T V Gopal
The 'Faith' factor in the Internet World

Abstract:

The author opines that the most creative use of Information and Communications Technology (ICT) in development may not entail computers, e-mail, or Internet access, but rather the use of other computer-based technologies, including embedded chips, satellite based information and so on to better meet local needs. The solutions must be affordable.

Some of the major challenges in developing local solutions based on ICT are Bridging the Digital Divide, Trustworthiness, Protecting Intellectual Property, Information Assurance, Privacy, Hacking , Viruses and Worms.

The solutions for these challenges are 'People-Centric' and are thus influenced by the "personal" and "professional" ethics of individuals. All the challenges cited above lead to many ethical issues. Internet being a global phenomenon the ethical issues need to be examined in Intercultural perspective. The author suggests that 'faith' of people is the key in meeting the challenges in developing local solutions.

Agenda

Major Challenges
    Digital Divide
    Trustworthiness
    Protecting Intellectual Property
    Information Assurance
    Computer Crime

'FAITH' as the Primary Preventive
    Ten Commandments of Computer Ethics
    Tacit Knowledge
    Faith
    'Faith' and Indic Scriptures
    Conclusion

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Major Challenges

Digital Divide

The first major challenge is the "Digital Divide". In India there are as many as four types of digital divides to reckon with.

The first divide is that which exists within every nation, industrialized or developing , between those who are rich, educated, and powerful, and those who are not.

A second digital divide, less often noted, is linguistic and cultural. For Indians who speak no (or little) English, the barriers to the Information Age are almost impossible to surmount. Local language and local content are essential. However, the pace of work in the area of "Language Technologies" is painstakingly slow.

The third digital divide follows inevitably from the first two -- it is the growing digital gap between the rich and the poor nations.

The fourth divide is that which is emerging between the elite few beneficiaries of the lucrative technologies such as ICT and equally talented many who studied other less lucrative but equally important areas of science and technology. In the US this is not the situation. The hourly wages of a Physicist [US $ 33.23] and a Chemical Engineer [US $ 29.44] are higher than those of a Computer Programmer [US $ 25.67]. We cannot simply assume that a flourishing ICT sector will trickle down riches to the rest of the people.

The Digital Divide impacts upon:

- People, Institutions, Businesses
- Medicine, Health Care, Education
- Economies (local, state, national, international/global)
- Content and Digitization (racial/cultural)
- Democratic Participation
- Quality of Life

The digital divide, as a whole, remains an enormous and complicated issue - heavily interwoven with the issues of race, education, and poverty. Finding ways to bridge the Digital Divide is a very tough task. It is a multi-dimensional problem, and thus requires an effective solution on many different levels.

The Internet has grown for a long time without too much regulation. In particular, the management of Internet names and addresses is considered as critical to the stability and inter-operability of the Internet. The allocation of domain names is of utmost significance for the organizations concerned, users and trademark owners. The debate is now lively because the key issue is "What kind of regulation?" Rules by governments or self-regulation by business and users?.

The internet governance methodology must address the following issues:

- **Equity in the right of access ("universal service") :** making information universally accessible and affordable. Access to information is crucial for education, public health, …; its accessibility to all will be a sign of democracy. The current situation cannot be considered as equitable.

- **Questions linked to the respect of the dignity of the person** (protection of minors and human dignity; illegal and harmful content on the Internet, paedophilia, racial hate, denial of crimes against humanity, incitement to murder, to drug trafficking, to riot, …) : Many national and international organizations are preoccupied by the deleterious influence that the Internet could have in such matters. The time has come to confront the different ethics and approaches to these issues and to harmonise the practices, and combat such scourges.

- **Justice and social exclusion (mainly North-South, but also work distribution, …) :** Social exclusion is unfortunately a concept which is still fully relevant when speaking about the Information Highways: there, we observe discrimination and exclusion of the elderly, gender imbalance, …

- **Respect for the interests and the rights of the persons :** The Universal Declaration of Human Rights includes rights which can have an application in the field of ICT: privacy (art. 12), freedom of thought (art. 18), free speech,freedom to seek, receive and impart information and ideas (art. 19), … This makes sense when we know that there are still 45 countries where access to the Internet is more or less strictly controlled.

- **Free speech / censorship** : On the Internet, how to find a relevant balance between free speech and censorship(sensu lato, i.e., any kind of control)?

