

Paradigm shifts in the profession

One of the ways we solve problems is by instinctively relating what we already know to new problems and challenges. However, if over time major problems in a field cannot be solved by this method, more problems accumulate. We begin to ask ourselves if there are other ways to look at the situation—perhaps it is time to change the basic paradigms of our thinking. This is the position that many chartered accountants

and accounting professionals across the country now find themselves taking.

Paradigms

The term paradigms refers to accepted examples of practice. Paradigms are the way we perceive, think and value the world, based upon a particular vision of reality. They provide us with a valid set of expectations about what will probably occur based upon a shared set of assumptions. Paradigms establish boundaries and define

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how to succeed within the boundaries. When we are in the middle of a paradigm, it is difficult to imagine any other paradigm. Conditions are ripe for a paradigm shift, when, a sufficient number of people agree that the old ways no longer solve important problems and that new ways are needed. Of course, everyone in a field does not change because a new paradigm comes on the scene. Some people are so committed to particular paradigms that they never change. It is not always easy to know when to change and when to step around those who do not.

In 1962, Thomas S. Kuhn, then a budding philosopher and historian of science, published a book called *The Structure of Scientific Revolutions*.

Kuhn noted that throughout the history of science, each advance noteworthy enough to be called a revolution was followed by a change in the way the community of scientists looked at familiar data. Science develops in a non-linear pattern. Each generation solves its own problems, not because the problems have changed, but because the knowledge and mindsets of each generation change after each scientific revolution.

Those who stimulate paradigm shifts, or who recognise that a paradigm shift is taking place, are the best placed to gain some control over the consequences of the shift. The accounting profession need not rely on old paradigms for their successes. We need to create new ones.

Kuhn's work was in itself tradition-shattering and continues to be influential in the study of scientific processes today. Others have noted its relevance for the social sciences, business, the professions and other fields.

Paradigm shift

Changes in paradigms are called paradigm shifts, and shifts strong enough to attract a significant group of adherents lead to basic and revolutionary change. History provides many examples of paradigm shifts. In science, Galileo's 17th century inventions of a telescope for observation in the field of astronomy, and his discovery of the laws of falling bodies and the motions

of projectiles, were paradigm shifts. His work initiated a scientific revolution and underlay the later discovery of the laws of gravity by Sir Isaac Newton, in itself another paradigm shift. Yet, Galileo's work was not initially accepted or recognised as a paradigm shift by philosophers and academics of his time. His discoveries contradicted Ptolemaic astronomy and Aristotle's theories about the nature of heavenly bodies. Many of the scholars of his day viewed his work through a paradigm that was no longer valid and did not realise that what they had encountered were their own blind spots.

The chartered accountant profession has been proac-

tive in examining some of the reasons why recognising paradigms and knowing when it is time to change them is so important to the future of the profession. We, as professionals need to do that on a consistent basis.

Knowing a paradigm shift when you see one

"The real act of discovery consists not in finding new lands but in seeing with new eyes."
- Marcel Proust

Paradigm shifts need to be recognised before they can be acted upon. Examples of trends triggered by paradigm shifts include the Total Quality movement that began in Japan in the late 1950s,



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The Institute of Chartered Accountants of India (ICAI) has been the torchbearer for the accounting profession and its development in India. ICAI has been regulating, developing and guiding its members in various areas of professional interest so that the highest of traditions and technical competence can be ensured in the services rendered by the profession. Indian Chartered Accountants are highly respected in the global circles of the profession and enjoy a privileged social status within the country. ICAI has been proactive in taking the profession to higher levels. Every profession witnesses changes and this has also been true for the accounting profession. Initially in this article we look at the paradigms, paradigm shifts, blind spots and patterns in paradigms and, in the latter part we look at the impact on working methods, impact of technology, emerging areas and the changes that the profession is witnessing.



spreading to manufacturing all over the world; specialisation and niche marketing; self-managing work teams; decentralisation of corporate hierarchies; and the view of poor people as worthy credit risks, first in Bangladesh (Grameen Bank) and now by for-profit corporations in the U.S. and other countries.

