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Volume No. 34  Issue No. 1  APRIL 2010

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For Computer Society of India

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Social networking is the grouping of individuals into specific groups, like small rural communities or a neighborhood subdivision. Although social networking is possible in person, especially in the workplace, universities, and high schools, it is most popular online. The social networking phenomena did begin in the 80s but was not popular until four years ago. In the 1980s, we had the Bulletin Board Services (BBS). By the 90s, we often used e-mail because it was easier and more immediate. Facebook was launched in the year 2004 and the explosive growth of the phenomena has surprised many people. Social networking now accounts for 11 percent of all time spent online in the US.

In many ways, the origin of Social Networking in the present form begins with the convergence of several events. The social interacting that began with Instant Messaging (IM) has evolved. With IM, the user defines who is in their network. People would invite others to be “in their network”. The construction of the network gave them control over who they interacted with. In the initial marketing of such ideas, it was presented as a safety feature. IM differs from e-mail in that it occurs in ‘real-time’ just as ‘text messaging’ on cell phones. The two individuals interact with each other in the form of an ongoing conversation typed out on their keypads. Over time, the IM system improved to where pictures were added and other ways such as avatars, “smileys” and emoticons were available to customize ones’ on screen appearance.

“Social Media can be called a strategy and an outlet for broadcasting, while Social Networking is a tool and a utility for connecting with others.

The difference is not just semantics but in the features and functions put into these websites by their creators which dictates the way they are to be used. There’s also a kind of, which came first, the chicken or the egg kind of argument to be made here. I suspect that Social Networking came first which evolved into Social Media.”

- Lon S. Cohen, Writer, Communicator and Blogger

In other words, Social Media are tools for sharing and discussing information. Social Networking is the use of communities of interest to connect to others.

Social Media is a vast term comprising of communication, collaboration, multimedia, reviews, and sharing interesting online content with friends, family, and even complete strangers. Blogs, Internet Forums, Podcasts, Picture Sharing, Video Sharing, and Instant Messaging are just some of the social media tools that people use to interact on the internet on a daily basis. Our communications have gotten increasingly short, often circulated one sentence at a time on Facebook, Twitter or via text message.

Social Media is a collective group of web content prepared and published (primarily influenced) by end-users. The group is directly involved and the members “think aloud”. They share their thoughts, ideas, knowledge, post questions, discuss and get answers, comments and acknowledges. There is plenty of scope for learning in the informal mode. Social Media is about participation, openness, conversation, community, and connectedness.

Juniper Research on Trends of Social Media showed that:

- 77% of online shoppers read consumer product reviews and ratings before making a purchase
- $2 Billion of online travel purchase a year are affected by social media
- 24% of online car shoppers have changed their mind about a vehicle purchase based on social media
- 51% of journalists read blogs for story ideas
- 28% of top search engine results are social media sites

Through social networking, we have learned about friends’ breakups, their children’s illnesses or parents’ deaths. We’ve gotten an inside glimpse of our children’s lives and a better sense of the day-to-day lives of close friends who live far away and coworkers who sit next to us. We’ve found long-lost friends and made a couple of new ones, but we also have never felt more distracted.

Social Media is influencing Business, Education, Law Enforcement and changing the way social interactions happen. There are dangers associated with social networking including data theft and viruses, which are on the rise. The most prevalent danger though often involves online predators or individuals who claim to be someone that they are not. Although danger does exist with networking online, it also exists with networking out in the real world, too. Just like one is advised when meeting strangers at clubs and bars, school, or work – one is also advised to proceed with caution online. By being aware of your cyber-surroundings and who one is talking to, one should be able to safely enjoy social networking online. It will take many phone conversations to get to know someone, but one really won’t be able to make a clear judgment until one can meet each other in person. Common sense and listening to one’s own inner voice are presently the best handles when something doesn’t feel right about the online conversations taking place.

I thank Ms. Mini Ulanat who is one of our very active professionals for compiling the theme content for this issue.

Dr. Gopal T V
Hon. Chief Editor
gopal@annauniv.edu
Dear Affectionate Members of CSI Family,

I am privileged to take this opportunity to bow before you, thanking you for the continuous support extended to me since 1980s and for electing me this time, as the first person to serve you.

Let the light of Wisdom from this CSI family with the divine light, enlighten us, to open up new avenues and enable us to reach new frontiers in using ICT for improving the quality of life in all sectors of economy.

Employability:

The Trinity of Academics, Industry and Government need to have better bondage to make ALL the outturn of our Educational Institutions employable. While our IT sector is contributing to earn impressive Foreign exchange year after year in good arithmetic progression, we are concerned on the prevailing statement that “25% of our Engineering Graduates are only employable”. As is obvious, our economy would grow in Geometrical progression, only when every Graduate is employable. Let us encourage our CSI Educational programs, seminars, conferences, workshops and publications to provide such kind of thought processes, which would improve the Quality of education, professionalism and connectivity.

We believe that “Child is the father of the Man” and we have respect for the youth. We shall work for their empowerment of knowledge.

CSI-india.org

We are grateful to TCS for developing the CSI knowledge portal and for the efforts put in by Mr. S Mahalingam in steering the implementation and launching the portal in record time. We also appreciate the passion of Mr. Ravi Raman, the incoming Chairman of Mumbai Chapter, who conducted review and feed back sessions with chapters/members and had given a shape to the portal.

By April 2010, the portal is expected to respond on some of the important initial functionalities. The portal is now open for your feedback. The content development is in the hands of all CSI members. The first attempt is to clean the database. However, quality is a continuous process.

Each member is requested to kindly login and update personal details. Please note that the e-mail address given in the portal would be the main communication link to each member in future.

Data on each chapter needs validation. Each chapter is given about four pages to upload important photographs, chapter write-up, calendar of events, Managing Committee details and to share news. We request each chapter Chairperson to utilize the space.

On our portal, we plan to host articles on technology updates, innovations, success stories, motivating lessons etc. that help us to continue as a professional. I appeal for sending such articles to Prof. M Chandwani, who has kindly accepted to be the Chairperson of the Web-Publication Committee whose e-mail address is: chandwani@rediffmail.com. Interested members are welcome to join him for contributing/editing articles.

Distinguished Speakers

Dr. S Ramani has spoken to me to seriously work on identifying Industry experts who can visit our Educational institutions and build the Industry-Academic bridges. In order to make available some of the distinguished persons from Industry/academics, as Keynote speakers/resource persons to the chapters/student branches, we plan to recognize eminent persons who can extend such services. Chapters/Institutions may recommend the names with their bio-data, photo graph and details on their specializations to hq@csi-india.org.

Events:

Student Branch at JayPee Institute of Technology, Guna has conducted a regional student meet which has been inaugurated by Prof. S. K. Khanna on 5th March 2010. A salute to Dr. Vipin Thagy, student counselor and President of ISCA and Prof. Rao, Director of JayPee Institute for promoting the student activities.

Vallabhbhai Vidyantarag chapter has conducted “IT FUTURA-2010” during 5-6 March 2010.

Congratulations to Dr. Deepthi, Dr. Paresh, Dr. Darshan, Mrs. Jyoti, Dr. Preeti, Mr. Himansu and Mrs. Chayaben on their success in attracting more than 200 registrations with presentation of about 20 research papers.

IFIP International conference on Bioinformatics was conducted by SVNIT, Surat and was coordinated by Dr. Rattan Dutta. Congratulations to Dr. P D Porey, Dr. M N Mehta, Mr. H A Parmar Dr. Neeru Adlakha and Dr. K R Pardasani on making the event, a grand success.

Regional student meet (Eastern) was conducted in Jadavpur University Campus and Dr. Phalguni Mukharjee deserves my salute for promoting students by selecting 16 papers for presentations and a dozen papers for poster sessions on February 20, 2010

Request to Chapters:

I request all chapters to complete the election process and send the election details and accounts statements to the HQ at once, so that the WHO’s WHO can be printed at the earliest.

For their contributions in EXECOM:

We thank the out going President of CSI Mr. S Mahalingam and past Presidents Prof. K K Agarwal and Mr. Lalit Sawhney (who is also CSI representative to Gen. Assembly of IFIP), Mr. Bipin Mehta, Dr. C R Chakravarthy, Mr. V L Mehta, Mr. Rabindra Nath Lahiri and Prof. S V Raghavan for their excellent contributions to CSI.

Let us welcome Mr. M D Agarwal, Prof. R R Viswakarma, Prof. D P Mukharjee, Mr. Sanjay Mohapatra, Mr. C G Sahasrabuddde, Mr. Jayant Krishna, Prof. T V Gopal and Mr. H R Mohan on board and look forward for their valuable services. We also welcome the Nominations Committee headed by Dr. S S Agrawal with most experienced members of CSI, Prof. U K Singh and Dr. S C Bhata.

Acknowledgements

While saluting the founder fathers of CSI, I would like to take this opportunity to thank Dr. F C Kohli, Mr. Hemantbhai S Sonawala (HeMan), Mr. N Vittal and Dr. P P Gupta who located me in Vallabh Vidyantarag and encouraged me on my passion for making all my students employable during 1985-'86. Some of the deliberations with them, had helped me to initiate research work and I could produce a dozen Ph.Ds during the next few years. It is with respect, my owe my gratitude to Prof. V Rajaraman, Prof H N Mahabala, Prof PVS Rao, Dr. R K Dutta, Brig. SVS Chowdry, Dr. M L Goyal, Dr. S Ramani, Dr. R Srinivasan, Prof. C R Muthukrishnan, Prof. A K Pathak, Mr. M L Ravi, Mr. Lalit Sawhney, Prof. K K Agarwal, Mr. S. Mahalingam for involving me in various levels to serve CSI and to Prof. D B Pathak, Gen Balasubramaniam, Prof. Ashok Agarwal, Gen. (Dr). R K Bagga, Prof. DVR Vithal, Dr. Vijay Bhakat, Prof. T P Ramnarao, Dr. Vinay Deshpande, Dr. L C Singh, Dr. Subash Pani, Mr. S K Syal, Mr. O P Mehra and Prof. S C Bhata, Brig. V M Sundaram and all the present and past ExecCom members for their support on several missions to encourage me in extending my services to CSI.

Prof. P. Thirumurthy
President, Computer Society of India
World Wide Web has undergone a profound shift from the information sharing medium to more of communicative or socializing medium. The ways to communicate, propagate and consume information with the latest collaborative technologies have made web more user centric. People all over the world embraced this new revolution in generating and sharing contents. More and more users started communicating with peers, collaborating, socializing, creating new contents, vocalizing and participating in the likeminded groups and finding a global voice for them. An average internet user is shifting from email to sharing the contents via networks. Cyberspace has seen a significant growth in the scale and richness of online communities and social media.

Social Network, a term coined by anthropologist J.A. Barnes in 1954, became the buzz word through the popular websites like Myspace[1], Facebook[2], Orkut[3] and LinkedIn[4]. Online social networks became a fad in 2003 with the popularity of such kind of websites. A social network is a graph of relationships and interactions within a group of individuals, which plays a fundamental role as a medium for the spread of information, ideas and influence among its members. The individuals or organisations are related to each other by various interdependencies. This can also be visualised as a practice of expanding social contacts by making connections through individuals.

Online communities allow users to create a web presence, managing their identities and staying connected to friends and colleagues. The outreach of this has put together millions of people share content, videos, articles etc from all over the world. These are among the most popular destinations on the web with millions of users from around the globe signing up daily. According to Alexa[5], seven of the top 20 most visited Web sites in the world are social-networking sites, such as MySpace or Friendster, or contain significant social-networking components like YouTube or Hi5.

Journey from BBS to twitter

The dot com of 90’s saw a mad rush for virtually every one to establish their cyber presence in the information highway through some static sites developed by tech geeks. But today web has evolved into a platter of diverse site offerings from interactive flash presentations to full length movies. This technology is continuing to shape our lives unlike all the other information and communication media of the past. The most fundamental change the new social internet brought about is that it is a participatory medium, a place for sharing rather that extracting information.

A moment to step back and get a historical perspective to assess real value and to anticipate how they evolved and are likely to evolve in future: People were hosting bulletin board services (BBS) focusing on interest group or local community before web became easily accessible to public. Computer user population expanded rapidly and user communities grew, online services began to build communities. Then came Internet Relay Chat (IRC), a tool for chat over the web. The history of online social networks can be linked to the chat rooms. The online network appeared in its primitive form in 1995 with the site classmates[6] to keep in touch with schoolmates[6] to keep in touch with schoolmates and the modern form took off with friendster[7] in 2002. The journey from BBS to IRC to Social Networks have come a long way. This is a level playing field enabling every creator to find an appreciator. There is a social network explosion in cyberspace, with new site popping up everyday and no one wants to be left out. The choice is endless. This is influencing the behavior of users in web. These sites are enjoying increasing traffic and are turning into community spaces where users interact with their friends and acquaintances. Social life is increasingly migrating to online communities with public interaction over blogs, wikis etc. Global Social networks continue to gain prominence in India during the last few years with each of the above mentioned sites witnessing significant increase in visitation. The trend of growth upward is continuing with each carving out a more prominent position.

Technology Behind

Jon Kleinberg, professor of Computer Science at Cornell University, was awarded 2008 ACM-Infosys...
degree of separation phenomena which he used web's reach to explore the six degree of separation popularised by Milgram's 1969 chain letter experiment. This is an unproven theory that anyone in the planet can be connected to any other person through a chain of acquaintances that has no more than six intermediaries. Kleinberg developed a model to predict an optimal way in which social connections could be distributed for the network to guide messages between distant pairs of people. This model was validated by subsequent research on large social-networking sites, revealing how virtual connections tend to link people who are close in geographic and other dimensions. Kleinberg's work has had a direct effect on the design of peer-to-peer systems and on Web crawling techniques that methodically browse the Web and index downloaded pages to provide faster searches.

Evolution of Communities

In the real world, the communities evolve based on a common thread. They are not created. The relationship is initiated based on trust and then slowly nurtured. Social networking is the practice of expanding social contacts by making connections through individuals. Online social networks create an online “profile” and share this. It relates to formation of a circuit or a chain of friends who use different tools to interact. There are countless sites that people can participate making us difficult to decide which sites are truly beneficial. In the last few years, the peer dependence has tremendously increased which has directly impacted in the dependence of online networks and thus making it a face to face interaction. These sites have gained immense acceptance over the years providing a global exposure, thus making your views, thoughts and opinions reach world wide. It is difficult now to think of a life without online services. Blogs, chats, scraps etc. have gained so much importance in our day to day life in such a way that we have developed a habit of it.

Social Networks are a great step towards personalisation of online communications. Networking sites like LinkedIn and Facebook help their members stay updated with their contacts and share relevant information at ease. LinkedIn has carved out a strong identification within professional job seeking world. People were able to switch jobs helped by their contacts established through LinkedIn. Social networks are starting to become part of the tools that both job searchers and hiring managers are using to track potential candidates. Not just background checks but even large scale recruitments are made using networks on these sites. The success of these sites rests on the concept of “strength of weak ties” [9]. This was a model developed by Mark Granovetter [10], American Sociologist for the spread of information in 1970 based on his study in Boston area. A network that is only strong ties (everybody knows everybody very well) is not valuable on its own. Genetically that can lead to birth defects, in companies it leads to stagnation, in social circles it can lead to snobbery/prejudice. The outsider with a new perspective is valuable.

Microblogging to Nanoblogging

One of the new trends in the family of social networking site is microblogging. The advantage is instantaneous nature and ease of publication. Sending and receiving short blurs of what your online friends are doing at present is what microblogging is aiming at. Year 2007 saw an explosive emergence of this short quick bursts of texts that are published instantly. Twitter is increasingly becoming popular, even overtaking the giants. It is appealing for its immediate impact. Celebrities are increasingly using twitter. It is becoming a popularity contest. Once thought of as sole domain of kids and teens, people of all ages and walks of life are signing on to social network sites. Microblogging is said to be used as tool in communication, productivity, e-commerce, brand exposure and in many cases a serious business tool because of its instant information retrieval nature, thus nearly a real time info exchange. When things can’t get anything brief than a Tweet, NanoBloggig is the new entrant. Sites like Adocu[11] are taking NanoBlogging to the extreme with their one word updates.

Penetration of social media in our life

Social media cut across the barriers of demography. The advent of digital media into social networking called social media started giving a new cultural dimension that penetrated into our day to day life. For example technology changed the way in which election campaigns were done even in a country like India which is traditionally an orthodox society. We witnessed the changes that happened in our last general election. Indian politics taking clue from the Western counter parts- most National parties started portraying their leaders and Prime ministerial candidates though portals and allowed the users to register to receive feeds and alerts of the candidate’s events. Considering India’s youth profile, even political parties wanted to make sure that they are in tune with their aspirations and expectations. The new generation leaders of our nation are effectively using it as a tool to connect with the masses and to express their views, opinions, propaganda of their political agenda and a lot of other things. Barack Obama was able to pull the whole generation not only from US to win the presidential election but gather enough mass appeal from across the world. He used unique grass root campaign to reach out to masses through technology. His assets included 13 million emails and 3 million online friends according to a published data[12]. We are witnessing a spurt in the number of social networking sites being launched. This concept has excited many companies and they are vying to turn this to their advantage. Kingfisher airlines uses twitter for customer communication and aircel mobile service providers use facebook’s embedded service to create voice messaging services.

Social Networks in Disaster Management

People’s usage and acceptance of social networks in crisis is expanding rapidly. Mumbai siege showed a different face of online reporting. People shared quickly the small pieces of information on what is happening on the ground. They were the first responders. Citizen journalists were providing photos from their cell phones and camcorders online. Unlike the traditional disaster management system, constrained by the capacity, this peer to peer system can scale to deliver real time information on an emergency with no central point of information control or single channel of dissemination. Thus online social networks gave a new dimension giving options on how to collect news, create and disseminate news. Relief activities during Haiti earthquake also got helping hand from social networks. In the wake of natural, disasters such as the Haiti earthquake, major events, such as the Hudson plane crash, and terrorist activity, social networks have become increasingly prominent as useful tools to get the news out faster than traditional media, to provide timely information sources, and even to re-connect people affected directly or indirectly as events unfold.

Popularity of Social Networks in India

Indians culturally are not loners, which is very much evident from the system of joint family. But there is a cultural barrier, as not many individuals will express themselves...
in “Myspace.com.” Apart from this, there are infrastructural barriers also affecting the communications. Indian community started coming online with shaadi.com and bharatmatrimony.com, helping in searching soul mates. Orkut is the most visited social networking site in India. There are already dozens of local Indian social networking sites trying to be the next Orkut. Rediff, a popular portal in India launched its own version recently and claims to have 1 Million subscribers already! Yaari, Minglebox, Hi5 and dozens of other sites are attracting their own fan base.

**Challenges of Social Networking**

Like every other thing, there is a negative side to this new phenomenon. Cases of misuse are on rise. Social networking websites can be accessed by anyone, intrusion to privacy becomes a big issue with many online users knowingly or unknowingly compromising with their personal information and disclosing them to unknowing and unverified population of the internet. Fake profiles are on rise. Reported cases of profile impersonation towards maligning the reputation of an individual are there. Another alarming trend we can foresee is that this exclusivity will lead to isolation. Then social network may become less social. The users have to remember that social network is intended to be relational. Another cause of concern is that it is becoming a haven for spammers and purveyors of porn. A way to filter noise out of social conversation is need of the hour.

**Conclusion**

Future of human society depends on the future of web. Web first emerged as a way for people to talk to people. The second evolution of web ushered in a wave of application that allowed people to talk to applications and vice versa. The next evolution? Semantic web in which applications can talk to one another to create a seamless web experience. These social networking sites have emerged as a powerful and effective means for people to not only link but also get linked. The growing popularity of these network portray one single truth – the days to come are bright and sunny for social networking groups. This is the way of sustaining communication and continued sharing of experience and learning. The popularity of top social networks will continue to increase with smaller ones falling off the radar screen. Future communication devices and services are expected to solve the problem of multiple identity aggregation, filtering or alerting and managing the incoming data. The two dimensional internet will give way to three dimensional avatars like second life exploring a 3D universe. Next decade will be quite exciting and we will be part of many life changing innovations. Mobile internet has barely kicked off in India with the introduction of 3G, expected to observe an upward trend. While there is certainly room for several players in this space, the sites that have right blend of having both a strong brand and cultural relevance will be best positioned for future growth. So get connected and make your views, thoughts and opinion reach world wide.

