



Impact of IT Ethics on various section of Indian Society

A term paper by

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Abstract

With emergence of IT and IT being present in every part of the society whether ticketing, getting a gas connection, dealing with bank, trading stocks, paying bill, doing education, applying for a pan card, voters card, pass port etc. you name it, IT plays a big role in all these and hence affect all parts of the society that uses IT to do any of these jobs, all these need to be done right way that the society perceives to be correct. Any wrong doing will affect a larger section of the society and the result can be irreversible.

Introduction

India, the most diversified country in the world, whose population goes beyond one billion; whose culture, food habits, language changes from region to region. The only way to keep the society bonded is through their beliefs, integrity and religion, where Ram Rajya, Maryada Purshottam Ram are being taken as their idol from an ethical point of view that has impacted different sections of the society.

India has survived for the last 5000 years and with time, the people's want and expectations have changed drastically where people have become more materialistic and greedy.

With emergence of Information communication technology (ICT) in the 21st century, IT (information technology) has provided a whole new opportunity along with its share of issues to the people of the society and at the same time, it has tested the ethics of the people.

A company is built by the people, is for the people and is of the people. Business has embraced IT for the enablement of better product, service, efficiency and transparency. With the introduction of IT, ethics related to IT were also introduced to enforce the right and wrong in IT.

So in this paper, team will try to highlight the Impact of IT ethics on different sections of Indian society in both ways. This will not cover corporate ethics, but it may refer to some examples related to corporate ethics as IT ethics and corporate ethics go hand in hand in today's world.

Ethics

Ethics, also known as **moral philosophy**, is a branch of [philosophy](#) that involves systematizing, defending, and recommending concepts of right and wrong conduct. The term comes from the Greek word [ethos](#), which means "character". Ethics is a complement to [Aesthetics](#) in the philosophy field of [Axiology](#). In philosophy, ethics studies the moral behavior in humans, and how one should act.

Ethics may be divided into four major areas of study.

- [Meta-ethics](#), about the theoretical meaning and reference of moral propositions and how their truth values (if any) may be determined;
- [Normative ethics](#), about the practical means of determining a moral course of action;
- [Applied ethics](#), about how moral outcomes can be achieved in specific situations;
- [Descriptive ethics](#), also known as comparative ethics, is the study of people's beliefs about morality

(Sourced from Wikipedia – Ethics)

IT Ethics

Ethics in Information technology are related to the following

1. Data Governance
2. Copyright violation
3. Usage of computer
4. Email and Internet usage policy
5. Sniffing
6. Usage of explicit information from other companies to your gain
7. Spam / unsolicited email / Sexual harassment
8. Phishing
9. Computer Program and its affect
10. Transparency
11. Acceptance of gifts – Promoting fairness
12. Legal Binding – No place for negligence
13. Volunteer Time off – Giving back to society (VTO)
14. Green Technology Initiatives – IT Sustainable Computing

Data Governance – Gaining the trust factor of society

In today's world, the success of any business depends on having the right information at the right time at the right place to take informative decision. So to provide the right information, there is a need to have the right data. Data is expensive the way it is captured, stored, managed and shared. In health industry or banking industry, having the right data about the subject / customer is key to the success of the business. Once this data is captured, it is the IT of the company accountable and responsible for the security of the data as well as the availability of the data to the people on a need to know basis. IT department of the company to facilitate a process for audit tracking about the person having access to the data and a picture of the previous state and the current state of the data after change (SOX compliance). This will provide a sense of security and comfort to the owner of the data and this makes sure that the data is secured and not shared nor sold to any third party. Once this trust is gained in the society, then there will be more and more people from the different part of the society becoming part of the IT revolution. Once more and more people join, then the digital divide in the society will decrease.

Here is an instance where the TOI reported data theft issue which did not put a good picture of IT in the society.... Trust is lost on IT by the people of the society. The damage to the company brand and the IT sector is extremely high and the loss to the company can be extremely high. There are instances where the company has been closed down.

http://articles.timesofindia.indiatimes.com/2004-10-05/lucknow/27153745_1_gis-mapping-data-theft-scientist-couple

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http://articles.timesofindia.indiatimes.com/2012-10-14/chennai/34448365_1_cyber-crime-data-mobile-phone

NetApp, world leading provider for data storage, where a lot of emphasis and training is given to the IT personnel on ethics related to the importance of data and its value and what loss can the company incurred and what it would happen the trust of the shareholder, customer, supplier, employee as well as to the society, when the security on data is compromised.

