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**INFORMATION
ETHICS**

SUCCESS



National Conference on IT for Silk Industry

*Dr. Swarnalatha R. Rao**



Dr.H.Basker IAS, CEO and Member Secretary, Central Silk Board, inaugurating the conference. Prof.Veerendra Kumar, Dr.A.B.Saha,Dr.Swarnalatha Rao, Mr.M.L.Ravi,Dr.T.H.Somashekar and Dr.S.B.Dandin look on.

CSI Division III (Sc.Applns) & CSI Mysore Chapter, jointly with Central Silk Board, Ministry of Textiles, Govt. of India

A two-day “National Conference on IT for Silk Industry” was held on 16th &17th Dec 2004 , jointly conducted by CSI Div III, CSI-Mysore Chapter and Central Silk Board, Ministry of Textiles, Govt. of India. The conference was a great success with a participation of more than 100 delegates drawn from all over the country. The Conference was held in the Auditorium of the Central Sericultural Research and Training Institute (CSRTI), at Mysore.

The conference which was the first one of its kind, had a very broad objective, to provide an opportunity for experts from both the IT and silk sectors to come to a common platform to discuss and share each other’s needs and expertise for mutual benefit, to help to take our country to a prime position globally, in silk industry and silk research.

Inaugural Function

During the inaugural function of the conference held on 16th Dec.2004, Dr.Swarnalatha R.Rao, Chairperson, CSI Division III(Sc. Applns), in her welcome address, traced the evolution of the silk industry in India and mentioned that India had pioneered in the production of silk since several centuries. She hoped that the IT and the silk sectors interacting together can create great amount of synergy for mutual benefit, to bring India into focus globally in the silk sector.

**Chairperson, CSI Division III (Sc. Applns)*

Dr. Somashekhar, Director, Central Silk Research Institute, Bangalore, who was the Programme Chair of the conference, had planned excellent two-day technical programme, consisting of highly interesting and informative talks by experts from the silk and sericulture research and silk industry, as well as experts from the IT field. There was an exhibition too, in which the exhibitors were from various sectors of the silk industry. Dr. Somashekhar, presented the highlights of the technical programme, the exhibition and also the visits organized for the participants, to Central Sericultural Research and Training Institute and to the factory of Karnataka Silk Industries Corporation at Mysore. He emphasized the need of the hour to adopt Information Technology to strengthen the Silk Industry, right from the grass-root level to advanced processes. He also brought out the significant advantage IT has brought for Silk Research.

The conference was inaugurated by Dr.H.Basker IAS, CEO and Member Secretary, Central Silk Board, Ministry of Textiles, Govt of India. In his Inaugural Address, Dr.Basker highlighted the various areas of the silk sector, namely, sericulture, marketing and trading of silk, silk research and the garment sector which can derive benefits with the help of Information Technology. He also emphasized that the potentials of IT should be exploited to reach the grass-root level. With the help of IT E-Chaupals can be created for sericulturists, for on-line trading, dissemination of information on latest cocoon and silk prices at the doorsteps of the sericulturists, quick spread of new technologies etc., he added. He commended the joint effort of CSI and CSB in organizing this conference. Dr.A.B.Saha, Director, C-DAC, Kolkata, who was the Chief Guest delivered the Keynote Address. Recalling his experience of interacting with the agricultural sector, he mentioned that there is significant IT advantage in the agricultural sector. Drawing parallel from this experience, he was of the opinion that IT can bring big advantages to the sericultural sector. He also presented the highly beneficial advantage the Indian Tea industry is deriving with the help of Information Technology, to meet the customer needs, resulting in customer satisfaction. Perhaps these experiences can help the Silk Industry, he opined.

Dr.S.B.Dandin, Director, CSRTI, Mysore, presented the highlights of the Sericultural Research and Training activities of CSRTI. Mr.M.L.Ravi, President, CSI, in his Presidential Address, stressed the need for taking IT to

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Ethics is often defined as the art and science that seeks to bring sensitivity and method to the discernment of moral values. The widespread usage of Information and Communication Technologies [ICT] has brought ethics into sharp focus. “Computer Ethics” as the field is known uses analogical approach and empirical scenarios to resolve ethical dilemmas. It thrives on case studies. Loosely defined, “Information Ethics” provides the philosophical foundations imperative for practicing “Computer Ethics”.

The Guest Editors for this theme issue, Dr. Karsten Weber and Dr. Rafael Capurro are internationally recognized experts in the area of “Information Ethics”. We are thankful to them for putting together a wonderful collection of articles for the theme section.

Learning to use information ethically and fairly is the first and the most important aspect. Citing the references accurately enhances the credibility of your work. Citation includes the details of the author(s) of the original work and serves to demonstrate the reliability of your work. It must be understood that a thought once expressed in some tangible form automatically bestows a copyright to its creator. Thus usage of this form of expression must be accurately cited even if there is no formal copyright indication. Otherwise, penalties may be levied for Plagiarism.

Today there are many areas in ICT, where the “Information Ethics” is playing a significant role. Some of them are

- The social and cultural effects of IT on business practice
- Security and computer misuse
- Privacy and workplace monitoring
- Cross-cultural issues in IT ethics
- Ethics in project management
- Professional etiquette, standards and codes in IT
- Ethics in electronic commerce
- Ethics of software patents
- Professional responsibility
- Corporate governance
- Theoretical and Empirical issues in IT professional practice
- Innovative training strategies such as e-Learning

IT professionals must note that, there is usually no right or wrong solution to an ethical dilemma. There is a personal best answer. Thus focus is now shifting to the personal quality of the IT professionals in addition to the quality of the professional work done by them. Ethics is always about action. Hence, the IT professionals are expected to take a quick decision and survive the scrutiny of the peers as long as the effect of the decision is live in the organization. It is heartening to note that many IT professionals are able to rise to the occasion. However, to ensure certain minimum standards most IT organizations issue a ‘code of ethics’ to their employees.

Law usually lags behind the technological innovation. The ‘twilight zone’ created by every innovation is best handled by the ‘code of ethics’. ‘Information Ethics’ is an imperative investment to ensure a sound brand image and customer loyalty for all endeavors impacted by ICT.

With best regards,

Gopal T V

Chief Editor

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Information Ethics

*Karsten Weber**, *Rafael Capurro***



Karsten Weber

ICT changes the world – for sure, that’s a trivial statement. However, it’s true: ICT does change the world in a way comparable only to the impact steam machine and industrial revolution had at the beginning of the 19th century. The rise of ICT a few years after World

War II first brought to us large computers affordable only for large companies and state institutions. But that monopoly did not last long. The invention of the Internet in the late 1960’s was accompanied by the downsizing of computers – a development that brought to us Personal Computers. Now, at least in the industrialized western world, in principle (but not in fact) computers were affordable to anyone. But at the same time, a new gap opens between the developed and the developing countries – the Digital Divide. Access to information that is stored in the Internet is possible only if one has a computer. Unfortunately, the larger part of the world population does not have a computer connected to the Internet – obviously a handicap in a world ruled by information. Therefore, Soraj Hongladarom addresses the Digital Divide as a problem of justice. Now, if one talks about justice one talks about ethics and about moral claims. In their contributions, Rafael Capurro and



Rafael Capurro

Thomas Froehlich try to clarify what is meant by the term “information ethics”. While Froehlich provides a brief history of the development of information ethics, Capurro is more focused on the roots of that particular kind of applied ethics. Because ethics as

well as moral and social norms and values always are rooted in traditions it is important to stress that information ethics can be done in quite different ways. Makoto Nakada shows that dealing with ICT in Japan deeply is affected by traditions that can be summarized with the term “Seken”. However, Anthony Lobo proves in his contribution that acceptance and implementation of ethical guidelines seem to be culturally independent as long as basic moral duties are addressed. The remaining texts are focused on particular moral problems of ICT. Herman T. Tavani mentions problems related to data mining and privacy, Karsten Weber raises some questions connected with mobile ICT and privacy. Additionally, Richard A. Spinello somehow returns to the challenge of Digital Divide. He compares proprietary software with Open Source Software and shows that Open Source could help to implement an ICT industry in developing countries. Finally, Toni Carbo stresses that teaching of information ethics must be improved in order to have that influence it should have.



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The Digital Divide, Epistemology and Global Justice

*Soraj Hongladarom**

It has become a cliché in many parts of the world that one has entered the information age. However, in many other parts of the world this is still a farfetched dream. It is well known that a large part of the globe, as well as the majority of the world's population, do not enjoy the fruits and benefits that information and communication technologies are supposed to bring. The situation is known as the *global* digital divide, referring to inequality in access to and usage of information and communication technologies, including the Internet, among groups of countries or global regions. Discussions of the digital divide usually focus on what is happening within a national boundaries. For example, many studies usually pay attention to disparities among various groups, such as women, the elderly, the undereducated, and so forth; however, these groups remain within one and the same country. Solving the digital divide within a nation-state presumably lies in the hand of the national governments. Global digital divide, on the other hand, looks at the same kind of disparity in a wider scope, focusing on disparities among different countries and regions of the world. Hence an important factor in the discussion of the latter lies in the fact that here there is an international issue involved, and there is the problem of who exactly has the authority or the responsibility to alleviate the problem. International organizations as a rule do not have the power to enforce in detail the policies that might have solved the disparities in the use of information technology among countries.

This discussion of the digital divide in its global dimensions makes it a species of global justice. As the world is getting smaller and as more and more corners of the world are becoming connected with one another, considerations of justice within the boundary of single nation states do not seem to be sufficient in solving the

large number of problems that are facing the world (Onora O'Neill 2000). Apart from the obvious problem of who is in charge of making policy prescriptions and enforcing them mentioned above, I would like in this paper to focus on the *epistemological* aspect of the global digital divide problem. Information and communication technologies can indeed be considered a good, and social inequality can indeed be constituted by the fact that one section of the population has more of their products and benefits than another. In this way products and services rendered by the information and communication technologies do not differentiate them from the other, more familiar goods, such as income or social status or power. In addition to these aspects, however, information and communication technologies do have their own special quality, which merits a separate type of discussion apart from the usual one in political and social philosophy when social inequality is discussed. Since information and communication technologies, including the Internet, are pliable and can be used in daily life in very diverse ways. Apart from the older technological products, such as the tractor or the toaster oven, which can be used only in a limited number of ways, computers can be programmed to do many tasks as many are of course familiar. Moreover, operating the tractor or the toaster does not seem to require as much knowledge and skill as is needed for one to work on the computer efficiently. In this sense the computer can be seen as a *second-order* technology, as opposed to the first-order ones exemplified by the toaster oven. The toaster operates on a chunk of concrete reality, but computers do not directly do so, instead it operates on binary digits acting as symbols capable of referring to anything, including non-existent ones found in future plans, etc.

This distinctiveness on the part of computers makes it the case that running it effectively requires much more

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knowledge and skill that is required for running the first-order technologies. A consequence for the digital divide discussion is, then, that simply equipping a group of people with computer hardware and software, as many state and local authorities have done in the past, is never going to be an effective solution. Much more is needed before those who have not found a place in their lives for computers and the network to be fully 'computer literate' and to function in such a way that the inequality exemplified by the divide is alleviated.

The second-order characteristic of computer technology makes it the case that one needs to factor in epistemological considerations in a kind of philosophical endeavour to make sense of the whole phenomenon, as well as in any attempt to lay a foundation for a workable and effective policy for solving the digital divide problem. This is so because, in addition to the fact that one needs to possess a certain amount of knowledge and skill in order to operate a computer relatively well, the second-order characteristic, the one that enables computers to work on symbols capable of referring to anything whatsoever, makes them prime epistemic tools which could prove to be instrumental in bridging the knowledge and information gap that undoubtedly exists in the world. And in this sense looking for ways to solve the digital divide should go hand in hand with solving the knowledge and information divide too. Furthermore, as the problem takes on a global dimension, the epistemological considerations become global too, and in the same manner, the digital/knowledge/information gap become global, which adds

another dimension to the whole discussion. It is here that discussions on global/local epistemic practices have a role to play (Hongladarom 2002).

In conclusion, the more practical aspects of the discussion are the following: 1) that discussion of the normative and ethical aspects of the digital divide should need to pay attention to the fact that computer technology (or information and communication technologies) is a *second-order* device, which makes it distinct from the other social goods; 2) that the *second-order* nature of computer technology makes it the case that epistemological considerations do have an important and necessary role to play, and 3) that policy deliberations on the global digital divide needs to pay attention to the role played by the epistemological considerations—more concretely this would mean that considerations of knowledge and education are inseparable from any effective policy implementation on the digital divide. The global dimension of the digital divide phenomenon makes it the case that the issue is one of global justice, that the vocabulary that political philosophers are using to discuss global justice are pertinent, and that one needs to find a balance between the global knowledge system and epistemic practice and the local ones.

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Information Ethics

*Rafael Capurro**

I. Foundations

Introduction

- I.1 Information Ethics as Applied Ethics
- I.2 Information Ethics as a Descriptive and Emancipatory Theory
- I.3 Ethics for Information Specialists

Introduction

We draw a distinction among:

- Morals: customs and traditions
- Ethics: critical reflection on morals
- Law: norms formally approved by state power or international political bodies.

I.1 Information Ethics as Applied Ethics

Information ethics deals with ethical questions particularly:

- in the Internet (cyberethics; information ethics in a narrower sense)
- in computer science (computer ethics)
- in the biological and medical sciences (bioinformation ethics)
- in the mass media (media ethics)
- in the library and information science field (library ethics)
- in the business field (business information ethics)

I.2 Information Ethics as a Descriptive and Emancipatory Theory

Information ethics as:

- a descriptive theory explores the power structures influencing informational attitudes and traditions in different cultures and epochs.

- an emancipatory theory develops criticisms of moral attitudes and traditions in the information field at an individual and collective level. It includes normative aspects.

Information ethics explores and evaluates:

- the development of moral values in the information field,
- the creation of new power structures in the information field,
- information myths,
- hidden contradictions and intentionalities in information theories and practices,
- the development of ethical conflicts in the information field.

I.3 Ethics for Information Specialists

Educational goals:

- to be able to recognize and articulate ethical conflicts in the information field,
- to activate the sense of responsibility with regard to the consequences of individual and collective interactions in the information field,
- to improve the qualification for intercultural dialogue on the basis of the recognition of different kinds of information cultures and values,
- to provide basic knowledge about ethical theories and concepts and about their relevance in everyday information work.

II. Historical Aspects

Introduction

- II.1 The Western Tradition
- II.2 Other Traditions

*Guest Editor

Introduction

The study of information ethics within different cultural traditions, i.e., what can be called intercultural information ethics, is an open task. The following text gives some hints about the Western tradition.

II.1 The Western Tradition

In the Western tradition information ethics has its roots in the oral culture of ancient Greece. Agora (marketplace and meeting place) and freedom of speech (Greek: *parrhesia*) were essential to Athenian democracy. The cynics cultivated freedom of speech as a special form of expression. Socrates (469-399 B.C.) practised his thinking in public places and never published his arguments. Plato (427-347 B.C.) discusses in his dialogues the transition from an oral to a written culture. Under the influence of Christianity a book culture was developed which was mainly centered on one book, namely the Bible.

The invention of printing by Gutenberg in 1455 and the Reformation, which profited from it, brought back, in the Modern period, the idea of freedom of communication, which implied the freedom of communicating ideas to others not just in a written but in a printed form.

The French Revolution brought about the transformation of the private libraries owned by nobility as well as by the church into common property. Projects like the one of the French Encyclopédie and the public access to libraries created a new awareness of freedom of information which culminated in the principle of freedom of the press as one of the foundations of modern democracies.

The Western tradition of information ethics from ancient Greece until the beginning of the 20th century is characterized by two ideas:

- freedom of speech,
- freedom of printed works and particularly freedom of the press. A third element arises now, in the age of a networked world of electronic information, namely
- freedom of access / right to communicate.

II.2 Other Traditions

See the contributions to the CATaC Conferences on Cultural Attitudes Towards Technology and

Communication as well as the contributions to the International ICIE Symposium in the International Review of Information Ethics (IRIE 2004/2).