Joel Barker, author of a book on paradigms points out to Sony's invention of the Walkman as another example of a paradigm shift, this time in personal entertainment. The concept of mobile communications embodied by today's cellular telephones is a direct descendant of the Walkman, but it was not obvious in 1979 when Sony introduced the Walkman to the U.S.

Blindspots

"We cannot look at the future as a continuation of the past... The things that got you where you are, are seldom the things that keep you there." —Charles Handy, British business philosopher

A blindspot is essentially a failure to see beyond one's basic assumptions about how things operate in a field.

The two classic examples that come to mind on blindspots in industries are:

Typewriter industry: The age-long industry has its share of players, but in the space of 10 years the typewriting industry got run over by the personal computer revolution. Smith Corona who was a leader in typewrites in the USA had to close shop. In November 1992, a couple of years before they went out of business, the company's CEO, G.

Lee Thompson, told the Wall Street Transcript, "Many people believe that the typewriter and word-processor business is a buggy-whip industry, which is far from true. There is still a strong market for our products in the United States and the world." When asked what new products and services the company planned to introduce, he replied, "Nothing right now. They're still in the formative stages." Smith

There have been many paradigm shifts in the history of accounting, from the invention of double-entry bookkeeping by Italian traders in the Middle Ages, to the opening of new fields of accounting practice, the use of scientific statistical methods and computer simulations, and refinements in cost and management.

Corona grossly misjudged the public's preference for PCs. It was hard to imagine that the typewriter would be annihilated in just 10 years.

Swiss watch: A famous example of an industry that did not recognise a change in its industry's paradigm and paid the price of this blindspot is the watch industry in the 1970s. Switzerland had long been the world leader in watch production and sales when, in the late 1960s, it invented the first quartz watch prototype. In an astounding failure to recognise the implications of their development, they dismissed the technology, which Japan quickly snapped up.

Meanwhile, the Swiss continued to improve upon what they had been doing, further refining the manufacture of watch gears and springs and offering waterproof and self-winding watches. Soon, the Japanese took over the market. The Swiss share of watch making collapsed from 65 per cent to less than 10 per cent within 10 years, and it took many more years for the Swiss to climb back up. Key to their comeback was the Swatch, an affordable, trend-setting product aimed at a non-traditional market. In this case, clearly, continuous improvement was no match for the consequences of a paradigm shift.

One can think of many more examples, like the video rental industry as of now which is facing a run over from cable television industry and the like. Blindspots can be costly mistakes.

Paradigm change has a pattern

Kuhn pointed out; changes in paradigms have a predictable pattern. Understanding this pattern improves our ability to manipulate the paradigm and to use it for problem solving. Schematically, paradigms usually follow a curve. They first ascend with a rush, then flatten out, and then descend until conditions are again ripe for another paradigm shift.

Both Kuhn and Barker see common characteristics in pre- as well as post-paradigm situations. Instability, often to the point of turbulence, characterises both stages. In the pre-paradigm phase, most members of the community are aware that there are a number

of difficult or apparently unsolvable problems in the field and would like to solve them. There is a general sense that things need changing. But it is not clear in which direction, or if the changes are temporary or definitive. And it is not clear what, if anything should be done about them. The accounting profession also needs to make sure that we see the pattern.

To be accepted, any new paradigm that comes upon the scene must give the community the ability to look at old problems with new eyes. If this is the case, a rush of problem-solving takes place and the purposes of the community are advanced. The paradigm

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curve ascends. If the new paradigm is not recognised and accepted by a significant portion of the critical population, this blindspot may cause unfavorable changes or changes beyond the control of the community. The paradigm curve flattens once the most difficult old problems are solved and problems brought by the new paradigm come into view.

The new problems are often problems that were not known to be problems before. For example, Galileo did not know that his new paradigm

had anything to do with the problem of gravity. It took Newton, nearly a 100 years later, to recognise that Galileo's work had laid the foundations for defining the laws of gravity.