**References**

1. www.myspace.com
2. www.facebook.com
3. www.orkut.com

Mrs. Mini Ulanat is a faculty in the Post Graduate Department of Computer Science, Cochin University of Science & Technology. She has over 15 years of rich multifaceted experience in IT covering areas of software, infrastructural development, implementation and management of enterprise IT project in her prior role as Systems Manager. She has successfully managed and delivered business transformation/change projects with particular focus on Academic Information System.

She is a speaker, moderator, sessions chair for numerous forums and has been serving in various program committees for national and international workshops and seminars. Mrs. Mini Ulanat has been actively involved in organizing and co-coordinating conferences. She is a resource person at all levels from community development programmes at grass root to the scientist of national institutions, involved in reshaping and continuing education programmes to train and retrain outside traditional channels using innovative techniques.

Mrs. Ulanat, skilled in Project Management, is a Fulbright Scholar in Information Science & Technology, holds a Master of Technology in Computer and Information Sciences from Cochin University of Science & Technology and a Bachelor of Technology in Electrical Engineering from Calicut University. As part of various academic scholarships received, she has widely travelled in US, Europe and Japan. Active in professional organizations, she is the past chairperson of CSI Cochin Chapter and currently the Regional Student Coordinator of Region -7. She is a member of IEEE, ACM, ISTE and is on board as governing council member of Alumni Association of Technical Scholarship, Japan. Her passion is in evangelizing the Computer Culture with special emphasis on application of Information Technology for common man. She is philanthropically engaged in supporting organization working towards making positive difference in the life of less privileged girls as a mentor and teacher.

She resides in Cochin with her husband Dr. Harikrishnan and daughter Keerthana.

Please visit the Home Page of Mini at http://admn.cusat.ac.in/miniu

**Acknowledgement**

I thank Prof. T.V. Gopal for giving me the opportunity to share my thoughts on Social Networks. My sincere thanks to all the authors who have contributed towards this issue on various aspects of OSN and Dr. Danah Boyd and Prof. Mark Newman for permitting us to reproduce their papers. I am deeply indebted to Prof. K. Poulose Jacob for all his guidance and support extended. A word of gratitude to all my CSI colleagues and well wishers.

Mrs. Mini Ulanat
Participation in web based social networking in India is steadily increasing. It is largely a youth phenomenon, with literally every college going student in the urban area becoming a member of at least one social networking site. The most popular is Orkut, claiming to have more than 15 million users and second one is Facebook which is growing faster. Twitter is gaining popularity, with celebrities and politicians having large number of followers. The other popular social networking sites are Bharatstudent (3.3 million), hi5 (2 million), LinkedIn, Bigadda, Ibiboo, Ning, Desimartini, Fropper and Minglebox.

The user profile of online social networking
Majority of the members are young, of 18 to 26 years. This bracket is the most active on any social networking site. How do they start? Most of them start by invitation from a friend to be part of the group of the same class, or batch in college. There are sites/groups that are focused on Cricket, Bollywood, Education, Career, Social activism. There are hundreds of communities on popular icons like Shahrukh Khan, A R Rahman, Aishwarya Rai, Priyanka Chopra, Tendulkar and Dhoni. There are a few communities on politics and social activism too, but much lesser in comparison.

What do Indians do with online social networking?
People started using the web based social networking sites to search and discover friends and to keep in touch with them. There are many sites and groups that link up classmates and batchmates in school. In India, a lot of discussions are centered on education, class assignments, and activities in college. The sites are the place to share scrap pages, links, photos, videos and such digital media. There are a few dating sites, but these are facing deceleration in growth rate all over the world, and people are increasingly using large generic social networking sites. Members also do reviews about products and services that the group is interested in. There is a lot of hype about mobile social networking. In India, according to 2009 data, approximately 10 million urban Indians used their mobile phones for accessing social networking sites, a reach of 3.3% among urban Indian mobile phone user. Orkut has been leading with over 3 million users, followed by Yahoo! Dating with 2.1 million users in the second place, and Facebook with 1.97 million users, accessing the sites using mobile platforms.

According to Comscore, the average time spent by users online per month in Asia region is - India 11 hrs/ month, South Korea 31 hrs/month, Honkong 26 hrs/month, Asia Pacific 17 hrs /month. Studies show that 63% of the internet users make use of social networking. The amount of time users spend on web based social networking around the world is found to be proportional to broadband connectivity.

Access to most of the external social networking sites are blocked in Indian corporate environment, since they feel there is considerable productivity loss. According to an Assocham report, social networking sites kill productivity of corporate employees by 12.5%. But many companies have implemented internal social networking sites, to focus on employee development and information sharing.

What is happening in the market?
Orkut had the first mover advantage in India. When the number of people actively participating in web based social networking increased in India, Orkut was the natural destination. There are several other sites too in the market; some of them are catering to vertical functions. For example, Bharatstudent tries to connect the students’ community. Users continue to use Orkut mainly due to their friends being in Orkut groups. New member additions are based on invitation, so Orkut grew for the initial period, thanks to word of mouth and invitations. As far as features are concerned, members feel that Orkut has got stagnated. Facebook has been marketing aggressively and it has the ability to get new and random people connected. People recognized that Facebook had lot many features, and the site was constantly being upgraded. Facebook APIs enable users to create new applications on Facebook, and this opens up a lot of opportunities for games, entertainment, marketing etc. It is often mentioned as a social OS. The interesting fact is that majority of the Facebook users in India are members of Orkut too. In fact, Facebook’s audience in India is up 228 percent from a year ago, compared to Orkut’s gain of 35 percent. Facebook’s
The Friend Export Tool and Facebook Lite are the main tools that contributed to this growth. Facebook provides easy method to export your friends from Orkut to Facebook, so people find it easy to move to a better party place. If we look at the numbers from India, Facebook has a huge number of first time users and groups in the last couple of years, as compared to Orkut. One of the major marketing strategies of other social networking sites in India has been distributing content on Orkut, with a few exceptions.

The competition is getting stiff. Google introduced a new service called Google Buzz, for users of its Gmail service to share updates, photos and videos. This service is supposed to compete with sites like Facebook and Twitter, which have been gaining on their share of time people spend online. Facebook recently announced that it is improving the live chat service on its site by allowing it to be integrated into other services like AOL’s instant messaging network called AIM, a popular one in the United States.

Where is the money?

Businesses and individuals love the user base of the sites so that they can market directly to the user, and try to sell or popularize their product or service. Social networks connect people at low cost. But it is getting increasingly competitive. Social networks generally operate under a business model in participatory and autonomous mode, in which a social network’s members are both the suppliers and the consumers of content. Whoever wants to attract attention has an ever steepening uphill task. The time to attract attention is shrinking and the memes have to be more effective. The users are looking for more than just chit-chat, so the social networking sites must have to put more functionality out there. The questions that linger are - Are there any revenue models other than advertising? Would your business partners get real advantages? What is the impact due to increased focus on privacy?

Corporate businesses in India are utilizing only a tiny fraction of their marketing dollars in promoting their products and services on social networks. They have not yet realized the power of social networks as a major medium. One exception would be Dell, which has utilized social media and networks for communicating with the user/customer at every opportunity.

Social networks in India have been depending on advertising as the revenue model and have not been creative in trying to look at new avenues. China’s social networking site Ozone makes 12% of their revenue from online advertising and rest of the revenue from sales of other items such as applications and virtual products. These sites make use of Facebook like apis and charge users for deploying applications on the network.

Going forward, in the near future, social applications will focus on improving external customer relationships, rather than improving internal communication, in order to increase the market share. Gartner’s analysis shows that those with clear and direct benefits for both company and customer may show results those are measurable. According to Gartner, the social applications that make the transition from general purpose to support specific business will see considerable growth. Some groups in social networks will automatically make some existing social networks irrelevant. The sites will be platforms for applications that will utilize the intelligence of the web and provide whatever functionality the user wants.

Conclusion

Businesses are facing challenges in understanding the user’s context and using social media effectively for marketing. As the hype around social networking continues, companies are still struggling to evolve business models around social activities on the web and social media. Measurements have been difficult and there are few business successes around social applications. It is becoming more evident that the traditional methods of pumping ads in social media are not much effective as compared to using them for communication. Social networking sites will evolve to platforms that support entertainment, business and creativity. Users will be looking for increased functionality. As far as users are concerned, social networks are expected to play an important role in meeting their needs such as information, ideas, support, products, creativity, socializing and having fun.

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Suppose hypothetically that one out of every 200 people or so is a jerk. In today’s world these jerks will discover that if they enter government or business they can become super rich and powerful jerks. Do we conclude, therefore, that markets (or government) have caused greed? No, the fact is that once we no longer live in tiny tribes of 200, anonymity allows some people, who would have been assholes in a small tribe but who would have been sanctioned there, to go off and become jerks on a much, much larger scale.

Technology, including Zaadz, will allow us to evade the jerks far more than we could before. The technology-based social responsibility movement, broadly construed, will allow us to return to some extent to the moral monitoring of small villages.

- Michael Strong, zPod:FLOW:Re: Forget the World Bank, Try Wal-Mart
Introduction

Social networking (SN) sites such as Facebook, MySpace, and Orkut have become increasingly popular in recent years, particularly with high school and university students, but also with their teachers (and parents). This raises a number of issues, particularly privacy. This article briefly reviews some recent work in this area, makes some recommendations for using SN in academic contexts, and describes some possible future trends.

Background

SN sites are differentiated by three features (boyd, 2007): profiles, which describe the background, interests, and activities of a person or group; relationships between people, and comments, which are notes, messages, or asynchronous conversations between people. Relationships can also help determine who can see what parts of a person’s profile and comments. Thus, SN sites mediate virtual communities which are distinguished by four properties (boyd, 2007): they are persistent (content is saved for later reference), searchable, replicable (content can be copied easily), and allow invisible audiences (it can be difficult to know who might see given information). Note that different SN sites use different terminology; for example, Facebook and Orkut use “friends” for relationships, while LinkedIn uses “contacts”; a Facebook user has a “wall” for public messages, while Orkut has a “scrapbook”.

SN sites are increasingly popular. The Pew Internet & American Life project (Lenhart and Madden, 2007) surveyed American youths (age 12-17) and found that 55% of online teens have created profiles, and 48% visit SN sites at least daily. Of the youth that use SN, 91% use it to stay in touch with friends they see frequently, and 49% use it to make new friends.

A key concern with SN sites is privacy – who can access what information, under what circumstances. Dwyer, Hiltz, and Passerini (2007) compared attitudes and behaviors between Facebook and MySpace, and found that users of both sites had similar levels of concern about privacy. Facebook users were more confident of their privacy than MySpace users, and disclosed significantly more identifying information, but MySpace users were more likely to meet and interact with new people. Lack, Beck, and Hoover (2009) found that 62% of undergraduate students in a survey had Facebook accounts; over 90% of their profiles included birthday and a photograph, while only 50-60% included an email address and political or religious views. 22% of profiles included questionable content, such as foul language, alcohol use, or drug use.

As SN expands to wider audiences, new issues arise. Students may find that some of what they do and say online with their friends can lead to problems with parents, teachers, and prospective employers. At the same time, students may feel peer pressure to do things that will lead to such problems.

SN in Academia

Ajjan and Hartshorne (2008) surveyed university faculty to understand their attitudes towards and use of several Web 2.0 technologies. Their findings are shown in Table 1 below; many faculty are aware of the benefits of using such tools, but that relatively few faculty actually use such technologies.

Recommendations

The following paragraphs offer some recommendations for using SN sites in academic settings.

Explore SN as a user before using it for teaching. Each SN site has different capabilities and behavioral norms. Invest some time understanding how a site and its users work so you make fewer mistakes.

Monitor and limit the time you spend on SN sites. It’s easy to spend too much time on SN sites, so keep track of how much time you spend, and consider setting limits on when or how long you use SN sites. Look for ways to work more efficiently, such as using RSS to provide a succinct summary of activity, or defining groups of users. For example, a teacher might define a group for the students in each course. Also, try to limit the number of relationships you have, so you can focus on the people who are most interesting or relevant to you.
Understand and make use of the privacy settings in SN sites. Most SN sites give users at least some control over who can access what data, and this control will become more flexible over time. For example, Orkut and Facebook users can make their data visible to friends, friends of friends, or everyone. Facebook users can also specify access for individuals. When possible, define settings that apply to groups of users - close personal friends, family members, students, teachers, professional colleagues, etc.

Think twice before posting photos, comments, or other content that could lead to problems or misunderstandings. Students may be surprised when prospective employers find their profiles and react negatively to questionable photos or comments. “Praise in public, criticize in private” is even more applicable in SN, given the properties described above.

Consider how much students and teachers should know about each other. Some teachers use SN sites with friends and colleagues but don’t allow relationships with current students, often because they don’t want to know too much about their students’ lives and activities. Others accept relationships initiated by students but do not initiate connections with students. Still others seek out connections with students, so that the SN site can be used in teaching; if you choose this approach, be sure students understand how to use the privacy settings appropriately. Another option is to use different profiles for different groups of people; for example, a teacher might use one profile for teaching, and a second profile to interact with friends and colleagues, although this makes it necessary to switch back and forth between profiles.

To use SN for teaching, start with small steps, and look for ways to adapt or enhance successful techniques using SN, before experimenting with more radical approaches. Schedule course related events, such as review sessions. Collect a list of topics or questions for review. Have students use their virtual communities to find experts or other resources to support classroom activities. These sorts of activities will help students and teachers understand the benefits and limitations of SN.

Use SN to let students write for a real audience (their peers). Most SN sites can be used for blogging, since it is easy to post text, photos, and video (or links to such content). Users can read and then comment on or discuss blog posts, which gives students broader and more authentic feedback on their writing. However, most SN sites do not provide collaborative editing tools (such as a wiki), so some writing assignments will work better than others.

Concentrate activities in as few platforms as possible. Before you start using a SN site for teaching, consider how it will affect other platforms you use, such as a learning management system (LMS) or a wiki. Students and teachers can become confused if course data is spread across too many platforms. LMSs are designed to support a variety of activities, including some SN activities. On the other hand, if you only use a few capabilities, consider migrating all of them to a SN site.

Future Trends

SN sites will continue to become easier to use and more powerful. In particular, it will become easier and more common to give different permissions to different users or groups of users. It will still be important to help new or naive users understand the importance of using such permissions wisely. SN sites will develop features currently associated with other tools, such as the collaborative editing capabilities of wikis, or the ability to distribute, collect, and evaluate assignments and compute grades, usually associated with LMSs. As SN sites continue to develop and their capabilities become more similar, it will be difficult for smaller or newer sites to compete, resulting in a small number of mature players. It will also become easier to connect and integrate content between SN sites; for example, Minggl is a browser plugin that can update a user’s status on multiple SN sites.

Conclusion

This article briefly reviewed some recent work in SN, made some recommendations for using SN in academic contexts, and described some possible future trends. SN has great potential in academia settings, and one of the main obstacles appears to be
faculty reluctance to explore and utilize SN to enhance teaching and learning.

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M D Agrawal
Vice President & Chair, Conference Committee, CSI
The Challenge

It is difficult to define ‘public’ or ‘private’ without referring to the other. Often, especially in tech circles, these terms are seen as two peas in a binary pod. More flexible definitions allow the two terms to sit at opposite ends of an axis, giving us the ability to judge just how public or private a particular event or place is. Unfortunately, even this scale is ill equipped to handle the disruption of mediating technology. What it means to be public or private is quickly changing before our eyes and we lack the language, social norms, and structures to handle it.

Today’s teenagers are being socialised into a society complicated by shifts in the public and private. New social technologies have altered the underlying architecture of social interaction and information distribution. They are embracing this change, albeit often with the clumsy candour of an elephant in a china shop. Meanwhile, most adults are panicking. They do not understand the shifts that are taking place and, regardless, they don’t like what they’re seeing.

This leaves educators in a peculiar bind. More conservative educators view social technologies as a product of the devil, bound to do nothing but corrupt and destroy today’s youth. Utterly confused, the vast majority of educators are playing ostrich, burying their heads in the sand and hoping that the moral panics and chaos that surround the social technologies will just disappear. Slowly, a third group of educators are emerging - those who believe that it is essential to understand and embrace the new social technologies so as to guide youth through the murky waters that they present. This path is tricky because it requires educators to let go of their pre-existing assumptions about how the world works. Furthermore, as youth are far more adept at navigating the technologies through which these changes are taking place, educators must learn from their students in order to help them work through the challenges that they face.

In this article, I want to address how the architecture that frames social life is changing and what it means for a generation growing up knowing that this shift is here to stay. Educators have a very powerful role to play in helping smooth the cultural transition that is taking place; I just hope that they live up to this challenge.

Social Network Sites

In communities around the world, teenagers are joining social network sites (SNSes) like MySpace, Facebook, and Bebo. Once logged into one of these systems, participants are asked to create a profile to represent themselves digitally. Using text, images, video, audio, links, quizzes, and surveys, teens generate a profile that expresses how they see themselves. These profiles are sewn together into a large web through ‘Friends’ lists. Participants can mark other users as ‘Friends’. If that other person agrees with the relationship assertion, a photo of each is displayed on the profile of the other. Through careful selection, participants develop a ‘Friends’ list. The collection of ‘Friends’ is not simply a list of close ties (or what we would normally call ‘friends’). Instead, this feature allows participants to articulate their imagined audience - or who they see being a part of their world within the site. While SNSes have millions of users, most participants only care about a small handful of them. Who they care about is...
What you say sticks. Yet, while mediated and unmediated network sites are yet another form of public acknowledge them (Arendt 1998). Social and they let people make certain acts or ignored if not.

Circle of conversation if they’re interesting be present and might be brought into the group of Friends. Other people are likely to join the sites with their friends and use the different messaging tools to hang out, share cultural artifacts and ideas, and communicate with one another.

Mediated Publics

Social network sites are the latest generation of ‘mediated publics’ - environments where people can gather publicly through mediating technology. In some senses, mediated publics are similar to the unmediated publics with which most people are familiar - parks, malls, parking lots, cafes, etc. Teens show up to connect with their friends. Other people are likely to be present and might be brought into the circle of conversation if they’re interesting or ignored if not.

Public spaces have many purposes in social life - they allow people to make sense of the social norms that regulate society, they let people learn to express themselves and learn from the reactions of others, and they let people make certain acts or expressions ‘real’ by having witnesses acknowledge them (Arendt 1998). Social network sites are yet another form of public space. Yet, while mediated and unmediated publics play similar roles in people’s lives, the mediated publics have four properties that are unique to them.

- Persistence: What you say sticks around. This is great for asynchronous communication, but it also means that what you said at 15 is still accessible when you are 30 and have purportedly outgrown your childish ways.
- Searchability: My mother would’ve loved the ability to scream “Find!” into the ether and determine where I was hanging out with my friends. She couldn’t, I’m thankful. Today’s teens can be found in their hangouts with the flick of a few keystrokes.
- Replicability: Digital bits are copyable; this means that you can copy a conversation from one place and paste it into another place. It also means that it’s difficult to determine if the content was doctored.
- Invisible audiences. While it is common to face strangers in public life, our eyes provide a good sense of who can overhear our expressions. In mediated publics, not only are lurkers invisible, but persistence, searchability, and replicability introduce audiences that were never present at the time when the expression was created.

These properties change all of the rules. At a first pass, it’s challenging to interpret context in a mediated space. Physical environments give us critical cues as to what is appropriate and not - through socialisation. We know that the way we can act at the beach is different to how we can act at a public lecture. I welcome anyone to show up to a lecture hall wearing a bathing suit, lay down a towel, and proceed to rub oil all over themselves. The lack of context is precisely why the imagined audience of Friends is key. It is impossible to speak to all people across all space and all time. It’s much easier to imagine who you are speaking to and direct your energies towards them, even if your actual audience is quite different.