See also the contributions to the World Summit on the Information Society (WSIS)

III Systematic Aspects

Introduction

III.1 Human Rights and Responsibility

III.2 Ethical Issues of Information Production

III.3 Ethical Issues of Information Collection and Classification

III.4 Ethical Issues of Information Access and Dissemination

III.5 Prospects

Introduction

The following ideas were originally inspired by the research done by Thomas J. Froehlich: Survey and Analysis of the Major Ethical and Legal Issues Facing Library and Information Services. IFLA Publication 78, München 1997, a survey prepared under contract no. 401.723.4 for the General Information Programme (PGI) of UNESCO.

See also the contributions to the World Summit on the Information Society (WSIS)

III.1 Human Rights and Responsibility

A basis for ethical thinking on the responsibility of information specialists are the following articles of the Universal Declaration of Human Rights (UDHR):

- Respect for the dignity of human beings (Art. 1)
- Confidentiality (Art. 1, 2, 3, 6)
- Equality of opportunity (Art. 2, 7)
- Privacy (Art. 3, 12)
- Right to freedom of opinion and expression (Art. 19)
- Right to participate in the cultural life of the community (Art. 27)
- Right to the protection of the moral and material interests concerning any scientific, literary or artistic production (Art. 27) Information specialists have a moral responsibility with

regard to the users at a micro (individuals), meso (institutions) and macro (society) level.

III.2 Ethical Issues of Information Production

The question concerning the protection of the intellectual property is one of the most important and difficult ethical, moral and legal ones in the field of information production. Different traditions with regard to technologies and products have led to different protection laws in different regions of the world:

- The European tradition emphasizes the moral rights of the authors (droit d'auteur). These are related to the person of the author and concern the integrity and authorship of her/his work as well as her/his reputation.
- The Anglo-American tradition emphasizes the property or economic rights (copyright). These rights can be transferred. According to this tradition "original works of authorship in any tangible means of expression" (17 U.S.C. sect. 102(a)) should be protected.
- The Asian tradition(s) consider copying as a matter of emulation of the master. Conflicts arise when national and international laws and moral traditions protect different aspects of various media.

Ways of harmonization : The Berne Convention (1886, revisions) Protects: books, sculptures, architecture... Duration of a copyright: the life of the author plus 50 years. It makes a difference between economic and moral rights: In case I grant economic grants to another person this does not include moral rights. The USA joined the convention in 1989.

- Universal Copyright Convention (1952) (UCC). The protection is national and concerns the rights of reproduction. Duration of protection: the life of the author plus 25 years. Both treaties are administrated by the World Intellectual Property Organization (WIPO).
- Copyrights directives from national and multinational parliaments (such as the EU).

Challenges: Digitalizing makes copying and re-making (re-modelling) easier. Internationalization through the Internet changes the dimension and perspective of national legislation and control. This

new situation gives rise to questions such as: Should information (content and/or software) be regarded as an intellectual property? Should the notion of knowledge sharing become predominant with regard to the notion of ownership? How can the public access to electronic information be guaranteed?

III.3 Ethical Issues of Information Collection and Classification

Ethical questions concerning collection and classification of information are related to censorship and control. The answers to these questions vary historically according to the interests of political, economic, religious and military power using and abusing of censorship and control. Cultural and moral traditions play also an important role concerning for instance what is considered as offensive. We draw a distinction between censorship and selection:

- Censorship means the active exclusion of information based on religious, political, moral or other grounds.
- Selection concerns the activity of choosing information according to the objectives of an institution.

Selection procedures may be biased with regard to certain groups of subject matters. This leads to a loss of ethical balance.

The main ethical question in this field may be formulated as follows: Are there limits to intellectual freedom?

The will to exclude bad information is itself an ethical paradox as far as any exclusion, limiting intellectual freedom, should be avoided.

There is a tendency in liberal societies to less control. But this leads to ethical as well as moral and legal conflicts. Codes of Ethics as well as official international statements and agreements may help against arbitrary censorship and selection pressures.

Classification systems, thesauri, search engines and the like are not neutral. This non-neutrality concerns not just the fact that they are necessarily biased but that specific unethical prejudices are not recognized as such. Problems of this kind arise in the Internet because of the massive amount of information and different kinds of search methods and search engines.

III.4 Ethical Aspects of Information Access and Dissemination

Ethical questions concerning information access and dissemination are related to problems of public access and reference/brokerage services as well as to the (human) right to communicate. The question of access can be studied as an individual as well as a societal issue.

See the Declaration of Principles of the World Summit on the Information Society (WSIS)

Individuals and groups are interested in a free and equal access to information as well as to free communication (one-to-one, one-to-many, many-to-one, many-to-many). Information is in many cases product of work and has an economic value that should be protected. The question is then what information for whom should be free (of charge). The problem of user education is also connected to this question.

The question of access as a societal issue concerns the problem of creating equal opportunities of access for nations or groups of nations avoiding the gap between the information rich and the information poor (societies). The right to communicate, i.e., the right to read (r2r) and the right to write (r2w) in the electronic environment should be considered as a human right.

The question of reference/brokerage services can be studied with regard to institutionalized services as well as a question concerning the end users. Ethical conflicts may arise regarding for instance the right to confidentiality and the one to protect life. Organizations may ask information professionals to break confidentiality.

Information professionals are supposed to inform

their users about the limits of their sources and methods.

Finally there is the question of misinformation (or information malpractice) that can cause great (economic) damages to the users.

III.5 Prospects

All these questions become more critical as a result of the globalization of information in the Internet. Questions arise such as: Who should control the information (content and/or software) coming from another country and/or another culture? How can national laws, being geographically limited, meet the challenges of cyberspace?

Solutions to these questions may be found at different levels:

- **Self-control:** this is the ethical solution propagated by the Internet community particularly through the use of filtering software. Its basic and most primitive form is the netiquette. Other kinds of self-control are for instance operated within newsgroups through moderators. Sanctions, beginning with flaming, through spam, may reach the level of a mail bomb. Finally there are the cyber angels who take care of (free) decency self-control in the net.
- **Campaigns:** such as the Blue Ribbon Campaign against different kinds of discrimination and censorship.
- **Codes of Ethics:** of different institutions and societies.
- **Legal regulations:** at national, multinational and international level (UNESCO, WSIS)
- **Technical regulations:** such as filtering software and rating procedures.

Cyber-Geography Research The analysis of the networked society is basic for ethical reflection, for instance on the question of distribution and access to information and knowledge. The Centre for Advanced Spatial Analysis, University College London (an initiative by Martin Dodge) has explored the geographies of the Internet, the Web and other emerging Cyberspaces.

A brief history of information ethics

*Thomas Froeblich**

Information ethics has grown over the years as a discipline in library and information science, but the field or the phrase has evolved and been embraced by many other disciplines. What will be sketched here is a brief summary of the strands that have now come to make up information ethics. In fact, it can now be seen as a confluence of the ethical concerns of media, journalism, library and information science, computer ethics (including cyberethics), management information systems, business and the internet. In the process of showing this evolution, several bibliographic references will be highlighted, although given the brevity of this article, the set of references provided is in not intended to be comprehensive.

In the United States the field of information ethics has had a 20-year evolving history, pulling together strands from librarianship at first and then from computer ethics. For example, one of the key figures in the field is Robert Hauptman who wrote several works and articles on ethical issues, one of the most well known and seminal being *Ethical challenges in librarianship*.¹ This work addressed some of the problem areas of librarianship: censorship, privacy, access to information, balance in collection development, copyright, fair use, codes of ethics, and problem patrons, to name a few. At this time, when schools of library and information discussed ethical issues, these issues would be included in the content of some other, larger subject matter: for example, a course in reference work might discuss ethical issues in reference, such as competency in supplying adequate or correct information. However, there were no courses whose sole concern was ethical issues in the field of library and information science. When courses solely devoted to ethics emerged in America, they tended to move away from a sole concern of ethical issues in librarianship to a broader concern of ethical issues in

information science, information technology and information in society. In fact, even at its beginning the domain of concern in information ethics spilled over to other areas: computer ethics, information systems ethics, ethical issues in management information systems, and information policy.

Persons who first used the phrase, information ethics included Robert Hauptman in the book mentioned above and who started the *Journal of information ethics* in 1992 and Rafael Capurro who wrote an article in German in 1988 in "Informationethos und Informationsethik"² [Information Ethos and Information Ethics]. However, some the issues in information ethics were raised as early as 1980. Barbara J. Kostrewski and Charles Oppenheim wrote an article, "Ethics in Information Science" for the *Journal of information science*³ where they discussed such issues as the confidentiality of information, bias in information provided to clients or consumers, the quality of data supplied by online vendors, the use of work facilities, etc.

One of the first schools of offer a regular course on ethical concerns of information professionals was the University of Pittsburgh (<http://www.sis.pitt.edu/~ethics>). It was taught by Professor Stephen Alamagno, O.F.M. and Toni Carbo, who was Dean of the School of Information Sciences for many years. In 1990 they offered a master's level course on Information Ethics. Around the same time, Kent State University offered my Master's level course on "Ethical concerns for library and information professionals" and Simmons College offered a course, "Organizational/information ethics".

Unfortunately, most schools of library and information science in the United States still do not have courses devoted regularly and solely to ethical issues, and even today most ethical and legal issues are presented in the context of another topic. Shortly thereafter I produced

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a work for the Annual review of information science and technology (ARIST),⁴ entitled “Ethical considerations of information professionals”, which provided an analysis of ethical principles applied to ethical concerns of information professionals. Several years later, for the International Federation of Library Association’s (IFLA’s) professional series, Survey and analysis of the major ethical and legal issues facing library and information services.⁵

As the years have progressed, the term information ethics was also adopted by faculty in schools of computer science. Depending on the academic institution in the United States, many departments of Computer Science focused on theoretical dimensions of computer science (for example, they would be concerned with the completeness or consistency of a programming language) while others have included the applied dimensions. Many of these departments are called “Computer and Information Science”, information science representing more of the applied side of computer science. In this area, there have emerged textbooks like Richard Severson *The principles of information ethics*⁶ for whom the major principles of information ethics are respect for intellectual property, respect for privacy, fair representation, and nonmaleficence (or “do no harm”). Another textbook, Marsha Cook Woodbury’s *Computer and information ethics*,⁷ addresses a broader variety of topics: computer crime, copyright, privacy, software reliability, artificial intelligence, and e-commerce, which continued a tradition established by one of the foundational books in computer ethics, Deborah G. Johnson’s *Computer ethics*.⁸ Associations or symposia devoted to computer ethics include: *Computer Ethics: Philosophical Enquiry (CEPE)* (<http://cepe2005.utwente.nl/>) and *ETHICOMP* (<http://www.ccsr.cse.dmu.ac.uk/conferences/ccsrconf/>).

Another textbook that tried to span issues in computer ethics and ethical issues in information management systems, with some treatment of library issues, was the *Ethics of information management*,⁹ by Richard O. Mason, Florence M. Mason, and Mary J. Culnan. It discusses issues in professionalism and ethical concerns in information systems, organizations and society. For a good summary of the evolution of information ethics up until 1997, see Martha M. Smith, “Information Ethics” in the Annual review of information science and technology (ARIST),¹⁰ which contains an extensive bibliography of sources.

Cyberethics, a particular branch of computer ethics, has also emerged as an area of ethical concern. According

to Patrick Sullivan,¹¹ cyberethics may replace computer ethics. Cyberethics is particularly concerned with ethical issues related to the internet or cyberspace. Topics in this area include expert systems, artificial intelligence, and the ability of robots to reason. Several important works are associated with this topical area: James Boyle’s *Shamans, software and spleens: law and the construction of the information society*,¹² Lawrence Lessig’s *Code and other laws of cyberspace*,¹³ and Richard A. Spinello’s *CyberEthics: morality and law in cyberspace*.¹⁴

Another strand of information ethics emerges from media ethics. A reader in media ethics, at least in the later editions, uses the phrase information ethics: Philip Patterson and Lee Wilkins, *Media ethics: issues and cases*.¹⁵ Matthew Kiernan, *Media ethics: a philosophical approach*,¹⁶ a lecturer in philosophy at Leeds University, addresses such issues as news and the fourth estate, impartiality as a regulative ideal, and deceit, lies, sexuality, censorship and violence in the press.

In sum, information ethics has evolved over the years into a multi-threaded phenomenon, in part, stimulated by the convergence of many disciplines on issues associated with the Internet. In the past, there existed a clear distinction between ethical issues associated print media such as newspapers and the credibility of reference sources, as in the field of librarianship. With the advent of the world wide web, publishing has become quick and easy and so issues of credibility that used to be different for journalists and librarians now have become a common concern, e.g., in assessing and evaluating the credibility of web sites, especially those that purport to provide information.

A good example where all of these strands have coalesced lies in the International Center for Information Ethics (ICIE) (<http://icie.zkm.de/>), established by Rafael Capurro in 1999, an organization which embraces scholars and scholarships from all over the world. Scholars and practitioners from all of the topical areas mentioned above, as well as others, are included as members of the association. A recent symposium (October, 2004, <http://icie.zkm.de/congress2004>) at the Center for Art and Media Karlsruhe (Germany) sponsored by VolkswagenStiftung brought together 45 scholars and practitioners from at least 19 different countries and many varieties of disciplines, reflecting in part the diverse membership of the ICIE. The disciplines included computer science (informatics), computer engineering, library and information science, software engineering, philosophy, law, and management.

While the majority of participants were from academic institutions, several institutes and associations were represented: for example, the Centre for Computing and Social Responsibility (<http://www.ccsr.cse.dmu.ac.uk/>), and Fundación Funredes (<http://funredes.org/>). While the general concern of the symposium was information ethics, its specific focus was “Localizing the Internet: ethical issues in intercultural perspective”.

In his keynote address on “Intercultural information ethics”, Rafael Capurro¹⁷ raised important questions about the foundations of philosophy and ethics and its historical Western roots. Western philosophy has a strong tradition in European and particularly early Greek history. It is problematic in our global information society to assert that the grounds for ethics, in particular information ethics, lies in this Western tradition. If we are trying to create a genuine dialog about ethical values and ethical reasons in the multicultural internet world, we cannot be bound solely to this tradition, because, for example, Chinese and Indians have engaged in ethical thought and ethical reasoning and the grounds for the resolution of their ethical dilemmas may or may not be the same as those offered in Western society. In fact, it would be presumptuous to assert the superiority of the Western approach. For a truly intercultural information ethics, one must take seriously the diverse cultures of the world and their own historical traditions. That would also include the feminist perspective that has long been ignored or undervalued in both Western and Eastern cultures.

The theme of the paper was both provocative and challenging—asking the participants to think beyond their own traditions. While keeping this challenge in mind, the ICIE symposium devoted itself to the ethical role of the Internet for social, political, cultural and economic development. Addressing these themes, papers included: “The Internet and community building at the local and global levels: some implications and challenges”, “The Internet: the missing link between the information rich and information poor?” and “Gendered views on the ethics of computer professionals”. It is not possible to detail the diversity of topics discussed and presented (the papers will be soon published in the International journal of information ethics (<http://www.ijie.org/>)). The point is these papers and their presenters and their backgrounds are indicative of pluralism that is indicated by the phrase, information ethics. That pluralism is also reflected in UNESCO’s INFOethics web site: http://www.unesco.org/webworld/public_domain/legal.html.

In sum, information ethics is a dynamic and evolving field, flowing from various disciplines and perspectives and cultures, critical in these times of intercultural exchange and dialog.

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Seken as old cultural aspects in Japan including meanings of the Internet

Makoto Nakada*

In this paper we examine the data from researches conducted in Japan in order to analyze the relationships between the meanings of the Internet and the meanings of *Seken* which is an old and indigenous aspect of culture and society in Japan. Through this analysis, we could find that the meanings of the Internet in Japan can't be separated from *Seken*.

What is *Seken*?

