know the current value of the assets as much as I'm saying they want to know the capacity of this basket of assets to make customers better off, to create value for customers.

Sure they want financial information, but they want much more than that: They want to be able to look behind it and see the operating data that lie behind those numbers, see the leading indicators, see the non-financial performance indicators that management itself is using increasingly to run the enterprise, things like customer satisfaction, product and process quality, measures of innovation-those types of things.

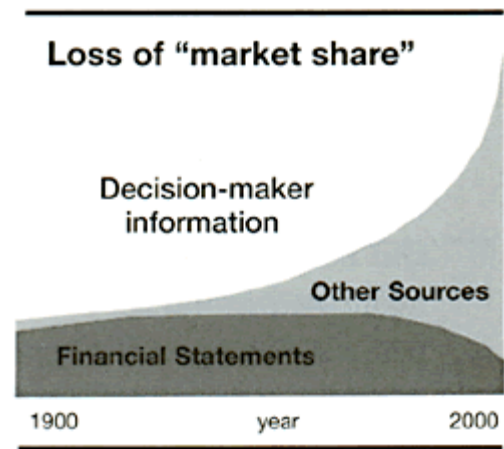
Then, the last word in this five-part set is the word statements." We're referring to general purpose financial statements. General purpose financial statements means the information is not exactly what the investors need, not exactly what the creditors need, not exactly what the managers need, not exactly what the regulators need, not exactly what the tax man needs. It's not exactly what anybody needs. It's a compromise.

But today, we actually have the capacity to go in and find out what we want on demand. This trick of summarizing a complex enterprise in two pages, a balance sheet and an income statement, is a neat trick we learned as accountants 500 years ago or so. It was a pretty good trick when people could hardly come into the enterprise, thumb through the journals and ledgers, and form their own impression of the enterprise.

But today, users can literally come in and thumb through the journals and ledgers themselves. I don't mean with their thumbs, but with their software. They have the ability to come in and express their information demands and get them met in the format that they need, drill down, and get whatever they want when they want it.

What I am saying is that this left-hand column is not a formula for success in the future. In fact, it leads to something we might call a loss of decision-information market share.

On this graph, what I show, over the extent of the 20th century, is the information content of financial statements available to decision makers. It has been going up somewhat during the century as a result of higher standards, better accounting, better practice, and so forth. Actually, those show a tailing off at the end of the century. That's what I was talking about earlier. These financial statements don't describe the Microsofts and the other post-industrial enterprises.



Looked at this way, the information content of financial statements is declining. At the same time, we have other information. At the beginning of the century, you would certainly need information outside the financial statements to decide whether to commit money to the enterprise as either an investor or a creditor, but a relatively large percent of what we needed could come from the financial statements. You always need some other information, but the financial statements supply a relatively large part of what is needed.

As the century goes on, though, low-tech information intermediaries emerged, people like Moodys, Standard & Poors, and Dun & Bradstreet. Later in the century, you get an explosion of other sources of information because of electronic databases now on line. So while the total information that creditors and investors have is exploding, the piece that we as accountants are involved in preparing and auditing is flat at best, perhaps even declining, but either way, it's a loss of relative market share.

That's why I say we're facing a parlous present. Yet, I have the temerity to tell you there is a great future in front of us. How so? How do I get there?

First, there are some enormous megatrends in our favor. One megatrend is the change from an industrial to an information or post-industrial economy. We as the information people should be able to figure out how to take advantage of the shift to an information economy. Unless we're foolish or lack creativity, that megatrend actually operates in our favor. A second megatrend is that all around the world, people of every type are expressing less and less trust in institutions, businesses, governments, and people. More and more, they want accountability for the money they are investing or contributing, for resources managed by others, and for relationships. They want to be told about what's happening with their trusted inputs.

These demands for accountability express themselves in many ways, but we as the accountability people should be able to figure out how to take advantage of the trend. That's what we supply. If people are demanding more of it, that's good for us.