- **Quality of life :** The "whole person" - Does technology lead to an imbalance in mind, body, spirit? Teleworking is cutting into family time, vacations, leisure, weakening the traditional institutions of family and friends and blurring the line between public and private life.

- **Right to information ("transparency") :** The role of information in the relationship between the citizen and the administration as well as in an effective market requires that clear and sufficient information be given to the citizen or to the consumer.

- **Personal qualities (honesty, competence, ...)**

- **Non-abuse of power (appropriate use)**

- **Respect for cultural differences :** In the face of U.S. cultural supremacy in many domains (for instance in values conveyed by current filtering services), European, Asian, Latin American, and African countries must be encouraged to make respect for cultural differences a major concern.

- **Freedom of choice in the use or non-use of the Internet** :

- **Grounding "virtual" life in the physical realm** : Many people are concerned that the increasing importance of 'virtual life' will have serious psychological and social implications.

The issues cited above involve the ethical behavior of the netizens. The nature of regulation can be determined by the 'ethical behavioral patterns' of the netizens.

Trustworthiness

There are two facets of 'trustworthiness'. The first is to do with the Networked Information System (NIS) infrastructure. The high availability of the NIS is critical. The second is to do with Internet Trade.

Typically, in Internet Trade, the seller posts a description and price of the item to be sold. A willing buyer sends the money to the seller and awaits the shipment. With no rigorous outside controls, the seller may not ship the item or ships a low quality item. Anticipating this moral hazard, the buyers may

not buy on the net. This trust dilemma needs to be navigated in Internet trade.

Trust is a long-term proposition that builds slowly as people use a site, get good results, and don't feel let down or cheated. In other words, true trust comes from experiences of customers over an extended set of encounters. Trust is hard to build and easy to lose. A single violation of trust can destroy credibility accumulated over years. Lack of trust in online companies is a primary reason why many web users do not shop online.

The following questions need to be answered to assess the trustworthiness of a company doing e-business.

- Is the information truthful and accurate?
- Is it easy to contact the company?
- Are there privacy and security statements?
- Are terms of the sale clearly disclosed?
- Does the site promise customer satisfaction?

The most important determinant of initial perceptions regarding a company's trustworthiness is how well customers believe the company will protect their privacy. Also significant is the perceived usefulness of the company's web site. Other important determinants include perceived company reputation, the company's willingness to customize, and perceived security control of the web site. The decision to purchase is dependant on several factors including :

a. perceptions about the company's characteristics: company size, company reputation, initial company trustworthiness

b. perceptions about the company's actions: willingness to customize, information sharing, privacy control

c. perceptions about the company's web site: usefulness, ease of use, security control

Protecting Intellectual Property

Intellectual property refers to work created by inventors, authors and artists. Intellectual property rights are the right to which creators are entitled for their inventions, writings and works of arts. A **copyright** gives authors and artists, authors exclusive rights to duplicate, publish and sell their materials. **Copyright Infringement** is the act of using material from a copyrighted source without getting permission to do so. This is

rampant in the Internet world today. 38% of all software worldwide is copied

Information Assurance

Organizations world over are flooded with information and are actively evolving ways and means of structuring, organizing, labeling, finding and managing information.

The following costs and value propositions are becoming increasingly important.

- The cost of finding information
- The cost of not finding information
- The value of educating the customers about information products and services
- The cost of constructing an information system
- The cost of maintenance
- The cost of training

Information Assurance is conducting the operations that protect and defend information and information systems by ensuring availability, integrity, authentication, confidentiality, and non-repudiation.

Availability is the state where information is in the place needed by the user, at the time the user needs it, and in the form needed by the user. **Integrity** ensures that information available is sound, unimpaired, or in perfect condition. **Authentication** is to verify the identity of the user, device, or other entity in a computer system, often as a prerequisite to allowing access to resources in a system. **Confidentiality** is the concept of holding sensitive data in confidence, limited to an appropriate set of individuals or organizations. **Non-repudiation** is a service that provides proof of the integrity and origin of data, both in an unforgeable relationship, which can be verified by any third party at any time; or, an authentication that with high assurance can be asserted to be genuine, and that cannot subsequently be refuted.

Writing a page for the World Wide Web is a child's play today. Millions of pages of information thus get onto the web every day. More and more professionals are relying on the WWW for any form of information. The key difficulty if ascertaining the authenticity of the information fetched from the WWW. The key problem is to prevent spurious information getting into the cyberspace.