What we want to do in this short paper is to examine the relationships between the meanings of the Internet in Japan and Japanese people's attitudes towards their society or culture, mainly focusing on *Seken* as the traditional and indigenous features of Japanese culture and society. What is *Seken*? *Seken* is a set of attitudes towards the world or views on the world consisting of morals, social ethics, criteria of value judgements, common senses, aims of life, desirable behaviours, even shared illusions about the world and the like. One of the most remarkable characteristics of *Seken* is that *Seken* has its long history in Japanese culture and that parts of *Seken*-related meanings derive from Buddhism, Confucianism, Shinto, Bushido (morals and ethics of Samurai), traditional views on Nature, orientation to solidarity and so on.

Originally, *Seken* consists of two different meanings, *Se* and *Ken*. *Se* means this world and *Ken* means between. So *Seken* means the Between World, i.e. this world between heaven and the vulgar earth or the world between gods and people or the world between persons.

Seken is a neglected world of meanings because the majority of Japanese scholars and intellectuals have paid their attention to the more westernized and modernized aspects of our world that might be called *Shakai*. In contrast to *Seken*, *Shakai* is an imported term and concept that was imported at the beginning of our

modern age in the late 19th century from 'Western' countries. But in spite of neglect by scholars, as I show here, *Seken*-related meanings still live in Japanese minds and still have powerful influence upon our various areas of life including the evaluations and the meanings of the Internet.

Research findings about *Seken*

We can make sure of the fact that *Seken*-related meanings still live in Japanese minds by several researches we (the author and his research group ReGIS) conducted during the last several years in Japan.

In 2003 and 2005, we conducted researches about *Seken* and related matters in Japan. (The respondents of research in 2003 were 876 adult males and females randomly selected from over 200,000 samples collected by a research company. The respondents of research 2005 were 500 adult males and females selected in the same way. For detailed information on these researches, see Nakada (2005) and Nakada(2004). Through these researches we could find surprising results about *Seken*-related questions. For example, 76.0% of the respondents of research in 2003 said "agree or somewhat agree" to the following statement (one of *Seken* -related statements); "People have a certain destiny, no matter what form it takes." In the research of 2005, 80.8 % of the respondents said yes to the same statement. Likewise 80.3% of 2003 research respondents and 79.6% of 2005 research respondents showed affirmative attitudes towards the statement; "People will become corrupt if they become too rich." These tendencies were also found in regard to the following *Seken*-related statements; "Within our modern lifestyles, people have become too distant from nature", "In our world, there are a number of things that cannot be explained by science", "There are too many people in developed countries (or Japan) today who are concerned only with themselves", "In today's world, people are helpless if they are

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(individually) themselves”, “In today’s world, what seems cheerful and enjoyable is really only superficial”, “Doing your best for other people is good for you”.

Seken and the Internet

It is clear that *Seken*-related meanings still remain active in Japanese minds. We believe that this is a very important finding. But another finding gained through these researches seems to be no less important than this finding; the evaluations of the Internet as well as of the other dominant media in Japan are closely related with *Seken*-related meanings just mentioned above. In fact, in the case of the research in 2003, the evaluations of the Internet (as sources of general information) were closely related with (or had statistically significant relations with) 5 out of 8 *Seken*-related views cited above. This tendency was also confirmed between the evaluations of the Internet and the factors gained through factor analysis conducted on the responses of the *Seken*-related views. In addition, this tendency was not confined to the Internet. In other words, we could find that *Seken*-related meanings (views) are tightly associated with the evaluations of media including the Internet. According to our interpretation, these findings clarify that the meanings of the Internet and other major media in Japan belong to a horizon of meanings or a network of meanings for which *Seken*-related meanings play central roles.

What do our findings mean?

What do our research findings mean? It seems that our research data can be interpreted in many ways. One possible and important interpretation is that the meanings of the Internet (and perhaps of other dominant media) can’t be separated from a kind of a horizon of meanings whose sources are rooted in specific cultural,

social and historical backgrounds. This interpretation seems to provide us with an adequate framework with which we can understand Japanese data regarding *Seken*, the Internet or the relations between *Seken* and the Internet. To put it another way, we can say that the Internet in Japan belongs to *Seken*. We believe that our research data lead us to pay much attention to diverse cultural contexts surrounding or relating to the meanings of the Internet as well as the various problems in the fields of studies on information ethics. In fact, through the analysis of the data of our research in 2005, we could gain an interesting finding in regard to this point; *Seken*-meanings are closely tied with people’s views on privacy. For example, the view, “People will become corrupt if they become too rich”, one of the *Seken*-related meanings, has statistically significant correlations (relationships) with the senses of crisis of privacy measured by the following statements; “Your e-mails address was collected by some advertising companies etc. without your knowledge”, “Your home address was revealed to the public on the Internet without your permission.” In short, the problems of privacy in Japan can’t be separated from *Seken*-related meanings.

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Ethics and the IT Professional – Showstopper or Showcase?

*Anthony Lobo**

“Computers have a central and growing role in commerce, industry, government, medicine, education, entertainment and society at large. Software engineers [read as “IT Professionals”] are those who contribute by direct participation or by teaching, to the analysis, specification, design, development, certification, maintenance and testing of software systems. Because of their roles in developing software systems, [...] [they] have significant opportunities to do good or cause harm, to enable others to do good or cause harm, or to influence others to do good or cause harm.” [Extract from Preamble to IEEE-CS/ACM Software Engineering Code of Ethics & Professional Practice].

Recent media clippings appear to be playing the devil’s advocate vis-a-vis India’s prowess in Information technology:

- Indians lead in Techies’ Hall of Shame
- Con techies taking global netizens on the ride are expanding by the nanosecond.
- Indians held for peddling counterfeit software, fraudulent raising of loans.
- Former call centre employees siphon off funds from overseas bank customers.
- 73 percent piracy places India above the Asia Pac average of 53 percent, says BSA.
- Internet-based railway reservation racket; Net fraud leaves electronic shoppers defenseless. (iSOURCEupdates.com)

Gone are the days when one could casually remark, “in business there is no ethics”. WorldCom, Enron, Tyco, and similar glaring instances of misdemeanor have yanked one out of complacency. Nearer home the local

stock markets have had their own share of scams and scamsters.

In all this, can one really tread the straight and narrow path? Is staying within the law, or “not getting caught” the only course of action? Is there a challenge for the IT professional beyond the optimum, the closest fit, the zero defect?

The proverbial “Mirror on the wall” may suggest some answers ... The term “profession” connotes an occupation which requires academic discipline, specialized knowledge, and an orientation towards serving society with dedication. “Professionalism” typically signifies a tempering of technical competence with an acknowledgement of responsibility and an awareness of society and the public as key stakeholders. As early as 1980, M. W. Thring proposed a “Hippocratic Oath” for Engineers, who would have to accept responsibility for the consequences of their work which would thus be for the benefit of human society and the world (The Engineer’s Conscience, London: Northgate). C. Huff and C. D. Martin opine that “one of the fundamental changes in computer science [...] is the realization that the context in which technology is used must be taken into account in its design, partly because of the ethical implications of its use, and partly because understanding the consequences of use helps to inform and improve the design.” (Communications of ACM, Vol 38/12)

The global village has thrown up newer and more formidable challenges. National borders are no constraint for trade and travel. With workforce migration was raised the need to recognize qualifications outside the country of origin. The Washington Accord, first signed in 1989 was a response to the challenge of the equivalence of engineering degrees. It covered professional engineering undergraduate degrees only.

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Allied to the Washington Accord is the Engineers Mobility Forum, which addresses the questions of recognition and certification more directly.

India's response has been the "Engineers Bill" which seeks to regulate the practice of engineering by an Act of Parliament in order to protect the public health, safety and welfare. The Engineering Council of India and the Institution of Engineers (India) are piloting the effort. Till date the bill has yet to enter the statute books.

Certification is a thorny issue, even in the USA but there is nevertheless a strong need to ensure that the requirements of the profession are not diluted. Basically, certification implies an assurance that an individual possesses a specific knowledge or skill level pertaining to an occupation. Allegiance to a Code of Ethics is a "sine qua non" of professional certification. Such a Code generally serves to define acceptable behavior, to promote high standards of practice, to provide a benchmark for self evaluation, as a framework for professional behavior and responsibility, as a vehicle for occupational identity and a mark of occupational maturity (www.ethicsweb.ca/codes, see Jurek Kirakowski, "A broader view of certification", University College, Cork, Ireland, May 16, 2002. jsz@ucc.ie).

A distinction is sometimes proposed between *Codes of Ethics* which are aspirational and *Codes of Conduct* which are more oriented towards the professional and his attitudes. Such Codes clarify issues at stake. *Codes of Practice* fix the accepted state of the art and relate to best practice. Although each manner of Code is normative and prescriptive, the level of enforcement may not be the same. For the benefit of the computer engineer and IT professional there is the IEEE Code of Ethics (1990) and the Association of Computing Machinery (ACM) Code of Ethics (1992). In India the Computer Society of India published a detailed Code of Ethics for IT professionals in 1993. Similar prescriptions are enjoined on members of the British Computer Society and other national Societies. The Joint IEEE Computer Society and ACM Software Engineering Code of Ethics and Professional Practice, (SECEPP) version 5.2 was adopted in late 1998 and is well respected today. In 2004 the Code was officially adopted in Australia and New Zealand, besides being the inspiration for several IT organizations.

A noteworthy extract from the preamble to the Full version of the Code declares:

"Ethical tensions can best be addressed by thoughtful consideration of fundamental principles, rather than blind reliance on detailed regulations. These Principles should influence software engineers to *consider broadly who is affected by their work*; to examine if they and their colleagues are *treating other human beings with due respect*; to consider how *the public, if reasonably well informed, would view their decisions*; to analyze how the *least empowered will be affected* by their decisions; and to consider whether their acts would be judged worthy of *the ideal professional* working as a software engineer. In all these judgments concern for the health, safety and welfare of the public is primary; that is, the "Public Interest" is central to this Code." [Italics added]

Academics would recognize in the extract that the SECEPP is founded on well regarded ethical theory including consideration of Means, of Ends, of Recognition of the least empowered, of Upholding of Virtue and Respect for the individual. Similarly there is a clear reference to the "Stakeholder identification" technique of Ethical Analysis.

Ethicists in business today advocate "[...] integration of the more formal compliance-based approach with a values-based approach, together with an acceptance of both the importance of the individual and respect for the team." (see Chris Moon & Clive Bonny: "Business Ethics", The Economist Books, 2004). In other words, even if ethical conduct is mandated, the point at which behavior is inspired by inner conviction is the point when it attains the level of sustainability. Modern business practices place a premium on transparency in dealings. However, one must not only *be* fair and good and transparent, but also be *seen* to be such. The Professional with an ethical compass is the one who "leads from the front" and walks the talk.

Several Indian companies have risen to the challenge and have established a reputation for fairplay and for "going by the rules". Among leaders of IT companies, there are icons in the industry who are looked up to as models of good governance and whose lifestyle speaks as loud as their words.

The USD 14.25 billion Tata Group upholds "Leadership with Trust" as its key asset and holds up the Tata Code of Conduct to its 220,000+ employees. Founded on the five core values of : Integrity, Understanding, Excellence,

Unity and Responsibility, the Code is enunciated in 24 canons typically embracing ethical conduct, conflict of interest, corporate governance, citizenship and national interest, health, safety and environmental concern. There is an elaborated machinery in place to monitor the management of business ethics in each of the 91 member companies and the latest initiative has been the adoption of an official Whistleblower Policy.

IT professionals in the Group, numbering over 50,000 worldwide, all sign allegiance to the Code and in particular to mandates on equal opportunity, prevention of gender inequality, concurrent employment, quality of (software) services, and integrity of data furnished, all of which impinge more closely on their domain.

In the long haul, ethics would be no “showstopper” for the IT professional who has a *pride in his calling*, who is conscious of the *consequences* of work, both immediate as well as remote. (*Pronoun used equivocally in this context and below*). Such a professional accepts the principle of *intellectual ownership*. He shows a healthy *respect* for the client, for the organization and for the various bits and bytes of data and information through the *confidentiality* with which he would handle them on 24/7 basis. Here is someone who can build the workplace everyday into a “Harmony Project” where productivity, fellow feeling and *respect for individual* are supreme. A leader who is looked up to for advice and example and who possesses the *courage of conviction* to escalate a “concern” which cries out for attention.

Is this asking for heaven? Is this cyberspace? Is this no man’s land?

If IT were so dreary a profession, the jingle of the dollar alone would hardly suffice as an incentive for the thousands of knowledge workers and IT “yuppies” today. For them whether in this time zone or any other, the joy is in resilience and in taking the dilemmas of modern life head on ...

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Transactional Information, Internet Cookies, and Data Mining

Herman T. Tavani*

Writing in the late 1970s on the topic of privacy and computer databases, David Burnham (1980) notes:

“Computers generate *transactional information*....Buried [in this information] are records that can be helpful in drawing an amazingly detailed portrait of any single person, group, or corporation. The astounding power of these records is not appreciated by the public, the courts, or Congress.” [Italics Added]

In this passage, Burnham describes a new category of personal information that emerged in the computer era, which he calls *transactional information*. Henceforth, we refer to this kind of information, generated by transactions, as TI (transactional information). What, exactly, is TI? As it pertains to persons, TI is information acquired from commercial and noncommercial transactions involving individuals in their day-to-day activities. Examples of commercial transactions include activities such as withdrawing money from an ATM (Automatic Teller Machine), cashing or depositing a check at a bank, and purchasing an item at a retail store. Borrowing a book from a public library, on the other hand, is an example of a transaction that typically is non-commercial in nature. TI can be contrasted with “traditional information” about individuals, such as information about a person’s age, place of birth, education, work history, and so forth.

We should note that the practice of collecting traditional information about persons is hardly new. For example, governments have collected census data since the Roman era. Consider the kind of traditional information that was collected about American citizens at the turn of the 20th century. At that time, the few personal records that existed contained information about when and where a person was born, married, owned property, etc. Information about the day-to-day transactions of individuals was rarely, if ever, collected and stored. Even if it had been collected, it would have been very difficult to process and store. For example, armies of clerks would have been needed to sort through this information, and huge warehouses or repositories would have been required to store the physical records. Those

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conditions changed, of course, with the advent of computers and electronic databases.

It is also worth noting that traditional information about persons is often collected in a way that requires a conscious act of disclosure on the part of the person providing it. For example, when an individual fills out a census form, she is generally aware that she is providing explicit information about herself to some external organization. TI is not typically gathered in the same kind of manner, however, since the data subject is not always consciously aware that she is providing information about herself to the data collector.

Why is TI controversial from the perspective of personal privacy? Some privacy advocates worry about the ways in which TI is collected; others worry about the controversial ways in which that information can subsequently be used. For example, consider how TI can be gathered in a typical activity involving a motorist in her day-to-day life. When a motorist uses the convenience of an Intelligent Highway Vehicle System, such as E-ZPASS in the U.S., she might not realize that a transaction occurs each time she passes through a toll plaza. Not only is the motorist’s pre-paid account with E-ZPASS debited, but information about the exact time she passed through the toll booth is electronically recorded and stored. This information might seem innocuous, but many privacy advocates worry that this particular kind of TI might be later used in ways that could negatively affect the person about whom the data has been collected. Some also worry about the subsequent uses of TI that is acquired via other means of electronic surveillance, such as in the use of “cookies” technology on the Internet.

Internet Cookies

By means of a technology called *cookies*, TI is routinely gathered about users who visit Web sites. Cookies technology enables Web site owners to collect data about users who access their sites, including information about the user’s IP (Internet Protocol) address and ISP (Internet Service Provider). This information is stored in a text file that is placed on the hard drive of the user’s computer and then retrieved from that computer and

resubmitted to a Web site the next time that user visits that site. It provides the operator of a Web site with information about a user's on-line browsing preferences. Transactions involving the use of cookies to exchange data between users and Web sites typically occur without the knowledge and consent of users.