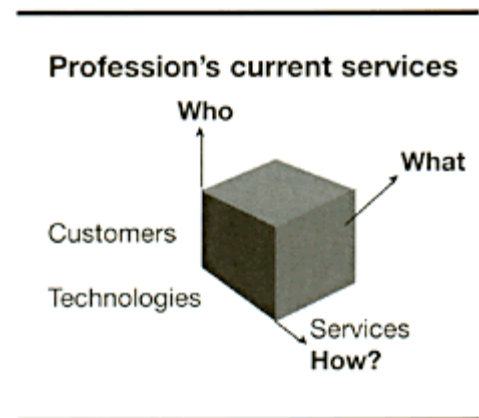
The third megatrend is that information technology is making markets so much more competitive. You have probably heard this comparison: an Internet year to a regular year is like a dog year to a human year. This enormously speedy change creates turmoil everywhere. That should be good for us. We should be able to step in and help resolve the turmoil by bringing some information discipline to it. What we have to do is figure out how to harness these megatrends.

This cube represents the product of the revenue opportunities for the accounting profession as we now see them. Let me describe its three dimensions. First is a "who" dimension, meaning who is it that we're serving, who are the customers that we're making better off? The "what" dimension refers to what are we doing to make the customers better off; what services are we providing? Then there's a "how" dimension, which refers to the technologies we employ in order to provide the services. In order to get into those future opportunities, we need to figure out how to relax the boundaries in each of those



dimensions.

With respect to the first, or "who," dimension, we need to appeal to a larger set of customers than we do as accountants and management accountants. The people who deal with accounting systems inside companies basically see their customers as the enterprise's management. That's too narrow a set of customers. Every single worker in a modern enterprise is an information customer who needs high quality, up-to-date information. If we think of ourselves as financial accountants, the people who prepare financial reports for investors and creditors, then we see them as our customers. But how about other customers like the enterprise's own vendors, and customers, and people, and regulators, and Government, and community? We need to think about a much broader set of customers we can serve.



Regarding the second dimension, the "what" dimension, we need to think of a broader array of services, not just financial statements but the full range of information, including on-line real-time information and nonfinancial information.

On the "how" dimension, we need to rethink our technologies. The technologies we use to prepare batch information and then audit it after the fact is a kind of obsolete technology in many respects. What we need to think about are new uses of technology that permit us to generate much more information of higher reliability, available on-line in real-time. So we need to think about the technology dimension as well.

One of the nice things about this model being geometric and cubic is that as you relax the constraints in each of the three dimensions, the volume of opportunity is going up by the cube. That creates this enormous opportunity space. Let's look at new customers, new services, and new technologies, and I will illustrate with a service that the accounting profession is rolling out right now-CPA WebTrust.

The idea here is that electronic commerce isn't taking off as fast as people think it should. There is enormous capacity, but it hasn't been realized. There could be billions and trillions of dollars of commerce going on out there. Why isn't it taking off faster? You ask consumers that question and they tell you, "Well, we really would like to deal with these people, but we don't know it's a real company. Even if it is a real company, we don't know if they will get the transaction right, and even if they do that, we don't know that they won't misuse our own personal data." So here's a service that addresses those three dimensions. This is a bona fide company. There is transaction integrity, and they won't misuse your personal data. You see this on a Web page. It's a hot link. Click it, and you can see the accountants' report and you can get to the methods that are used.

Here's an actual example from the Web for a company called Resource Marketing. The WebTrust seal gives the customers assurance before they put in their Visa or Mastercard numbers. You hit that link, and you can drill down to a report. A small firm happens to have issued this WebTrust seal. Notice that the criteria and assertions are hot links, so you can drill down and find out more and more about them.

This product serves new customers-individuals doing business on the Web. It's also a new assurance technology, not after-the-fact checking, detection, and correction. It's looking at the systems to make sure that they will produce these types of results in real-time for future customers.

WebTrust illustrates that these opportunities that I've been telling you about are real. The megatrends that I mentioned are strongly in our favor. Clients and employers have information needs; we know that from interviewing them. We found out that they are quite aware that they are forced to deal with information of lower quality than what they want and need. There were 90 cases of that. So they have

the needs that we as a profession can meet.