Just like journalists, participants in social network sites imagine their audience and speak according to the norms that they perceive to be generally accepted. The difference is that journalists are trying to carefully craft a message to energise a targeted audience while teenagers are shooting the breeze, showing off, and just plain hanging out amongst the people they call friends. The ephemeral speech that would be acceptable in any unmediated public with a homogenous audience is not nearly so well-received in a mediated public with variable audiences.

Of course, two audiences cause participants the greatest headaches: those who hold power over them and those who want to prey on them. The former primarily consists of parents, teachers, bosses, and other authorities. The press have given the impression that the latter is made up of sexual predators, but the most lecherous behavior tends to come from marketers, scammers, and spammers.

Context is only one complication of this architecture. Another complication has to do with scale. When we speak without amplification, our voice only carries so far. Much to the dismay of fame-seekers, just because the Internet has the potential to reach millions, the reality is that most people are heard by very few. At the same time, embarrassing videos may have only been intended for a small audience, but if others are entertained, these things have a way of being duplicated and spreading through the network at record speeds. Another twist concerns teens who were living regular lives until something propelled them into the mainstream media spotlight (typically death, crime, and other negative situations). Suddenly, their rarely visited profile is the object of curiosity for millions, complicating their lives and the lives of their Friends.

Navigating Public Life Today

The Internet lacks walls. Conversations spread and contexts collapse. Technical solutions are unlikely to provide reprieve from this because every digital wall built has been destroyed by new technologies. The inherent replicability of bits and the power of search make most walls temporary at best. This is why most participants in networked publics live by ‘security through obscurity’ where they assume that as long as no one cares about them, no one will come knocking. While this works for most, this puts all oppressed and controlled populations (including teenagers) at risk because it just takes one motivated explorer to track down even the most obscure networked public presence.

Teenagers are facing these complications head-on and their approaches vary. Some try to resuméfy their profiles, putting on a public face intended for those who hold power over them. While this is typically the adult-approved approach, this is unrealistic for most teens who prioritise socialisation over adult acceptance. Some teens work to hide their profiles by providing false names, age, and location. This too is encouraged by adults, typically without any reflection on what it means to suggest lying to solve social woes. Yet, because of the network structure, it’s not that hard for motivated searchers to find an individual through their friends.

Another common approach is to demand adults understand that these sites are ‘my’ space. In other words, why expect teens to act like they’re in school when they’re not?

This dilemma introduces another
complication of how public life has changed. Just because it’s possible to get access to information, is it always OK to do so? The jury is out on this one. Many parents claim that if it’s public, they have the right to see it. Of course, these same parents would not demand that their children record every conversation on the school bus for review later... yet. Because mediated publics are easier to access, they afford less privacy than unmediated publics. So, what does it mean that we’re creating a surveillance society based on our norms?

While I can argue that ‘just because we can, doesn’t mean we should’, it is foolish to assume that society will quietly take up conscientious restraint. College admissions officers and employers will continue to try to get a portrait of the ‘real candidate’. Smitten admirers will continue to try to uncover any juice on their crush. And the press will continue to treat any digital data as fair game when publicly destroying someone’s character.

When asked, all youth know that anyone could access their profiles online. Yet, the most common response I receive is “...but why would they?” Of course, the same teens who believe that no one is interested in them are pseudo-stalking the ‘hottie’ they have an eye on. Educators are not the only ones playing ostrich for mental sanity.

In response to this surveillance, some youth are starting to play tricks on their invisible audiances. At George Washington University in the United States (US), college students played a prank on the watchful campus police. They advertised a massive beer blast, but when campus police arrived to bust them, all they found was cake and cookies decorated with the word ‘beer’ (Hass 2006). Activist youth are taking advantage of distributed messaging features on mainstream social network sites (bulletins, news feeds) to rally their fellow students to protest, vote (usually campus elections and American Idol), and voice their opinion. An example of this occurred when thousands of American teens used MySpace to organise protests against US immigration policies (Melber 2006).

Youth are also working through the implications of the comments system. For example, teens often break up with their significant other through MySpace comments (typically boys breaking up with girls). The reason for this is simple: a vocalised breakup is visible to all Friends, making it difficult to play the ‘he said/she said’ game or to control the breakup narrative by modifying the Instant Messaging (IM) conversation.

While most of this is taking place through text right now, video is increasing daily. Video is not currently searchable, but technology will advance, making it possible to determine who was in what footage. These systems will also go mobile the moment someone figures out how to break through the mobile carrier roadblock. When things go mobile, location based information will add a new dimension to the hyperpublic infrastructure.

Supporting Youth Engagement

By providing just a taste of how social technologies have altered the architecture of public life, my goal is to whet the reader’s appetite. It is critical for educators to understand how mediated publics are shifting the lives of youth. There are very good reasons why youth use them and encouraging them to return to traditional socialisation structures is simply not feasible (boyd, in press). Rather than diving deeper into these shifts, I want to offer some concrete advice to educators about how to think about the new media and how to engage with youth directly.

1. Recognise that youth want to hang out with their friends in youth space.

Although most adults wish that formal education was the number one priority of youth, this is rarely the case. Most youth are far more concerned with connecting with friends. Their activities are very much driven by their friend group and there is immense informal learning taking place outside of school. Learning social norms, status structures, and how to negotiate conundrums, show how mediated publics differ from unmediated ones, invite youth to directly engage youth about their networked world as one large city? Imagine having college students troll the profiles of teens in their area in order to help troubled kids, just as they wander the physical streets. Too often we blame technology for what it reveals, but destroying or regulating the technology will not solve the underlying problems that are made visible through mediated publics like social network sites.

It’s also important to realise that the technology makes it easier to find those who are seeking attention than those who are not. The vast majority of teens using these sites are engaged in relatively mundane activities, but the ‘at risk’ ones are made visible through mainstream media. In this way, both the technology and the press coverage magnify the most troublesome aspects of everyday life because they are inherently more interesting.

2. The Internet mirrors and magnifies all aspects of social life.

When a teen is engaged in risky behaviour online, that is typically a sign that they’re engaged in risky behaviour offline. Troubled teens reveal their troubles online both explicitly and implicitly. It is not the online world that is making them troubled, but it is a fantastic opportunity for intervention. What would it mean to have digital street outreach where people started reaching out to troubled teens, not to punish them, but to be able to help. We already do street outreach in cities - why not treat the

3. Questions abound. There are no truths, only conversations.

Over the last year, dozens of parenting guides have emerged to provide black and white rules about how youth should interact with social network sites. Over and over, I watch as these rules fail to protect youth. Rules motivate submissive youth, but they do little to get youth to think through the major issues. Conversation (not lecturing) is key and it needs to be clear that there is no correct answer; it’s all a matter of choices and pros and cons.

An Educator’s Role

So, what’s an educator to do? More than most, educators are well positioned to directly engage youth about their networked practices. They can posit moral conundrums, show how mediated publics differ from unmediated ones, invite youth to consider the potential consequences of their actions, and otherwise educate through conversation instead of the assertion of power.

I have found that group settings are ideal for engaging youth to consider their relationship with social technologies and mediated publics. Some of the questions that I have used in the past are:

- Technically, I (your teacher) have access to your profile. Should I look at it? (Why or why not?)
- Who do you think looks at your profile? How would you feel if your mother, grandmother, coach, future boss, etc. looked at your profile? Why? What do you think they’d think of you based on your profile alone?
- You were at a party last week and a girl you barely know took pictures of you that you know will get you into trouble, even though you did nothing wrong.
1. Create a profile on whatever sites themselves for interacting with all students. 

Internet safety is on the tip of most educators’ tongues, but much of what needs to be discussed goes beyond safety. It is about setting norms and considering how different actions will be interpreted. It’s important to approach this conversation with an open mind and without condescension because, often, there are no right or wrong answers.

There are different ways to approach conversing with students. The most obvious is through curriculum, under the broader umbrella of media literacy. At the same time, there are ways to open up this conversation in other settings as well. Social studies teachers can bring in news clippings of case studies. Literature teachers can introduce the meaning of public life through many of the books that teens read. Throughout the world, curriculum regulations differ, but introducing the dilemmas of everyday life is essential.

Finally, there are some practical steps that educators can take to prepare themselves for interacting with all students.

1. Create a profile on whatever sites are popular in your school. Learn the system and make a profile that represents you. Use your own profile and your own experiences to introduce conversations in the classroom - this way they will know that you are online and that you too find it weird figuring out what’s appropriate.

2. Keep your profile public and responsible, but not lame. Add your favourite song; add photos of your cat playing; write about your hobbies. Put blog entries up about these issues and your own experiences in handling them. Write them as personal reflections rather than lectures. Not all students are going to read your manifestos, but you will be setting a standard.

3. Do not go surfing for your students, but if they invite you to be Friends, say yes. This is a sign that they respect you. Write a kind comment back to them if appropriate and make certain to respond to comments that you receive. If something concerns you, privately ask why they chose to put a particular item up on their page, rather than criticise their profiles. Ask about their lives; don’t demand that they behave as you’d wish. Show that you care, not that you dictate.

4. The more present you are, the more opportunity you have to influence the norms. Social network sites are not classrooms and they shouldn’t be treated as such. The goal in being present on these sites is not to enforce rules, but to provide responsible models and simply be ‘eyes on the street’ (Jacobs 1961).

Mediated publics are here to stay; yet they are complicating many aspects of daily life. The role of an educator is not to condemn or dismiss youth practices, but to help youth understand how their practices fit into a broader societal context. These are exciting times; embracing societal changes and influencing the norms can only help everyone involved.

**Useful Links**

- [www.hebo.com](http://www.hebo.com)
- [www.facebook.com](http://www.facebook.com)
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**About the Author**

DANAH BOYD is a Social Media Researcher at Microsoft Research New England and a Fellow at Harvard University’s Berkman Center for Internet and Society. She completed her PhD at the School of Information (iSchool) at the University of California (Berkeley). Her research examines social media, youth practices, tensions between public and private, social network sites, and other intersections between technology and society.

She blogs and tweet frequently on a wide variety of topics. Along with other members of the MacArthur Foundation-funded project on digital media and learning, she helped co-author a newly published book: *Hanging Out, Messing Around, and Geeking Out: Kids Living and Learning with New Media*.

Her details can be had at: [http://www.danah.org/](http://www.danah.org/)

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“The value of a social network is defined not only by who’s on it, but by who’s excluded.”

— Paul Saffo, quoted in *The Economist*, “Social graph–it: There’s less to Facebook and other social networks than meets the eye,” Oct 18th 2007

“Human beings are far more likely to communicate ideas and information with others when they are emotionally engaged. Find the key issues that concern your audience and then inculeate them within your marketing plan to get an emotional response.”

— Maki, DoshDosh.com
Using Social Media for Business

Swetha Christy
Asst Manager [Resource Management], Systech Solutions Pvt Ltd., No 9, North Street, Sriram Nagar Alwarpet Chennai, Tamil Nadu 600018, India. Email id: swethaa@systechusa.com

The Web took a new dimension of becoming more social. With the revolution of the Internet, media slowly evolved and thus the world saw the genesis of technological socialization. From reading contents to voicing opinions, online social networking to location aware mobile connectivity; Social Media has begun taking a different facet. Social Web users, whether they are connected teens or digital moms, are increasingly unable to draw boundaries where their physical and virtual worlds divide, or to distinguish between their known and anonymous peer groups.

Social Media defines the various activities that combine technology, social interactions, and sharing of words, pictures, videos and audio. Social media is being used for just about everything these days from keeping in touch with friends to promoting a business. Businesses, and business people, are taking advantage of these new media. The predictions for social media, mobile and the growth of online advertising are huge. New jobs are being invented, described and defined. New people are learning new skills to do them.

Social media is here to stay, and organizations need understand this new communication channel. But it’s clear that times are changing again, and those that don’t jump in will go the way of print media.

Social Media implies places, tools, services allowing individuals to share information digitally; but also social networking. Social media is more than just posting and sharing information. It’s about building a social network - slice of entertainment. It’s about relationships; it’s about interactivity.

Networking is the best way to build professional relationships, maintain and cultivate contacts and disseminate information about oneself and their business. Effective networking especially through Social Media is a low cost form of Marketing and definitely beneficial. It is a great way to get your message out to a large number of people, for free.

People come to online communities looking for top-rated answers, voice their valuable opinions, complaining, warning, starting topics, creating good debate, sharing the success stories and bragging. Six Kinds of Social Media Users include:

- **Creators**: Publish Web pages, write blogs and upload videos to sites like YouTube
- **Critic**: Comment on blogs and post ratings and reviews
- **Collectors**: Use RSS and tag Web pages to gather information
- **Joiners**: Use social networking sites
- **Spectators**: Read blogs, watch peer-generated videos, and listen to podcasts
- **Inactives**: Are online but don’t yet participate in any form of social media

**Beyond Chatting : Social Media as a Business Resource**

**Social Media: A fixture on communication**

**Six Degrees of Separation**: If a person is one click away from each business professional they know and two clicks away from each business professional who is known by one of the business professionals they know, then everyone is at most six clicks away from any other business professional on Earth.
Social media continues to grow globally in terms of adoption, usage, interest and impact in a massive way. It’s undeniably changing the way that content and information are exchanged, transforming the way consumers relate to brands and the way that brands operate, driving direct interaction and transparency. Its importance is rapidly mounting; a new way to communicate between brands, consumers and consumers/consumers.

The four 'C's model

A sound conceptual social media model leads to tactical methods for creating value and making concrete plans to act as a basis for strategy. The tools and buzzwords in social media are constantly changing but such a value system embedded in a conceptual approach is a more stable way to approach all social media.

Content: This refers to the idea that social media tools allow everyone to become a creator, by making the publishing and distribution of multimedia content both free and simple.

Researchers have found support for the 1:9:90 rule in a variety different contexts. The 1:9:90 rule says that 90% of all users are consumers, 9% of all users are curators and only 1% of users are creators.

Collaboration: This refers to the idea that social media facilitates the aggregation of small individual actions into meaningful collective results. Collaboration can happen at three levels: conversation, co-creation and collective action.

Community: This refers to the idea that social media facilitates sustained collaboration around a shared idea, over time and often across space.

Collective Intelligence: This refers to the idea that social Web enables not only to aggregate individual actions but also extract meaning from them. It can be based on both implicit and explicit actions. Amazon and Netflix are able to offer us recommendations based on our (implicit) browsing, (implicit) buying and (explicit) rating behavior and compare it to the behavior of other people like us.

The four Logical Groups

Digital Marketers: Those who track what someone is searching for and buying on the web. They create digital brand extensions of leading brands to capture your attention online.

Social Media: They exclusively focus on how communication influences the social web impacts influence. They monitor social media are involved in marketing communications.

Enterprise 2.0: Whether it’s behind the firewall or out on the open Internet, this core area specializes exclusively on delivering a business value via 2.0 technologies.

Mass collaboration: This group is more symbolic of a new way of thinking about collaboration than any specific 2.0 tool. The notion of reaching outside of your boundary to co-create innovative solutions is key here.

Although there is overlap among all these groups, the areas of focus are distinctly unique. Of course, businesses can benefit by incorporating the expertise from all these areas, but they’d need to source it separately.

Social Media Toolbox

There is wide range of tools available in the market: simple to advanced, freewares to subscription based. One should select options that work best based on specific activities, budget and the objectives to achieve in social media marketing.

• Blogs and Forums
• Social Networks (share personal interests; activity feed)
• Communities
• Micro-blogs (to share links, news; collaborative, real-time discussion)
• Video and Photo sharing
• Bookmarking sites
• Social Music sites
• Social News sites

Among those using any form of social media to find business-relevant information, the most popular activity is attending webinars or listening to podcasts (69%) followed by reading ratings/reviews for business products or services (62%). The least popular activities are saving business-related links on social bookmarking sites (28%) and participating in discussions on 3rd party web sites (29%)- information sources which do not require active participation: webinars, podcasts, reading ratings/reviews, RSS feeds, and downloading 3rd party content.

Interest in Twitter as a business information resource is also growing as people find they can quickly gain access to relevant information and start new business relationships.

Richness and diversity of social media: Infinity of tools and services

Social media maybe is here to stay; but tools are not. Different tools and services can be grouped into categories:

• Publication tools with blogs: Typepad, Blogger, Digg, NewsVine, Wiki
• Sharing tools for videos: Videos – YouTube; Pictures – Flickr; Links - del.icio.us, Magnolia; Music - Last.fm, iLike, Slideshows - Slideshare
• Discussions tools like forums: PHPbb, vBulletin, Phorum. Video forums – Seesmic
• Instant messaging: Yahoo! Messenger, Windows Live Messenger VoIP - Skype, Google Talk
• Social networks: LinkedIn, Facebook, MySpace, Bebo, HI5, Orkut; Tools for creating social networks (Ning)
• Micro Publication tools: Twitter, Pownce, Jaiku, Plurk, Adocu, twitr, tweetpeek
• Social aggregation tools: Lifestream, FriendFeed, Socializr, Socialthing!, Meebo
• Platforms for livecast hosting: Justin.tv, BlogTV, Yahoo! Live, UStream
• Mobile equivalent: Qik, Flixwagon, Kyte, LiveCastr
• Virtual worlds: Second Life, Entropia Universe, There, etc.
• Social gaming portals: Casual gaming portals - Pogo, Cafe, Kongregate, etc.
• Social networks enabled games: Three Rings, SGN, etc.
• MMO: Neopets, Gaia Online, KartRider, Drift City, Maple Story
Social Media Aggregators - Bring It All Together

Updates, tweets, diggs and feeds; comes from all directions these days. Aggregators help to manage everything.

The goal is to provide one simple point of entry where you can keep track of the streams from any and all of the most popular social networking sites. Eg: Google Buzz, Streamy, Flock, and FriendFeed.

Set Your Metrics: Measure of Success

Measurable metrics helps to understand the customer, uncover opportunities, and develop strategies to run the business better. There are analytics softwares (Eg: Google Analytics, Woopra, or Omniture). One has to know what they want to get out of Social Media. If one doesn’t know what “success” is for them, then they’re not ready to start yet. Define the metrics.

• Better overall brand awareness
• More traffic, increase in rankings based on traffic
• Increase in Blog subscribers
• Increase in leads
• New knowledge about your customers and how they view your brand
• More success on the social voting sites
• For blogs (age, audience, popularity, RSS feed subscribers, RSS subscribers/ visitors, comments per post)
• For microblog (total tweets number, average tweets per day, followings/followers)
• For social networks (profile richness, age, friends number, friends of friends number)

Subscribe for Information

Start subscribing to as many top expert’s sites and blogs out there in your niche. Tools that allow you to be on top of information without any sacrifice include: Email notifications (Tweetbeep, Google alerts), RSS feeds (Technorati search, Twitter search) and Special software (Radian6, Filtrbox).

Mobile becomes a social media Lifeline

Sales of smart phones on the rise, is likely to make employees seek to their social media addictions on their mobile devices. As GPS functionality and location-based intelligence begin to improve content delivery and advertising through the mobile device, mobile will get smarter, and marketers who leverage it will, too.

Television turning Digital

Going digital will help TV modernize. As TV signals convert to digital in June 2009, there is an opening of opportunities in advanced television. Through their media platforms and real time set-top box data, Google TV, etc have been offering limited scale options for increased accountability and metrics in the TV space.

Who Uses Social Media as a Resource for Business

Social media is used by people in different job levels, roles, industries and company sizes.

Various industries are using social media for business promotions and brand awareness. Real estate, entertainment, healthcare, automobile and IT tops the chart.

Social media being used across different levels in an organization, management people use it the most.

The vast majority respondents are directly involved in planning or managing social media initiatives and spend, on average, 18% of their time in a given week on business social media activities.

What Social Media Offers

Social media participation is an essential tool in networking with professional contacts, creating brand awareness, making new contacts, recruiting employees, and keeping in touch with the world. If you’re not participating in the top social media and networking sites, the world is leaving you behind.

Benefits of Social Media

Low/Non-existent entry cost: One could build a community around the product or service for almost free.

Business Intelligence & Competitive Analysis: Social Media allows you to open up channels to understand your business and competitors like never before. This intelligence has a value greater than any one sale or new lead.