Copyright Violation – Loss in revenue and dirty picture of the society

We are told and made to follow, “Nothing comes free, whether tangible or intangible, everything has a cost attached to it, it can be direct cost or indirect cost”. As long as this is understood, it is going to have a positive impact in every aspect of life as well as in the society. Copyright – A person or a company spend their life time to build a process / product and they look to make financial gain out of it and nothing wrong with that. It is when people start copying the product (could be an application SW) and make use for their financial gain, it is extremely unethical. India as a country has built the reputation of lack of strict copyright law, where people download songs / copy software and because of this there are companies who are afraid to make their products and software available in India, hence the software is provided on a remote desktop for the people from India to work on it. To change the picture of India, we in our company are strictly given guidelines not to download any software, songs unless it is open source. The company does a full scan of the computer from time to time to make sure that there is no illegal software as well as there is no copyright violation. Once people understand the copyright violation is a serious crime and the punishment can be severe, this will discourage people to follow the right path and this in turn will lead to more innovation as well as people, company getting their due, credit for their work. The economy of the industry will change and this will also have a positive impact on the economy of the Indian society not only on SW but also in literatures, movies etc.

In IT Industry, India, Hyderabad has earned the perception that, this is the place, where you can get any pirated software at a fraction of cost of the software.

Here is a link to loss in revenue worldwide due to copyright violation (piracy).....

<http://www.dailytech.com/Report+501B+Lost+Globally+to+Software+Piracy/article18350.htm>

Usage of Computer – email – internet – Company Asset vs. Personal asset

Using other's computer and office computer for personal gain is a conflict of interest. This gives the notion, it's OK to use others computer, office resources for personal gain. Though company allows limited use of computer – internet and email for personal use, there is a thin line between right and wrong. Using office computer during office hours is a double whammy, one is using office asset at the office time for personal gain. Using office computer, to visit sites which are related to violence, pornography, abuse or getting emails related to any of the above topics is a serious violation to the simple liberty given by the company to the employee to use computer for personal use. This will have major adverse effect on the fellow employees of the company. This decreases the productivity of the employee which in turn decreases productivity of the company and that affects the society. In Indian society, there is a perception that, people working in IT uses computer for personal usage, if that perception is found to be true (where productivity is in question), then companies outsourcing to India will look for a country with a better productivity and people there have a strong ethics.

Sniffing - Trust

Accessing other people's email, overlooking the computer and profile is ethically wrong and that compromises on the trust and integrity of the people and company.

Sniffing can happen in two ways, one is physical sniffing and other being - virtual world. Both are wrong. In physical sniffing, people try to look over the shoulder to read the email, catch the password and read company confidential information.

In the virtual world, an email can be sent to the un-suspecting user to provide the personal details in order to gain financially like a lottery ticket has been won in your name. The most common one is the UK lottery scam, where an email is sent to the user asking them to furnish all personal details along with the bank details. This affects the trust of the people on IT as it is only IT people who can design a program similar to lottery scam or a program (Trojan) can be placed in the computer of un-suspecting user, which can then capture the personal details of the person and then send it to its master. **On 28th Jan 2013, Bangalore Mirror, reported about RED OCTOBER malware, which is similar to other sniffing like programs.**

Usage of explicit information from other companies to your gain

Using explicit information from other companies for personal gains is a serious company policy violation and there could be legal consequences. A company usually prohibits usage of explicit, confidential or proprietary information outside the company for personal gain. Many companies use 'Non-disclosure agreements' to reduce the risk for company explicit information. Companies usually want to keep explicit information confidential as these include companies 'trade secrets' which gives companies a competitive edge. This type of information may also include future business plans, development/production processes followed, customer contacts or anything an employee learns during the employment tenure. The company's explicit information needs to be confidential even after the employment tenure ends.

Corporate, organizations should train their employees in best possible ways on the ethical scenarios of using 'company exclusive information for personal gain' and the consequences for the same so that employees are completely aware and alert and this should be supported by strong company policy as well.

This ethical learning spreads across regions in our society such as rural, sub-urban to urban as people migrate from rural, sub-urban areas to urban areas for better employment opportunities. These people when they get trained on this aspect of ethics then they become more alert for the scenarios where other people uses company 'trade secret' for their advantage and they may question or counteract these unethical behavior. This way it helps to spread a good vibration across our society.