We have unexploited permissions. Customers would be willing to turn to us for these types of additional services because they trust us. They think we do good work. So we have unexploited permissions. That creates the clear possibility of double-digit growth in the foreseeable future.

Now you're saying, "Yes, but you're having double-digit growth now," right? But the double-digit growth that we're having now as a profession is largely in consulting. What I am saying here is that this double-digit growth can also be in the rest of the profession, the part that's dealing with the production and auditing of information. The question is, what do we have to do in order to take advantage of these opportunities?

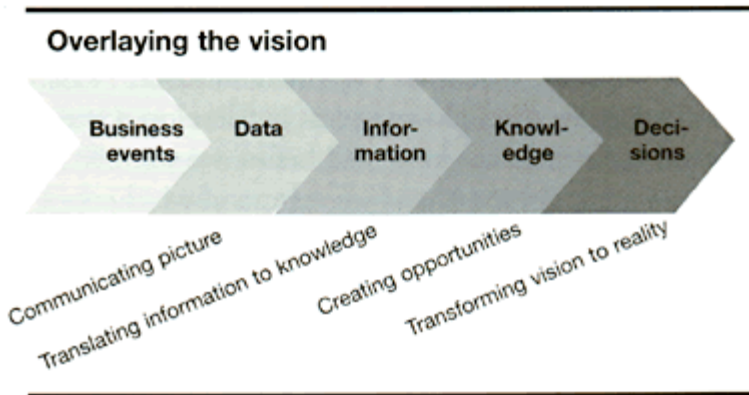
In order to explain that to you, let me focus for a few minutes on a project that the AICPA has just completed. We were interested in a future vision for the accounting profession—where we should be going. We noticed that the Canadian Institute Chartered Accountants had gone through a process to develop a vision for their profession in Canada a year or two before we started this. We thought it was a great vision. A year went by, and we checked back and asked, "How's it going? Is your vision getting traction with your members in Canada?" Answer: "No." They reject it. It's not theirs. It's forced on them by the leadership and doesn't suit them.

So we said to ourselves, "Okay, top-down doesn't work; let's try the opposite approach. Let's get a random sample from our members." We did that in every one of the 50 states in order not to contaminate the findings. We didn't put anybody from the AICPA leadership in there. We had outside facilitators. These people got together and came up with a vision. If you're interested in reading it, it's on a Web site. You can get as much detail as you like. A total of 177 member groups evaluated the environment, the threats, the opportunities, where they saw the CPA profession in the future, and how we were going to get there.

Let me tell you what we found. First, the 177 versions were boiled down a little at a time until we got one national version representative of what these 3,000 members said. They saw CPAs as the people who can make sense of a changing and complex world. That's pretty broad. That's a lot broader than people who prepare financial statements and tax returns. It's general, at the 100,000-foot level.

What happens when you drill down to the 40,000-foot level and try to put a little more shape to that? Here's what they said in their vision statement for the year 2011: CPAs are the trusted professionals who enable people and organizations to shape their future. Financial statements might be a part of that, but lots of other things will be a part of that as well because we want to do what helps people achieve their future.

Combining insight with integrity, CPAs deliver value. They listed four bullets: One is communicating a total picture with clarity and objectivity. Second is translating complex information into critical knowledge. Third is anticipating and creating opportunities. That sounds a little more creative than what most people think of when they think of accountants. And fourth is designing pathways that transform vision into reality.



Let me take those four bullets and recast them a bit for you. I want to start here with the information value chain. You have probably seen this in some form or another, but here's the idea. At the left end of this chain, we've got business events and transactions taking place, but we don't know anything about them yet, so the first thing we do is record them. Now we have data about them, and we can begin to take a look at what happened. We take the data, refine and combine it with other information, and we have more than data -- we have information, information from the outside and so forth. That turns into knowledge, and we use that knowledge in order to make wise decisions -- consumption decisions or welfare, political, and social decisions. Any type of decision.