Increased awareness of your brand: Helps to establish the online brand. Using social media, one could easily let people know about the product/service and events in the community that an organization is taking part in. Do what’s right and beneficial for customers, and they’ll reward you with value: loyalty, innovation, suggestions, revenue, helpful behaviors.

Product Innovation: When you listen to customers’ voice and innovate, you will win their business over and over again; and create better products in the long run.

Wider and rapid reach of information: Social media is a great way to propagate the word. Information on blogs, Facebook and Twitter is copied, pasted and spread around quickly, making it easier to inform.

Get linked and Develop social connections. You can join groups that share your interests, your community, or your profession and be part of it. Also you could
be found by all, friends, colleagues wherever they are. If your whole network is profiled and linked, you’ll never lose them again. Certain tools are increasingly scheduling in-person meetups so that people who are interacting online can meet face-to-face.

**Easy to post variety of media.** Some people will be especially moved by photographs while others will require the action of a video to be engaged. Social media makes it easy to employ all of these different kinds of media in one place.

**Easy to get feedback.** With social media it’s easy to get feedback from your supporters (or opponents) on what you’re doing right and what you’re doing wrong. Helps to have a two way communication. It can make a big difference in the success of your future endeavors.

**Find candidates for jobs.** You can email your network with job requirements and ask for referrals. Tap into the power of your current employees’ networks by asking them to broadcast available positions to their networks. This is one of the top ways to find passive candidates, people who may not currently be actively seeking work.

**Value of the Identity**

The increase of companies turning to Web, and thousands of websites and blogs, and millions of users; it is about identification with the spread. With projected increase of social media, it is important that one has to stay recognized and unique.

**Corporations Care About Social Media!**

Already 59% of top retailers have facebook sites. If it hits the front page of Digg, it’s visible. Once it’s visible, once you have things like incoming links and lots of regular traffic.

If your business social networking skills and techniques are poor or non-existent, people won’t find you, which would have a dramatic effect on your business prosperity in the future. When you engage, adapt, innovate and accessible, your customers will come back to you over and over.

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**Use of Social Media as a Business Information Resource by Industry**

<table>
<thead>
<tr>
<th>Index Value (1.00 = average)</th>
<th>Real Estate &amp; Construction</th>
<th>Healthcare</th>
<th>Media &amp; Entertainment</th>
<th>Automotive</th>
<th>Computers &amp; Software</th>
<th>Food &amp; Beverage</th>
<th>Retail</th>
<th>Internet &amp; Online</th>
<th>Financial Services</th>
<th>Advertising &amp; Marketing</th>
<th>Law</th>
<th>Industrial Goods &amp; Services</th>
<th>Other Industry</th>
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<td>0.96</td>
<td>0.98</td>
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<td>1.01</td>
<td>1.00</td>
<td>1.01</td>
</tr>
</tbody>
</table>

**Use of Social Media as a Business Information Resource by Industry**

<table>
<thead>
<tr>
<th>Index Value (1.00 = average)</th>
<th>Middle Manager (Director, Dpt. Head)</th>
<th>Individual Contributor</th>
<th>Sr Management (EVP, SrP, VP, GM)</th>
<th>C-Level (CTO, CFO, President, etc)</th>
<th>Manager</th>
</tr>
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<tbody>
<tr>
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<td>1.02</td>
<td>1.02</td>
<td>1.02</td>
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</tbody>
</table>

**Time Spent Managing or Involved with Company Social Media Initiatives**

<table>
<thead>
<tr>
<th>Percent of Work Time</th>
<th>Percent of Respondents</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;10%</td>
<td>31%</td>
</tr>
<tr>
<td>10-19</td>
<td>35%</td>
</tr>
<tr>
<td>20-29%</td>
<td>16%</td>
</tr>
<tr>
<td>30-39%</td>
<td>5%</td>
</tr>
<tr>
<td>40-49%</td>
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<td>5%</td>
</tr>
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<td>60-69%</td>
<td>1%</td>
</tr>
<tr>
<td>70-79%</td>
<td>2%</td>
</tr>
<tr>
<td>80-89%</td>
<td>1%</td>
</tr>
<tr>
<td>90%+</td>
<td>1%</td>
</tr>
</tbody>
</table>

- Generated exposure for my business
- Increased my traffic/subscribers/opt-in list
- Resulted in new business partnerships
- Helped us rise in the search rankings
- Generated qualified leads
- Reduced my overall marketing expenses
- Helped me close business
Getting Started: Gearing Up...

You will need to explore the possible social media sites to see which sites fit your need for participation. Some sites specialize in certain industries and on specific topics. Some even focus on networking within regions and nations.

Factors to be aware of before venturing into Social Media

• How will social media be integrated into the company’s core strategy
• Who from the company will engage
• How much time and budget will be spent on social media
• What’s the right level of engagement (corporate vs. audience vs. product)
• How long will the company “test” the different sites before evaluating their success
• If a serious issue or negative comments breaks out, what is the protocol and who needs to become involved

Commandments for Social Media Networking!

Choose your right Target. If you’re trying to target everybody, then chances are, you’re not targeting anybody. State your target clearly in all of your marketing materials. Expand your network and share ideas. More people will notice you if you are a source of innovative information. Provide the first lead before expecting from others.

Don’t mess up with every other social medium. Choose wisely. There are hundreds of social mediums on the Internet. Not everything can be of use to your service/brand. Instead choose based on relevancy and find out which media have the largest number of your target users.

Stop Spending Money on Ineffective Marketing. Don’t invest on marketing and advertising that isn’t producing results. Don’t forget to track the number of responses you are getting. If you’re not reaching your goals, then your strategy needs to be revised.

Tap untapped customer base. Don’t gravitate toward other users having huge social business networks, don’t miss out on untapped consumer base. Spread attention and marketing around to reach a variety of targeted audiences. While users with large social business networks are appealing, focus on developing strong bonds with lesser-known users too.

Do use a future-oriented approach. Information is archived for users to access for long periods of time. Whatever is posted should be future-oriented so that it does not haunt your business at a later time. Social media for business is part of building a reputation and brand recognition for your business.

Do update regularly. Computer users like to see things that are pleasing to the eye, and they also appreciate change. Leaders in the virtual world are constantly tweaking graphics, photos and layouts in order to appeal to users. Take Google for example; the basic logo on the homepage changes every day. Update the look of your social business networks on a regular basis.

Don’t send mixed messages. If there are two or more sites, ensure that your messages on are in sync. Share information including pictures, videos and music; coordinate graphics, layouts and color schemes; uniformity and consistency looks more professional.

Involves everyone to manage. Organizations are represented by individuals who become the face of the company. Engage and assign the task of running the community to group of people, so that no one person becomes the soul of the community.

Don’t self-promote. Learn the art of subtle marketing. Never force people into purchasing your product or service. It may backfire. True marketing is actually no marketing; market subtly. Interact, share your ideas and offer any helpful information to the target group. Build trust. Your branding will happen automatically.

Reciprocate and get Feedback. Provide a space where customers can interact with you. Consumers would prefer to have conversation about their wants and needs, and how you can better serve them.

Engage, listen and reciprocate. Have constant interaction.

Be Persistent and Develop Long term Relationship. Look for long term relationship with people; social media adds value to cultivate lifetime advocates of their brand; a permanent positioning. Many organizations fail because they don’t follow-up long enough to produce results. Most sales are made after the seventh or eighth contact.

Analyze your Stats. Setting up social business networks isn’t enough to generate a surge in traffic. Use Analytical tools to track and monitor. Revisit and revise strategies on a regular basis. Statistics helps to redesign the approach.

Don’t let out official/confidential information in public. Discuss regarding your business and the emerging trends, but never let out confidential/official information in public.

Safeguard the professional image. Never reveal your business secrets. Be aware of your competitors.

Don’t get addicted to social networking. Don’t go too far into the social media business and get addicted. It is just part of your promotional activities. Don’t just update your group; instead, engage in discussions that can generate leads to your business.

Social Media: Policies

It is important to develop a strategy and policy, most importantly, the rules for employee engagement around social media to protect corporate interests, yet allow employees to further an organization’s overall social media goals. The rules for creating and implementing a social media policy are not universal.

Companies having a Written Social Media Policy

Yes 57%
No 69%

A social media policy should apply to everyone, not just a subset of employees. An effective policy should remind internal audiences of these obligations and relate them to social media. The elements to include in a good social media policy:

• Define the company’s overall philosophy on social media and be consistent.
Channels to understand your business

To jump in even if you don’t yet understand it.

Social Media is the world. You have to understand the world for today and for the foreseeable future. Social Media is the world.

For non-disclosure of confidential or proprietary information.

It is important to differentiate an employee’s personal identity from business identity.

Conflicts of interest come in many forms – social media hurts worker productivity. Discuss how to identify potential conflicts of interest, what types of conflicts are prohibited and who to talk to when in doubt.

Employees should make it clear that their views about work-related matters do not represent the views of their employer or any other person.

The rights an organization hold and to what extent to monitor social media usage and about disciplinary guidelines.

**Wrapping Up**

The Web has got its pulse. Using social media for business is also a hot new trend that you cannot afford to miss out on, which is becoming a basic necessity in the virtual world. For today and for the foreseeable future, Social Media is the world. You have to jump in even if you don’t yet understand it.

Social Media allows you to open up channels to understand your business and competitors like never before. When you engage, adapt, innovate and are an accessible organization your customers will come back to you.

A well-defined strategy with clear policies and effective training will place your company in the best position possible to take full advantage of social media’s potential. Social media helps to translate online conversations into true, actionable business intelligence to make business decisions.

The most-engaged brands are significantly outperforming their peers across industries. They have even sustained strong revenue and margin growth in spite of the economy, according to the study. The level of engagement appears to be a factor, too. The companies deeply engaged in fewer selective channels delivered higher gross and net margins than those only lightly engaged in more channels. It’s not about doing it all, but doing it right.

We are only beginning to observe the rise of social media. There are still a lot of territories to conquer.

**Useful Insights on Social Media**

As a social media entrepreneur, I’ve realized the key to learning and applying social media knowledge to any business can be best summarized in two main points: 1. Awareness; 2. Guidance. Awareness equals the realization of social media’s pivotal role. This 1st point is the fuel in the furnace of acquiring more social media skills in order to grow your business. Guidance signifies the textbook, outlining the learning principles and techniques needed in order to succeed. My experience tells me this 2nd point mostly involves learning from social media experts, such as successful bloggers, podcasters, or viral video producers.

- **Andrew Ran Wong**

Andrew Ran Wong suggests the following five Logical Steps to use Social Media effectively.

1. Recognize the Need to Adapt to Social Media
2. Embrace Change/Challenge the Status Quo
3. Understand Why Social Media is the New Mainstream Media
4. Learn Why Google is So Popular
5. Take On the Tools to Become a Leader in the New Media Age

[“Evolution is evolution – and it’s happened before us and will continue after we’re gone. But, what’s taking place now is much more than change for the sake of change. The socialization of content creation, consumption and participation, is hastening the metamorphosis that transforms everyday people into participants of a powerful and valuable media literate society.”](http://www.briansolis.com)

- **Brian Solis, BrianSolis.com**

[“Social media isn’t the end-all-be-all, but it offers marketers unparalleled opportunity to participate in relevant ways. It also provides a launchpad for other marketing tactics. Social media is not an island. It’s a high-power engine on the larger marketing ship.”](http://technomarketer.typepad.com)

- **Matt Dickman, technomarketer.typepad.com**

[“The old saying tells us, “the way to a man’s heart is through his stomach.” Let’s update that for today’s world and recognize that the way to a blogger’s keyboard is through their ego.”](http://www.bloggingpods.com)

- **Peter Kim, BeingPeterKim.com**

[“Blogging, Podcasting and staying up to date on Twitter, Facebook and more is real work. It’s this kind of real work that affords me the luxury to acquire new clients, build interesting Digital Marketing and Communications initiatives, speak all over the world and think ever-more deeply about this space.”](http://www.twistimage.com)

- **Mitch Joel, TwistImage.com**

[“If you think about the bloggers and thought-leaders currently making waves at the moment – the people everyone is currently talking about – you’ll notice that they are unashamedly individual and unashamedly confident. You have to be. Believing that people will listen to and find value in what you really want to say requires that.”](http://www.skelliewag.org)

- **Skellie, Skelliewag.org**

**If No Policy... Why?**

<table>
<thead>
<tr>
<th>Reason</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Not sure what to include</td>
<td>25%</td>
</tr>
<tr>
<td>Hasn’t been addressed</td>
<td>25%</td>
</tr>
<tr>
<td>Don’t think it’s important</td>
<td>25%</td>
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</tbody>
</table>

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1. Introduction

Computer users are spending more time on social networks like Facebook, Orkut, Ibibo etc., and sharing sensitive and valuable personal information, but hackers are there to check where you are and where the money is to be use. The dramatic rise in attacks in the last few year warning us that social networks and their millions of users have to do more to protect themselves from organized cyber crime, or risk falling prey to identity theft schemes, scams, and malware attacks. Targeted attacks against companies are in the news at the moment, and the more information a criminal can get about any organization’s structure, the easier for them to send a attachment to precisely the person whose computer they want to break from your side.

It is now more important than ever to be diligent about online security measures as relative threats are prevalent in an increasing number of channels including social networking sites such as Facebook, Orkut. In a recent poll reported by Computerworld and anti-spyware development company Webroot, four out of five IT professionals believe web 2.0-based malware will pose the biggest security threat in 2010.

The one common threat is that at the end of the day everyone is concerned about protecting their personal data, their financial information, and their identity data. So, social networking sites, blogs, social media tools such as Twitter, chat tools, even search engine results are being used to infect end user systems with all sorts of data stealing malware. Users need to be aware that what they say and do on these social networking sites can be tracked. Web 2.0 based social networking sites are biggest security threat for Businesses and individuals. You must aware while working with these sites to safeguard your identity, personal data and financial transactions. This paper will give you some answers of questions about how to better enjoy the conveniences of the digital world of social networking and how to secure one’s digital identity and information while surfing, buying, traveling and communicating on these sites. According to Investor’s Business Daily, evil is sweeping social networks, moving beyond email and blogs to where you like to virtually hang out and congregate.

2. Types of Threats

Last year one virus in particular, called Koobface, is a particularly nasty virus that can do some quite astounding things. It’s capable of registering an account (in your name and with your email address on Facebook), verifying the account by logging into your email, then befriending contacts or strangers. Then it posts messages to people, walls and groups full of links to spam sites and other viruses. Others take over your existing account and post messages to all of your friends containing another virus. The advise is you should change password on another computer in case the virus was logging the keys you hit on your computer.

On Twitter, a virus called StalkDaily spread the rather strange ratings of a 17-year-old called Mikey Mooney. Hundreds of thousands of messages were posted across Twitter, making Mikey a celebrity for a day. 61 percent of security chiefs in business consider Facebook the biggest threat to their security. That’s not surprising considering how many of us use it. But there is no doubt that simple changes could make Facebook like sites users safer. For instance, when Facebook rolled out its new recommended privacy settings late last year, it was a backwards step, encouraging many users to share their information with everybody on the internet.

2.1 Think before you click

Other than an up-to-date anti-virus system, think carefully about clicking on any links sent to you by friends on these sites. Is the language of the message a little out of character? Have you heard of the website they’re linking to? Like On Twitter, where links often appear using web address shorteners like Bit, then it may be impossible to know where you’re going to land until it’s too late. That’s a big and growing risk.

Security experts last week warned that a new strain of the Koobface virus is hitting Facebook, MySpace and other social networking sites. It looks for links and passwords to other social networking sites. Virus creators are increasingly targeting social networking sites and other Web 2.0 technologies such as the micro-blogging site Twitter and instant messaging services from Google, AOL and others. Virus writers
are also creating fake profiles of celebrities, real friends or business associates hoping people will link with them. Users can be tricked into linking to the fake profile, which can be loaded with various forms of malicious software.

Some times when you responded to an email from a “friend on Facebook” to visit a link that initiated a program that rifled through your hard drive, may install malicious software and sent the same e-mail to all of your friends through your profile.

Other attack targets included Google Talk, Yahoo and Microsoft Instant Messaging services, and Twitter users. They were sent a message to check out a video or link that required their login information.

Myspace, Facebook, LinkedIn, and other social media tools and networks are becoming the target of an increasing number of Phishing and criminal activity. Unfortunately, many of us continue to fall for these misleading attacks, handing out passwords and personal information, risking our personal identity as well as our privacy and computer data.

Identity theft is on the rise, and it’s a lucrative business to disrupt your business and your online life.

3. Data Collection and analysis about some theft attacks

More than 1.2 million people filed a complaint of fraud, identity theft or a related act to law enforcement or regulatory agencies in 2008, up 16% from a year ago, according to the Consumer Sentinel Network, a branch of the Federal Trade Commission. Financial losses came to $1.8 billion, or about $3,400 per victim reporting a financial loss. Losses of $1 million or more were reported by 257 people.

Identity theft was the top complaint, named by 26% of the complainants. Credit card fraud was the most common form of identity theft, at 20%. Most fraud victims said the initial contact with the crooks came through e-mail or Web site visits.

According to research firm Javelin Strategy and Security, in 2008 about 9.9 million U.S. adults were victims of identity fraud, up 22% from the year before. It pegs the total loss at $48 billion. Most incidents were the result of lost or stolen wallets, checkbooks and credit cards, but online access accounted for 11% of the total.

F-Secure reported that the total amount of malware accumulated over the past 21 years increased by 200% in the course of just one year for the year ending in 2008.

With the big business of security attacks and identity theft come big losses. The financial impact of these cyber crimes is on the rise as well, blogs scams including the danger of exaggerated claims, how to spot a scam and report them, web hoaxes, blogs scams making money from your content and gullibility, get rich schemes, and the growing number of Phishing, fake, and impostors out there on the web pretending to be something they aren’t.

Now we may say threats of the popular social network sites are:
- Identity theft
- Threats to personal safety such as stalking or threatening either online or in real life
- Social risks through participating in minority groups or stigmatized groups

In a recent study the researchers developed a tool to score the information disclosed on Facebook. This instrument can determine in Facebook profiles what personal information is disclosed and what is not. Next this scoring tool for personal information was used to explore means for examining identity threat.

For this they divided the personal information on Facebook in 3 categories: personal identity information (gender, birth day, birth year, email, and picture), sensitive personal information (email, employer, job position, status, mini-feed, regular wall, picture, photo albums, self-selected photos, tagged photos, message, poke, send a gift, and friends viewable) and potentially stigmatizing information (religious view, political views, birth year, sexual orientation, photos, friends viewable, interests, activities, favorite music, favorite movies, favorite TV shows, favorite books, favorite quotes, about me).

They used a sample of 400 randomly selected, accessible, personal profiles from 8 Facebook networks. Overall in all three categories those revealing their relationship status were also those to reveal more personal information. Those seeking a relationship were at greatest risk of threat, and disclosed the greatest amount of highly sensitive and potentially stigmatizing information.

For all three categories as age increases less personal information is disclosed. Older people are more cautious when disclosing personal information. Facebook users who disclosed information about age, gender, relationship status disclosed more information in all three disclosure categories than people who did not disclose this information. Moreover, those who were single also revealed more stigmatizing items. Gender had no influence on these findings. Although women usually disclose more personal information, this difference from men is not present online.

Using facebook for finding a new relationship is probably accompanied by a high threat of identity theft and other social risks, so take care.

4. Attack scenarios

Social network owners offer encoded and possibly sanitized network graphs to commercial partners and academic researchers. Therefore, we take it for granted that the attacker will have access to such data. The main question is that, can sensitive information about specific individuals be extracted from social-network graphs?

Attackers fall into different categories depending on their capabilities and goals. The strongest can be a government-level agency interested in global surveillance. Such an agency can be assumed to already have access to a large social network like orkut or facebook . His objective is large-scale collection of detailed information about as many individuals as possible. This involves aggregating the social network data.

Another attack scenario involves abusive marketing. A commercial enterprise, especially one specializing in behavioral ad targeting, can easily obtain an encoded social-network graph from the social networking sites for advertising purposes. As described this data may often be misinterpreted as privacy. If an unethical company were able to decode the graph using publicly available data, it could engage in abusive marketing aimed at specific individuals.