Since the implementation of cookies on the Web in the 1990s, the use of this technology has been controversial. The owners and operators of on-line businesses and Web sites, who defend the use of cookies, claim that they are performing a service for repeat users of a web site by customizing a user's means of information retrieval. For example, they point out that cookies technology enables them to provide a user with a list of preferences for future visits to that Web site. Defenders of cookies also note that users can elect to "disable" cookies via an option provided on their web browsers. Privacy advocates, on the other hand, argue that because cookies technology involves the monitoring and recording an individual's activities while visiting a Web site, as well as the subsequent downloading of that information onto a user's PC (without informing the user), the use of cookies is a practice crosses the privacy line. They also point out that many Web sites do not permit users to disable cookies, and they note that users must first be aware of cookies before they can opt out (i.e., reject cookies) on Web sites that allow them to do so. Some privacy advocates also worry that information gathered about a user via cookies can eventually be acquired by on-line advertising agencies, which can then merged with other personal data about a user – acquired from records in both on- and off-line databases (Tavani, 2006).

Data Mining

In addition to concerns involving the kind of TI collected via cookies, some privacy advocates worry about ways that TI can be "mined." *Data mining* is a computerized technique used to unearth non-obvious patterns in data that otherwise would not be discernible. Data-mining technology also generates new classifications or categories (of individuals), which are not always obvious to the individuals who populate them. Some of these newly discovered/created categories suggest "new facts" about individuals who constitute these groups. For example, a young executive with an impeccable credit history could, as a result of data-mining technology, end up being identified as a member of a (newly generated) category of individuals who are perceived to be high-credit risks because of certain patterns found in aggregated data, despite the fact that his own particular credit history is unblemished. That is, a data-mining program might associate the young executive with a group of individuals who are likely to start their own businesses in the next three years and then file for bankruptcy within the next five years (Tavani, 2004).

Because of concerns about the ways in which electronic

records can be exchanged between two or more databases, various privacy laws in the U.S. have been enacted at the federal and state levels. However, these laws have primarily aimed at protecting personal information that is: (a) *explicitly* identifiable in electronic records, and (b) considered *intimate* or *confidential*. Information acquired via data mining fits neither category. First, as we noted above, it is derived from *implicit* patterns in data, which without data-mining technology, would not be accessible to data collectors. Secondly, the kind of personal information generated in the data-mining process is often considered non-intimate or non-confidential because it is derived from information acquired through transactions in which individuals engage openly and in public places.

Consider that when an individual uses a "discount card" in a supermarket to purchase various items, her transaction might initially seem innocuous from the perspective of personal privacy. For one thing, the items she purchases are typically transported in an open shopping cart that is visible to anyone who sees her in the store; so there is nothing confidential or intimate about the individual items she purchase. However, a record of her purchases, made possible by the use of the discount card, can generate a consumer profile about her. This profile can reveal patterns that identify, among other things, the kinds of items she purchases and the time of day/week that she typically shops. And this kind of information is very useful to "information merchants" who use it to target consumers in their advertising and marketing campaigns. Furthermore, information in her consumer profile can be used to make judgments about her lifestyle, health, spending habits, etc., even though the aggregated data that constitutes her profile may be inaccurate.

So it would seem that practices involving the collection and use of TI have significant implications for personal privacy. We have seen that this is especially apparent in cases where TI is acquired via cookies technology and where TI is mined for patterns involving consumer profiles.

Acknowledgments

This essay draws substantially from two of my previously published works: Tavani (2004, 2006). I am grateful to John Wiley & Sons and to MacMillan for permission to use that material.

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Mobile Access to Information: Some Questions

*Karsten Weber**

The driving force of social change in modern industrial societies towards that which is often called knowledge or information society seems to be the rapid development of ICT as the fundament of dealing with information in a way that is unprecedented in history with respect to quantity, speed, and possible far reaching consequences for individuals and whole societies. As the 1990's were symbolized by the rapid distribution of computers with Internet access, it seems that the coming years will be characterized by the promise which is tied up to digital mobile devices—it is to be expected that the Internet and other information and communication services are going mobile. This means that Internet services—to be read as abbreviation for all future information and communication services—can be accessed anytime at virtually any location. Particularly mobile information and communication technologies (mobile ICT) like UMTS with its high bandwidth shall support the idea of mobile Internet access. It is planned to distribute music, video clips, pictures, television, and so on via mobile technology, as well as new services like shopping and paying via mobile devices, making reservations for hotels, restaurant, theaters, and the like.

Much of the content and services consumers will be able to access with mobile devices have to be paid for—here, mobile access does not in principle differ from the “traditional” way of accessing the Internet. However, there is a problem connected to content and services, because digitally paying always will produce information about the product or service itself, but, more important, about the customer. Therefore, the debate about Digital Rights Management (DRM) versus privacy gets a new dimension. The possibilities of surveillance by using DRM systems, e.g. reporting back on the activities of individual users to copyright owners, will be reinforced (e. g. Cohen 2003; Kretschmer, Klimis, Wallis 2001: 42; McCourt, Burkart 2003: 342), as Barrera

and Okai (1999: 1) stress with regard to Internet usage in general:

“To be in cyberspace is to be recorded. Digital activities and objects are nothing but an ensemble of traces and records. Each electronic action in cyberspace implies the creation of tread marks; digitalization involves the generation of representations, more or less permanent. Those digital footprints can be, by nature, reconstituted, recreated and saved indefinitely. Where a vast number of activities in traditional space are inherently non-traceable, cyberspace actions are the traces themselves.”

Mobile technologies that promise that the Internet can be used everywhere will incorporate that personal data massively will be produced, processed, and exchanged between various kinds of devices. Thus, the advantages mobile technology provides to us perhaps could be overridden by the disadvantages of infringements into our privacy. The access to information with mobile ICT always has to be tracked in order to identify and authorize users, to calculate costs, to manage resources, and the like. All that will require multi-functional Digital Rights Management (DRM) Systems. Depending upon laws and other regulations under which the access will take place, providers will be allowed to use such tracking information for their own purposes—for example they could be allowed to sell such information to third parties. The problem is that combined with data about the whereabouts of access and about other people who accompany the accessing person it will be perhaps possible to draw detailed conclusions about the content itself or even the person(s) that access it. Of course, encryption of information can help to reduce that problem, but communication itself can be treacherous if it is possible for third parties to determine who communicates with whom. Thus, it is important to mention the briefly described problems and to provide solutions for them. Otherwise, the acceptance of mobile ICT could be endangered. Besides that pragmatic aspect of regulation mobile ICT infringements into privacy could be evaluated as a social and moral problem. Linda

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L. Brennan puts it that way (2004: 53): “Privacy has cost. Access has benefits. And vice versa.” We have to accept that technology inevitably shapes our way dealing with information; it shapes our whole individual and societal behavior in information societies. Mobile ICT has and will have benefits for both users and providers. Most of the benefits of providers are connected with costs on the side of users—and vice versa.

Clearly, technology is only one factor that has an effect on our behavior in cyberspace—and of course in real world, too. In his important book “Code and other laws of cyberspace” Lawrence Lessig (1999) shows that technology—he uses the term “architecture”—together with social norms, laws, and of course the market frame our individual and societal behavior. Therefore, this briefly description of some aspects of mobile ICT has to be expanded to all these regulating factors. Doing that, one will learn that technology, social norms, laws, and the market themselves are not independent of each other.

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Open Source Software

*Richard A. Spinello**

Most software products are still developed and distributed by commercial enterprises such as Microsoft, Oracle, or Lotus. This software is typically written in high level languages such as Java or C++. This source code is compiled or translated into object code (1s and 0s), and the programs are distributed in object code format. For example, Microsoft's Office Suite can be licensed or purchased on a disk on which the object code has been encoded. The source code for that data base is not included on the disk nor is it disclosed to buyers. As a result, Microsoft users cannot customize this program in any way or fix bugs. Most major software companies like Microsoft and Oracle strongly prefer to keep their source code confidential, since that code often embeds trade secrets and other proprietary information.

Arguably, this model of software production has been quite successful especially if the measure of success is volume. For example, in the United States, annual software revenues total \$170 billion. But a new model has emerged that makes the source code itself open and available to users. Open source software (OSS) should be carefully differentiated from so-called "freeware," that is, software such as Adobe's Acrobat Reader, which is distributed to users at no charge. Open source software is also usually distributed at no charge, but, unlike freeware, this type of software is distributed with its source code (as well as the executable object code), and the license allows for modifications of that source code and the development of derivative products. The rapid growth of the OSS movement has been greatly helped by the Internet and the Web where code can be posted for all to inspect and to download.

The development of open source software usually represents a form of "peer production" (Benkler, 2002), and for the most part it is a more egalitarian economic

system of work and reward. According to Raymond (2000), open source software communities, which build software collaboratively, operate as a "gift culture." In this culture programmers and others work without pay for the sake of enhancing software and promoting knowledge. Success is determined by one's reputation as a programmer in the eyes of other hackers, and the recognition by one's peers substitutes for a more tangible pecuniary reward.

Open source software has been quite successful in certain segments of the market. For example, the OSS web server known as Apache currently leads the market for web servers with a 60% market share. The PC operating system known as Linux is undoubtedly the most famous open source software product, and some still believe that it will one day challenge the hegemony of Microsoft's Windows operating system. Adopters of Linux cite economic benefits such as security and stability along with social benefits such as transparency. Transparency can aid the process of incremental innovation and prevent anti-competitive posturing.

There is also excitement and anticipation that the open source approach will extend beyond software production. If the OSS model is a good way to produce software, why not use it for other forms of scientific research? The model seems to be a perfect fit with the norms of the scientific community such as communism, universalism, organized skepticism, and disinterestedness. Communism means that scientific discoveries and innovations should belong to the scientific community. The recent effort to sequence the human genome is a prime example of the open source model at work in biotechnology. This revolutionary knowledge regarding the human genome is the heritage of all humans and the moral propriety of its common ownership and open availability seems evident.

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According to Benkler (2002), if open source projects are to be successful, they must offer the prospect of “social-psychological” rewards. They must also manifest modularity so that the work can be divided into smaller, more manageable segments. Of course, there must also be some authoritative leadership in the community, someone who can make judgments about which contributions will be accepted and which ones will be rejected.

Like all developments in technology, open source code has generated controversy. There are ethical and policy issues associated with the OSS model, and it is instructive to concisely review those issues. The claim is made that OSS is morally and socially superior to proprietary code, but why should this be so? First, open source programs are valued because they tend to promote competition especially with monopolistic enterprises in the software industry such as Microsoft. Thus, OSS can help curtail the monopoly power which is not uncommon in the software industry where a winner-take-all dynamic is often present due to network effects. A second rationale for supporting open source is based on its capacity for challenging what some regard as a problematic system of proprietary intellectual property rights. The argument is advanced that open source code is a more socially and ethically responsible business model “leading to greater equity between producers and consumers, capital and labor, rich and poor” (Stoltz, 2000). OSS could eventually lead to the commoditization of operating systems and application software. When a product is “commoditized” monopoly rents are expunged and consumers benefit through lower prices. The prospect of software as a low-priced or free commodity would be especially appealing to developing countries which have limited access to information technology. Accessibility to software products and the underlying technology might begin to put them on a level playing field with more developed countries like the United States (Spinello, 2003).

A third benefit of OSS that has some moral and social implications is transparency. Everyone can see

and inspect the source code – there are no secrets with OSS. The assumption is that transparency increases security because “backdoors” and other flaws exploited by hackers are readily exposed and fixed. Also, in this digital era where “code is law,” that is, where software has regulatory effects, such transparency assumes greater salience. For example, filtering software that blocks pornographic speech is code-base regulation of speech. Thus, code is not amoral and how companies write code has moral and social implications. According to Lessig (1999), “too many miss how different architectures embed different values, and that only by selecting these different architectures – these different codes – can we establish and promote our values.” Thus if code embeds and propagates moral values, if code is a new way of legislating behavior, it is imperative that code be open so that the user community can see *how* it is being regulated and constrained by such code.

For these reasons, some governments have begun mandating the use of OSS products such as Linux or subsidizing OSS technology in various ways. The Chinese government, for example, has indicated a preference for OSS because it believes that OSS systems are more secure. Whether this is wise policy is a matter of debate. What is not a matter for debate is that the open source model has a promising future.

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Information Ethics Education: A Brief Overview of Current Issues

*Toni Carbo**

Introduction

Education about Information Ethics (IE) has grown quite rapidly around the world over the past 10-15 years. Other papers in this issue address the challenges of defining the field of Information Ethics as it continues to evolve. This paper will use the definition and context established by the International Center for Information Ethics (ICIE) and will provide a brief overview and discussion of issues related to the topic of education. These issues fall into broad categories: 1) Who is teaching IE and who should teach it; 2) To whom is IE being taught; 3) What is being taught; 4) How is it being taught; and 5) How well is it being taught. Due to the strict limits on the length of articles in this publication, issues will be presented as questions and discussed only very briefly; each topic deserves and demands far more extensive attention. The questions posed tend to be more practical than theoretical to assist those interested in education.

1. Who is teaching Information Ethics and Who Should Teach it?

Frequently, faculty members have included topics related to Information Ethics (such as privacy and intellectual freedom issues) as a component of their formal courses in many countries. Courses devoted exclusively to IE are much more recent. From a very small number of formal courses offered in colleges and universities in the 1980's, the number has grown to more than 80 currently courses included on the ICIE website, and, no doubt, there are many others that are not yet listed. These are taught in a wide range of programs at both the undergraduate and post-graduate level, including in programs in philosophy, computer science, library and information science, engineering, business, law, and many other disciplines (and in several interdisciplinary areas). Those teaching it range from very senior professors with extensive knowledge of ethical theory and/or practical experience to very new faculty members, some of whom get assigned the course during their first term of teaching, even though IE is not their area of expertise. There is an increased demand for experts to teach IE, both to meet the growing demand and to fill positions vacated by those expected to retire over the next few years.

Among the issues to be addressed are: 1) What knowledge and experience (and in what subject areas, such as philosophy, library/information/computer science, etc.) are needed to teach an IE course? 2) What is the appropriate balance between

theoretical knowledge and practical experience? 3) Where will we find a sufficient number of IE experts to meet the growing demand for faculty to teach IE? 4) Where can we find sufficient funds to support PhD students to educate the next generation of IE experts? 5) What kinds of education and training programs are needed for these PhD students? 6) Should practitioners without PhD degrees be involved in teaching IE? 7) Should guest speakers be included in courses, and, if so, which speakers? and 8) Should courses be team-taught, and, if so, by whom?

2. To Whom is Information Ethics Being Taught?

Currently the focus of IE education has been on formal courses on the campuses of colleges and universities, primarily at the undergraduate and master's level, with some PhD level seminars and a few specialized courses (such as intellectual freedom) offered via distance education programs. Some continuing education programs, such as workshops on IE for medical and other special librarians, or on the critical thinking component of ethical reflection, have been presented. Those being taught have a very wide range of knowledge and experience and often come from diverse cultural backgrounds. The issues in this area relate to determining who *should* be taught.

Education in IE should be expanded to become a fundamental component of Information Literacy programs for all students, beginning in elementary education programs for young children, through undergraduate curricula, to advanced education programs. In particular, advanced education programs for doctoral students, including the opportunity for them to be involved in teaching IE, are needed. In addition, much more extensive continuing education programs are needed for practitioners, not only in information professions, but for others in most disciplines (similar to work on health-related information underway in medical education programs). This would include "teaching the teachers," especially those who will work in elementary and secondary education, and those designing, building, and managing information systems and services. In addition to students taking IE courses, many other students should be taking courses that have IE components in them. Of particular concern are required introductory courses in technology-related areas, such as telecommunications or security management. Too often in such courses students are taught how to build systems without considering the "why" questions. For example, just because certain

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information *can* be gathered doesn't mean it *should* be gathered. Helping those who teach technology-related courses to understand the ethical implications of systems and services is important, and one group to be taught is faculty, themselves.

3. What is being taught?

This topic is far too complex to address in the space allowed. An examination of the wide range of IE courses taught in U.S. Library and Information Science programs alone indicates the diversity of content. Questions to be addressed include: 1) How much of the course should be devoted to ethical foundations? 2) How should theoretical knowledge and practical applications be balanced? 3) What texts should be used? 4) What key ethical issues should be discussed? 5) Should case studies be included? 6) What multicultural content should be included? and 7) How much material should be included for each course?