Coming to the specific context of students and researchers, traditional information repositories such as the libraries resulted from a careful selection of information that could be housed therein. The users of a library can thus be assured of atleast factually correct information to hasten the process of knowledge acquisition. This feeling is a luxury on the web. Registering the domain names and hosting the web pages on the WWW is highly simplified and does not cost much. The following aspects appear to provide a sense of assurance to the users of WWW.

1. Information Assurance is a Function of Time and Specific to Formal Characteristics of Sites.

2. Six Fundamental "Forms" Communicate the assurance :

   - brand,
   - navigation,
   - fulfillment,
   - presentation,
   - up-to-date technology and
   - the logos of security guaranteeing organizations

3. Users begin seeing the world of the Web as one of chaos, offering both possibilities and threats. Only after a reasonable period of experience they believe they have secured control over the navigation and start believing the content.

4. Effective Navigation is Generally a Precondition to Communicating Trust and the Perception that Sites Meet user needs even if the user does not have a clear idea of his needs. Effective navigation is by far the simplest way of establishing a new site and its content.

5. Web-Based Seals of Approval Matter More than Credit Card Brands in Communicating Trustworthiness.

6. The Most Trusted Web Brands Are Well-Known Brands. Only well established institutions stand a chance of convincing the user about the quality of the content.

7. Information Assurance Isn't the Most Important Attribute a Site Can Possess. It is a fundamental aspect amongst many other factors.

8. Clearly-Stated Policies, Limited Information Requests and Guarantees are Keys to Future Growth in Information Assurance.

9. Users expect the web to be like the present mode of an organizational behavior.

10. Brand Now Matters More than Medium.

Computer Crime

A computer crime is any illegal activity using computer software, data or access as the object, subject or instrument of the crime. Computer crimes costs more than US $20 Billion dollars a year. About 80% of all computer crimes happen from within the company. Over 60% of all computer crimes go unreported. Common crimes include:

- Credit card fraud
- Making long distance calls
- Unauthorized access to confidential files
- Stealing hardware
- Selling information or intellectual property
- Software piracy
- Hacking
- Viruses and Worms
- Identity theftDisruption of network traffic

A false sense of 'anonymity' seems to be abetting computer crime. In the internet world, there is a gap between the IP address of the machine and the person using the machine. A typical netizen is aware that only the IP address or the corresponding machine from which a crime has been committed can be traced. A 'log' of computer usage is thus becoming vital to deter cyber criminals.

'FAITH' as the Primary Preventive

The solutions for these challenges are 'People-Centric' and are thus influenced by the "personal" and "professional" ethics of individuals. All the challenges cited above lead to many ethical issues. Internet being a global phenomenon the ethical issues need to be examined in Intercultural perspective.

Ten Commandments of Computer Ethics

A commonly cited reference is the 'Ten Commandments of Computer Ethics' written by the Computer Ethics Institute that is reproduced below.

- Thou shalt not use a computer to harm other people.
- Thou shalt not interfere with other people's computer work.
- Thou shalt not snoop around in other people's computer files.
- Thou shalt not use a computer to steal.
- Thou shalt not use a computer to bear false witness.
- Thou shalt not copy or use proprietary software for which you have not paid.
- Thou shalt not use other people's computer resources without authorization or proper compensation.
- Thou shalt not appropriate other people's intellectual output.
- Thou shalt think about the social consequences of the program you are writing or the system you are designing.
- Thou shalt always use a computer in ways that insure consideration and respect for your fellow humans

The real challenge is to ensure that every netizen behaves as envisaged in the above set of doctrines.

Tacit Knowledge

There is a vast body of knowledge that cannot be captured explicitly in the form of books, formulae, web content or derived from formal analysis. This body of knowledge is termed as 'tacit knowledge'. Tacit knowledge is generated through personal experiences and/or by inherently personal qualities and competence. Tacit knowledge involves intangible factors embedded in personal beliefs, experiences, values and ethics. This plays a major role in providing effective ICT based solutions.

Personal convictions develop from family, community, education, religious/spiritual upbringing, and peer influence. The general perception is that the same yardstick cannot be applied for both personal and professional lives. Increasingly, the courts are concurring with this position.