Phishing and spamming also gain from social-network decoding. Using detailed information about the victim gleaned from his or her decoded social-network profile, a phisher or a spammer will be able to send a highly individualized message to others.

Yet another category of attacks involves targeted decoding of specific individuals by stalkers, investigators, nosy colleagues, employers, or neighbors. In this scenario, the attacker has detailed contextual information about a single individual, which may include some of her attributes, a few of her social relationships, membership in other networks, and so on. The objective is to use this information to recognize the victim’s node in the social network and to learn sensitive information about him or her, including all of his or her social relationships in that network.

5. Conclusion

This is the Year of Original Content, a year where we fight back against those who steal our content for their own evil purposes without our permission. Don’t let your guard down against those who abuse us in other ways, too. Using
Facebook and other social networking sites like Orkut for finding a new relationship is probably accompanied by a high threat of identity theft and other social risks, so take care.

References:

FACT FILE OF SOCIAL NETWORK THREATS

Sophos’s “Social Security Threat Report” released on 1 February 2010 reveals that criminals have increasingly focused attacks on social networking users in the last 12 months, with an explosion in the reports of spam and malware:
- 57% of users report they have been spammed via social networking sites, a rise of 70.6% from last year
- 36% reveal they have been sent malware via social networking sites, a rise of 69.8% from last year

“Computer users are spending more time on social networks, sharing sensitive and valuable personal information, and hackers have sniffed out where the money is to be made”

- Graham Cluley, Senior Technology Consultant, Sophos

Online Social Networks: 5 threats and 5 ways to use them safely
Posted by Tom on June 19, 2008 - 10:48 pm [http://www.spylogic.net/]

Top Five Threats on Social Networks
1. Cyberbullying, stalking, and sexual predators
2. Vulnerabilities in Applications/Widgets
3. Spear Phishing [Fake Friend Request] and SPAM
4. Collection and aggregation of personal data
5. Evil Twin Attacks

Top 5 Ways to Safely use Online Social Networks
1. Set appropriate privacy defaults
2. Be careful with third-party applications/widgets
3. Limit personal information
4. Only accept friend requests/connections from people you know directly
5. Only post information your mother is comfortable seeing!

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Harnessing Social Networking Services for a Business Edge

Anand Parthasarathy

Social Networking sites have matured from being mere windows to their members’ trivial pursuits, to providing measurable business advantage especially for small and medium sized industries. The manner in which such sites are being leveraged by Indian corporate is suggested and their future potential is discussed.

The pioneering social media sites which made their appearance, around 2000-2002, were perceived to be non-serious and mainly limited to the trivial pursuits of their members. But in the decade or so since then, there is mounting evidence that some of them – including the most popular ones – are also being leveraged to serve a more serious professional agenda. Many large corporations are still testing the waters of online social media and marking their presence in a spirit of “we don’t know quite what to make of it, but let’s hedge our bets in case it becomes big and our competitors exploit it and to overtake us”.

Smaller and younger businesses – and this means young in entrepreneurial spirit rather than in mere years – have been more agile: for them personal contacts and connections are cornerstones for expanding their list of customers: And social networking sites and services are ready-made solutions to further their corporate agendas. They use these networks as a customer relationship management tool to sell their selling products and services, often advertising such services in the form of banners and text ads.

To its credit, the corporate leaders who helped create the Indian technology brand have been quick to appreciate the promise and potential of social networking; in some cases, their employees who were already into Facebook, Orkut, YouTube or Twitter out of personal interest, found themselves leveraging these services for business, even before their managements woke up to the potential.

Consider these examples that have been reported in the Indian media in recent months:

- MindTree has created its own community on the professional networking site LinkedIn and on Facebook: It sees positive referrals from these sites being translated into business.
- Infosys staffers following Twitter found a prospective buyer, posting a query. They responded promptly and were rewarded with a contract.
- “TCS Twitter” started this year (2009) has received overwhelming response from analysts and opinion makers”, says a company spokesperson.
- Wipro reports that its business leads from online webinars, webcasts and social networking sites have grown by 50 percent in recent years. It has its presence in SecondLife, YouTube, Twitter and LinkedIn [1].
- Speaking at the Brand Summit in February 2010, Rahul Welde, Vice President, media services at Unilever said social media sites successfully pushed the sales of the company’s toothpaste brand, Close-up in Vietnam. "Social media is a reality. You can’t ignore it”, he added. [2]

Clearly Corporate India sees some definite value in jumping on the social media bandwagon.

Wikipedia quotes Jody Nimetz, author of Marketing Jive, to list the five major uses that businesses see in social media: “To create brand awareness; as an online reputation management tool; for recruiting; to learn about new technologies and competitors; and as a lead tool to intercept potential prospects. These companies are able to drive traffic to their own online sites, while encouraging their consumers and clients to have discussions on how to improve or change products or services” [3].

The emerging demographics of Internet usage would suggest that the more popular of such sites and services, like Facebook, Orkut, Twitter or YouTube are the places to target, if one is looking for customers who are relatively younger. A recent survey commissioned by TCS (Generation 2.0 Survey 2008-09) across 12 Indian metros and mini metros, among 14,000 children in the 12-18 years age group, studying mostly in English medium schools, found that almost
all of them – 93% – are aware of social networking; and Orkut is the most popular of their networking resources. Bangalore is the blogging capital of India, with almost seven of ten students running their own blog.

The survey report says: “Urban school children in the metros and mini-metros are immersed online and have the technology at hand to access information through the net at all times. Over 80% have access to mobile phones, find time for the internet alongside school, classes and extra-curricular activities, and are starting to embrace Web 2.0 tools like blogs and social networking sites”. Interestingly, their most popular information tool is not newspaper, magazine, radio or TV but Google.

Conservative estimates put the number of Internet users in India at nearly 80 million (16-20 million connections each used by an average of 5 persons). If you also factor in the almost 600 million who have a mobile phone (a small percentage of these are GPRS-enabled), the total population of Indians who have access to the Web is almost 100 million. As a percentage of the population this may still be less than 10 percent – but the sheer volume dictates that Internet – and Internet-driven social networks -- must be part of the arsenal of any entrepreneur hoping to do business in India – particularly with the young and upwardly mobile sections of the population.

That leaves the question, ‘which of the many social networking options are relevant to business? A recent compilation by Alyssa Gregory, listed the top 20 sites for business professionals.[4] However, not all of them are popular or even known in India. More useful is the checklist created by Kent Lewis,[5] primarily for the hotel and hospitality industry, where each of the sites cited is rated for its primary demographics, metrics, its main opportunity and biggest challenge. It is important to understand what site works for what target audience – and a careful selection will ensure that time and effort is not wasted.

Corporations who can be called significant Web players have also found in social networking a way of having their cake and eating it too: they use such sites or their personal blogs to make announcements that cannot be made for some reason through formal and official channels. Google announced its development of the Chrome browser and later the Chrome OS not through a press release but through the blog of the Chrome team leader, Sunder Pichai. More recently, the ‘father of Java’ James Gosling used his personal blog to signal that Sun Microsystems, its parent of Java was no more – as a separate entity – a year after its acquisition by Oracle. He published a simple graphic, a gravestone marked “RIP Sun Microsystems: 1982-2010”. A day later, Sun CEO asked Sun employees to “emotionally resign from Sun”. He himself packed his bags and left the company, both emotionally and practically, saying his goodbyes through social networking.

Recent weeks have seen the social networking space getting even more crowded with new entrants and offerings: Google has launched Buzz, a challenger to Twitter – which makes it very easy for users of its Gmail service to painlessly build up their own personal following. IBM is reported to be in talks with major Indian telecom companies to help them integrate cloud-based social networking and collaboration tools into their applications. The IBM tool is called LotusLive and it already has over 18 million users worldwide. Microsoft’s next iteration of its Office Suite is widely expected to have a Web-based version, likely to be free to use and including many tools to make cross-posting to the most popular social networking sites, easy.

Clearly, such sites and services have matured from being mere showcases of the lifestyles of the rich, famous and trendy. Today they are already providing a business advantage to the early movers, who are ready to study the entire social networking ecosystem, understand the unique features of each component system and leverage them to their advantage. The corporate world ignores these developments at its peril.

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About the Author

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“\n“What separates the successful from the unsuccessful is the acknowledgement of weakness. Bring your weaknesses to the front of the line, acknowledge them, and learn from them. Think of them as a valuable tool rather than trash to take out.”

~ Tim Jahn, TimJahn.com

“Don’t worry about retracing the path of ten thousand other creators. Make the journey your own with your honest, authentic thoughts and feelings. No one can accurately duplicate that.”

~ Mark Dykeman, Broadcasting-Brain.com
Social Networking for Health

Sangeeta Bhattacharya, Satish P Rath

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Over the past few years online social networking sites like Facebook, Orkut and Twitter have grown in popularity. While most people use these social networking tools to just connect with friends, their utility extends much beyond this, to more valuable things like our health. Health social networks are a new class of burgeoning social networks that are helping people deal with a range of health issues from maintaining a healthy lifestyle to fighting diseases like cancer. This article provides a brief overview of the marriage between social networking and health.

Man is known to be a social animal and by nature builds and maintains a social network throughout his/her lifetime. While the social networks of our ancestors were mostly limited by physical distances and family ties, with the rapid advancement of technology, today we are able to maintain social networks that span the entire globe. Flourishing social networking sites like Facebook [1], Orkut [2], Twitter [3] and GupShup [4] exemplify human tendencies to socialize. People use these sites for varied objectives ranging from sharing personal information to showing support for a cause to connecting with people with similar likes and dislikes. While these sites enable generic social networking, there are several other social networking sites that serve specific goals. For example, LinkedIn [5] is a popular networking site used to build and maintain professional networks. Another more recent class of burgeoning social networks caters to health. Sites like Fitbit [8] and Lifemojo [9] promote healthy living. They not only provide diet and exercise advice but also support social communities interested in healthy living. These sites allow people to share their health and activity states with friends and experts. While social support plays an important role in these sites, other factors at play here are “peer pressure” and “competition.” People are often driven by competition either consciously or subconsciously. Peer pressure comes into play mostly among people who know each other well. A question that might be asked at this point is why generic social networking sites like Facebook cannot be leveraged for better health management. In fact it can. People wanting to lead a healthier life by losing weight have benefitted significantly from the support of their friends on facebook [10]. Declaring goals to friends enables our friends to keep track of our progress and encourage us to reach our goals. Then there is the added pressure of not wanting to fail when others are watching. Social networking sites also enable us to form a private group among friends with common health goals and work towards the goal as a group. While these are explicit ways in which our social network can affect our health, other implicit social forces also seem to be at play. A recent study published by Christakis and Fowler [11] [12], involving 12067 individuals over a span of 32 years, shows that health behaviors like those causing obesity are contagious. From their study, they found that “a person’s chances of becoming obese increased by 57% if he or she had a friend who became obese in a given interval. Among pairs of adult siblings, if one sibling became obese, the chance that the other would become obese increased by 40%. If one spouse became obese, the likelihood that the other spouse would become obese increased by 37%” (Fig. 1). Further, they found that social distance is more important than geographic distance, in the spread of obesity and that the effect of influence extends up to 3 degrees of separation. Pairs of friends and siblings of the same sex have a higher degree of influence than pairs of friends and siblings of the opposite sex. They reasoned that the cause behind the social contagion was the fact that our social network influences our general perception of social norms. For example, if the majority of our friends are obese, we will likely come to believe that being obese is ok. Hence, it may be worthwhile to examine our social network or even selectively build our social network to help achieve our goals [11].

Fig. 1: Network of social influence.
While the above sites mainly deal with healthy living, other sites like Diabetes Friends [6] and Cancer Survivors Network [7] help manage more serious health problems like Diabetes and Cancer, respectively. Members of such social groups help each other by sharing advice, experiences and most of all by providing support. A few similar sites go one step further and make user information (after data is made anonymous) available for mining, as an effort towards finding cures to fatal health problems like diabetes, cancer etc. Such sites are often said to be crowd-sourced, which means that it is driven by the crowd. Members of the community support the community through information and advice. Several such crowd-sourced projects have been initiated [13][14] in the past 1-2 years with the aim of finding solutions at a faster pace. The driving force behind such websites is that as a first step, people generally seek information from friends and other people with similar problems and on the web. All of the above sites help individuals to either leverage their existing social networks or to grow their social networks to address their health needs. While most of the work is done manually now by people, for example, identifying a common problem and suggesting a solution or asking for one, we can imagine that in the future a large part of this process will be automated. For example, future Facebook applications could enable us to expose certain health information to our social network and could automatically match our health condition to that of our friends or friends-of-friends and pull-up solutions as recommended by them.

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1] Facebook: http://www.facebook.com
3] Twitter: http://twitter.com
5] LinkedIn: http://linkedin.com

Facebook

Facebook is a social networking website that is operated and privately owned by Facebook, Inc. Since September 2006, anyone over the age of 13 with a valid e-mail address can become a Facebook user. Facebook’s target audience is more for an adult demographic than a youth demographic. Users can add friends and send them messages, and update their personal profiles to notify friends about themselves. Additionally, users can join networks organized by workplace, school, or college. The website’s name stems from the colloquial name of books given to students at the start of the academic year by university administrations in the US with the intention of helping students to get to know each other better. Facebook was founded by Mark Zuckerberg with his college roommates and fellow computer science students Eduardo Saverin, Dustin Moskovitz and Chris Hughes. The website’s membership was initially limited by the founders to Harvard students, but was expanded to other colleges in the Boston area, the Ivy League, and Stanford University. It later expanded further to include (potentially) any university student, then high school students, and, finally, to anyone aged 13 and over. The website currently has more than 400 million active users worldwide. The original concept for Facebook was borrowed from a product produced by Zuckerberg’s prep school Phillips Exeter Academy for decades published and distributed a printed manual of all students and faculty, unofficially called the “face book”. Facebook has met with some controversy. It has been blocked intermittently in several countries including Syria, China, Vietnam, and Iran. It has also been banned at many places of work to discourage employees from wasting time using the service. Privacy has also been an issue, and it has been compromised several times. Facebook settled a lawsuit regarding claims over source code and intellectual property. The site has also been involved in controversy over the sale of fans and friends. A January 2009 Compete.com study ranked Facebook as the most used social network by worldwide monthly active users, followed by MySpace. Entertainment Weekly put it on its end-of-the-decade ‘best-of’ list, saying, “How on earth did we stalk our exes, remember our co-workers’ birthdays, bug our friends, and play a rousing game of Scrabulous before Facebook?” There have recently been reports of Facebook proposing an initial public offering (IPO), i.e. issue equity shares as stock to investors. However, Zuckerberg stresses that it will not be for a few more years, and the company is in no need of additional capital. Also, some analysts fear the Facebook IPO might be a particularly weak one.

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FACEBOOK

Multi-Dimensional Social Networks: The Race to the Intelligent Web

Joseph Pally

Introduction

Human societies have evolved over thousands of years, from simple hunter gatherers to a collection of complex societies – all driven by repeated revolutions in communication techniques, paralleled by rapidly evolving techniques for information storage, information processing and information retrieval. The range, size and power of social networks have constantly grown, and almost exponentially in the last century. The new century holds amazing opportunities in ways we will connect and function as societies.

Global Web Traffic during December 2009 indicates that an average user spent about five hours on social networking (The Nielsen Company, 2010). Engaging about 350 million unique visitors worldwide, dominated by a younger demographic that will constitute and define markets, economies, culture and society for the next 30 years. Clearly, the social networking phenomenon will redefine our future. Very much like television – that in the latter half of the last century changed the fabric and nature of societies, throughout the world.

In order to understand the significance of this phenomenon in reforming our future, we need to examine the real nature of such networks, their interaction with the evolving web of data and functionality, and increasing power of machines and the networks driven by electrons that connect us.

Background

Tim O'Reilly and his team at O'Reilly Media noticed something rather interesting evolving on the web from the ashes of the dot-com bust (O'Reilly 2005). They tried to understand the differences between the old web and the new web, by writing them down. They noted that far from having “crashed”, the web was more pervasive and significant. The companies that had survived the dot-com collapse seemed to have some things in common (Table 1), they noted. This they identified as a turning point for the web, dubbed Web 2.0, later identified as the Constellation of Connected Communities or CCC (Pally 2009) (Table 2).

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In 1965, JCR Licklider had described a concept of “an active desk with a display-and-control system in a telecommunication-telecomputation system with a connection to a precognitive utility net that will connect to everyday business, industrial, government, and professional information, and perhaps, also to news, entertainment, and education.” Four years later, on 29 October 1969, at 10:30 pm, a message was sent over the first packet switching computer network set up between Leonard Kleinrock’s lab (at UCLA) and Doug Engelbart’s lab (at the Stanford Research Institute), starting a new era in computer communications (Pally 2009) – spawning the Internet. This was immediately followed by the invention of e-mail by Ray Tomlinson in 1971; leading the way to electronic bulletin boards, newsgroups, Gopher; and eventually the World Wide Web by Tim Berners’ Lee in 1991. Companies like AOL and Prodigy that dominated network connectivity in the late 80’s and 90’s, now have been almost completely eclipsed by the World Wide Web.
Web is still transitioning to a semantic omni-functional web (Table 2), from an electronic collection of communities. With the arrival of mobile communication devices with data connectivity, it is hard to imagine a society without a network.

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<td>Intelligent Immersive Imagion</td>
<td>2011-2015</td>
<td>Web 3.2 - Immersive Web</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2014-2020</td>
<td>Web 3.5 - Learning Web</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2020-2025</td>
<td>Web 4.0 - Knowledge Web</td>
</tr>
</tbody>
</table>

Table 2: Generations of the Web (Pally 2009)

A social network is defined as a social structure made of individuals (or organizations) connected by friendship, kinship, financial exchange, dislikes, relationships, beliefs, knowledge, prestige, etc. An electronic social network translates any real-world social network into a virtual world.

In many networks such as MSN Messenger, users have about 6.6 hops on an average to any other person on the network (Leskovec and Horvitz, 2008). Though a network such as Facebook claims to have 350 million nodes, the actual connectedness of a single individual is limited to around 100 nodes (Facebook, 2009), with active nodes being far less than that. The average individual connectedness needs to be considered for evaluating target marketing as well as business models. Though centrality of individuals in a network tends to show their social status (as the case is in popular Blogs where large numbers of people track a small number of authors), in larger social networks this tends to be far less in significance, due to the sheer size of the population. Instead, cohesion and closeness of the individuals (or nodes) at the local level holds the global network together.

This also means that the strength of the network may heavily depend on real-world relationships, which often change over time in relevance and cohesion. For example, a network that is based primarily on the dating requirements of an individual may get irrelevant as the person becomes attached or change in status. A similar situation can be seen in networks or groups that map into academic classes, once such classes are finished.

Dimensional Roles in Network Formation

Every individual has several dimensions - based on his roles as employee, parent, spouse, friend, and associations based on religion, culture, social group, etc. In many of these roles, which may or may not be constant, the interest network changes over time. For example, as an employee, the roles may change from a manager to a leader over time. The people network associated in each of these roles will certainly vary almost annually, with age, family status, employment status, social status, etc. This varying interest networks can be visualized as a series of hub-and-spoke patterns centered on the individual.

In general, a person is involved in more than one network to achieve the purposes of his/her life in the digital realm. Clearly, this observation portends mergers of some of the current networks of dissimilar nature, in the upcoming years, so as to cover many roles into a single medium (example, Facebook and LinkedIn).

Future Trends: Interconnected Social Networks in Web 3.0

Role-based aspect-based social networking ‘graphs’ demand better ways of sharing information among the networks. The need to standardize social networks – to make it easier for an individual to interact with the several aspects and roles that they may be involved in – is fast becoming a priority.

In May 2007, Facebook became one of the first social networks to expose an open API for other providers to connect to (Arrington 2007). This started an avalanche of networks opening up their interfaces for other parties.

With the advent of the Web 3.0 generation of machine driven networks, it has become necessary that such data is stored and handled in more machine understandable formats.