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Paradigms and the accounting profession

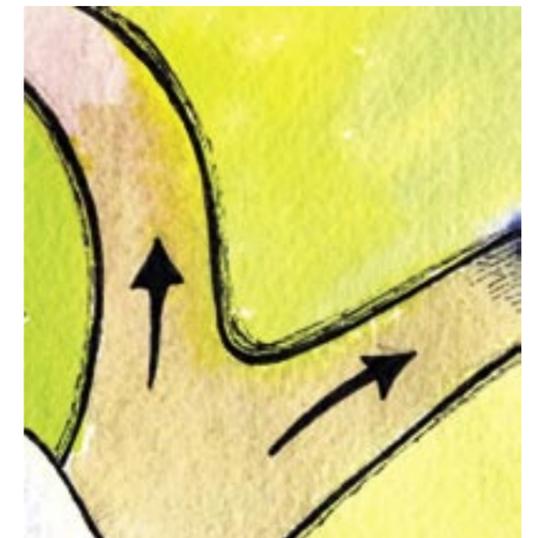
If change had been remarkable in the 20th century, many observers believe it will be even more accelerated and profound in the 21st century. Paradigm shifts are taking place in every profession and every business throughout the world. Such shifts are affecting the dimensions of management and leadership, the empowerment of workers, the marketing and distribution of products, the geographic location of work, economic theory, the role of technology, and the relation of individuals to their communities and the organisations of which they are a part.

There have been many paradigm shifts in the history of accounting, from the invention of double-entry bookkeeping by Italian traders in the Middle Ages, to the opening of new fields of accounting practice, the use of scientific statistical methods and computer simulations, and refinements in cost and management accounting. The

biggest paradigm shift being witnessed in the accounting profession today is the information technology revolution and globalisation of business.

ICAI initiated the Vision Document to reposition the

The one increasing voice for internal audit is to change the paradigm from Internal Control focus to a Risk Management (Business Risk) focus. Managements are increasingly concerned about the business risk and want the Internal audit to focus on the same as well.



Institute and the profession of chartered accountancy in the 21st century. Chartered accountants across the country need to think about their profession in new ways. We need to keep an open mind, to think in new directions, and to question old assumptions. The synergy of new thinking can lead to paradigm shifts, as well as increase the likelihood that a new paradigm will be recognised when it comes along.

Emerging trends

Now, we look at some of the trends that are emerging. These are either already in place in the advanced nations and will soon be a part of Indian business environment or some of them are already in place in the Indian environment.

Work profile and methods

By far the biggest change that a chartered accountant will undergo, be it in the audit profession, consulting or members in industry, it will be about gearing up to do value added jobs. We need to be truly knowledge workers, information providers and advisors. It is about the higher-end intellectual capacity that needs to come into play. A seat at the strategy table in a corporate, value added consulting, information technology related control assurance, strategic tax consulting and taking care of complex tax planning issues and the like.

In the United States, tax returns can be filed online. There are numerous websites that have affiliation to IRS (Internal Revenue Service) and who even allow the federal tax returns to be filed through their websites free of cost. A nominal fee is charged in some instances. Software is available and can be bought off the shelf.

The routine and mundane number crunching will not be the domain of the accounting professional alone. As can be seen from these examples below:

Accounting software is

improving leaps and bounds by the day. There are many off the shelf products available as well. If we were to compare what was happening a decade back, when trained accountants often used to crunch the numbers or make entries, today the accounting software is able to take care of many of the steps. As a result the demand for trained accountants is on the wane. For lower end jobs it is the data entry operator who can do the job. Booking, posting of Journal entries etc is all done by the software. Gone are the days when the trial balance had to be tallied and the profit and loss account and balance sheet had to be drawn up manually.