The implication is that the private conduct is not evaluated as long as the job performance is not degraded. However, a subset of morals are perhaps important for the individual to demonstrate high standards of professionalism and command respect as a leader in the professional life. This blurs the distinction between 'personal' and 'professional' ethics.

The author observes that individuals are intrinsically good. Yet, the present day internet scenario is chaotic. The reason for this is not entirely technology. Faith simply defined is belief without reason and is thus anti-theitic to the current approaches and methodologies in science and technology. Repeatability is the cornerstone of scientific proofs. Repeatability has to be demonstrated by same or different individual observers. Science and technology do not take the individualistic aspects that border on spiritualism (faith in) of the individual into account.

Faith

Faith as on date has not been integrated into the scientific methodology. As a result individual's faith in oneself, in the society, in the nation and in the world has rapidly eroded. This attribute of individuals needs urgent resurrection. The author opines that 'preventive solutions' for many of the challenges cited above would then become feasible.

Curiously, in the late twentieth century, even agnostic cosmologists like Stephen Hawking—who is often compared with Einstein—pose metascientific questions concerning a Creator and the cosmos, which science per se is unable to answer. Several leading scientists of the last century expressed similar views. The author opines that science has to address the notion of 'faith' at the earliest.

Indian ethos has been prescriptive of good and bad. Goal setting was not considered entirely free from unethical practices. In fact, the modern theory of anomie predicts the formation of internal pressures within organizations for deviance from ethical practices. Choice of a deviant means to achieve an end is more likely when achievement of goals is emphasized.

'Faith' is the key deterrent in arresting the decay of values in people. Today, the notion of 'faith' is unfortunately confined to the framework defined by religion. Hence, the approach being suggested by the author is 'Sociological'. As there are many faiths across the globe, the intercultural issues need to be understood.

The English word "religion" is derived from the Latin word "*religo*" which means "*good faith*," "*ritual*," and other similar meanings.

Defining the word "*religion*" is fraught with difficulty. Dictionaries have made many attempts to define the word *religion*:

1. **Barnes & Noble (Cambridge) Encyclopedia** (1990): *"...no single definition will suffice to encompass the varied sets of traditions, practices, and ideas which constitute different religions."*

2. **The Concise Oxford Dictionary** (1990): *"Human recognition of superhuman controlling power and especially of a personal God entitled to obedience"* That definition would not consider some <u>Buddhist</u> sects as religions. Many <u>Unitarian Universalists</u> are excluded by this description. Strictly interpreted, it would also reject polytheistic religions, since it refers to "*a*" personal God."

3. **Webster's New World Dictionary** (Third College Edition): *"any specific system of belief and worship, often involving a code of ethics and a philosophy."* This definition would exclude religions that do not engage in worship. It implies that there are two important components to religion:

   – one's belief and worship in a deity or deities
   – one's ethical behavior towards other persons

There is essentially no consensus among religions on any factor related to:

- religious belief, ritual, organization
- family structure

Non-theistic ethical and philosophic systems also exhibit a wide range of beliefs. But there is near unanimity of opinion among almost all religions, ethical systems and philosophies that each person should treat others in a decent manner. This is called *Ethic of Reciprocity*. It is often expressed as "*Do onto others as you would wish them do onto you.*" It is a basic tenant in almost all religions: Christian, Hindu, Jewish,Confucian, Buddhist, Muslim.

A logical development of this *Ethic* is the principle that each individual is of equal worth, simply because they are human. The United Nations has formalized this developing consensus as *Universal Declaration of Human Rights* (UDHR).

The Preamble of the UDHR starts by referring to the rights of all humans: "*Whereas recognition of the inherent dignity and of the equal and inalienable*

rights of all members of the human family is the foundation of freedom, justice and peace in the world..."

It ends by stating that the UDHR is "*a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms.*"

Some pertinent articles of the UDHR are given below.

> **Article 1:** *"All human beings are born free and equal in dignity and rights."*

> **Article 2:** *"Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status."*

> **Article 7:** *"All are equal before the law and are entitled without any discrimination to equal protection of the law.*

Thus the three virtues inculcated by all religions are:

- Humility: to regard oneself as fully one, but not more than one.
- Charity: to consider one's neighbor to be as fully one as you are.
- Veracity: the capacity to see things exactly as they are, freed from subjective distortions.