FOAF (Friend of a Friend) is an RDF-based (Resource Description Format) technique, based on XML, to describe details about a person to aid in machine

<table>
<thead>
<tr>
<th>Role/Aspect</th>
<th>Social Network(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual</td>
<td>Facebook, Myspace, Orkut, Bebo, Friendster, hi5, Habbo, Mixi (Japan), MSN Spaces, Qzone (China), Vkontakte and Odnoklassniki (Russian), Skyrock (French), Sonico (Spanish)</td>
</tr>
<tr>
<td>Artist</td>
<td>deviantArt</td>
</tr>
<tr>
<td>Expressions: Videos, Photos</td>
<td>Flickr, imeem, Youtube, picassaweb</td>
</tr>
<tr>
<td>Employee/Career</td>
<td>LinkedIn, Plaxo, Monster, Dice</td>
</tr>
<tr>
<td>Religion</td>
<td>MyChurch</td>
</tr>
<tr>
<td>Virtual Avatars</td>
<td>Second Life</td>
</tr>
<tr>
<td>Music</td>
<td>Last.fm, imeem</td>
</tr>
<tr>
<td>Alumni</td>
<td>Facebook, Classmates.com</td>
</tr>
<tr>
<td>Special Interests/Generic</td>
<td>Yahoo Groups, Ning</td>
</tr>
<tr>
<td>Blogs</td>
<td>Blogger</td>
</tr>
<tr>
<td>Travel</td>
<td>WAYN, Expedia</td>
</tr>
<tr>
<td>Books</td>
<td>Amazon</td>
</tr>
<tr>
<td>Auction/Exchange</td>
<td>eBay</td>
</tr>
<tr>
<td>Movies</td>
<td>Netflix</td>
</tr>
<tr>
<td>Family</td>
<td>Ancestry, Geni</td>
</tr>
<tr>
<td>Business</td>
<td>LinkedIn, Twitter, Tibbr</td>
</tr>
<tr>
<td>Communication</td>
<td>Hotmail, GMail, Yahoo Mail, Meebo, Yahoo/GChats, Twitter.</td>
</tr>
</tbody>
</table>

Table 3: Roles/Aspect based Social Networks.
based social networking. Example of FOAF is given in Listing A1.

```xml
<foaf:Person>
  <foaf:name>Joseph Pally</foaf:name>
  <foaf:gender>Male</foaf:gender>
  <foaf:title>Mr</foaf:title>
  <foaf:givenname>Joe</foaf:givenname>
  <foaf:family_name>Pally</foaf:family_name>
  <foaf:mbox>joseph@zcubes.com</foaf:mbox>
  <foaf:homepage rdf:resource="http://www.jpally.com/"
                 rdf:label="Joseph Pally website"/>
</foaf:Person>
```


For a machine, FOAF format is a machine understandable description of a person. Such formats can allow semantic web software to connect the person described by the FOAF file, to another person or group with similar interests or associations automatically. It can even be used to set up accounts at other social networking sites automatically, which may neutralize the advantage of any particular social network becoming or being dominant.

The provision of such interfaces and data structures may or may not come from established social media providers initially; though it would be easier for established players to provide this to start off a ‘social interaction revolution’. Interfaces like Facebook platform API can be considered as a first step towards this.

Conclusion

The new generation of computer users will certainly be immersed in social networking as the dominant way to conduct cultural and social life. It is to be expected that the explosion of social networks will be accompanied by a merger of several dissimilar networks into a more seamless experience for the users with various roles in real life. However, since social network enganges only 5% of user’s time (The Nielson Company, 2010), functionality based approaches (such as omni-functionality) (Pally 2009) may drive the user experience in the future, with social networking playing an important, but a less significant or notable role.

References

- The Nielson Company (2010).

About the Author

JOSEPH PALLY, is the CEO of ZCubes, Inc., a high-technology company based in Houston, and leads several software companies. He is a graduate of the Indian Institute of Technology, Madras, India, as well as Texas A&M University, College Station, Texas, USA. He is a well-known software scientist, and has been credited with the invention of ZCubes and many other advanced software technologies.


Twitter is a social networking and microblogging service that enables its users to send and read messages known as tweets. Tweets are text-based posts of up to 140 characters displayed on the author’s profile page and delivered to the author’s subscribers who are known as followers. Senders can restrict delivery to those in their circle of friends or, by default, allow open access. Since late 2009, users can follow lists of authors instead of following individual authors. All users can send and receive tweets via the Twitter website. Short Message Service (SMS) or external applications. While the service itself costs nothing to use, accessing it through SMS may incur phone service provider fees.

Since its creation in 2006 by Jack Dorsey, Twitter has gained notable popularity and popularity worldwide. It is sometimes described as “SMS of the Internet.” The use of Twitter’s application programming interface for sending and receiving text messages by other applications often eclipses direct use of Twitter.

“What we have to do is deliver to people the best and freshest most relevant information possible. We think of Twitter as it’s not a social network, but it’s an information network. It tells people what they care about as it is happening in the world.”

- Evan Williams

Twitter began in a “daylong brainstorming session” that was held by board members of the podcasting company Odeo in an attempt to break a creative slump. During that meeting, Jack Dorsey introduced the idea of an individual using an SMS service to communicate with a small group, a concept partially inspired by the SMS group messaging service TXTMob.

A blueprint sketch, circa 2006, by Jack Dorsey, envisioning an SMS-based social network.

The working name was just “Status” for a while. It actually didn’t have a name. We were trying to name it, and mobile was a big aspect of the product early on... We liked the SMS aspect, and how you could update it, and we came across the word “twitter,” and it was just perfect. The working name was partially inspired by the SMS group messaging service TXTMob. A blueprint sketch, circa 2006, by Jack Dorsey, envisioning an SMS-based social network.

“We wanted to capture that in the name—we wanted to capture that feeling: the physical sensation that you’re buzzing your friend’s pocket. It’s like buzzing all over the world. So we did a bunch of name-storming, and we came up with the word “tweet,” because the phone kind of vibrates when it moves. But “tweet” is not a good product name because it doesn’t bring up the right imagery. So we looked in the dictionary for words around it, and we came across the word “twitter,” and it was just perfect. The definition was “a short burst of inconsequential information,” and “chirps from birds.” And that’s exactly what the product was.”

- Jack Dorsey
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Introduction

Social Networks are community-centric clusters of people and insights that are transforming business models in many industries. Combination of crowd sourcing and democratization of information on one hand and real-time intelligent systems modeling on the other can change the way we market, sell, buy, and support products and services, the way we make decisions. Social Network formations follow a four-step life cycle of create, contribute, generate, and sustain. This article focuses on strategic architectural decisions for Energy and Utility organizations across the Social Network life cycle. While roles of people in this ecosystem who can benefit from Social Networks span generation, transmission, distribution, consumption, service, and regulation associated areas, our emphasis is on Advanced Metering Infrastructure (consumer, analyst), operations, and customer care related roles. Insertion points based on architectures and solutions by Microsoft, Oracle, Google, and IBM are discussed. We also answer the following questions: (a) how can social networks drive policy making, (b) how can social networks address the issue of knowledge retention and management, (c) how do you transform customer care and smart grids using social networks. We conclude with the assertion that cognition-oriented architectures can play a critical role in making strategic architectural decisions that can optimize business value.

Background

The Energy and Utility industry, globally, is on a rapid path of transformation fuelled by alternate energy pursuits, regulatory changes, aging workforce, economy booster investments, consumer demand, and technology acceleration. Social Networks, associated Web 2.0 and semantic capabilities offer an unique opportunity to harness this change towards competitive differentiation. Granted social structures differentiate us, humans and community-oriented networks evolved from settlements, religious, educational, and ethnic organizations to alumni associations, consumer forums, and book clubs. What is new is the opportunity to cut across geographical, age, and language divides and tap into the collective knowledge and intelligence of the entire value chain.

The Social Network cast

Any architecture discussion starts with key actors and use cases. We are particularly interested in consumers of energy and utilities, regulatory bodies, and service provider customer service representative (CSR) roles that make use of Advanced Meter Infrastructure (AMI), operations, and customer care. See [2] for a longer list of actors. The consumer cares about lowering cost and getting the best value with the least amount of effort. Regulators need to make the right policy decisions that favor the environment, government priorities, and consumer needs and at the same time ensure a vibrant business. Operations role turns information into insights and use dashboards to keep track of business performance indicators. The CSR is measured on customer satisfaction and customer wallet share.

Social Network Life Cycle, Use Cases and Architectural Decisions

Social networks are fast evolving from consumer-oriented gathering places to business priority-driven communities. An emerging life cycle model spans Create-Contribute-Generate-Sustain elements that maps to use cases and architecture decision points with associated people, process, and technology components.

Business priority driven communities for AMI can bring together home owners who consume energy with regulators and service provider organization representatives. Best practices here include nominating a community leader to keep the dialog going, and ensuring that there is a quick turn around time to questions raised by the home owners. Service Providers may want to complement the social network with dashboard rich portals. Regulators can make use of this sounding board not only to get feedback on a potential policy change but also to evolve the best
policies. Many industries have succeeded in turning such Social environments into opportunities for them not only to get solution feedback but also conducting successful persuasion campaigns.

Create
- Enterprise Service Bus (ESB) and Service Oriented Architecture (SOA) - ability to integrate variety of applications and information sources using web services.
- Meta data management - brings together the strengths of ontologies
- Profile management - options include active directory, LDAP, Domino NAB, and social software profiles such as those offered by IBM Lotus Connections
- Community services - blogs, micro-blogs, wikis, forums, file sharing and forms are key technology components
- On premise vs on the Cloud or hybrid - Emerging models favor the hybrid option that allows you to move seamlessly from on premise to the Cloud and vice versa.

Contribute
- Security and privacy -- this includes single sign on, bio metrics, ability to have private conversations
- High availability — you want to avoid frequent down time that may discourage the participants from contributing
- Connected and disconnected use-- critical or mobile consumers and regulators
- Identify contributors, allow them to select and use the right Incentives, establish reputation protocols, and the ability to measure progress and success
- Relate, Filter, Consensus - Smart searches with filtering capabilities can help the participants discover commonalities. Consensus building tools
- Recommendations - This works in two ways: ability to recommend an entry using social media, how the system can make recommendations based on your profile and subscriptions, and the ability to recommend contributors
- Network games - use engaging games that consumers can relate to and tie this to profiles, incentives, and reputation

Generate (value)
- Relationship formation - invite and share
- Network analysis - identify gaps of relationships and conversations in the social networks and make recommendations on corrective action directly to the end user or to the community owners
- Prediction Markets - can create pull and focus that will lead to more value generation
- Multi media support is critical in capturing tone and sharing insights

Sustain
- Collaboration Jam is a brainstorming approach to drive innovation on one hand and participation on the other
- Intelligent Control and prediction models can be deployed to navigate the discussions and increase participation volume and quality
- Personal dashboards supported by advanced analytics can motivate the participants to improve their metrics

Insertion points in IT Vendor reference architectures and solutions for Energy and Utilities
Social Networks fits under the broad category of Collaboration and Web 2.0. The following table maps key insertion points and related technologies from IBM, Microsoft, Oracle, and Google. Vendor consortiums such as the Smart Energy Alliance [3] offers similar insertion points and technologies.

Using Cognition oriented architectures and gaming spaces
Following your elected representative’s twitter updates and figuring out sentiments and buzz around your ideas and policy candidates are being fast adopted across geographies. The promise of Social Networks are moving more in the realms of participatory policy making than getting feedback or spreading the word.
Crowd sourcing brings together the best practices and experiences and make it available just a click away. This goes beyond sharing your utility bills and debating energy saving options to encouraging Utility companies to establish and promote mutually beneficial incentives.
Energy and Utility workers in many developed countries are at their retirement age. Tacit knowledge capture will require story telling sessions that can be complemented using social network memory triggers [7, 8].
Letting your customer vent, offer ideas, and compliment is common practice through consumer forums and service provider web sites. Social Networks allow you to identify your fan club, nurture advocates and promote favourable outcomes. Social gaming capabilities tied to these networks are on the ramp.
As the semantic web take shape and networks of intelligent virtual agents [9] become real, gaming spaces based on Cognition oriented architectures will transform social networks into extensions of human decision system.

Conclusion
Prioritizing the use cases and making the right architectural decisions can provide measurable benefits for energy and utility ecosystem players. We are at a technology and cultural inflection point that allows individuals and organizations to crowd source and make smart decisions.

References

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<tr>
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<tbody>
<tr>
<td>Insertion Point</td>
<td>Improved customer experience</td>
<td>Collaboration</td>
<td>Collaboration</td>
<td>Power meter</td>
</tr>
<tr>
<td>Technologies that can provide Social Network capabilities and</td>
<td>Lotus Connections</td>
<td>SharePoint Server with third party webparts</td>
<td>WebCenter</td>
<td>GAPE</td>
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<td></td>
<td>High</td>
<td></td>
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<td>Medium</td>
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</table>

Table 1.0: Identifying Insertion Points in vendor architectures and solutions

CSI COMMUNICATIONS | APRIL 2010 | 35
ANTONY SATYADAS

ANTONY SATYADAS (BS Electrical Engineering 1984, MS Computer Science 1992, IEEE Senior Member) is a marketing strategist driving worldwide initiatives including open and virtual smart clients on linux for the cloud for IBM (http://www.satyadas.com). He has 25 years of worldwide consulting, marketing, and research experience with Fortune 500 and governments. His expertise include competitive strategy, and bridging the business-IT gap towards Enterprise 3.0 using Intelligent systems modeling and knowledge innovation. His contributions in Energy and Utilities include working as a young investigator on petroleum reservoir characterization with USA Department of Energy, architect smart customer care solutions for a large utility company, and guiding a large systems integrator to establish a knowledge management practice for E&U industry. Antony has 50+ publications, conducts courses (IEEE, AIAA, NATO, KM World), keynotes, workshops worldwide and is active with IT Analysts and Press as an IBM Spokesperson. He serves in the editorial board of several reputed international journals and 50+ international scientific committees.

BLOG

A Blog (a contraction of the term "web log") is a type of website, usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse-chronological order. “Blog” can also be used as a verb, meaning to maintain or add content to a blog.

Many blogs provide commentary or news on a particular subject; others function as more personal online diaries. A typical blog combines text, images, and links to other blogs, Web pages, and other media related to its topic. The ability of readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art (Art blog), photographs (photoblog), videos (Video blogging), music (MP3 blog), and audio (podcasting). Microblogging is another type of blogging, featuring short posts.

As of December 2007, blog search engine Technorati was tracking more than 112,000,000 blogs.

Types

There are many different types of blogs, differing not only in the type of content, but also in the way that content is delivered or written.

Personal blogs

The personal blog, an ongoing diary or commentary by an individual, is the traditional, most common blog. Personal bloggers usually take pride in their blog posts, even if their blog is never read. Blogs often become more than a way to just communicate; they become a way to reflect on life, or works of art. Blogging can have a sentimental quality. Few personal blogs rise to fame and the mainstream, but some personal blogs quickly garner an extensive following. One type of personal blog, referred to as a microblog, is extremely detailed and seeks to capture a moment in time. Some sites, such as Twitter, allow bloggers to share thoughts and feelings instantaneously with friends and family, and are much faster than emailing or writing.

Corporate and organizational blogs

A blog can be private, as in most cases, or it can be for business purposes. Blogs used internally to enhance the communication and culture in a corporation or externally for marketing, branding or public relations purposes are called corporate blogs. Similar blogs for clubs and societies are called club blogs, group blogs, or by similar names; typical use is to inform members and other interested parties of club and member activities.

By genre

Some blogs focus on a particular subject, such as political blogs, travel blogs (also known as travelogs), house blogs, fashion blogs, project blogs, education blogs, niche blogs, classical music blogs, quizzing blogs and legal blogs (often referred to as blawgs) or dreamblogs. Two common types of genre blogs are art blogs and music blogs. A blog featuring discussions especially about home and family is not uncommonly called a mom blog. While not a legitimate type of blog, one used for the sole purpose of spamming is known as a Splog.

By media type

A blog comprising videos is called a vlog, one comprising links is called a linklog, a site containing a portfolio of sketches is known as a sketchblog or one comprising photos is called a photoblog. Blogs with shorter posts and mixed media types are called tumblogs. Blogs that are written on typewriters and then scanned are called typacoblog or typecast blogs; see typcasting (blogging).

A rare type of blog hosted on the Gopher Protocol is known as a Phlog.

By device

Blogs can also be defined by which type of device is used to compose it. A blog written by a mobile device like a mobile phone or PDA could be called a moblog.[11] One early blog was Wearable Wireless Webcam, an online shared diary of a person’s personal life combining text, video, and pictures transmitted live from a wearable computer and EyeTap device to a web site. This practice of semi-automated blogging with live video together with text was referred to as sousveillance. Such journals have been used as evidence in legal matters.
Those of you who followed the Copenhagen Summit would have been amused by the final official claims of a "broad consensus" amongst global leaders. In diplomatic terms all that really means "we agreed to disagree".

However, if there is one thing on which there is a unanimous and collective global view, it is on the emerging global dominance of China and India. Together these countries account for 40 per cent of the world’s population and 11 per cent of the world’s GDP. They are transforming the geopolitical landscape and its impact over the next century could be as dramatic as the rise of the US during the past century.

Fuelled by domestic economies growing at a sizzling pace of 10% and 7%, China and India are becoming the world’s biggest consumers of everything … from oil to consumer goods. Consider the fact that China’s need for energy is projected to increase by 150 percent by 2020, its oil consumption grows seven times faster than the U.S. Not too far behind is India with a demand for power that will soar to as much as 315,000 MW by 2017, requiring an investment of $600 billion if the economy keeps its pace of growth at an 8%.

Mirroring the same hunger pangs for growth, are sectors such as IT, Engineering Services, Infrastructure, Power, Retail, Pharma and Telecom. They will all vie with each other for people, … who will seek innovative technologies to bring new products and services … to millions of new consumers. The magnitude of the challenge is huge……………… the demands to make it happen even bigger. A staggering 500 million skilled workers by 2020 and technologies that we discuss in forums such as these ………will power this growth. On the other hand agriculture contributes 17% to GDP accounting for about 52% of employment, here the challenge is to greatly enhance productivity and technology and R&D will have a critical role to play.

It is against this context that we are gathered here today. Good morning to all of you.

I am greatly honored to be addressing all of you … members of the Computer Society of India on the interesting and challenging subject of the technological developments and its impact on business given the environment that I just described.

So……..the challenge that I just described, is huge. Couple it with realities of poverty, lack of adequate education and health facilities ………… and the task ahead is complicated immeasurably. Further…….. Given that our resources are limited and strained already…… water, clean air, land are in short supply, while the waste generation is enormous, our future development cannot follow the same path of high carbon consumption …….we will need to find new and sustainable ways.

So what can be the charter for technology within this landscape? Without doubt, Technology with its capabilities of replicability, scale and reach must deliver to address these challenges head on, initiatives such as NREGA, Tata Swach and Adult Literacy Programs attempt to do. We must work on the advancement of cutting edge technologies to bring creative solutions, after all the advancement of society is the purpose of scientific pursuit.

In an earnest effort to leverage India’s IT expertise, the Indian Government has launched several initiatives such as the UID, National e-Governance Plan, National Rural Health Mission, Mission Mode Projects for e-filing of income tax returns, providing agricultural information to farmers, etc. Some are hugely ambitious, like the National Solar Mission to produce 20GW by 2020 and achieve parity with coal-based thermal power by 2030. All of these initiatives have dependencies without which they cannot be successful, they need private public participation, they need R&D investments and academic collaboration, they need trained people, they need innovation and new technologies, they need a whole ecosystem as a spring board because no Govt can do this alone. Both industry and the scientific community across this country …….and all of us present here must rise to this challenge.

Lets then take stock of what we have today…………….We have a few things going for us already. Two decades ago if you asked a question
"Where was cutting-edge R&D happening in the world? India could hardly aspire to figure in the solution set. Not so today.....

Our institutions are at the forefront of research - IIT Kharagpur has an internationally known VLSI group, IIT Kanpur is leading the way in Algorithms and Complexity, IIT Delhi in Computer Vision & Graphics, IIT Bombay in open source and affordable computing. IIT Hyderabad leads on Language Technology, while IIT Madras has many incubated companies on low-cost wireless technology and applications for rural India. Companies such as TCS have over 20 Centres of Excellence that specialize in areas such as RFID technologies to automotive engineering. Together the Indian IT industry has 594 R&D research centres engaged across India. The challenge of course is of enabling an ecosystem to take the idea to deployment quickly through a well oiled closeness between corporate and universities.