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The one other change in terms of work life for an accounting professional could be from being a 'virtual employee'. Wireless technology, Voice over Internet telephony, remote access and other advancements in technology

has given birth to the 'virtual employee'. One need not be physically present at a location to do a particular job. We also have seen the trend of outsourcing of accounting functions to India where there is a huge talent pool of finance and accounting professionals. Audit reviews by partners could happen from remote locations.

The other major change in the years to come would be in working with foreign professionals, being exposed to different languages and cultures, business environments different from the Indian environment, working on a host of new regulations and issues and even time zones.

Industry and corporates

Transparency is going to be a very important factor in the coming years. In the book *The Naked Corporation* by Don Tapscott, transparency was defined as 'accessibility of information to stakeholders of institutions, regarding matters that affect their interests'. Investors, suppliers, customers, employees, everyone have access to information, loads of information. In such a world only the transparent will forge ahead. The authors have defined three levels of transparency:

Level 1

Compliance culture: Preserves value consistent with laws and norms and seeks to avoid the unacceptable destruction of value.

Level 2

Relationship management culture: Value created but typically traded off, usually after the demands of investors are satisfied.

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Level 3

Open enterprise organisation culture: Maximises the creation of value simultaneously in economic, social and ecological terms.

Level 3 is what does maximum good i.e. creating maximum value. Level 3 is what the stakeholders are going to expect relentlessly from corporates.

Other areas of change are/ could be:

- The accounting function in corporates has undergone changes over the period of time. From being watchdogs (compliance) to bean counters to business partners to the present claim by finance – a seat at the strategy table.
- Accounting technology has improved leaps and bounds. Gone are the days when it took two or three months to achieve a financial year close. Even companies with multi-locations and multi subsidiaries spread across countries, are able to achieve a financial close in 10 to 12 days. From the annual to quarterly close, now it's a detailed monthly close. Business is demanding a daily profit and loss account. And the day is not

far off when even that will be common, if that serves the purpose. It already does exist in one form or the other in some of the companies already.

- The coming years are going to demand the accounting professional to be more dynamic with performance reporting. Information needs are going to be on the rise. Dashboards, Metrics, Scorecards (The balanced scorecard and Strategy Maps, as popularised by Robert Kaplan), Data mining etc will be the order of the day – in one form or the other.
- Rather than concentrating on compiling and presenting the numbers, tomorrow's financial professionals will have to mine data, turn information into knowledge and share their forecasts with senior management.
- Accountants will no longer be statisticians, but strategic partners. They will consider past performance, analyse existing data and evaluate changes in the economy. Then they'll use this information to help position companies for future success.
- As investors insist on setting standards that can be used to accurately gauge a company's performance, financial professionals will furnish the factual basis and strategic advice for management's decisions and help demonstrate the impact of those decisions on the bottom line.
- Major growth areas for corporate financial profes-

sionals will be cash flow forecasting and analysis; computer systems and other technology procurement; strategic planning and management; and international finance.