4. How is it being taught?

Many colleges and universities have a diverse student body and, if programs are expanded as suggested above, this diversity will probably increase. Students come from differing backgrounds with a wide range of knowledge, practical experience, information technology skills, and cultural experiences, and they have varying learning styles. In many programs, some attend school full-time; others work full time; and many also balance family responsibilities with their education and work schedules. Students also have differing levels of ability in the language in which the courses are taught and in the languages in which materials are written. Addressing the needs of the diverse student body requires attention to these differences.

Among the issues to be considered, whether for formal educational or continuing education programs, are: 1) How can the instructor best meet the educational needs of each individual student? 2) What different styles of teaching can be used most effectively? 3) What models for ethical reflection should be used? 4) How can students unaccustomed to questioning others and engaging in active civil discourse be taught to do so? 5) What are the most agile teaching and learning techniques to use in adapting to individual learning styles and the changing needs of students? 6) How can information technology (such as web-supported modules for individual learning) be used to assist students? 7) What different types of assignments and evaluation of students should be used? 8) How can the class best focus on understanding the complexities of IE and avoid the tendency to move to simplistic dichotomies? 9) Should only face-to-face on campus courses be taught, or can IE be taught asynchronously? and 10) What can educators do to keep current on the subject and on educational theory and techniques?

5. How Well is IE Being Taught?

The teaching of IE is scattered across so many

disciplines, programs and countries, that determining how well IE is being taught is a major challenge. This is a topic that has not yet been addressed adequately and one that demands attention. While each individual instructor addresses this, to date there have been few opportunities to share experiences with others teaching IE. The 2004 ICIE invitational symposium, which provided opportunities for discussion, and some sessions at conferences, such as the Association for Library and Information Science Education (ALISE) 2005 conference, are two notable exceptions. Opportunities to share experiences and learn from others about teaching IE are needed. Also needed is research on the evaluation of IE courses, especially on the impact of IE education on the future behavior of those taking IE courses. For example, while this author has extensive examples of anecdotes in which students who took the IE course describe significant changes in their behavior or how they applied what they learned to the real world (such as serving on a jury or on a local government council), there is no scientific study of what difference IE education made to the hundreds of students who have taken the course. The issues in this area include: 1) What evaluation techniques should be used to determine how well IE is being taught? 2) How can the IE specialization and the information profession best provide opportunities to share experiences to improve IE education? 3) What organizations and agencies might support research on the evaluation of IE education? 4) Who should undertake this research? 5) What can be learned for education in other areas of applied ethics? and 6) How can we most effectively encourage collaboration between educators and practitioners to evaluate IE education?

Conclusion

This very brief and limited overview of some of the issues and questions related to IE education has attempted to stimulate thinking and begin a discussion of this complex topic. Each of the questions raised deserves considerable thought and investigation, and in some cases, extensive research as well. The author welcomes comments and opportunities to continue this examination and discussion.

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Computer Society of India

Organizes

CSI 2005

40th Annual National Convention of Computer Society of India

Hosted by CSI Hyderabad Chapter

9-12 November 2005

Theme : ICT for National Development

Call for Papers

Preamble

The ICT industry has focused on exports for over two decades. The society that nurtures it is all around us. Unless we address its problems through applications of ICT, we will not experience the development growth evidenced by the Asian Tigers. Singapore, Malaysia, Korea and China have all exhibited strong economic growth. Their domestic assimilation of ICT is far better than in India. The theme of this convention is to take stock of our developmental concerns and apply ICT as a change agent. The sessions will be organized to address developmental concerns. Each session will have technical talks and papers that discuss technologies and their applications to the concerned areas of development.

The major problems facing the nation for development are unemployment and under employment, corruption, gender insensitivity, increasing authority of state, population growth and absence of pro-poor strategies. The program to do justice to the theme, must reflect contributions from ICT professionals grappling with these problems to enable national development.

Programme

The convention will have a two and a half day technical programme. There will be plenary sessions with invited speakers each day, followed by parallel tracks in four streams. All tracks will be focused on technical aspects of ICT as a change agent, with a view to strive for excellence. Three of the session tracks will be dedicated to applications on concerns of the academia, society at large and Government in particular, and Industry. The fourth track will focus on ICT as a *change agent* in its evolution, in IT services and in IT enabled services.

Education: The content of the track on applications in academia will focus on using the ICT medium to deliver education and training so as to raise its quality, foster their constructive and improved understanding and facilitate use of such knowledge, create technologies to provide attention to individual learning, facilitate research, and manage educational and training institutions with an eye on continuous self improvement in their journey towards excellence.

Government/Society: The track on societal applications will have sessions on intra and inter ministerial applications, administration in government, citizen services, administration and management of municipal services, and applications that address serious societal concerns like literacy, health care, public distribution systems, reducing overheads in providing welfare and its management, disaster and crisis management and uses of ICT by NGOs to enable their effectiveness.

Industry: The track on industrial application will focus on the journey towards excellence in product and process quality, the effect of digitization on products and services, value creation in industry through cost management and through enabling the industries to address their critical concerns differently because of these emerging technologies.

The Industrial Applications track will also feature a CIO/CTO/CKO/COO conclave that will focus on value creation through uses of ICT

Technical Papers of high quality are invited in emerging technologies and applications that address the above suggested concerns.

Important Dates

Last date for paper submission : 15 Sep '05

Acceptance Notification : 30 Sep '05

For the paper format, please see the convention site at www.csi2005.org

Tutorials

Four parallel tutorials will run on 9th Nov '05 by experts on topics of current interest concerning the use of ICT for National Development.

Student Paper Contest

There will be a Student Paper Contest, the finalists of which will present their work in the Conference. Students are urged to align with the theme of the Conference. So also, there will be awards for the winning submissions in the area of e-Governance.

Exhibition

As part of this Convention, CSI is also organising an Industrial Exhibition that will feature the latest, path-breaking, sophisticated technology solutions, showcasing typical applications of ICT for National Development, R&D, new technologies and products. This mega event is planned with an aim to provide a common platform for technology users, providers, developers, professionals etc, to share their knowledge, experiences, developments, best practices and more importantly, new technologies and solutions. The focus is on bringing to light those technologies that are going to have a revolutionary impact on the industry, business and in fact in all the areas of government, education, R&D and society.

The Event will allow all concerned to take stock of what has been achieved in terms of technology advances and what's in store for future.

Accordingly, CSI invites participation in this exhibition, thereby allowing community members in general to understand and appreciate the technologies that have developed or are developing.

Participation Scope

Participation is invited in the following areas, which are indicative, but not exhaustive:

1. Industry
2. National Development
3. Government
4. Education
5. Research and Development
6. Societal

Profiles of the exhibitors may include,

- Academic Institutions
- Government Agencies
- R&D Institutions
- For-Profit Corporations
- Non-profit Organisations
- NGOs
- IT Development Organisations
- Manufacturing Organisations
- Service Organisations
- Health Service Companies
- Law and Order Agencies
- Building/Architectural Firms
- Social Associations, etc.

Visitor Profile

Participants may expect the following categories of visitors:

- Academicians
- Technology professionals
- Industry experts
- Corporate leaders
- Government authorities
- Students

Exhibition will be open to general public in the evenings.

Publicity for Participants

Participant can look forward to a campaign, which will include: display advertisements in Journals, Newspapers, Website, Brochures and the Venue itself and the Stalls.

Exhibition Space Booking

Booking of exhibition space or stalls will be on first come, first serve basis. There are various stall sizes and prices vary on the basis of size. Stall rates are as follows:

Stall size	Payment
4 square meter	Rs. 20,000
6 sq. mtr	Rs. 28,000
8 sq. mtr	Rs. 36,000

Registration and Payments

Exhibitors are required to register by **15 Jul '05** and make 50% advance payment by **15 Aug '05**. The remaining 50% has to be paid by **15 Sep '05**. Stall booking will be confirmed after the entire payment is cleared.

The payment can be made by DD/Cheque in favour of CSI 2005, payable at Hyderabad and may please be sent to Dr Shaukat A Mirza, 302 Archana Arcade, Opp Railway Reservation Complex, Secunderabad – 500 025.

Cancellations

- 80% refund – 8 weeks prior to exhibition
- 50% refund – 4-7 weeks prior to exhibition
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Software Documentation Process Overview

*Gurudutt R. Kamath**

“In the last few years around 4000 people have died as a result of software defects,” according to Sami Zahran in **Software Process Improvement**¹. How many of these defects can be attributed to poor documentation or lack of documentation is not known. As technical communication is an integral part of software development, we can apportion some blame to technical documentation. However, the Bhopal gas, space shuttle, aviation, and other disasters have been attributed to poor technical communication.

Everyone pays lip-sympathy to documentation. One of our large software companies with thousands of employees has less than 75 technical writers/editors. Long ago a friend in Oracle, USA told me that there were 300 technical writers in one building alone. Technical writing is an almost unknown profession in India despite several technical writers having 25 years of experience. While abroad, you can get Bachelor's, Master's and PhD degrees in technical writing; India is yet to wake up even to a degree in this subject!

All of us are aware of the Capability Maturity Model (CMM) of the Carnegie Mellon's Software Engineering Institute. Yet, many are not aware of the Document Maturity Model. While many companies are at CMM Level 5, we do not know how many are at this level in terms of document maturity. My own guess is that a majority of our software companies are at DMM Level 1 (documents do not exist!) and Level 2 (minimal documentation exists). Companies like TCS, Infosys, HP, and Oracle in India may be at Level 4 or 5. Companies at Level 3-4-5 have realized that good documentation saves them money.

Poor documentation leads to poor software is an established fact. Catching bugs and defects early is a cost saver; it is not only common sense but also a well-researched fact. Good documentation practices can prevent bugs and defects or can at least catch them early.

User documentation is the first interaction which users have with your product. If they are shabbily produced,

poorly written, haphazardly illustrated — the few users who dare to touch documentation will never touch them again. Just as you would only let a qualified dentist or a doctor treat you; you should only let technical writers meet your documentation needs. Let professionals do a professional job.

Documentation Standards

A few months ago, we had a meeting of technical writers in Mumbai where I was to talk on Documentation Standards. I asked around as to the standards which were being followed. I almost drew a blank. The technical writers were talking about the use of active voice! Many referred to the **Microsoft Manual of Style** as the standard which they followed. Most technical writers do not go beyond English, Grammar, Formatting, and Style Manuals. A case of mistaken identity — technical writing practices mistaken for software documentation standards. There are a large number of documentation standards (see Table 1), but most of us are ignorant about them.

The top software companies need to be blamed for not promoting and encouraging the development of technical writing. The focus has always been on software. But the neglect of documentation has had serious repercussions on the software industry itself. We have never matured as a software product development nation. We have merely been suppliers of cheap labour and cheap development. Earlier, it was outsourcing of programmers; now, we have outsourcing of technical writing jobs too. There is a dire need to promote technical writing and give it its due place in the sun. Technical writers play a crucial role in the software documentation process. Most mature companies recognize technical writers as a part of the software development team and not as mere formatters or beautifiers of prose. If the communication stinks, the software sinks.

A sample list of documentation standards is presented in Table 1. Some of these standards may have been updated and may possess a new number.

Table 1 Sample List of Documentation Standards

IEEE 610	Standard Glossary of Software Engineering Terminology
IEEE 829	Software Test Documentation
IEEE 830	Software Requirements Specifications
IEEE 1008	Software Unit Testing
IEEE 1012/1012a	Software Verification and Validation
IEEE 1016	Software Design
IEEE 1063	Software User Documentation
IEEE 1074	Standard for Developing Software Life Cycle Processes
ISO/IEC 18019	Guidelines for Design and Preparation of User Documentation
ISO/IEC 15910	Software User Documentation Process
BSI BS-5515	Documentation of Computer-Based Systems
BSI BS-7649	Design and Preparation of Documentation for Software Users

In addition, there are several other standards. For example, the US Department of Defense’s DOD-Std and US Military’s Mil-Std. If you are supplying any products to US Federal Agencies, the products need to be compliant with Section 508 of the Disability Act. Simply, it says that access for the disabled should be the same as for all. For example, the blind and the deaf should be able to use your products just like others. Their disability should not prevent them from using the product.

Documentation Suite

There are several software development methodologies and life cycles. The Document Development Lifecycle (DDL) parallels the Software Development Lifecycle (SDL). Even before a project or product development starts, technical writers come in to write the proposals, statement of work (SOW), RFPs or responses to them, and feasibility studies. During the course of software development, the documentation suite produced consists of:

- Software Requirements Specifications (SRS)
- Design Documents
- System Manuals

- Installation Manuals
- Maintenance Manuals
- User Manuals

Documentation Plan

All documentation begins with the Documentation Plan, which lays down the objective, audience, resources, planned table of contents, constraints, and schedules for the documentation. The more granular the plan, the more mature the documentation process.

Software Requirements Specifications (SRS)

The Requirements Specs document defines the needs of the end users. If a bank requires an Internet Banking application, the SRS defines the various dimensions of these requirements. How will customers log in? What kind of browsers do they need? What kind of transactions can they carry out? All the requirements are laid down. Usually, software buyers know only their domain and are not articulate about their requirements. Business analysts who document the SRS should interview Subject Matter Experts (SMEs) rigorously to define the requirements well.

The SRS is the foundation of the software. A weak foundation can topple the structure at the slightest tremor. While developers may want to play safe by documenting the least and writing in generic terms (“Security will be implemented by user ID and password.”); software buyers should insist on being comprehensive and specific (“Security will be implemented by user ID and a password. Fingerprint identification will be required for additional security.”).SRSs can be really varied in terms of scope. While security requirements may be present in all, there could be several other requirements peculiar to each project, for example, logical, numbering, accessibility, database, interface/protocol, standards, verification, validation, networking, and Internet requirements.

Design Document

The Design Document tries to flesh out the requirements into a viable system. The hardware/software and architecture are firmed up. How all the requirements are to be met is identified. Care is taken to ensure that the Design Document maps well with the SRS. The SRS and the Design Document are two vital stages of the software documentation process. Mistakes at this stage can be easily corrected and cost very little to the

companies. If errors at this stage are allowed to pass, then correcting them during testing, or worse, after implementation, is fraught with many dangers and, of course, financial peril. The ill-effects could be: heavy costs, ripple effect on other parts of the project, need for more testing, and delayed project schedule.

The Design Document contains details of the application, such as: software/hardware, architecture, user interface, database design, and source code listing,

System Manuals

System manuals are useful to understand the system for further development, modifications, or enhancements. System manuals contain information, such as: hardware/software, rationale, development strategy and methodology, architecture, programming logic, and algorithms.

Installation Manuals

Installation Manuals are required so that the customer can ensure that all the hardware, software, database, network and other requirements are met before installation. This manual is useful to ensure that the customers can smoothly install a system themselves (without any support). Most installations are driven by a wizard and therefore do not really require printed instructions. However, if the wizard text is mysterious and the interface is non-intuitive, a well-written installation manual could save the day.

Maintenance Manuals

Maintenance manuals are required so that developers can maintain the system and make necessary changes to meet current requirements. All the technical details should be included to help developers maintain the system, such as: hardware/software requirements, architecture, and programming information.

User Manuals

Customers demand manuals even if they don't read them. Technical writers have jobs because customers demand user manuals. The main reason for supplying user manuals is to save or reduce training and support costs. Companies cannot afford to train customers all the time. Take the high rate of attrition and the high mobility these days. Even before you have completed the training module, the employee has either left the organization or moved to a different location or department. User manuals can fill the gap. User manuals are cheap substitutes for training and support. In fact,

in some companies the effectiveness of user manuals are judged by their co-relation to the reduced support costs. Of course, in India, we do not have a culture of supplying manuals and instructions. Abroad, even a packet of peanuts has instructions — "Open and eat peanuts." Manuals abroad are used for legal reasons and legal safety. Of course, they are effectively used as a marketing tool to promote sales.

Technical Writing Practices

In addition to software documentation standards, one needs to follow technical writing practices. Some of the popular technical writing practices that we follow are listed in Table 2.