India is in fact becoming a global research hub. Consider that:

- It’s in India GE developed an electrocardiogram machine that costs a third of conventional costs.
- Microsoft, which started its R&D centre in India five years ago, with just 20 people, employs 1,500 people today.
- For SAP, India is the largest R&D centre outside Germany and employs 4,200 people.
- For search giant Google, Bangalore was first R&D centre outside U.S.
- Cisco has filed more than 600 patents from India

As we all know these companies are not investing for any newfound love for India, but because it makes pure economical sense to develop products in an emerging market like India ......home to one sixth of the worlds population. From their perspective, hiring local researchers means being better able to tailor products, price and value additions suited to these markets of the future. With the economic and socio cultural diversity offered here, you get to test your products in one of the toughest terrains. Result ?.......... these products are adaptable for the rest of the world. There is even a new term for this phenomenon - “reverse Innovation”.

However, these new innovations will have to follow some rules - they will need to pass the test on ...... Access, Affordability and Appropriateness of Applications......else they stand limited chance of success. We see this in action best in products such as the Tata Nano, mobile phones under 30$, and even the Tata Swach. We need the game changers...the rule breakers.

This radical shift requires a fresh new look at our acceptance of technologies what we know and readily accept. Technology must have a social, national and global relevance. For this we may need to go back to the drawing board........even examine afresh our operating systems, user interfaces and standards on one hand ................ and look at inclusiveness, affordability and applicability to critical areas like solar, agriculture etc.

Social relevance : Digital inclusion

As an example 500 million people in India have a “computer” in their pocket today in the form of a cell phone, in comparison only 20 million who own desktops. A large number of these users are first time users of technology, they will need a fundamentally different way to interact with computers. Perhaps through speech and gesture based such as sixth sense technologies. Most new users are not English proficient. We will need machine translation and language capabilities.

Infact, this is an area where India can and should claim global leadership. Our language processing capabilities are ready for deployment. A major launch is infact scheduled in May this year by the Govt. The industry must explore market opportunities to exploit this..... explore new applications based on SILKxy interfaces(SILK – speech, image, language, knowledge) rather than WIMPy (Windows, Icons, Menus and Pointing device) interfaces. The exciting part is that since the technology framework, software architecture and machine learning algorithms are language independent they can be easily adapted to alternate environments i.e for a global market. As this interface becomes more comprehensive there is no reason why they do not eventually become superior to keyboard interfaces enabling desktop users to switch to this alternate technology.

Financial Inclusion

Driving another peg in the inclusive agenda, mobile technology is also enhancing the delivery of basic financial services to those who are currently unbanked...... which is 41% of the population in India. As we know, limited access to affordable financial services is a constraint to the growth impetus. We need transformational ......not incremental innovation, we need creative problem solving that gives rise to new business models. Our public sector institutions, if transformed, can become forces to reckon with, we just need to look at the emergence of SBI, to see that it works. Technology will need to incorporate the need for flexibility, to use alternate channels for delivery such as business correspondents or post office services and interoperability between the suppliers, service Providers and delivery mechanisms.

Integrated technology frameworks that seamlessly tie up ebanking and mobile banking with core banking systems and third-party applications are called for. Simultaneously Biometry and Cryptography must be advanced for network authentication. Open standards architectures that offers multi-channel, multilingual and multi-connectivity functionalities must be explored.

This is where leveraging emerging technologies like “cloud computing” makes sense. Mobile cloud and Software as a service are expected to rise in the future and will enable developers to upload and share data and collaborate in real time on a shared file. The cloud developer community will move into open source quickly, they will be using a single Web standard for writing applications that can work on multiple operating systems.

Cloud itself is already bringing about a transformative change in the business landscape especially with its great potential to impact the bottom line. According to Gartner, infrastructure Cloud software will account for 64.4 percent of overall enterprise software spending in APAC in 2010 and the Cloud Computing market will hit USD $42 Billion by 2012.

We will see the rise of Cloud based middleware so that organizations can integrate services, applications and content available on the cloud. This allows building of web applications by integration of already existing applications, services or data easily in contrast to conventional middleware. Clouds allow the creation of products that either weren’t possible before or required prohibitive amounts of computing or radical new business models.

For the IT industry it has enabled IT as a utility very much in the lines of electricity as a utility. The Cloud offers multiple layers of services:

- Infrastructure-as-a-service (processors, storage, network bandwidth)
- to Platform-as-a-service (specific platform services ranging from basics like file systems to higher services like mail and office productivity)
- to Software-as-a-service like business software,
- to even Business processes or IT as a service.

Leveraging this TCS launched the SMB Strategic Business Unit, IT-as-a-Service is a subscription-driven model that allows SMBs to scale as they grow and pay as they use.

Health sector:

The IT industry is infact emerging out of a licensing mode into another, where service is the utility. The service is taking over the product, much like the iPod, which
is really a service in the form of a product and business is made from the number of songs users download.

Supercomputing lends itself well to this model, as is being leveraged by Tata in offering facilities. As you perhaps know EKA is Asia’s fastest supercomputer at 133 teraflops and can potentially be used as a national resource. Addressing the big challenges in nanotechnology, CFD, weather prediction, security and microelectronics, it is also of great relevance to drug discovery and clinical trials in the pharma industry, who being wary of the patent regime are moving towards the “drugs discovered by Indian company” model. Cost of R&D in India could be as low as one fifth when compared to discovering a drug in a developed nation.

The advances of Science combined with Information technology are greatly benefitting pharmaceutical R&D. These technologies include bioanalytical instruments which enable a great deal of automation for biomolecular research as well as synthesis and analysis of biomolecules. Biochips ...a microchip made from biological macromolecules (especially DNA) rather than a semiconductor and are miniaturized laboratories that can perform hundreds or thousands of simultaneous biochemical reactions. Biocombinatorial chemistry which involves optimizing the activity profile and structural possibilities of a compound by creating a 'library' of many different compounds to produce improved drugs and Bioinformatics where TCS has already made forays.

Use of emerging technologies in drug discovery such as nanotechnology and RNA interference is increasing at a rapid pace given their ability to expedite and improve efficiency of drug discovery processes and reducing time-to-market. Infact nanotechnology coupled with quantum information are set to become one of the 21st century’s most defining technologies.

At the nano level, insulators become conductors and opaque substances transparent, it’s a fascinating world with mega practical implications. It opens doors to creation of new materials and new processes in medicine. The human cell is the finest example of nanotechnology in action and no wonder then that we are mimicking the same to focus treatment on cancer cells.

To me one of its most promising implications is in chips................. not the kind you eat............. but what you use in computing. Moore’s law cannot hold forever. The move towards ‘micro’ and bringing down the size of devices means that either...... the same chip areas accommodate more transistors and more complex circuits or .................have the same complexity in smaller chips, reducing costs through better yields.

Today’s current state of art size is 45 nanometer technologies. Attempts to bring down size any lower, runs the risk of variation and current leakage. This challenge is what brings in the importance of nanotechnology which operates quite differently, while consuming less power, being more reliable and light weight. However even as research in these areas continues, we face a challenges in nano- electric fabrication due to a lack of standardization.

That aside an innovation in circuit design is through the nanomaterial self assembly process, whereby a disordered system of pre-existing components forms an organized structure without external direction. Infact companies such as IBM’s POWER6 microprocessor uses self-assembly techniques to create a vacuum between the miles of ‘on-chip’ wiring. They claim that the electrical signals on the chips flows 35 percent faster thereby consuming 15 percent less energy. Such techniques are moving out of labs and into commercial manufacturing environments. These design innovations have great relevance to India.

Collaboration

I have spoken about technologies that can bring about digital and financial inclusion and make an impact on better health for our people through new drugs and new ways to treat deadly diseases.

Already a lot of good work is happening across the country, however it remains restricted in pockets of excellence. We must find a way to bring these successes out in the open, at a national level, on a national platform, an “India innovation platform”. The creation of spaces with an IT framework for innovations to be shared, across sectors is a crying need. I truly believe we should not waste time reinventing the wheel, instead spend our energies on scaling up and making a difference at the ground level. Connect Govt, businesses, NGO’s and citizens in a powerful way where a basket of solutions are available to choose from, connect the buyers and the sellers, banks should be part of this network and they should invent financial mechanisms perhaps bonds to fund projects which guarantee reach of 100 million people. Collaboration is what I am driving .......to begin with .....in areas that need immediate attention.

An interesting multiyear study by Harvard Business School tracked the day-to-day activities, emotions and motivation levels of hundreds of knowledge workers in a wide variety of settings. It has thrown up something that quashes previous beliefs on what the top motivators of young professionals are today. It turns out that this generation of “instant and immediate gratification” rate “progress” and “collaboration” as their top two gratifiers.

We are dealing with a generation, who are in a hurry, believe in getting things done and rely on each other to do so.

No wonder then, collaboration spaces such as those offered by social networks are so popular. Business has been quick to leverage this forum to reach out directly to customers, especially those in the B2C space. Dell for example claimed to have made over 3 million dollars, just by using twitter. Social networking could be a powerful market intelligence tool for better positioning and creating brand awareness for a new product. As an example, Dell heard on twitter that customers felt that the apostrophe and return keys were too close together on the Dell Mini 9 laptop so they fixed the problem on the Dell Mini 10. The Dell Mini product development team asks around on Twitter for new ideas for the next generation of the computer.

Technology has enabled consumers shape public discussion over brands. Several companies have scores of employees tracking what’s being said on Twitter regarding their brand. Facebook with 400 million active users has a userbase almost as large as a small country, can anyone afford to ignore this opportunity.

What implications does this have for India? ......... How can industry leverage this for business, how can academia leverage this in their teaching? We must ask these questions of ourselves.............On our part one of TCS’ learning programs, Ignite which trains science graduates to become software professionals, uses Twitter like a modern day telegraph system- communicating with new jinnee during their pre-employment orientation and helping track leadership potential.

Education and Training

Education and Training is one of the areas where we really need some transformational innovation in terms of reach, content and delivery. Only 10% of the 300 million children in India between the age of 6 and 16, will pass school and go beyond. Only 5% of India’s labor force in the age group 19-24 years is estimated to have acquired formal training. At the beginning of my talk I spoke about various sectors poised for exponential growth. These will create millions of jobs but do we have the trained people? Converting our demographic surplus to an advantage holds the key to our claims of being a global power. We need 500 mn skilled people but there is lack of a national level architecture, framework and vision for Vocational education in the country.
The National Skill Development Plan is a beginning but the scale requires technology to form the backbone of a new approach.

At a basic level we need to explore how we can leverage mobile internet connectivity. It is not uncommon to find youth both in cities and in villages walking around with mobiles. The rural youth need education, they need jobs. Can education and training be provided through this device? These are the questions we should be asking and finding solutions for.

On skill development the power of IT must also be leveraged by creating a National platform to serve as a market place/meeting point for all stakeholders -students, industry and the Govt, thus making for effective interaction and bringing in an enormous amount of efficiency. The architecture of the platform should enable participation of external innovators and entrepreneurs who can feed into the system as content providers, offer product information, faculty services, so that people that ‘take’ from the system contribute back into it. Databases with an information on online courses, distance education or virtual models and job opportunities should be made. The idea is to address the problem end to end.....catch-educate- make employable – match to job.

National relevance: Microelectronics

I have deliberately chosen to pitch this talk primarily from the position of what India needs from technology and what it needs from it’s scientific community. Let us not underestimate the potential power of organizations like CSI or IEEE, we only need to go back a few decades when CSI guided India’s IT industry during its formative years. It must continue to do so.

As the first and the largest body of computer professionals in India, you can play a pivotal role in energizing ‘people to people’ interactions, to being the voice of industry and pressurising the government on policy change. Several studies have analyzed the success of Silicon Valley, which in four decades became an engine of growth for the US economy. While replication of the same model elsewhere in the world has been difficult, research shows that participation in professional associations can have a direct impact on professional growth of its members, through the creation of new firms, raise finance for start ups and raise job status. CSI was conceived as a dynamic institution and today it must adapt to the new needs of the country.

While I commend its work in disseminating IT knowledge by way of professional development programmes and conventions for budding professionals, researchers and students, it can be the catalyst as we create a rich ecosystem for both the software and hardware industry. One thrust that you can provide through the themes that you choose in future conventions is the propagation of the importance for India to become self reliant in the area of electronic and microelectronics. Your local chapters can be the glue between local industry and major research institutions in the area as an immediate step forward. At another more basic level, CSI should engage with school students to take up science and IT careers.

The Indian IT-BPO industry is doing well with estimated export revenues of USD 49.7 billion, domestic market grows at 12 percent growth with revenues of INR 662 billion in FY 09-10. IT services will continue to fuel employment directly with 2.3 million jobs and indirectly over 6 million jobs. With 450 delivery centers in 60 countries across the world, the industry has an unparalleled global value chain.

Now we need to move to the next level of growth. India should enhance its dominance beyond the software landscape by giving a thrust to its hardware sector. Leadership in both will give us an unparalleled global status. Our electronics sector is at a similar point of inflexion just as IT services was a decade ago.

So why should we give it a thrust? Domestic production is at present less than 45% of domestic consumption. Our total demand projections for FY 20 is USD400 billion, if we do nothing about it our import of electronics by 2020 will grow to 16% of our GDP. Most of India’s electronics imports are from China and Taiwan, creating a dependency that may be limiting in future.

Secondly if we seek to solve poverty, education, employment issues through digital and financial inclusion, we will need millions of low cost devices, handheld devices, bio monitoring solutions, micro payment solutions, GIS, project monitoring solutions, and smart meters. These products must be designed for India’s specific needs so clearly our own Electronics industry can play a big role in providing these products and solutions.

Thirdly our Energy and Defence needs a focus on self reliance and development of indigenous technology and manufacturing capabilities, given the strategic nature and scale of such initiatives. That there is a great volatility in global markets was shown in ample measure by the recent economic crisis. Copenhagen has shown us that when push comes to shove, India and China are seen as threats and technology or monies may not be forthcoming from the West. So we have to become self reliant.

Given that there is a future market, what is retarding the growth of the local manufacturing industry. Poor infrastructure and taxation issues are the two main inhibitors even for foreign investments. Due to the challenges, the total return on investment for a manufacturer in India is -12% as compared to -34% in China.

Collectively we must on one hand pressurize the Govt on taxation and labour laws, on the other, engage with industry, entrepreneurs and academia to set up manufacturing clusters for electronics. If we look at how Suzuki’s entrance in partnership with Maruti transformed automotives, perhaps we should look at paving the way for one big player to enter the India market to catalyse it.

There is a need to develop the entire value chain of manufacturing................. from components to creating end products in India i.e from semiconductors to components to peripherals and accessories, to electronic devices, mobile and handheld. Not only will it reduce our import bill, it will enable exports in a big way, and provide employment in huge numbers, creating employment opportunities for up to 27.8 million people.

It is this self reliance in hardware that is missing in the charter of India’s growth. Our IT exports have the potential to offset Oil imports. Only IF and this is a big IF we progress on both Software and Hardware. We have the talent the resources, what we need is the will.

Conclusion

I have spoken at length and finally would like to recall the key message.

• The scale of India’s challenge is huge, we have to innovate our way through
• Every sector is a sunrise sector, all need IT ....education needs to deliver,
• Access - affordability and Appropriateness of technology will be game changers
• Leadership in Hardware, and software is a winning combination
• CSI can be a big proponent of all of these, be the change agent

As we stand on the brink of another kind of liberation, I would like to recall Dr Radhakrishnan’s speech at the dawn of India’s freedom..... he talks about “the unimportance of the individual and the supreme importance of the unfolding purpose which we are all called upon to serve.”

Unless we act towards this clear purpose, we can only live in the illusion that “ALL IS WELL”, ..........those of you who have seen the movie " 3 idiots" will know what I mean.

Thank you.
Role of Social Networking in Employment

E Balaji

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There was just one more day to submit the proposal to the client in Mumbai. Sitting in Chennai, handling the remote task of identifying a resource who can consult for us in this assignment was indeed a farfetched possibility in more ways than one! Late into night, we were still working away on our machines while interacting on phone with the Mumbai team. One colleague piped up suddenly ‘I have found her!’. Presuming it was his dramatic moment to announce his marriage, we retorted on the speaker phone – hey, this can wait till tomorrow. ‘She has the right skills, is in Mumbai and is ready to work with us; what more do you want? Wait till tomorrow?’ There was a chorus ‘Oh!’ from the rest of us. The consultant met with the team, worked out the details and then was interviewed by the client. We signed the contract the next day evening. So, how did our colleague ‘find’ the consultant? Simple – on LinkedIn.

Social networking sites profess objectives beyond merely that of connecting people on the web page. Professional information is shared across organizations and geographies; information of individuals, which ironically respective employer organizations may not have paid attention to. Long gone are the days when we need to look around to obtain information about a business prospect before the first meeting. With the emerging options of Information Technology (such an apt term in this context) one needs to hit a networking site, type the name and read about the profile of the person to be met. In the world of hiring, recommendation does matter, as what is important is not what you know but who you know. With multi level networking, it is possible to not only check an individual’s profile but also check his/ her references.

Networking is two-fold: online and the real world. Online networking throws up a wide range of options through blog, chat, websites – professional & social.
Regular updation of the posted profile is necessary for one to be alive and visible in the cyber world. Networking does not confine to the individual alone. There has to be the two way process of seeking as well as providing information. On the one hand, there is the need to explore career changes, and on the other hand, the readiness to communicate opportunity leads, which may be of interest to other people. When information is posted, several readers put up responses and this interaction leads to forming of new professional relationships which can add value to one’s career growth in the long run. Several online communities have been launched by people with common interests.

Such platforms provide scope for knowledge and experience sharing and at times, even exchange of personal information; the age old pen pal concept has now been enhanced to the cyber friend variety. These online friendships cannot be treated lightly as people spend more time on the internet than with real people. Online interaction is done at your own pace and convenience and one can be selective about communication even within an online community. The conviction that a technically savvy person is not socially affable does not hold water anymore. Technical competencies and social skills are now on two sides of the coin.

While online social participation does go a long way in elevating professional status, socializing in the real world has its own charm. If one is too busy to socialize it would only have a negative impact on his professional standing. Attending seminars and meets is not an after work activity; it is an integral part of the profession. Memberships in associations, clubs and forums help in meeting people on a regular basis. Many a business deal or a job offer has been the result of social networking where one has been in the right place at the right time. I recall one organization becoming richer by an excellent project manager rather unexpectedly; one of their sales managers, happened to wait at the lobby of a hotel for a cousin who he was to have dinner with.

While waiting, he struck conversation with someone sitting there. The interaction, as is expected, started with talking about the increasing city traffic (both were waiting for their respective guests) and the hospitality industry’s service standards. When the sales manager discovered, in course of the conversation that the other person had concluded an assignment in the US and was now exploring options in India, he invited him to his office the next day. Meetings were fixed and the organization which was desperately hunting for a project manager for a new assignment, made the offer right away. Well, even for coincidences to occur, one not only needs to be there but also engage in meaningful and constructive conversation.

The power of social networking is increasing by the day and various levels of social interactions are emerging. The word of mouth or letter of recommendation has now gracefully given way to website credentials.

If one has to keep abreast of what is happening in the corporate world with regard to job as well as business opportunities, then social networking is the only way of life. However, we need to keep in mind the extent to which we can divulge or even share information, specially, in the cyber networking platform. Sensitive and critical information needs to be well thought out before communicating the same in person or on the net. The employer organization’s confidential information is not to be shared even if it means getting a foot into the proverbial door. Awareness of social ethics and professional values is the underlying guideline while networking. Knowledge and information sharing, leads posting, relationship building and so on will be highly beneficial so long as the process and the content is aligned with the buzz word: Netiquette.

About the Author

E. BALAJI is the Chief Executive Officer and Director of Ma Foi Randstad. He has over 16 years experience in the field of HR and he manages a team of nearly 900 professionals spread across 60 locations in India at Ma Foi Randstad.