'Faith' induces in an individual

- A refined sense of moral imagination
- A proclivity to recognizing ethical issues
- An aptitude to hone the necessary analytical skills
- A higher sense of responsibility
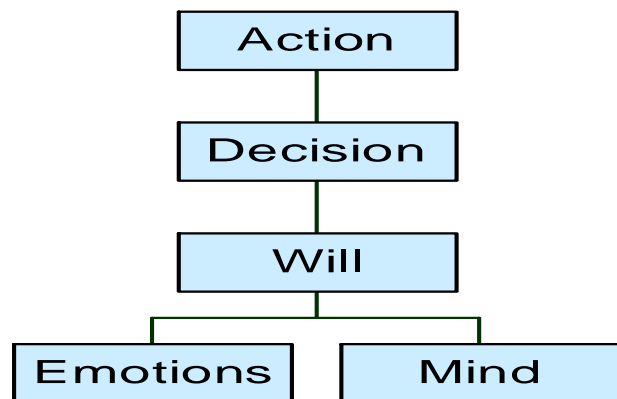- Tolerance for disagreement and ambiguity

Figure 1 Simple Model of a Person

'Faith' breeds the following virtues that determine the final actions of an individual.

- Prudence (mind): to think about a moral problem clearly and completely
- Temperance (emotions): control attraction to positive emotions
- Fortitude (emotions): control aversion for negative emotions
- Justice (will): choose according to truth and fairness.

Obviously, 'Faith' is a primary preventive. Character and Courage should finely blend with the competence of an individual to provide the necessary clarity of thought and confidence to act ethically. This process is greatly facilitated by the notion of 'Faith'.

'Faith' and Indic Scriptures

Every civilization produced visionaries who had the innate urge to uplift their fellow beings. They have designed ways and means of development. A few individuals produced startling effects on otherwise declining or perishing societies. The cause for this innate urge is dependent on several factors that range from suffering to divine grace. It is not rare that these people are either treated as gods or messengers of gods depending on the prevalent customs and practices.

Voltaire, an eminent French thinker, goes to the extent of suggesting that a society has to invent a god if they do not have one already. Thus gods in every society encapsulate certain qualities that can be inculcated in individuals through faith and diligence. The author refers to these everlasting qualities as 'Godliness'.

Max Mueller testified that India is the fountain-head of philosophical thought and that in the Indian religious scriptures [Indic Scriptures] may be found references to every philosophical conception that the western mind has since evolved.

Indic scriptures go beyond human beings in search of Godliness. This is recognized in all beings right from Brahma to Ant [Brahma Pipilikadi Paryantam]. The common denominator of all these beings is 'Chetana'. Lord Krishna asserts in Bhagawadh Geetha that he is the chetana in living beings. The scriptures permit one to choose a deity and attaining the corresponding godliness or unison with that deity. This state of (mind) achievement is often termed self-realisation. The process of achieving this state of mind is called 'Tapas'. The descriptives about the deities are found in the Four Vedas, Upanishads [10 of them are considered very prominent] and Puranas [18 of them are considered very prominent].

For one who tries to understand control of mind it is understood as

> *"Yato manah tato buddhihi"*

The implication is that the 'manas' [seat of emotions] needs to be controlled through 'tapas' to gain control of the mind. Faith is the conerstone of the process called 'tapas'. Recitation of hymns (mantras) and/or practicing yogic postures catalyses the process.

The process of tapas is believed to awaken certain dormant forces in the human body. These forces release a special form of energy that reaches the brain through certain 'psychic centers'. Modern science has neither proved nor disproved these claims vividly recorded in various Indic scriptures. The culmination of tapas is a highly energetic and excellent individual.

Conclusion

It is useful to observe that every religion has faith in the almighty as its foundation. History of mankind is replete with noble souls who served as role models to induce faith into large societies. However, retaining the same intensity of faith and handing it over to the future generations is a tough challenge. Faith erodes when the very existence of its sources including the notion of God is questioned. This erosion needs to be checked to ensure that every 'netizen' addresses the challenges posed by ICT mentioned in this paper in an ethical manner.

In summary, the author observes that 'faith' instills the following attributes in a 'netizen'.

- Sensitivity to the feelings and emotions of other netizens
- Empathy for fellow netizens
- Responsiveness to the changing demands of the Internet World
- Integrity
- Commitment
- Excellence

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