Table 2 Technical Writing Guidelines

- Write to achieve something.
- Write with a specific audience in mind.
- Structure information carefully. Use headings and subheadings.
- Write descriptions and instructions as required.
- Keep sentences and paragraphs short.
- Prefer the active voice.
- Be Accurate, Brief, and Clear (ABC formula).
- Be consistent.
- Follow the Microsoft Manual of Style.
- Use parallelism.
- Use bullets and numbering appropriately.
- Check grammar and punctuation. Use a good, current, dictionary.
- Keep your document up-to-date.

Technical writers ensure that documents are complete, and contain: cover, contents, copyright and other legal notices, cross-references, indexes, and glossaries. Illustrations and screen shots are vital aids in improving understanding. Technical writers ensure that they include the correct illustrations and screen shots at the appropriate locations to aid comprehension. Technical writers act as document designers to improve the document readability and appeal. They choose the correct fonts, size, and provide enough white space for matter to stand out. Important information is highlighted and unimportant information relegated. Technical writers also follow documentation standards (see Table 3) and keep documents up-to-date.

Table 3 Sample of Good Practices from Software Engineering by Sommerville²

The documentation should be provided in media and formats that allow its use by those with vision, hearing or other physical limitation.

A description of how to print the electronic documentation should be included in both the electronic and the printed documentation.

Because some users cannot distinguish between colors, documentation should provide text cues rather than using colors such as red and green as the only way to convey meaning.

Illustrations that accompany text should appear adjacent to their first reference in the text so that the associated text and illustration can be viewed simultaneously.

Warnings, cautions and notes shall be displayed in a consistent format that is readily distinguishable from ordinary text or instructional steps.

Technical Writing Process

The documentation or technical writing process is well known. Typically, 2-3 drafts are reviewed iteratively and then a final version is created. Writing is a collaborative effort and several writers write one or more drafts. Similarly, several reviewers may review the drafts. The following reviews are well established:

- Technical (System, programming, etc)
- Editorial (Language, Formatting, Legalities, etc)

- Quality (Standards of the Company)
- Domain (Banking, Insurance, Cardiology, etc)

Reviews should be scheduled well and reviewers should be given adequate time and notice to do a thorough review. Reviewers should be informed about the expectations (“Please review for technical accuracy. Do not focus on language or other issues.”) and the date and time by which the review is expected. Review meetings may be required to speed up the correction process. Reviewers play an important role in improving the quality of the documentation and thus the quality of the product.

Conclusion

What can you do to change the scenario in India? Start by implementing the software documentation process and technical writing process in your company. Colleges and universities can start a degree course on this subject. Hope you have realized the importance and value of documentation. Benjamin Franklin said that death and taxes are inevitable. Maybe he could have added documentation too!

References

- 1 Sami Zahran, 1998, Software Process Improvement, Addison-Wesley, p 4
2. Sommerville, I. 2001. Software Engineering, 6th Edition. Pearson Education

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He wrote the **DocuMentor** column in **IT People/Express Computer**. He has lectured at the National Institute of Design-Ahmedabad, Indian Institute of Technology-Mumbai, and Department of Journalism-Pune. Send your feedback to documentor@vsnl.com.



Minutes of the CSI National Council Meeting (2003-2004)

Fifty one members attended the meeting of the National Council of CSI held on 1st December, 2004 at Mumbai. Mr M L Ravi, President, CSI, chaired the meeting (2003-2004) and welcomed the members present.

President in his inaugural address highlighted the role the National Council can play in making the Society vibrant and move forward and appealed to all members to take good and adequate interest towards participating in the activities of the Society both at the Chapter and national levels, and discharge their responsibilities towards the Society.

The items on the agenda were thereafter taken up for consideration.

Item 1 : Confirmation of the Minutes of the National Council (2002-2003) meeting held on 11th December, 2003, at New Delhi (Minutes published in the June 2004 issue of CSI Communications)

President referred to the minutes of the National Council meeting which were published in the June 2004 issue of CSI Communications, and invited comments if any from members.

There being no comments from the Council members the minutes were approved and confirmed. (Proposed by Dr R K Datta and seconded by Maj Gen Dr R K Bagga)

Item 2 : Recommend and advise the General Body for adoption of the Annual Report, Treasurer's Report and Audited Accounts for the year 2003-2004.

Members by and large expressed appreciation and satisfaction that the Society's annual report has been well prepared and brought out and desired that the quality of the report be maintained well in future too.

Mr Bipin V Mehta, Hon. Treasurer (2004-'05) briefly explained the important items of the audited accounts of the Society for the year 2003-'04 and mentioned that the audited statements of accounts have been prepared after consolidation of all audited accounts received from the Chapters. He also mentioned that though the income as compared to the expenditure has resulted in a marginal increase in surplus during the year, the surplus generated is not significant enough considering the surpluses generated in past many years. This is primarily

due to the fact that for various reasons the increase in income does not keep pace with the corresponding increase in the expenditure of the Society. Though the financial situation of the Society cannot be said to be very happy it is also not alarming either. All the same every effort need be made to improve the financial status of the Society. Mr Mehta further mentioned that though the overall membership of the Society at 21,252 as on 30. 6. 2003 had grown to 24,098 as on 30. 6. 2004 the increase has mainly been in student membership which had grown from 10,817 to 12,913 during the same period. He reiterated the need to increase individual and institutional membership and therefore appealed to the Chapters and all others concerned to make concerted efforts to increase the membership in these categories.

Dr R K Datta mentioned that the financial discipline at the Chapter level at present is not what it should be and there is considerable room for improvement. Referring to the need to increase membership he mentioned the oft repeated question as to why one should become a CSI member, and explained that CSI being a professional body once a person becomes a CSI member he becomes part and parcel of the Society and basically the Society belongs to him collectively with other members. The person should appreciate that the Society provides unlimited opportunities to him / her to participate in its activities, gain knowledge on the technological developments and advances in the IT field, come in contact with the industry and its stalwarts, which can ultimately help him in his professional development and advancement.

Dr Datta as Chairman, Nominations Committee referred to the CSI elections for the year 2005-'06 and expressed unhappiness that despite the Society having over 10,000 voting members the number of voting members participating in the elections is not even 20% which is highly unsatisfactory. He therefore appealed to all voting members to take interest in the functioning of the Society and participate in the elections by casting their ballots without fail.

Prof. A K Nayak, member, Nominations Committee mentioned that the process of conducting the elections

for the year 2005-'06 has already commenced and explained at length the various actions already taken including the announcements made in CSI Communications. He appealed to all voting members to participate in the elections and cast their ballots.

Mr. S R Karode, Hon. Secretary, referred to the membership services of the Society and explained at length the various initiatives taken. He mentioned that renewals of membership and enrolment of new members are being done by CSI HQ very promptly and the status monitored by him personally on day to day basis. He expressed unhappiness that for various reasons many of the members do not renew their membership on time and hence requested Chapters to take follow-up action to ensure renewals. He mentioned that for the purpose of follow-up CSI HQ has been sending the updated membership database to all Chapters on monthly basis instead of the earlier practice of sending on quarterly basis. He also mentioned that CSI HQ has been issuing appeals from time to time to members to communicate their email ids and to promptly inform HQ in case of any change in their mailing addresses and email ids. However, many of the members concerned fail to respond to these appeals and as a result about 100 copies of CSI Communications every month are returned by the postal authorities undelivered. He therefore appealed to members to promptly communicate to CSI HQ any changes in their mailing addresses and email ids. He also mentioned that there are a large number of IT professionals who are still not CSI members and hence appealed to all the Council members to make personal efforts at enrolling new members.

Members gave various suggestions for increasing membership. Some suggested that the feasibility of having only one rate of membership fee for CSI life membership enrolment be examined as some people find the existing rates which vary according to the age of the applicant, very confusing. Some others suggested that to overcome the problems arising out of the change in mailing addresses and email ids, we should examine the feasibility of introducing some suitable software and have a systematic approach to subscriptions. Some also suggested that we should publicize our activities and resort to a membership drive through newspapers. Also there was a suggestion that the feasibility of supplying CSI Communications in CDs should be examined.

The Council thereafter unanimously approved the Annual Report, Treasurer's Report and the Audited Accounts for the year 2003-2004 and recommended their

adoption by the General Body.

(Proposed by Dr T K De and seconded by Mr H R Mohan)

Item 3 : Ratification of formation of new CSI Chapters at New Guntur, Ongole and Thane.

President mentioned that proposals had earlier been received for approval to form new CSI Chapters at New Guntur, Ongole and Thane and the same were pending for quite some time. The ExecCom has considered the proposals and found that they were conforming to the Society's norms and also showing adequate justification for establishing the Chapters Hence ExecCom approved formation of new CSI Chapters at these places as proposed.

The Council ratified the decision of the ExecCom to form new CSI Chapters at New Guntur, Ongole and Thane. (proposed by Dr R K Datta and seconded by Mr Subimal Kundu)

Item 4 : Ratification of formation of new CSI Student Branches :

President informed the Council that during the year proposals had been received by the ExecCom seeking approval to form new CSI Student Branches at the following educational institutions.

1. L D College of Engineering, Ahmedabad
2. Oriental Institute of Science & Technology, Bhopal
3. University Institute of Technology, Bhopal
4. Baba Bandesing Bahadur Engg. College, Fatehgarsahib, Chandigarh
5. Erode Sengunthar Engineering College, Erode
6. Jodhpur Engineering College & Research Centre, Jodhpur
7. Rourkela Institute of Management Services, Rourkela
8. Devi Ahilya Vishwavidyalaya, Indore
9. Bharati Vidyapeeth's Institute of Computer Applns. & Mgmt., New Delhi
10. Sinhagad Institute of Management, Pune
11. Sree Sastha Institute of Engineering & Technology, Chennai
12. Padmasri Dr B V Raju Institute of Technology, Hyderabad.
13. VRN Rao Vignana Jyothi Institute of Engg & Tech., Hyderabad
14. Hitech Institute of Technology, Aurangabad

15. Vardhaman College of Engineering, Hyderabad
16. A E S Institute of Computer Studies, Ahmedabad
17. Science Institute of Engineering & Technology, Hyderabad
18. Krishnasamy College of Engg. & Technology, Cuddalore
19. Government Engineering College, Gandhinagar, Ahmedabad
20. Aurora Post Graduate College, Hyderabad
21. Seth Jaiprakash Mukandlal Institute of Engg. & Tech. Yamunanagar
22. G L S Institute of Computer Technology, Ahmedabad
23. Kakinada Institute of Engineering & Technology, Kakinada
24. Mohandas College of Engineering & Technology, Trivandrum
25. International Institute of Information Technology, Pune
26. G Narayanamma Institute of Technology & Science, Hyderabad
27. MAR Baseliious College of Engineering & Technology, Trivandrum
28. G Pulla Reddy Engineering College, Kurnool
29. Sethu Institute of Technology, Kariapatti (Virudhunagar Distt.)
30. Pune Institute of Engineering & Technology, Pune
31. G L A Institute of Technology & Management, Lucknow
32. Acharya Institute of Management Sciences, Bangalore
33. St. Joseph's College of Engineering, Palai (Kerala)

President further mentioned that the ExecCom had considered the proposals and found that they were in conformity with the Society's norms and requirements and hence approved the proposals and granted permission to form the new CSI Student Branches at the above educational institutions.

The Council ratified the above decisions of the ExecCom to form new CSI Student Branches. (Proposed by Dr R K Datta and seconded by Mr Sunil Bakshi)

Item 5 : Constitution and Byelaw Amendments related to Chapters :

The National Council referred to the amendments to the CSI Byelaws and to the CSI Chapter Byelaws balloted

and approved by the General Body in June 2004 and thereafter published in the CSI Communications issue of October, 2004, when members gave various suggestions for amendments to be carried out to some Articles of the CSI Constitution as also to some more Sections of the CSI Byelaws and CSI Chapter Byelaws. Some members also suggested that for any proposed amendment to the CSI Constitution and Byelaws and Chapter Byelaws in future, the format should, in the first place, clearly mention the existing Article / sub Article or the Section / sub Section proposed to be amended, below which the relevant proposed amendment need be mentioned. Importantly, an explanatory note giving adequate reasons and justification for that proposed amendment should also be given.

Mr H S Sonawala, Past President and Fellow, mentioned that Computer Society of India is a registered Society which carries out its activities through its Chapters located across the country. Chapters are not independent entities legally and therefore all CSI members wherever they are located, are members of that one and only Computer Society of India. Since framing the CSI Constitution & Byelaws initially, considerable developments and changes have taken place in the field of computers and information technology necessitating changes in some provisions of the CSI Constitution & Byelaws and Chapter Byelaws to facilitate smooth functioning of the Society. The Constitution Review Committee of CSI had deliberated for a considerable period of time these developments and changes in the area of computers and information technology and based on inputs received from various quarters recommended amendments as proposed, to some of the provisions of the CSI Constitution & Byelaws and Chapter Byelaws, which after completion of related procedures, were balloted in June 2004. However, the provisions of CSI Constitution & Byelaws and Chapter Byelaws are not permanent and they can be amended in future too depending on necessity. Hence, Mr Sonawala requested the Council members to give their comments, suggestions and inputs if any to CSI HQ for consideration of the Constitution Review Committee.

Item 6 : Chapter share to CSI HQ funds :

Mr Deepak Shikarpur, Pune Chapter, mentioned that with the active help of Chapters CSI HQ conducts several awards every year. Also, CSI Education Directorate since the past over a year has been conducting several examinations for students. He

suggested that Chapters should be rewarded for their efforts and motivated to market our awards and examinations to get more entries. He was of the view that the entry fee for our awards being very low potential participants will not mind paying the fee from their marketing budgets considering the publicity their products can enjoy. He suggested that as an incentive Chapters should be paid for their active efforts at least a part of the amount collected by them as entry fee for participation in the awards as also of examination fees collected from the candidates provided by them.

Mr Anthony Joseph, Chairman, CSI Cochin Chapter and many others fully supported Mr Shikarpur's suggestions.

President mentioned that CSI is formulating good number of programs to be organized at the national level with the help of Chapters. CSI is a single legal entity and its Chapters are formed to enable it to conduct activities and spread its message through them. While affiliations to the individual Chapters are important for members they should not forget the fact that they actually belong to the much larger frame work of CSI which is much more significant and important. In view of this fact he appealed to Chapters that whenever they conduct national conferences they should share a part of the surplus with HQ which is facing heavy pressure for funds, and by doing so they are not only helping HQ to strengthen its finances but also drawing upon a pool of resources available across the country who can considerably help them in conducting the conferences successfully. In fact it works out to be a good relationship between HQ and Chapters to share all the resources of the Society in a very congenial manner. In this context he referred to the discussions he had on two or three different occasions with the joint secretary for e-Governance, Govt. of India, Delhi, on the Society conducting programs on ICT for Rural Development at several locations in the country. While Karnataka, Tamilnadu and West Bengal have already come forward to conduct these programs Govt. of India is keen that we conduct these programs, also in various other states especially in Jharkhand, Chattisgarh, Uttaranchal and Orissa, and has assured to provide CSI all logistics and financial support for these initiatives. He expressed the view that it is a very good opportunity for all of us to put our synergies together, organize good programs and earn reasonably good surplus, which can be shared between the Chapters and HQ to help each other and conduct more programs and ensure that the Society moves forward. Importantly, it should always be remembered that all finances of CSI including those

generated by the Chapters basically belong to the Society.

Some Council members mentioned that there should be proper guidelines on the functioning of the Chapters and sharing of their finances with HQ. They also mentioned that the large Chapters which have adequate resources can perhaps easily share their surpluses with HQ whereas smaller Chapters whose financial resources being very limited are unable to share their finances with HQ. They were of the view that HQ should in the overall interests of the Society assist smaller Chapters financially and nurture them so that the latter can conduct activities and become strong in course of time. The Council member from Surat Chapter mentioned that though the Chapter had deposited substantial sums of money with HQ for the purpose of eventually acquiring its own office premises in Surat, the Chapter is currently passing through financial constraints and has sought release of some funds from HQ to enable it to conduct activities and generate funds.