So as you move up the information value chain, you get to higher and higher value activity. The person who sits there at shipping, taking down and recording things going in and out, creating data, is earning what? Perhaps ten dollars an hour. That's what you get for actually creating data. Then you move up to the 30 people who get \$100 an hour because they are transforming data into information and refining information into knowledge.

Now let's take those four bullets that I showed you here and locate them on this value chain. The first was communicating the picture with clarity and objectivity. That's down here at this level. The conversion of data and information -- good work, pays decent, but a lot of that is being made redundant by technology. It's not going to be great work too far into the future. The next bullet is translating information into knowledge. That falls right here; that's higher value. People who do that get paid more.

The third bullet is creating opportunities. That lies even further up the value chain, and those people get paid even more. The fourth is designing the pathways that permit people to achieve their vision, and that's where you're up at the top of the value chain. So 3,000 members told us they aspire to move their practice up the information value chain. We also asked, "What do you think are the core values of the accounting profession?" These were the top five that they listed: First, a commitment to continuing education and lifelong learning. Second, competence. They think that whatever they are doing, they must be highly competent at it. Third, integrity -- stands to reason. The reputation of the accounting profession rests on people believing that we have integrity, and that rests on CPAs having integrity. Fourth, they list attunement to broad business issues, not just narrow green-eye shade focus on the numbers, but a holistic view of the enterprise. Fifth, objectivity, which is different from integrity. You can have one or the other or both, but objectivity is the neutrality, trustworthiness. So these are the top five values.

Now look at what our numbers showed as the services with the highest potential in the future. The first one was assurance and information integrity services. They extend the historical audit function, taking in a much broader domain. The second is technology. They see technology services as something that's really going to be high value-added and demanded well into the future. Third, management consulting and performance management. Obvious, right? The fourth is financial planning, helping people to achieve their financial objectives. And fifth, they see the world economy as global and see in that enormous opportunities for international services, much more than we have exploited in the past.

Our members also identified the capabilities that CPAs would need to have in order to succeed in taking advantage of the opportunities they identified. Number one was communications and leadership skills. Number two, strategic and critical thinking skills. You can't get up the value chain if you're just thinking about the production of debits and credits; you have to think strategically, the way the management of the enterprise thinks.

The third needed competency is a focus on customer, client, and market. We talked earlier about mass production, where the producer tries to drive down the price and isn't too concerned whether the product meets specific customer needs. Demassification is where you turn around and face every problem from the customer's perspective. You have to turn around and face the whole thing from the customer's perspective or you won't get the right answer.

The fourth competency is the interpretation of convergent information, by which they mean the ability to interpret both financial and non-financial information. If you only see one side of the picture, you don't have the full story. Fifth, you have to have high technology skills to succeed in this environment. When vision-project participants talk technology skills, they are not talking about the ability to run a PC, do a spreadsheet, and make a Powerpoint presentation; they're talking about a fundamental understanding of how technology reshapes organizations, products, services, and markets, and about the risks of employing technology and the ways in which to control those risks. They are talking about business implications of technology, not just the ability to run applications or deploy software. Those are necessary, but not sufficient in order to succeed.

The vision-project participants mentioned obstacles to achieving this vision-problems we have to solve and issues we have to deal with. One is that we can't get anywhere if the customers don't believe we can do it. So they held that future success would be based on public perceptions of our ability and roles. The second issue is that we've got to become as a profession much more market-driven than we are. Third, we have to be less dependent on traditional accounting and auditing services and focus more on high-value services like consulting. Fourth, you can't face this marketplace as a generalist very well in the future. You've got to specialize in some area. You need the breadth to see problems as a whole, but you also have to have the skills to be able to solve problems in some specialized domain. Fifth, these CPAs are saying that as a profession, they don't think we're sufficiently global in our perspective and outlook. That's an issue as well.