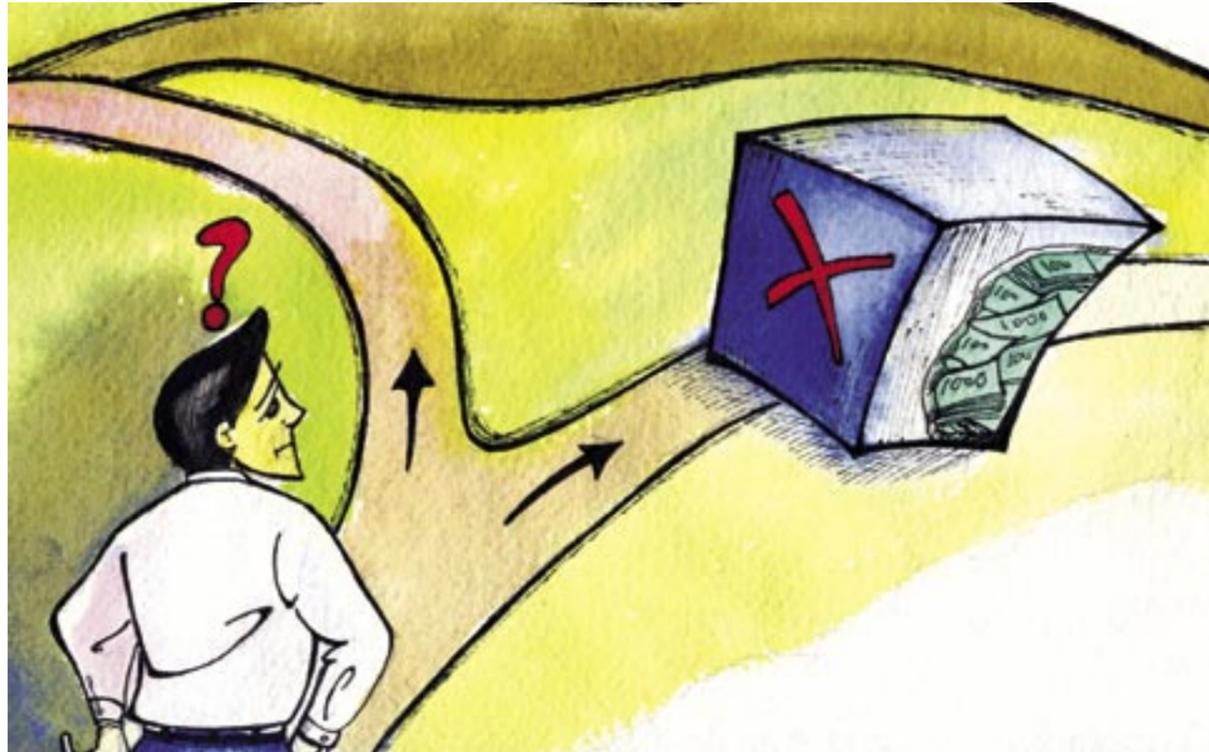
- As businesses seek to turn information into knowledge, chartered accountants will move from the backroom to the boardroom. They will assume more advisory roles, combining traditional services with non-traditional ones such as technology consulting, assurance services and e-commerce consulting.

The impact of technology

Technology by far has had the biggest impact on the way things have changed for the accounting profession. With each passing year, or months in the present day context, with the advent of computing speeds and advancements in technology and the ever growing internet technology things are going to be a state to come in the next few years.

Technology impacts both the accountant and the audit professional. Some of the key areas are:

- a. Information security: The hardware, software, processes and procedures in place to protect an organisation's information systems from internal and external threats. Data security, systems controls etc are going to be very important.
- b. Electronic document management (paperless or less-paper office): The process



of capturing, indexing, storing, retrieving, searching and managing documents electronically. Formats include PDF, digital and image store database technologies will have an impact on the accounting and audit process.

c. Automated workflow management: The workflow management coalition (WfMC) defines automated workflow management as 'the automation of a business process, in whole or part, during which documents, information or tasks are passed from one participant to another for action, according to a set of procedural rules'.

An example: Automated workflow for accounts payable

a. Invoices received from vendors are directly sent to scanning.

b. Key fields (data) are captured in the workflow – cost center code, purchase order number, quantitative details, expense code, vendor code etc.

c. The scanned invoices are segregated based on cost center codes and the workflow generates automated e-mails to respective cost center heads for approvals

d. The approved invoices are captured by the workflow engine for generation of accounting entries

e. The accounting entries are uploaded from the workflow to the accounting system.