Our society is again divided by age, income and profession etc. So this aspect of ethics applies to employable age group and retired age group but not to kid's as kids will not have access or understanding of company proprietary information. Income is another factor which drives employee parameters and can lead to this particular ethical scenario for monetary gain for people who belongs to low earning income group. This ethical scenario is NOT only limited to IT profession but these spread across all profession like manufacturing, banking, insurance, hospitality sectors.

For example when a corporate meeting happens which discusses company proprietary information, future plans etc. in a hotel then the meeting discussion agenda can be disclosed for monetary gain by any hotel personal who is attending to facilitate the meeting.

Spam – Unsolicited/Sexual harassment email

Sending hate mail, sentiment related email; sending chain mails always create a different impact on the society, the recent issue being mass exodus of NE (North East Region) people from Bangalore. This created a divide in the society.

Apart from the above, there are other different types of spam emails which generally falls under 'Email marketing' such as illegal prescription drug offers, pornography, sexually explicit emails, unwanted product offers, lottery's, etc. which contributes to the huge volume of spam emails. These spam emails often leads users to malicious websites or even can infect users machines via attachments or scripts contained in the message. Basically these are bulk or stream of unwanted emails which you did NOT subscribed for.

In our society, these type of emails can affect a particular group which uses IT in their day to day life and are closely associated with IT systems i.e. spamming will have significant affect in urban areas where employees in corporate & organizations uses IT and E-mail for all their business purposes. In urban areas kid's also uses computers or devices where they can configure emails and spamming can cause serious threat for Kid. Students using IT systems are also exposed to this threat and may mislead them. If we see the society impact with respect to gender then again a sexual explicit or pornographic spam E-mail can be sexual harassment for any gender which depends on the sexual content presented. These type of offensive adult content may also increase social crimes like rape, child abuse etc.

Organizations are part of our society and organization cultures impacts our society every day. Organizations should have strong email policies and should also train employees on the ethics and handling of unsolicited or sexually explicit emails. Organizations not able to handle pornographic or sexually explicit spam emails will lead to Hostile Work Environment which is bad for organization and society both. Organizations lose lots of productive hours as employees use work hours to go through spam emails, most of the times, these emails leads to virus outbreak which crashes servers, network etc. causing more damage to the company. This could be huge loss to company when calculated for lost work hours for ALL employees per year cost plus the virus outbreak recovery cost.

A recent publication by McAfee [Source: - <http://www.mcafee.com/in/about/news/2009/q2/20090415-01.aspx>] tells that 62 trillion spam emails were sent worldwide in 2008. This volume of spam requires an energy use of 33 billion kilo watt hours. A single spam email emission is associated with an average of 0.3 gm of CO₂, so worldwide spam email contributes 18.6 billion kg of CO₂ emissions which is like driving around the earth 1.6 million times.

In late 2008, McColo, a major source of online spam, was taken offline and global spam volume dropped 70 percent. The energy saved in the ensuing lull before spammers rebuilt their sending capacity, equated to taking 2.2 million cars off the road that day, proving the impact of the 62 trillion spam e-mails that are sent each year.

This shows the impact of spam on our society with respect to environment, energy & finance. May be we are losing more money on Spam then we think.

Phishing

Planting a company look a-like login page and asking people to login or share personal & financial details for personal gain creates a security threat, financial threat. That affects the credibility of the company.

Corporate & organizations should device proper training and strong policies for their employees to handle unethical phishing crimes which may cost lot of money & can spoil the reputation (confidential information leak) of the organization.

Phishing crimes are threat to the society as they steal company or individual information & money. In society, Phishing exploits can happen to the group of people who works on IT systems or uses IT system in their day to day life. This group of people will be mostly 'Working group (Employees)' who works on or uses IT systems and 'Student group' who uses IT for their studies. Mostly IT systems are accessible in semi urban to urban areas in Indian society. So, phishing can impact only this segment of Indian Society.

Phishers use social engineering (exploiting natural helpfulness of people) & email-spoofing to get to their victims. For example, Social engineers may call the employee with a sense of urgency to request network access to fix a immediate problem or they can convince an employee to give out personal information for an urgent issue or even they can convince people to run malware in their system to fix an urgent issue.

Aged people in society may not be very careful in reading the masked **URL** mentioned in the Phishing message. For example, there is a very little difference to spot between **icici.com** and **icicii.com** and the message looks so similar to ICICI bank messaging which may even confuse younger ones and can fall for the trick. Also, there could be IP Address behind the URL mentioned in the message.