So these are the things that our members are telling us. This is not the leadership of the AICPA telling us what to do; it's the members of the AICPA telling the leaders what to do. That doesn't mean that if the AICPA does those things, the game is won, because other actions are necessary as well. Some actions have to be taken at the level of firms, both industrial firms and CPA practice firms. Since I am in practice and I'm familiar with what we have to do in our firm and firms like it, I'll focus on them.

The first thing that firms have to do in order to realize these opportunities is to adopt a customer focus for the auditing product. The customers are not only the clients, but the investors and creditors out there who are the end users of the information. If we're not making those people better off, we're not going to have much of a job in the future. The second thing is that firms have to build competencies, particularly in the technology area but in some others as well. The third thing is that we have to take our existing product offerings and invest them with higher and higher value. We have to make them more valuable to the customers, and we have to show our customers and clients our capacity to create value.

When they think of CPAs, we don't want them to think only of people who prepare the financial statements and tax returns; we want them to think of CPAs as the people who help them shape their future. Those firms that don't have a research and development arm oriented to finding out customer needs and creating service opportunities to fulfill those needs will have to create one.

Big firms like mine can do that. We can have a big department that does product development. Smaller firms, though, might have a partner whose job it is to continually survey the pipeline of new product

and service offerings, to find out which ones are good for the firm, and to help the firm take advantage of them. But one way or another, each firm has to address this stream of opportunities aggressively.

Finally, it's not enough to study opportunities. You have to go out and perform these new types of services, because in the process of doing this and serving customers, you get feedback and the feedback will tell you what you're doing wrong and right. So study is good, but action is better in terms of getting these things done.

Not only do firms have to do these things, but each individual has to think about what he or she needs to do to prepare for this environment. Each individual has to make the mental shift from a production side to a consumption side, from the side of the person who produces financial statements to the side of the person who consumes information. If you can mentally put yourself in that person's shoes, then you can, in fact, serve more capably.

It's much like riding a bicycle. You can read about riding a bicycle, and you can watch videotapes about riding a bicycle. When you get on a bicycle, you're going to fall over a few times, but when you finally get the trick, you never lose it for the rest of your life. That's the same thing here. When you finally get the trick of thinking about everything from the consumption side, from the customer's side, you will never again think about any problem other than from that angle. It's something that you either have or don't have. If you don't have it, you need to work on it.

Another thing that we need to develop is a more strategic perspective. It's not something that's had a high position in accounting curriculums or practice in the past, but it is something that I find that CPAs have a latent capacity to do. It just hasn't been exercised very much. When you take CPAs out of the grind of daily activities, they can think strategically pretty well. So if you haven't done that yourself, you need to do that. You need, obviously, to develop technology competence, and, as I said earlier, that is much more than just the grammar of being able to run PCs, networks, and whatnot; it's more the poetry of knowing how the technology is used to reshape the business environment.

Finally, if you haven't done it, you need to make a commitment to continuous learning because the information you have right now will be totally obsolete in five years, if not less. If you don't have an intentional learner's attitude, you're going to have difficulty.

Now, to begin to summarize, I've put the definition of accounting from Webster's on a slide. Webster says accounting is the system of reporting and summarizing business and financial transactions in books and analyzing, verifying, and reporting the results. Does that sound sexy or not?

That's what Webster says, but I would submit to you that there's a different way to think about it. I would define accounting as the information infrastructure necessary for an organization to achieve its objectives. It includes the system that generates financial information, but it includes much more. If you can actually internalize that notion, there is no upside limit to what you can achieve. You as an accountant would become a person who enables an entity to achieve its objectives through the strategic use of information and information systems.

#### **Achieve the vision and we'll...**

- Improve our position as information experts
- Contribute more to the economy
- Attract the best new talent
- Improve our standing as a profession in society
- Serve the public interest
- Prosper

If we can do all this -- if you and I and our firms and institutions can do all this -- all sorts of benefits await us. We'll improve our position as information experts; we'll make a bigger contribution to the American economy; we'll attract new talent to the profession; we'll improve our standing as a profession in society; we'll serve the public interest much better than ever; and we'll prosper as well.