The following is the difference from the old manual system:

- i. No manual movement of the invoices for approval.
- ii. No paper audit trail.
- iii. A highly automated environment wherein all the

movements are by way of e-mails and ends up with an automated upload of accounting entries.

d. Data integration/XBRL: The ability to update one field and have it automatically synchronise between multiple databases, such as the automatic/seamless transfer of client information between all systems. In this instance, only the data flows across systems from platform to platform or application to application. Data integration also involves the application-neutral exchange of information. For example, the increased use of eXtensible Business Reporting Language (XBRL) by companies worldwide provides for the seamless exchange and aggregation of financial data to meet the needs of different user. XBRL is being popularised by many organisations. It is said that XBRL will be to

accounting what HTML was to the Internet. In a few years time XBRL will change the very way business reporting is being done today.

e. RFID (Radio Frequency Identification): Silicon chips and an antenna that transmits data to a wireless receiver could one day be used to track everything from soda cans to cereal boxes. Unlike bar codes that need to be scanned manually and read individually (you have to actually see a bar code in order to read it), RFID tags do not require line-of-sight for reading. Within the field of a wireless reading device, it is possible to automatically read hundreds of tags a second. Inventory management and supply chain management will undergo drastic change with the advancements in this technology. The world's largest retailer, Walmart, has already required all its supplier to be RFID compliant in order to supply to Walmart.

f. Fuel cells: Methanol-powered fuel cells represent an exciting alternative to aging battery technology that will help users complete the everything wireless puzzle. These electromechanical devices represent both an environmentally friendly solution (they give off carbon dioxide and water as their by-product), as well as provide unlimited life for mobile devices (just fill the tank when they run low on fuel!). Fuel cells will replace today's batteries and the wireless technology will become much more convenient to use.

Apart from the specific topics above, the following also will have an impact for the accounting professional:

- Accounting professionals will be called upon to bridge the gap between technology and business. With the rise of integrated systems, technical expertise will go hand in hand with general business knowledge.
- With the growth of e-commerce, safeguarding assets in the digital realm will be a critical area in accounting. Financial professionals must know their company's web systems and functionalities in order to ensure the integrity and security of internal computer systems.
- To work productively with Chief Information Officers (CIO) and the IT staff, accounting professionals must be conversant with computer code and programming language; possess a working knowledge of new business applications; and be proficient in database, spreadsheet and analytical software.
- The Internet will continue to transform accounting's basic foundation of service and delivery. Financial professionals must develop familiarity with Internet engineering as well as application service providers, enterprise resource planning programs and other web-deployed applications.

Audit profession

Most of the above discussion on Information Technology will have an impact on the audit profession. Electronic commerce related issues, cross border transactions, IT controls, corporate governance issues, internal controls etc will continue to hold fort.

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the paradigm from internal control focus to a risk management (business risk) focus. Managements are increasingly concerned about the business risk and want the Internal audit to focus on the same as well.

The accounting scandals in the USA and elsewhere have made the audit profession pull up its socks in the said countries. Sarbanes Oxley Act and the ever increasing stakeholder demand for stringent financial controls are on the rise.

In line with the changes in business practices, changes in regulatory environment, information technology advancements and globalisation, the audit profession also will see many changes.

Consulting

- The vigorous growth of independent financial consulting as a career will continue as businesses rely on these professionals to introduce new concepts, provide expert advice, solve problems and conduct financial analysis and strategic planning.
- Hot specialties for consultants will include – supply chain management and business-to-business integration; resource planning; staff training and mentoring; financial systems conversions; re-engineering and e-commerce (from advising on the business implications of a web initiative to testing for security, disclosure, integrity and delivery on all of the site's promises).
- As the workforce becomes more entrepreneurial and mobile, an increasing number of accounting and finance professionals would elect to work

for themselves, rather than one corporation. More young people will go into consulting because of the variety, fast pace and challenge that it offers. Retired professionals would return to work as consultants.

- Consultants will be called upon to serve their clients as mentors, strategists and acting or interim CFOs.

Looking forward a. Specialities

"The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn."

- Alvin Toffler

Accounting professionals could be branching out to specialities such as:

- Information technology services: Accountants will be domain experts for implementation of software packages. Accountants who have multimedia expertise will be asked to work with IT to implement specialised, advanced computer systems.
- E-commerce experts: The growth of e-commerce will drive the need for financial professionals who are systems security experts and Internet strategists. A comprehensive knowledge of Internet regulations and the ability to manage

e-commerce initiatives will be indispensable.