Mr Hemant Sonawala mentioned that HQ has already brought out a Chapter Manual titled "Look Within There Is A Friend Inside" containing guidelines to Chapters for their functioning. Also there is a "Chapter Accounting Manual" containing comprehensive guidelines to Chapters in the matter of maintaining Chapter accounts etc. With regard to HQ helping Chapters financially Mr Sonawala mentioned that as per the Society's policies and norms HQ from time to time has been giving loans to Chapters desirous of acquiring long term assets such as own office premises etc.

Mr S R Karode, Hon. Secretary, mentioned that the request of Surat Chapter for release of funds has already been approved by the ExecCom and the funds will be released no sooner certain details requested from the Chapter are received by HQ.

Item 7 : Review of functioning of National / Divisional / Regional events, Chapters and Student Branches :

President mentioned that registration fees if charged for CSI events are subject to the levy of service tax under the Service Tax Act. Hence, he advised all Chapters to charge the service tax as applicable whenever registration fees are charged for CSI events organized by them. Alternatively, the registration fee could be made inclusive of service tax. In any case the responsibility and liability of paying the service tax to the govt. is that of CSI as a whole.

Mr H S Sonawala expressed the view that CSI and other

professional societies could jointly make a representation to the Department of Science & Technology seeking exemption from payment of service tax.

Item 8 : Chapter Presentations & Update :

- i) Mr Subimal Kundu, Chairman, CSI Kolkata Chapter gave an excellent presentation on the activities of Kolkata Chapter. He mentioned that:
- a) The Chapter in association with the CSI Student Branch at IIMC, Kolkata organized a seminar on “Enterprise Project Management” on 24th August, 2003.
 - b) The Chapter and IETE Kolkata Centre jointly organized in collaboration with CDAC Kolkata, the 35th World Telecommunication Day on 14th August, 2003 at the IETE Auditorium at Salt Lake Electronics Complex.
 - c) A regional meeting of the CSI Chapters in the Eastern Region was organized at Kolkata Chapter premises on 20th September, 2003 in which representatives from different Chapters in the region participated.
 - d) At the request of Prasar Bharati, Kolkata, he gave a talk on “Shilpe Computer-er Bahumukhi Prayog” which was broadcast on 16th October, 2003 by Kolkata AIR.
 - e) The Chapter for the 5th year in succession very successfully organized the Eastern Regional Contest for the CSI-Young IT Professional Award-2003, on 29.11.2003 at the Science City, Kolkata.
 - f) Dr G D Gautama, Principal Secretary, IT, Govt. of West Bengal, visited Kolkata Chapter on 2nd December, 2003 and discussed the Chapter’s activities and various other issues with senior members of the Chapter. It is expected that as a result of these discussions the Chapter will be able to initiate some collaborative programs with the Govt. of West Bengal soon.
 - g) The Chapter in association with Birla Industrial & Technological Museum, Kolkata, celebrated the Computer Day on 17th December, 2003.
 - h) The Chapter in association with HP Education Service organized a three-day workshop on “Information Technology Infrastructure Library” on 20. 12. 2003.
 - i) The Chapter organized a seminar on “IT and Entrepreneurship Development” for engineering and other students on 13th March, 2004 at WBUT Campus, Saltlake.
 - j) The Chapter in association with CSI Student Branch at St Thomas Engineering College, Kolkata, organized a two-day seminar on “Systems Usability: Usable IT in Global Context” on 22nd & 23rd March, 2004.
 - k) The Chapter in association with WBUT, TCS, NITTR, IVETA, Jadavpur University, Institute of Engineers WB state centre organized a two-day national seminar on 23rd & 24th April, 2004, on “Applying Creativity and Systems: Thinking for Business Innovation”.
 - l) The Chapter organized a one-day workshop on 29th May, 2004, on “IT in Banking, Financial Services & Insurance”. There were speakers from SBI, Allahabad Bank, TCS, HP, Oracle Corp, Peerless and Computer Associates who spoke on relevant current topics which were of interest to the participants.
 - m) The Chapter in association with CSI Division IV organized a national conference on Business and Industry Group (BIG-2004) on 12th & 13th June, 2004 at Hotel Taj Bengal, Kolkata. The conference was very successful with over 100 participants.
 - n) The CIO Club Meet is an excellent platform where CIOs / Directors / Professors interact among themselves and over the years the same has become very popular with good responses from the sponsors and the participants. During the year the Chapter organized its CIO Club Meets four times which were very successful.
 - o) The Chapter made lot of efforts during the year to increase its membership strength and as a result its membership which was 703 including 144 students as on 30/06/2003 increased to 920 including 338 students as on 30/06/2004.
- ii) Mr Sunil Bakshi of Pune Chapter gave a presentation on the activities of the Chapter during the year. He mentioned that the Chapter hosted the Regional Meeting of the Chapters in the western region which was attended by the representatives of Mumbai, Pune, Nashik, Surat, Aurangabad and Nagpur Chapters. During the year the Chapter conducted fortnightly or monthly technical lecture meetings and quarterly workshops which were focused programs on topics of interest for the benefit of its

members and others. Many of these programs were attended by non CSI members also and their participation helped the Chapter to enroll many of them as CSI members. Also a two-day National Workshop on Software Life Cycle Management was jointly organized by the Chapter in May 2004 at Pune in association with Maharashtra Knowledge Corporation Ltd, a Govt. of Maharashtra undertaking, with the objective of communicating to the IT professionals at large the best practices for Software Development. The workshop offered Basic Building Blocks for improving processes in the ICT organizations. The faculty and students from IT Education who attended the workshop got a unique opportunity to gain valuable insights into the latest Software Development trends in the industry. The Chapter also organized meetings of its CIO Club which have since become very popular with its participants. The two-day Western Region IT Convention was organized in February, 2004 in association with DY Patil Institute of Management & Research, Pimpri, which is having a CSI Student Branch. More than 300 students from different colleges located in the western region participated.

The Chapter made lot of efforts at increasing its membership strength and as a result there were 1512 members including 743 students as on 30/06/2004 as against 1017 members including 418 students as on 30/06/2003.

- iii) Ms Minu U, Vice-Chairperson of Cochin Chapter in her presentation mentioned that the Chapter organized a program in October 2003 on "Online Share Trading" which was presented by Sharekhan, a prominent Share Broking House of Mumbai. Further, the Chapter organized in December 2003 a joint program with Institution of Engineers India, and the Indian Institute of Materials Management on "Transforming Traditional Organisations through IT" It was very well attended by members of all the three institutions. The Chapter also conducted in February 2004 a one day seminar on "Information Technology in Supply Chain Management – Its Challenges" The Chapter could increase its membership strength by 12 individual members during the year to reach 109 members as on 30/06/2004.

The agenda for the meeting had a provision for 3 slots on first come basis, for Chapter presentations. However, after presentations by the above mentioned three

Chapters, the Chapter representatives of Delhi, Ahmedabad, Trivandrum, Lucknow, Allahabad, Coimbatore, Rourkela, Indore, Surat, Mysore and Bangalore Chapters also gave brief presentations on the activities of their Chapters during the year.

Item 9 : Regional / Divisional / International Activities:

This item was not discussed as members were of the view that the same be discussed at the meeting of the Chapter Chairmen and Regional Vice Presidents / Divisional Chairmen.

Item 10 :

- (a) **CSI-2004** : Mr M D Agarwal, CSI-2004 Event Chair, apprised members the hard work and efforts that had gone into organizing CSI-2004 Annual National Convention at Mumbai. He mentioned that the primary effort had been to organize a conference of high quality standards and hence it had been decided not to have the exhibition which is usually associated with the CSI annual convention. He mentioned that the conference program had been designed by Prof N L Sarda, P C Chair, in coordination with the co-chairs with total emphasis on quality of programs. Also, research papers had been accorded high importance. He expressed confidence that even without holding the exhibition which is usually a money spinner and subsidizes the convention, the CSI-2004 will be successful and result in some modest surplus.

Mr V L Mehta, OC Chair, gave brief highlights of the organizational aspects of the convention and also explained in detail the programme schedule which had been published and circulated to all concerned.

- b) **CSI-2005** : President mentioned that the CSI annual national convention was last held in 1995 at Hyderabad, the city of CSI's incorporation and the IT savy and e-Governance capital of India. As almost 10 years have passed since holding the last annual convention at Hyderabad it has been proposed to hold CSI-2005, which is the 40th annual national convention of the Society, at Hyderabad in November 2005.

Dr B R Sastry, Chairman, CSI Hyderabad Chapter, gave a presentation on the proposed theme and plans and organizational aspects for CSI-2005. He mentioned that Hyderabad with a high density of IT professionals is having about 60 engineering colleges and is considered to be the ideal location

for organizing the 40th annual national convention of the Society. In view of the large number of engineering colleges in Hyderabad and the enthusiastic support from students it is expected that students will be the dominating feature of the convention.

Dr Sastry informed that the following members are proposed to be nominated as Chairmen of various committees of CSI-2005.

1. Prof B L Deekshatulu *Chairman, Steering Committee*
2. Col. Vijaya Kumar *Chairman, Organizing Committee*
3. Dr Keshav Nori *Chairman, Programme Committee*
4. Dr V P Gulati *Chairman, Exhibition Committee*
5. Mr Gopalakrishnan *Chairman, Finance Committee*

The national council unanimously endorsed the above names as proposed.

- c) **CSI-2006** : Mr Subimal Kundu, Chairman, CSI Kolkata Chapter informed members that the Chapter since its formation has organized the CSI annual national convention successfully five times. In fact, after organizing CSI-1990 which was CSI's Silver Jubilee Year convention, the Chapter had organized the annual convention in 1994 and 2001 very successfully with excellent participation and support from the industry and the academia. He mentioned that in view of the proven track record of the Chapter in organizing mega conferences successfully and also the fact that Kolkata is having excellent infrastructure for organizing such conferences, especially at the Science City where both the convention and its exhibition can be simultaneously held, the Chapter, which is also having an office space of about 1500 sq. ft. to take care of the back office functions, has offered to host CSI-2006 annual national convention at Kolkata and requested for its approval.

The council unanimously accepted the proposal and recommended its approval by the General Body.

(Proposed by Mr Apoorva Agha and seconded by Prof A K Nayak).

- d) **CSI-2007** : Mr G V Ramesh, Secretary, CSI Vishakapatnam Chapter, briefly mentioned the important events as also other activities conducted by the Chapter during the last few years and expressed the Chapter's interest and willingness to

host CSI-2007 annual national convention. He mentioned that with the support and participation of several major, medium and small industries both in the public and private sectors as also educational institutions located in and around Vishakapatnam the annual national convention if organized at Vishakapatnam, could be quite successful as had happened in the case of other important CSI events organized by the Chapter. Hence, he requested approval of the Chapter's proposal to host CSI-2007 at Vishakapatnam.

President appreciated the interest shown by the Chapter in hosting CSI-2007 and mentioned that for organizing the annual national convention good infrastructure and other facilities are needed and the ExecCom would certainly consider all aspects of the proposal with an open mind and take an appropriate decision.

Item 11 : Chapter Elections and submission of

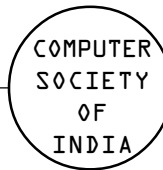
Accounts to HQ : Council was informed that the CSI Chapters at Bhilai, Jaipur, Jabalpur, Kanpur and Raipur in the northern region, Navi Mumbai and Rajkot in the western region, Karaikudi, Salem and Vijayawada in the southern region and Balasore, Cuttack, Guwahati, Jamshedpur, Patna and Siliguri in the eastern region have not yet submitted their audited accounts for FY 2003-'04 to CSI HQ. All these Chapters with the exception of Bhilai, Rajkot, Vijayawada and Patna Chapters have also not submitted their election results. These Chapters have failed to respond despite several reminders and requests from HQ.

Council decided that the above Chapters be given further time till the end of December 2004 to submit their audited accounts and election results to HQ which are pending and in case they fail to submit the same by that date, they be placed on probation in accordance with the provisions of the CSI Constitution & Byelaws as a prelude to revocation.

(Proposed by Dr R K Datta and seconded by Mr S R Karode)

Item 12 : Celebrating 6th March as "CSI Foundation

Day" every year : President mentioned that Computer Society of India was formally established on 6th of March, 1965 and the Society is now into its 40th year since inception. The ExecCom has decided that all Chapters should celebrate 6th March, 2005 as "CSI Foundation Day" to commemorate the Society's 40th Anniversary Day and conduct various programs and activities. ExecCom has further decided that 6th March



will also be celebrated as “CSI Foundation Day” hereafter every year by Chapters by similarly conducting programs and activities.

The Council unanimously ratified the decision of the ExecCom.

(Proposed by Mr P R Rangaswami and seconded by Mr. S R Karode)

Item 13 : Any other Business :

- A) Mr S R Karode, Hon. Secretary, requested that:
 - i) Those CSI Chapters having their own website should ensure that their domain names are properly registered without fail and also renewed whenever due. In this context he mentioned an incident which had taken place due to non registration of the domain name by a Chapter, and desired that such incidents should not recur.
 - ii) Chapters should strictly ensure that only licensed software is used for doing their CSI work. Unlicensed software should not be used at all under any circumstance.
- B) Dr R K Datta suggested that CSI should institute a special award to be given to the best Chapter for

achieving significant and sustained growth of life membership and student membership. The award should be given only after a period of two years of sustained growth in membership.

- C) Mr S R Karode suggested that as a procedure the outgoing Chapter MC should handover all the documents concerning the Chapter to the incoming Chapter MC at the beginning of every year to facilitate continued smooth functioning of the Chapter. Alternatively, these documents can be handed over at the Chapter AGM.
- D) Some members suggested that a list of Guest Speakers should be put on the CSI website so that Chapters can invite them at their cost.

President on behalf of the National Council thanked the Chairman OC, CSI-2004, and CSI Mumbai Chapter for the excellent arrangements for the National Council meeting.

The meeting concluded with a Vote of Thanks to the Chair.

Priyalata Pal
Executive Secretary

✂ Tear Here



Change of Address

Dear CSI Member,

If you have changed address, please inform us in following format

Name _____

CSI Memb. No. _____

New Address _____

Pin Code _____

Chapter Name _____

email address _____

Please send above info to us at **Computer Society of India**, 122, TV Industrial Estate, S. K. Ahire Marg, Worli, Mumbai 400 030, email: csi@bom2.vsnl.net.in



CSI Calendar 2005

June 2005

BIG 2005

Date : 10-11 June 2005

Host : Div. IV & CSI Coimbatore Chapter

For details contact : Apoorva Agha / O A Balasubramanian
apoorvaagha@hotmail.com / oab@roots.co.in

National Conference on IT for Defence

Date : 16-17 June, 2005

Host : Div. III & Bangalore Chapter

Venue : Bangalore

For details contact :

Dr. Swarnalatha R. Rao / Dr. C R Chakravarthy
swarnalatha_rao@yahoo.com / dr_chakra@yahoo.com

November 2005

CSI - 2005 - 40th CSI National Convention

Theme : ICT for National Development

Date : 9-12 Nov 2005, Hyderabad

For details contact : Dr. Shaukat Mirza -
csihyderabad@vsnl.net

Dr. K V Nori - kvnori@tcs.com

December 2005

ADCOM 2005 -

13th International Conference on Advanced Computing & Communications

Date : 14-17 Dec 2005

Venue : Amrita Vishwa Vidyapeetham, Coimbatore

For details contact : Prof B Jayaram-
adcom2005@amrita.edu

P R Rangaswami

Vice President & Chair Conference Committee, CSI



Important HQ News

Have you renewed your membership for the year 2005-2006 ?

"If you have not sent in your Membership Subscription for 2005-2006, then June 2005 will be your last issue of "CSI Communications" and your membership will be suspended accordingly. Please ensure that you send your subscription immediately by filling all the details in the renewal form published on page 42 of this issue

QUOTE MEMBERSHIP NUMBER

*Kindly treat this as
notice under*

Constitution Byelaws 2.5.2

**Renewal Form
on Page 42**

Mr. Satish Khosla, Fellow CSI joins ACS (Affiliated Computer Services Inc. as Vice President of International IT Solutions for Asia Pacific, a premier provider of business process and information technology outsourcing solutions,

Mr. Khosla comes to ACS with 35 years experience in the technology field, including senior positions at both Tata Infotech and Keane India.