Another Society factor is that if ICICI bank is used for Phishing messaging then society loses trust and credibility on that particular brand for the fear of future fraudulent transactions. However, banks or organizations have a social responsibility to spread the message that no bank or organizations will request Account number, User id, Password, Credit card numbers from their customers as they already have this information with them. Banks & organizations should convey this fact to their customers very clearly so the customers are alert.

Phishing messages also directs users to sites which will look exactly similar to ICICI Bank site but they will download malware to run in victim's machine which may infect the complete IT system and bring the entire IT system down. This may cost lot of money & productive work hours to the company.

There could be impact on e-mail marketing as well as these emails tend to track clicks real time due to which these URL's first redirects to tracking URL and then goes to the destination URL which may hint customers negatively towards phishing. So, company's doing email marketing need to be very consistent in their messaging to win society's trust.

A Survey conducted by Deloitte on "India Banking Fraud -2012" (Attached as Annexure)

"Says 93% of the respondents indicated that banking industry seen an increase of fraud incident"

When these type of information comes to the market it may lead to make a biased perception about the system and the society remain orthodox in term of accepting the changes.

Computer Program and Effect

Not following the process while developing the program and not doing the correct testing will have a severe impact on the society – for example issues related to car programs not written correctly and tested correctly could be a life and death. Publishing of information without checking the authenticity in media (social as well as digital) will affect the society in a negative way.

This unethical approach to programming and testing hit's all category of people in society ranging from infant to old, poor to rich and belonging to any profession who may be consuming an IT system which are programmed and tested by bunch of IT professionals.

Health care equipment devices such as Ultrasonography, CT-Scan etc. uses some amount of software programming to run parts of its functionality. If the software used in this type of critical medical equipment's are NOT programmed and tested by following company laid out processes then lot of people's lives will be at stake.

Software's used in Aircraft control systems such as flight control, collision avoidance, communications, black boxes etc. should follow processes laid out by law for the safety and reliability. If these processes are breached company's may face legal consequences. We all know how malfunctioning software used in Aircraft control systems can have severe implications in society.

Software produced for any critical segments such as banks, insurance etc. should follow proper development and testing guide lines laid out by the company. If these standard processes are NOT followed then the quality of the software will be poor and these critical systems may malfunction at some point of time which will drastically impact the people of society who depend on these systems for their transactions.

Therefore companies small or large producing software's for any critical system should set strong processes & guidelines for software development process. They should also set stringent Quality processes to ensure these systems works in the intended way does NOT impact the society critically.

Transparency

Transparency in public sector as well as in the private sector is one of the ethical aspects which directly touch the each section of Indian society. By making the process related to E-Governance, Public Accountability, public procurement, public facilities/amenities and other areas related to public welfare online the government and the private organizations can directly impact to the daily life of a common man.

By making the facilities available through electronic medium like internet and other web based services the organizations and the government bodies in India has started creating a positive environment by which aam admi (general public) even can make the public servants and other private governing officers more accountable.

It also has a significant impact on controlling the corruption, highlighting the important issues of the daily life of a common man from the various sections of Indian society. In the similar way by putting the audit details, financial transaction summaries online the private organizations can win the trust of each section of the Indian society.

E-governance is rapidly finding its way through the governments across the world and by using the internet and other modern IT technologies, governments can hope to reach out to a larger number of people across India. The main advantage of the e-government is to make the government available to the masses in order to address their grievances in an effective and time efficient manner; it has also played a vital role in improving the efficiency of the existing governance system. It also plays a significant role in shaping the economy of the country and involving the private sector and communication technology to form policies and developed infrastructure to facilitate and simplify process for the government and the people which develops more faith for government among the residents. The whole process of e-governance is also helpful in terms of saving money, resources and time.

For an example by checking the company details and its balance sheets now even a common man can have more faith in investing in a company which is doing business in India. E-governance, E-Ticketing, UID program (AADHAAR), E-Seva has brought in lot of transparency and thereby providing a positive impact on the society and different section.

Acceptance of gifts

To promote fairness maintain a professional relationship in work place, following the rules needed for building compliant application and taking an opportunity to give back to the society will help in trust and integrity of the company within the society.

Promoting fairness at work place is another aspect of corporate ethics which directly or indirectly has an impact on the work culture of an IT organization and sends the good precedence to the society. For achieving this mainly the companies try to reaffirm that every individual receives an equal opportunity to be recognized across the organization by developing a sense among the employees of the fair promotion policies. For example in many companies, IT staff cannot accept gift for any amount more than INR 1250 (US\$ 25). This helps in taking a very fair decision during many of the selection process. This helps in selecting the right supplier for the company and helps the society to move away from the belief that, you do not have to bribe to get things done. If your product is good, you have a process in place, and then you will get a fair chance to do the business. This will be a small step in cleaning the society from black money.