- Assurance services: Using both financial and non-financial information culled from past performance and/or present conditions, assurance services providers will put business intelligence into a financial context. They'll convert data into knowledge, especially in sectors such as e-commerce, risk assessment, performance measurement and information technology.
- Personal financial planning: Financial professionals in this specialty will help their clients reduce debt; develop investment and asset allocation plans; control expenses and minimise their tax burdens. Personal financial planners also may get involved in insurance analysis and retirement planning.
- International accounting: Cross-border transactions, oversea trade agreements and other daily activities in the expanding global economy will require the expertise of financial professionals who understand foreign laws, tax structures and business practices.
- Environmental accounting: As businesses strive to be environmentally responsible (as well as more profitable), they will enlist professionals with the chartered accountant credential to handle projects ranging from environmental compliance audits to managing and preventing claims and disputes.
- Forensic accounting: Experienced professionals who can identify and track computer fraud, particularly in the realm of e-commerce, will be in high demand as corporations in-

creasingly rely on technology. Forensic accountants will work closely with the other financial and IT professionals to solve problems related to systems integrity and security.

b. Creative thinking

Memory is past. It is finite. Vision is future. It is infinite. Albert Einstein said, "Imagination is more important than knowledge."

We as a profession need to understand the paradigm shift happening in our profession and be proactive. We need to anticipate the changes and look at the future and be prepared for it. A brief list of interesting questions that we can ask our self for now would be like this... we need to come up with many more such questions to invigorate our thought and shape our profession.

- Will there be a time when we have an 'Asian Union' along the lines of European Union? Single Asian Currency? How would that impact the accounting profession in India?
- Will the convergence of accounting standards that is being undertaken by IASB prevail and one set of global standards emerge?
- Will the accounting professionals across the world build partnerships and an Indian accountant would be consulting/auditing from a base in India?
- Will India be the accounting back office of this world?
- Digital currency or digital money could be a reality. E-commerce transactions would be based on digital money. What impact would that mean from an accounting perspective?
- Will Indian accounting professionals tie up with other professionals like lawyers, IT experts etc from across the globe?
- What will be the impact on accounting of the ever-increasing importance of 'intangible assets' in the knowledge era?
- In the industrial age, a massive investment in machinery was needed and people were treated as 'things'. The question that could be asked a few years from now in the knowledge era is - 'Are employees' expenses' on the income statement? And when investments in technology could go obsolete in short span of times - 'Are machines really investment?' Ponder a moment on the statement by Mr Narayan Murthy, Infosys, "My company's assets walk out of the door every evening."
- Will 'real time reporting' be a reality with advancements in technology and XBRL?
- Will non-financial measures form an important part of the accounting reports?
- What will the future annual report disclosure look like?
- Disclosure of key value drivers and their role in driving performance.
- Web enabled reporting that allows readers to 'click through' from summary level information components.
- Disclosure of the role of intangible value drivers in

delivering current and future performance.

- Disclosing a balance of performance metrics to capture both current period performance as well as future growth potential.
- Allowing users to access company relevant information from third party sources including peer group information.
- Enabling readers to select which group entities to include or exclude from consolidated results.

Conclusion

"It is never safe to look into the future with eyes of fear."

- E. H. Harriman

ICAI has always taken active steps to build the profession in the right direction. We, the members of the profession need to take proactive steps to be responsive to the changes around us.

Why do we need to be concerned? The quote by C.F. Kettering answers aptly: "My interest is in the future because I am going to spend the rest of my life there."

We may be tempted to say: "Some things are so unexpected that no one is prepared for them."

- Leo Rosen in Rome Wasn't Burned in a Day

But we need to realise that: "It is far better to foresee even without certainty than not to foresee at all."

- Henri Poincare in The Foundations of Science

And also: It is not the strongest of the species that survive, nor the most intelligent, but the one most responsive to change

- Charles Darwin. □