Every year a Marathi writer contributing to the field of Science and Technology is honoured with Late V D Savarkar award. This prestigious award is given away on his Birth Anniversary on May 28th.

The award is constituted by the largest and the oldest Public Library in Maharashtra and the selection is done by leading Literary expert panel.

The award for 2004 was announced to **Mr Deepak Shikarpur**, Chairman Division III, IT Applns., who has written 7 books on IT in Marathi. This award was given May 28th 2005 in Pune. Chairman Cosoms Bank Dr M L Abhyankar was the chief guest.



Computer Society of India

Membership Renewal Form

(To be filled in BLOCK LETTERS)

To,
 Executive Secretary,
 Computer Society of India
 122, TV Industrial Estate,
 S.K. Ahire Marg,
 Worli, Mumbai 400 030.

Membership No. : _____ Name : _____
 Address : _____

 City : _____ Pin: _____ State : _____
 Phone : _____ Email : _____

I enclose DD No.: _____ Dt. _____ drawn on (Bank/City) _____
 in favour of **Computer Society of India**, payable at Mumbai for Rs. _____

I have deposited Rs. _____ In UTI current A/C No.060010200003582, in _____
 Branch on _____. (Copy of Paying Slip attached)

I have made the payment for Renewal through ONLINE PAYMENT GATEWAY, available on CSI Website, using my Credit Card / Debit Card. The Transaction ID is _____

Please debit my Visa / Master Card / Diners Club
 Credit Card No. _____
 The Expiry Date for my Credit Card is _____
 M M Y Y

Name as Appearing on the Credit Card

Signature as on the Credit Card

Dues and fees

Due to the recent Amendments in CSI Byelaws, the Membership Year will be April to March. Hence during the Transition period the membership year will be from 1st July, 2005 to 31st March 2006 i.e. for a period of 9 months. Hence those enrolling or renewing from 1st July 2005 will pay for 9 months as under:

Life Membership	Rs.	US\$*
Age below 30 years	4250	720
Age 30 to 39 years	3750	620
Age 40 to 49 years	3000	520
Age 50 years and above	2250	320

Subscription / Renewal Fees

	July 05 to March 06	July 05 to March 07	July 05 to March 08	July 05 to March 09
Individual Membership	300	700	1000	—
Student Membership	150	250	400	550
Institution Membership	3750	—	—	—
Educational Institutions	2250	—	—	—

(10% rebate on life membership is allowed if he/she is a voting member for the previous ten years)

Note :

- A student member should attach Bonafide Certificate from College Principal.
- Members have the option to pay fees for 1,2 and 3 years and any increase in fees if effected after payment, will not be applicable till completion of that period
- Life Membership fees can be paid either in one full installment or in two equal installments, the second installment to be paid within six months of the first or before 30th June whichever is earlier.
- Please attach Xerox copy of your age proof for Life Membership .
- Life Members can avail of photo ID card by paying Rs.100/- by DD along with 2 stamp size coloured photos.
- As an additional facility for payment of CSI membership fee for renewals and also for new membership enrolments, Computer Society of India has opened current account No 060010200003582 at UTI Bank, 264-265, Vaswani Chambers, Dr Annie Besant Road, Worli, Mumbai-400 025.**
- The CSI member concerned should deposit the appropriate amount of membership fee using the bank's paying-in-slip by correctly filling in all the details. Most importantly they have to mention the Membership No., Name, the above mentioned Current Account No. of CSI HQ and the Name of the Branch (Worli) on the basis of which reconciliation can be carried out.**
- The members should send the membership form alongwith photocopy of the paying-in-slip counterfoil containing bank's acknowledgement, to CSI HQ at Mumbai directly or through the local CSI Chapter. The branches of UTI Bank will transfer all such fees received from members to CSI HQ account directly**

Contd. from 2nd cover

the Rural masses in our country, to bring the IT advantage for their overall benefit and growth. He pointed out the significant advantage the use of IT in the Silk industry, can bring to the Rural sector, as a large number of sericulturists and cocoon producers are in the Rural Sector. Prof. M.S.Veerendra Kumar, Chairman, CSI-Mysore Chapter, presented the Vote of Thanks, on behalf of CSI and CSB.

Mr. P R Rangaswami, Vice President, CSI, Mr. Satish Babu, Regional Vice President(South), CSI, as well as several dignitaries from the Silk Sector, participated in the Inaugural Function.

In the technical sessions which followed, as many as seventeen papers were presented, which are listed below:

Technical Session I

- ICT for Developmental Activities: Problems and Prospects by Mr.Satish Babu, Regional Vice President(South), CSI
- IT Applications in Design and Development of Silk Textiles by Dr. Sanjay Gupta, NIFT, New Delhi
- Enhanced Business Efficiency through IT for the Silk Industry by Mr. H.R.Srikanta Sharma, M/s Source Code International
- Mr.William D'Souza, Manager Marketing and Mr.Srivastav, Canbank Computer Services, Bangalore
- Farm Management System for Coffee Plantations – GIS Approach by Dr.Babu Reddy, Coffee Board, Bangalore

Technical Session II

- Recent Technologies in Sericulture and Information Technology Needs by Dr.S.B. Dandin, Director, CSRTI, Mysore
- Information Technology: Role and Impact of Commercialization of Technologies by Mr.Raghuram, Regional Manager, National Research Development Corporation, Bangalore
- Information Technology in Human Resource Development by Mr. Gururaj Kharajgi, Director, Jain Institute of Technology

- Bioinformatics and Biotechnology in Sericulture by Dr Sunil Archak, CDFD
- Experiences of Computerization in Silk Industry by Mr.H.A. Nagaraja Rao, Additional Director(Retd), DOS,Bangalore

Technical Session III

- Application of IT for Market Information Systems for Silk Industry by Dr. Lalith Achyut, Associate Professor, UAS, Bangalore
- Integrated ICT Solutions for the Textile Industry by Mr. R. Mittal, Texcad, New Delhi
- Knowledge Management and On-line Trading by Mr.Guruprasad, M/s SIQUELL, Bangalore
- IT in Extensions by Mr.Ramesh
- IBM Initiatives for Software Development for Social Issues by Mr.Zahir, IBM, Bangalore
- IT in Bioinformatics by Mr.Kumaresan, CSRTI, Mysore

Plenary Session

- Fundamentals of Digital Textile Printing by Prof. N. Chandrashekar, Senior Vice President(Technical), Manipal Enterprises & Pro-Vice Chancellor, MAHE

On the first day, a visit to the various departments of Central Sericultural Research and Training Institute, Mysore, was arranged. On the second day, a visit to the silk factory of Karnataka Silk Industries Corporation (KSIC), at Mysore was arranged, where the latest processes in dyeing and weaving of the Mysore Silk Sarees was demonstrated.

Mr.Ashok Kololgi, Past Chairman, CSI-Bangalore Chapter and Joint Director(Comp), Central Silk Board, Bangalore, being from both the organizations, rendered immense help to make the two organizations work together, resulting in this excellent conference. The dedication and efforts put in by Central Silk Board, Bangalore, Central Silk Research Institute, Bangalore, Central Sericultural Research and Training Institute, Mysore and CSI Mysore Chapter, are highly commendable. The conference was a memorable one and was highly beneficial to the participants.

From CSI Chapters

AHMEDABAD

The Chapter celebrated 37th World Telecommunication Day in association with IETE and IE(I) on May 17, 2005 by arranging a public lecture on the theme: "Creating an Equitable Information Society: Time for Action". Padmashri Dr. K N Shankara delivered a lecture on Digital Divide and Mr. A R Dasgupta delivered a lecture on "Technologies for Telemedicine".

BHOPAL

The Chapter, under its initiative of "IT for Masses" organized an expert lecture on 17th May 2005 at Hotel Residency in Joint association with MP State Electronics Development Corpt., Government of Madhya Pradesh. The topic of the lecture was - "Data Mining for Bioinformatics: Technology and Applications"

Dr. Sumeet Dua, Assistant Professor of Computer Science, College of Engineering and Science, Louisiana Tech University, Ruston, LA-71270, delivered the lecture. Dr. Dua, an expert in this field and with several books, papers and researches to his credit. He has won several distinguished awards in his field right from his student days.

The program was attended by members from various disciplines and background, including CSI

members, professors and students from technical institutes, IT users from private and corporate world, and CIO's from the Government department.

During his visit, he met people who were interested in understanding potential collaborative research opportunities and advised students on latest educational opportunities available abroad.

The event was a great success and the lecture enlightened the audience on the subject and gave every body present, an opportunity to know more and deeply about the latest technology and its applications which has improved our vision and life.

Student Branches

BHARATI VIDYAPEETH, NEW DELHI

MCA 2nd year students, Mr. Manish Sehgal, Ms. Ritika Bhutiani, Mr. Aashoo Bhalla of CSI Student Branch of Bharati Vidyapeeth's Institute of Computer Applications and Management Affiliated to Guru Gobind Singh Indraprastha University, New Delhi have won the 2nd Prize for Project Management Plan submitted on "Interlinking of National Rivers" in the National Level Project Planning Competition organised by Project Management Institute, Pearl City Chapter Hyderabad, at ISB, Hyderabad, out of a total of around 100 participating teams. This was one of the pre-conference activities of the Asia Pacific Project Management-2005 held during 15th-17th April, 2005, as a part of Project Management Competency



Bharati Vidyapeeth, Delhi : Felicitating function for the students of Bharati Vidyapeeth's Institute of Computer Applns. and Mgmt.

Development Programme for students at National Level. The other two teams of the Institute have also been ranked as 5th and 7th in the competition. The Institute has also been awarded a Trophy in recognition of its overall participation in the programme.

The Student Branch celebrated a Felicitation function on 26th April, 2005 to acknowledge the sincere academic efforts put in by the students under the guidance of their Faculty Members. Dr. M N Hoda, Director of the Institute, highlighted the achievement of the Institute in last three years. He discussed that the challenges in IT industry to deliver the projects within cost, within time and every time is tougher than any other industry.

Mr. Murthy Kosuri, GM, e-Zure Services Pvt. Ltd., was the Guest of Honour. He discussed the genesis and importance of this programme with reference to the ongoing corporate need in the domain of Project Management.

Dr. M N Faruqui, Former Vice Chancellor, AMU, Aligarh & Former Dy. Director, IIT, Kharagpur, was the Chief Guest.

Students, faculty and invited corporates participated in significant numbers.

*R*VCE, BANGALORE

The CSI student branch of RVCE, Bangalore organized a Technical Talk on "Embedded Systems" on 07-05-2005 in CSE Department Seminar Hall. Mr. S R Subba Rao Ex ADE person gave a talk. Prof. B I Khodanpur, HOD of CSE welcomed the speaker.

Mr. Subba Rao in his talk stressed upon the role of Embedded controllers in many of the day to day operating items. He also opined that without embedded systems many things will become standstill and obsolete. To conclude the

session he touched upon his involvement in LCA and how they used Software Engineering concepts in developing this LCA system. The Talk was very informative & interactive, well attended by more than 120 members.

Finally Prof. Shantharam Nayak of CSE dept (MC member CSI-BC) summarized the talk and proposed the vote of thanks. Mr. Vinayak Hebbar handed over a memento to the speaker. Mr. T N Seetaramu MC member CSI-BC was also present on the occasion.

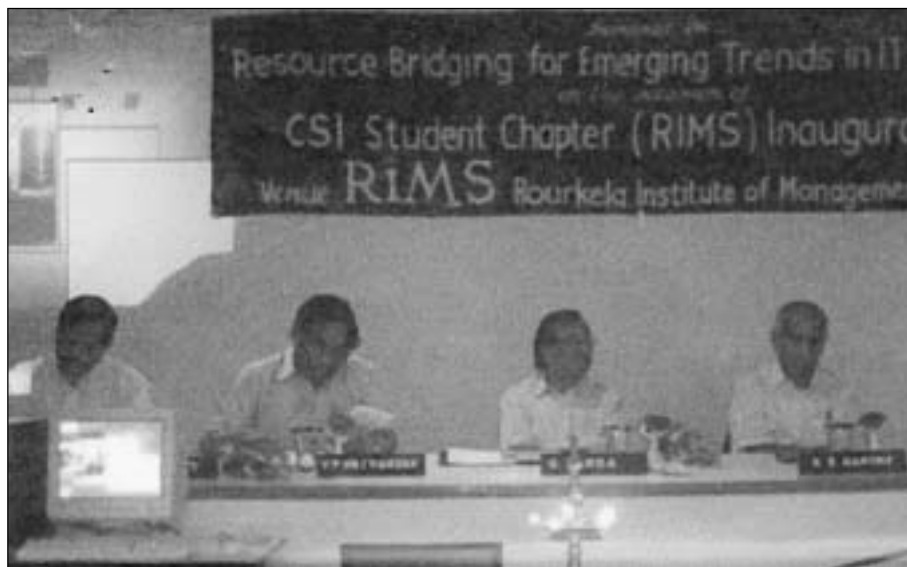
*R*IMS, ROURKELA

The CSI student branch of RIMS was formerly inaugurated on 13th April, 2005 at RIMS Campus. A seminar titled "Resource Bridging for the Emerging Trends in the IT Industry" was organised on this occasion. The function was presided by Prof. S S Sastry of RIMS. Mr. V P Srivastava, Chairman CSI Rourkela Chapter was the Chief Guest, Prof. Ganapati Panda, Dean (Administration) NIT, Rourkela was the Chief Speaker and Mr. Sanjay Mohanty, Secretary CSI, Rourkela Chapter was the Guest of Honour for the occasion. All the faculty members, students of RIMS & Mr.

Sreekumar the student counsellor was also present on the occasion.

Mr. Sreekumar, Dean Academics and the student counselor in his speech elaborated on the objectives of CSI and the way the CSI Student Branch at RIMS will help the students and others in developing their knowledge base.

Speaking on this occasion Chairman of the CSI Rourkela Chapter Mr. V P Srivastav said how the CSI has been spreading message of Technical Development in the IT Sector through the Conferences, Conventions for the students as well as for the professionals. He also elaborated on the industry expectation from the computer science graduates & how CSI can help in bridging the gap through different steps like interactions between students & technocrats from industry. Guest of honour, Mr. Sanjay Mohanty, Secretary CSI Rourkela Chapter emphasised on the role of CSI in the development of the outlook of the student towards growth of IT in the country. He also expressed satisfaction over the initiative made by the RIMS towards this cause and advised the students to continue their membership even after completion of these courses. He assured all the



RIMS, Rourkela : Inauguration of CSI Student Branch

supports to the student branch from
CSI Rourkela Chapter.

Prof. Dr. Ganapati Panda Chief
Speaker for the occasion
enlightened the students about
various upcoming fields like
forecasting about the performance of
financial markets, Digital image
processing, Data Compression,
Mobile computing Data Mining,

Cryptography, Water Marking, Soft
Computing, etc. On this occasion 4
paper presentation were made by
the MCA students on the topics-
Cryptography, data-mining, e-
Business & Data re-engineering.

At the end computer application
faculties interacted with the
experts in the question answering
sessions.



Executive Committee (2004-2005) meeting in progress at Chennai on 23rd & 24th April, 2005



*Members of Executive Committee visited CSI Education Directorate, Chennai on 24th April, 2005.
Group photo taken on the occasion with the Hon. Director & staff members.*

Obituary



Mr. B D Shriyan

With deep sense of grief & sorrow, Computer Society of India and CSI Ahmedabad Chapter expresses its condolences on the sad demise of veteran Mr. B D Shriyan. He left for heavenly abode on April 13, 2005.

He was a founder member of CSI Ahmedabad Chapter and shouldered many positions at Chapter level. He was organising Chair of CSI-75. He was instrumental in organising the Business and Industry Group (BIG) convention in 1979. He is a Fellow of CSI that was conferred during 32nd Annual Convention. His contribution to the professional societies at both National and Chapter level was very significant. He retired in 2002 as Senior Vice President from Reliance Industries Limited.

We all pray for eternal peace for the departed soul.

Correction

On Pg 45 of May 05, CSIC, the photo caption "KNIT Allahabad" should be replaced with "K K Wagh Engg. College, Nashik.

Error is regretted.