Legal Binding – No place for negligence

No place for negligence while coding - The Health Insurance Portability and Accountability Act of 1996 (HIPAA) is an US Law which started impacting Indian IT sector from past few years as Indian IT companies execute significant number of US projects (outsourced healthcare services to India) which requires compliance with respect to HIPAA. Indian IT society needs to be aware of the legal implications of the new and changing Laws with respect to HIPAA. When Indian IT companies says that they are HIPAA compliant then they need to be extremely sure that they are really compliant and not compromising on any of the HIPAA security standards to make patients data secure otherwise companies may suffer huge financial losses.

IT systems dealing with projects requiring HIPAA compliance produces ethical scenarios such as handling patients private medical data as this data can be exploited for personal advantage & handling development and quality processes to follow HIPAA guidelines and standards for all transactions to transmit data.

Organizations should have strict policies and guidelines around HIPAA compliance. Also, organizations should have an administrative body for auditing & enforcing HIPAA compliance rules. All in & out traffic to servers should be monitored, sensitive patients data access should be monitored, access control for secure data on need to know basis only and organizations should also have data handling policies & data loss prevention mechanisms.

Organizations should train their employees on HIPAA rules & regulations and the need for strict coding and testing guidelines for HIPAA standard. These measures will prevent an Indian IT organization from unethical issues arising from HIPAA compliance.

Volunteer Time off – Giving back to society (VTO)

Many of the Indian and foreign companies came up with an idea of volunteer time off option for the employees and published their initiatives on the web using different mediums, according to this policy employees can voluntarily take offs to do the community works like educating the poor children, serving the socially discarded people, helping the physically challenged people etc.

For an example from one of my friends, I come to know that Tata/Wipro/Infosys & many more other companies encourage their employees to take about 40hours paid time off every year for such initiatives & also recognize them for their work.

By making such commitments the IT companies are ethically supporting different sections of Indian society by making no difference in religious or regional basis. This is directly impacting to build their public image & public responsibilities. This ethically also symbolizes how sincere we as an IT professionals are towards the Indian or other societies.

Apart of this many IT companies collect some fund from the employee which is an ethical initiative to improve the livings of thousands which are part of our society e.g. poor children education initiatives etc. Far an example each full-time employee at one of my previous employer in US receives 5 days' paid time off per year to provide volunteer support to charitable organizations. This helped to show humanity during the storm Katrina and at the time when tsunami hit many countries around the world.

Green Technology Initiatives – IT Sustainable Computing

This is another best example of ethical responsibilities which the IT companies recognized after the global warming. Now IT companies came up with the idea of green business technologies which will help to save energy as well as to save the recyclable costs without hampering our surroundings in which we live.

This initiatives puts a positive picture of recognitions on the society and shows actually how much responsible we are towards our nature & greenery & how much ethically sensitive the IT is towards the society, this is a point which almost touches every part of our society.

For an example HP/IBM/Dell/Intel/Microsoft etc. Green business technology initiative addresses some of the ethical points which are challenging with respect to our surroundings. Some points are as follows:

1. To reduce material resource consumption.
2. To support ones compliance needs with current and anticipated e-waste disposal carbon regulations.
3. To better measure, manage and report ones carbon footprint to meet corporate and social commitments.

Conclusion

Ethics is that branch of philosophy concerning human action to be considered as right or wrong by the human society. It is further divided in three sections as normative ethics, Meta-ethics and applied ethics. I.T. being associated with human society is to be counted amongst the applied ethics such as Bio ethics, business ethics, legal ethics and medical ethics etc. Furthermore it may come under the preview of Meta ethics as much as that of normative ethics due to the nature of I.T. with far reaching consequences.

“DO NOT DO A THING THAT YOU CAN NOT TELL YOUR SPOUSE, CHILDREN AND PARENTS” – learnt while working at INTEL part of the training and that is TRUE.

Sources, Interviews

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Sourced from – Discussion with Mr.Shaktipada Mohanty – Conclusion part

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S R Manjunath, Sr. Director HR, NetApp Inc.

Ricardo Beale, HR Director (India Operations), Radisys Corporation

Dipanjana Dutta, S/W Engg. Manager, Radisys Corporation

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