He has done his Bachelors in Physics from Madras Christian College, Chennai and Masters in Business Administration from School of Management, Pondicherry University. He has successfully completed Randstad Senior Executive program conducted by INSEAD, Fontainebleau. He is also a certified Lead Auditor (IRCA, UK) for ISO 9001: 2000 and a certified six sigma green belt.

He has a keen interest in Management literature, philosophy and history. He has written number of articles on HR trends in various business journals and is frequently quoted in business dailies and magazines on HR trends.

Use of Internet for Staffing

American research (Global 500 Web Site Recruiting, 2000) shows, that 79% of companies from the Global 500 group (500 largest world companies by revenue) at least to a certain extent use the Internet for seeking new personnel. Also, comparison of data for years 2000 and 1998 shows that percentage of companies that use the Internet for mentioned purpose has grown considerably from 29% in 1998. According to 1999 RIS-research (RIS ~ “Raba Interneta v Sloveniji” - Usage of Internet in Slovenia.), only 4% of companies have used Internet for recruiting in same fashion. The main advantages for Internet supported recruiting are (Achieving Results with Internet Recruiting, 1998):

- Possibility to attract better and more candidates – invitation for application published on a website can also be spotted by those, who are currently not seeking new employment actively.

Besides the corporate websites, third-party websites are gaining importance. Not only that they act as “work- force exchange” where supply meets demand and vice versa, many of them also publish relevant business news, articles on job-hunting, CV writing etc., which acts as additional pull mechanism for web users, which ensures head- hunting companies that their call for applications is seen.

- Peter Baloh and Peter Trkman

Influence of Internet and Information Technology on Work and Human Resource Management, InSITE ~ “Where Parallels Intersect” June 2003
Data Governance and Security Challenges in Cloud Computing

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Cloud Computing

A. What Is Cloud Computing?

“A style of computing where IT-related capabilities are provided “as a service” using Internet technologies to multiple external customers”. It allows users to consume services without knowledge of, expertise with, nor control over the technology infrastructure that supports them. Resources being accessed are typically owned and operated by a third-party provider on a consolidated basis in datacenter locations.

Cloud describes the use of collection of services, applications, information, and infrastructure comprised of pools of compute, network, information, and storage resources. These components can be rapidly orchestrated, provisioned, implemented and decommissioned, and scaled up or down; providing for an on-demand utility-like model of allocation and consumption.

B. Why Cloud Computing?

There may be a vast array of reasons as to why an individual or business might use cloud computing. It offers enterprises a way to cut costs and increase agility, increased hardware utilization rates - without having to invest in new infrastructure, train new personnel, or license new software.

What drove your organisation towards using or considering cloud services?

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<th>N (%)</th>
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<tr>
<td>Need to reduce costs</td>
<td>28</td>
</tr>
<tr>
<td>Budget issues</td>
<td>18</td>
</tr>
<tr>
<td>To quickly implement new business processes</td>
<td>20</td>
</tr>
<tr>
<td>Lack of in-house IT skills</td>
<td>15</td>
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<tr>
<td>To improve overall business operating environment</td>
<td>12</td>
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Other relative key business drivers are:

- Less funding available to start-up companies trigger them to find a way to reduce infrastructure cost.
- Increasing emphasis to reduce processing time
- Need to store and retrieve real-time data
- Increasing scale of business giving rise to storage requirements
- Business Continuity and Disaster recovery capabilities
- Unlimited storage capacity
- Research purposes – Usually free to test.

C. Cloud Models:

Various Flavors of Cloud are:

- SaaS (Software as a Service) - Network-hosted application
- DaaS (Data as a Service) - Customer queries against provider’s database
- PaaS (Platform as a Service) - Network-hosted software development platform
- IaaS (Infrastructure as a Service) - Provider hosts customer VMs or provides network storage
- IPMaaS (Identity and Policy Management as a Service) - Provider manages identity and/or access control policy for customer
- NaaS (Network as a Service) - Provider offers virtualized networks (e.g. VPNs).

NIST defines cloud computing by describing five essential characteristics, three cloud service models, and four cloud deployment models as shown below:

Visual Model of National Institute of Standards and Technology (NIST) Working Definition of Cloud Computing

- Board Network Access
- Rapid Elasticity
- Measured Service
- On-Demand Self-Service

Resource Proofing

Software as a Service (SaaS)
Platform as a Service (PaaS)
Infrastructure as a Service (IaaS)

Public
Private
Hybrid
Community

This article has won the First Prize in the “eWIT Excellence Award - 2010” - a Paper Presentation Contest. Empowering Women in IT (eWIT) is a women’s forum conceptualized by a group of IT Professionals in India. Please visit: http://ewit.co.in/Index.asp for more details about eWIT.

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D. **Cloud Key Benefits:**
Key benefits of Cloud are as follows:-
- Minimized Capital expenditure
- Location and Device independence
- Utilization and efficiency improvement
- Very high Scalability & Sustainability
- High-level Computing power
- Increased Reliability
- Reduced Operational/Maintenance Cost
- Software as a Subscription
- Portability/Accessibility
- Increased pace of innovation & Environmentally Friendly

**Cloud Participants**

A. **Government Participation in Cloud Services & Security**

To address rising information technology costs, the government is making a major commitment to cloud computing, a move that aspires not only to cost and labor efficiencies, but also to environmental responsibility and openness to innovation. For example, the US government GSA (General Services Administration) now offers a portal for cloud computing services. Governments too, have serious hurdles to overcome - in terms of public perception of the secure processing of citizens’ personal information in cloud infrastructures. For instance,

- **National Aeronautics and Space Administration (NASA)** recently launched the NEBULA cloud computing platform. (nebula.nasa.gov)
- **Defense Information Systems Agency (DISA)** is now deploying an internal cloud computing service called the Rapid Access Computing Environment (RACE).
- **United States Army** - to improve its recruiting efforts
- **National Security Agency (NSA)**
- **The United Kingdom** - (Government of the United Kingdom, Department for Business Innovation & Skills and Department for Culture).
- **India** - On Feb. 24, 2009 a new research organization called Cloud Computing Futures (CCF) was established, focusing on reducing the operational costs of data centers and increasing their adaptability and resilience to failure.
- **Japan** - Ministry of Internal Affairs and Communications "Kasumigaseki Cloud"
- **Thailand** - Government Information Technology Service (GITS) is establishing a private cloud for use by Thai government agencies.
- **Singapore** - The Infocomm Development Authority of Singapore (IDA)
- **China** - Cloud computing initiative aimed at leading the effort to create The Yellow River Delta Cloud Computing Center.

**Other Domestic Government Agencies following Cloud Services:**

- Department of Interior National Business Center (NBC)
- Department of Health and Human Services (HHS) Program Support Center (PSC)
- Census Bureau

B. **Enterprise Participation**

Presently IBM, Amazon, Google, Microsoft, Yahoo, and Level 3 Communications are the leaders in the cloud computing. Other existing CPS are displayed below:

![Diagram of cloud computing services]

C. **Existing Security Standards:**

Cloud Security controls for the most part, no different than security controls in any IT environment. Compliance environments that experts cite as important for cloud computing included auditing-related standard SAS 70, Payment Card Industry Data Security Standards (PCI DSS) and the Health Insurance Portability and Accountability Act (HIPAA) etc

**SAS 70**
SAS 70 refers to “Statement on Auditing Standards 70: Service Organizations,” issued by the Auditing Standards Board of the American Institute of Certified Public Accountants (AICPA). One of the benefits of having SAS 70 is that it is seen as an operational certification to help satisfy HIPAA requirements.

**PCI DSS**
PCI responsibilities of the CP include firewalls, intrusion detection, disaster recovery, physical controls and appropriate segmentation of staff duties.

**HIPAA**
HIPAA mandates the environment to be suitably secure both physically and logically, that the data is protected, and that we have controls in place to keep people from walking in and picking up a hard drive containing Customer’s data.

The **ISO/IEC 27002**, section 6.2, “External Parties” control objective states: “...the security of the organization’s information and information processing facilities should not be reduced by the introduction of external party products or services...”

The Canadian privacy law, the **Personal Information Protection and Electronic Documents Act (PIPEDA)**, includes accountability as its first principle. A similar concept underpins the European Commission’s Binding Corporate Rules mechanism governing the international transfer of European personal data within a multinational company.

Federal Trade Commission has used its authority under the unfairness prong of the **FTC Act’s Section 5** in enforcing the Safeguard Rule of the **Gramm-Leach-Billey Act** to determine whether a company’s information security measures were reasonable and appropriate under the circumstances.
The figure below shows an example of how a cloud service mapping can be compared against a catalogue of compensating controls to determine which controls exist and which do not — as provided by the consumer, CP, or a third party. Based on the Cloud classification against the cloud architecture model, it is possible to map its security architecture; as well as business, regulatory, and other compliance requirements; against it as a gap-analysis exercise. The result determines the general “security” posture of a service and how it relates to an asset’s assurance and protection requirements. This can in turn be compared to a compliance framework or set of requirements such as PCI DSS, as shown.

Once this gap analysis is complete, per the requirements of any regulatory or other compliance mandates, it becomes much easier to determine what needs to be done in order to feed back into a risk assessment framework; this, in turn, helps to determine how the gaps and ultimately risk should be addressed: accepted, transferred, or mitigated.

Whatever regulatory environment is targeted, cloud-based compliance is nearly always a nontrivial task. As more companies turn to the cloud to save money and gain flexibility, there are no doubt these and other compliance standards will continue to be raised.

**Top ten obstacles, opportunities & Security Requirements for growth of cloud computing:**

The first three components are technical obstacles to the adoption of Cloud, the next five are technical obstacles to the growth of Cloud once it has been adopted, and the last two are policy and business obstacles to the adoption of Cloud.

<table>
<thead>
<tr>
<th>No.</th>
<th>OBSTACLE</th>
<th>OPPORTUNITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Availability of Service</td>
<td>Use Multiple Cloud Providers; Use Elasticity to Prevent DDoS</td>
</tr>
<tr>
<td>2</td>
<td>Data Lock-In</td>
<td>Standardize APIs; Compatible SW to enable Surge Computing</td>
</tr>
<tr>
<td>3</td>
<td>Data Confidentiality and Auditability</td>
<td>Deploy Encryption, VLANs, Firewalls, Geographical</td>
</tr>
<tr>
<td>4</td>
<td>Data Transfer Bottlenecks</td>
<td>FeedExing Disks, Data Backup/Archive, Higher BW Switches</td>
</tr>
<tr>
<td>5</td>
<td>Performance Unpredictability</td>
<td>Improved VM Support; Flash Memory; Gang Scheduling VMs</td>
</tr>
<tr>
<td>6</td>
<td>Scalable Storage</td>
<td>Invent Scalable Store</td>
</tr>
<tr>
<td>7</td>
<td>Bugs in Large Distributed Systems</td>
<td>Invent Debugger that relies on Distributed VMs</td>
</tr>
<tr>
<td>8</td>
<td>Scaling Quickly</td>
<td>Invent Auto-Scaler that relies on ML, Snapshots for Convention</td>
</tr>
<tr>
<td>9</td>
<td>Reputation Rate Sharing</td>
<td>Offer reputation guarding services like those for email</td>
</tr>
<tr>
<td>10</td>
<td>Software Licensing</td>
<td>Pay-for-use licenses; Bulk use sales</td>
</tr>
</tbody>
</table>

**Security Fundamentals**

<table>
<thead>
<tr>
<th>GOAL</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confedentiality</td>
<td>Ensuring that information is not disclosed to unauthorised persons.</td>
</tr>
<tr>
<td>Integrity</td>
<td>Ensuring that information held in a system is a proper representation of the information intended and that it has not been modified by an unauthorized person.</td>
</tr>
<tr>
<td>Availability</td>
<td>Ensuring that information processing resources are not made unavailable by malicious action.</td>
</tr>
<tr>
<td>Non-Repudiation</td>
<td>Ensuring that agreements made electronically can be proven to have been made.</td>
</tr>
</tbody>
</table>

**Risks & Recommendations**

A. Security Risks:

The ability to comply with fair information practices is critical to the ability of companies to fulfill legal requirements and meet the promises they make to consumers in their privacy notices. To maintain trust, users of cloud computing must assure customers and regulators that they meet their obligations under law, regulation and the provisions of their privacy policies. Three broad classifications of

<table>
<thead>
<tr>
<th>Policy &amp; Organizational</th>
<th>Technical</th>
<th>Legal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lock-in</td>
<td>Resource exhaustion (under or over provisioning)</td>
<td>Subpoena and e-discovery</td>
</tr>
<tr>
<td>Loss of governance</td>
<td>Isolation failure</td>
<td>Risk from changes of jurisdiction</td>
</tr>
<tr>
<td>Compliance challenges</td>
<td>CP malicious insider - abuse of high privilege roles</td>
<td>Data protection risks</td>
</tr>
<tr>
<td>Loss of business reputation due to co-tenant activities</td>
<td>Intercepting data in transit</td>
<td>Licensing risks</td>
</tr>
<tr>
<td>Cloud service termination or failure</td>
<td>Management interface compromise (manipulation, availability of infrastructure)</td>
<td></td>
</tr>
<tr>
<td>CP Acquisition</td>
<td>Data leakage on up/download, intra-cloud</td>
<td></td>
</tr>
<tr>
<td>Supply Chain Failure</td>
<td>Insecure or ineffective deletion of data</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Distributed denial of service (DDoS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Economic denial of service (EDOS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Loss of encryption keys</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Undertaking malicious probes or scans</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Compromise service engine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conflicts between customer hardening procedures and cloud environment</td>
<td></td>
</tr>
</tbody>
</table>
### Infrastructure as Service:

<table>
<thead>
<tr>
<th>Customer</th>
<th>Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Maintenance of identity management system</td>
<td>• Physical support infrastructure (facilities, rack space, power, cooling, cabling, etc.)</td>
</tr>
<tr>
<td>• Management of identity management system</td>
<td>• Physical infrastructure security and availability (servers, storage, network bandwidth, etc.)</td>
</tr>
<tr>
<td>• Management of authentication platform (including enforcing password policy)</td>
<td>• OS patch management and hardening procedures (check also any conflict between customer hardening procedure and provider security policy)</td>
</tr>
<tr>
<td>• Configuration of guest security platform (firewall rules, IDS/IPS tuning, etc)</td>
<td>• Security platform configuration (firewall rules, IDS/IPS tuning, etc)</td>
</tr>
<tr>
<td>• Guest systems monitoring</td>
<td>• Systems monitoring</td>
</tr>
<tr>
<td>• Security platform maintenance (firewall)</td>
<td>• Security platform maintenance (firewall, Host IDS/IPS, antivirus, packet filtering)</td>
</tr>
<tr>
<td>• Host IDS/IPS, antivirus, packet filtering</td>
<td>• Log collection and security monitoring</td>
</tr>
</tbody>
</table>

### Division of Liabilities

The following table shows the expected division of liabilities between customer and provider.

<table>
<thead>
<tr>
<th>Lawfulness of content</th>
<th>Full liability</th>
<th>Intermediary liability with Liability exemptions under the terms of the e-Commerce Directive (1) and its interpretation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Security incidents (including data leakage, use of account to launch an attack)</td>
<td>Responsibility for due diligence for what is under its control according to contractual conditions</td>
<td>Responsibility for due diligence for what is under its control</td>
</tr>
</tbody>
</table>

### Division of Responsibilities

With respect to security incidents, there needs to be a clear definition and understanding between the customer and the provider of security-relevant roles and responsibilities.

### Software as Service:

<table>
<thead>
<tr>
<th>Customer</th>
<th>Provider</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Compliance with data protection law in respect of customer data collected and processed</td>
<td>• Physical support infrastructure (facilities, rack space, power, cooling, cabling, etc.)</td>
</tr>
<tr>
<td>• Maintenance of identity management system</td>
<td>• Physical infrastructure security and availability (servers, storage, network bandwidth, etc.)</td>
</tr>
<tr>
<td>• Management of identity management system</td>
<td>• OS patch management and hardening procedures (check also any conflict between customer hardening procedure and provider security policy)</td>
</tr>
<tr>
<td>• Management of authentication platform (including enforcing password policy)</td>
<td>• Security platform configuration (Firewall rules, IDS/IPS tuning, etc)</td>
</tr>
<tr>
<td></td>
<td>• Systems monitoring</td>
</tr>
<tr>
<td></td>
<td>• Security platform maintenance (Firewall)</td>
</tr>
<tr>
<td></td>
<td>• Host IDS/IPS, antivirus, packet filtering</td>
</tr>
<tr>
<td></td>
<td>• Log collection and security monitoring</td>
</tr>
</tbody>
</table>
systems hosting the applications and information for the end customer. These should include details of certification against external standards (e.g., ISO 27001.2)
- Specify the controls used to protect against malicious code.
- Deploy Secure configurations to only allow the execution of authorized mobile code and authorized functionality
- Audit logs maintenance & periodic review.

Identity and Access Management:
Following controls to be applied for CP's identity and access management systems:

<table>
<thead>
<tr>
<th>Component</th>
<th>Critical Area of Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authorization</td>
<td>1. Checks on system-wide privileges for the cloud operations</td>
</tr>
<tr>
<td></td>
<td>2. Authentication &amp; management of highest level of privileged accounts</td>
</tr>
<tr>
<td></td>
<td>3. Checks on high-privilege roles allocated to the same person</td>
</tr>
<tr>
<td></td>
<td>4. Principle of role-based access control (RBAC) and least privilege to be followed</td>
</tr>
<tr>
<td>Identity Provisioning</td>
<td>1. Checks &amp; Standards made on the identity of user accounts at registration</td>
</tr>
<tr>
<td></td>
<td>2. Different levels of identity checks based on the resources required</td>
</tr>
<tr>
<td></td>
<td>3. Process of De-provisioning credentials</td>
</tr>
<tr>
<td></td>
<td>4. Risks identification analysis on credentials</td>
</tr>
<tr>
<td>Personal Data Management</td>
<td>1. Access policy for data storage and protection controls applied to the user directory (e.g., AD, LDAP)</td>
</tr>
<tr>
<td></td>
<td>2. Check on exportable user directory data in an interoperable format</td>
</tr>
<tr>
<td></td>
<td>3. Need-to-know the basis for access to customer data within the CP</td>
</tr>
<tr>
<td>Key Management</td>
<td>1. Customer system images to be protected or encrypted</td>
</tr>
<tr>
<td></td>
<td>2. Security controls in place for using those keys to sign and encrypt data</td>
</tr>
<tr>
<td></td>
<td>3. Customer system images to be protected or encrypted</td>
</tr>
<tr>
<td></td>
<td>4. Ability to deal with Key revocation simultaneity issues for multiple sites</td>
</tr>
<tr>
<td>Encryption</td>
<td>1. Encryption to use in multiple places like data in transit, data at rest, data in processor or memory</td>
</tr>
<tr>
<td></td>
<td>2. Well defined policy on what to be and what not to be encrypted</td>
</tr>
<tr>
<td></td>
<td>3. User accessing/holding/managing/protecting Keys</td>
</tr>
<tr>
<td>Authentication</td>
<td>1. Authentication on high assurance task like login to management interfaces, key creation, access to multiple-user accounts, firewall configuration, remote access, etc.</td>
</tr>
<tr>
<td></td>
<td>2. Two factor authentication management on critical components like firewalls, etc.</td>
</tr>
<tr>
<td>Credential Compromise or Theft</td>
<td>1. Analysis on failed and successful logins, unusual time of day, and multiple logins</td>
</tr>
<tr>
<td></td>
<td>2. To identify the provisions in the theft of Customer’s Credentials (detection, revocation, evidence for actions)</td>
</tr>
</tbody>
</table>

The following measures apply to the identity and access management systems which are offered by the CP for use and control by the cloud customer:

<table>
<thead>
<tr>
<th>Component</th>
<th>Critical Area of Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identity Management</td>
<td>1. Federated IDM infrastructure for both high assurance (OTP systems, where required) and low assurance (e.g. username and password) to be interoperable.</td>
</tr>
<tr>
<td></td>
<td>2. Interoperability of CP with third party identity providers</td>
</tr>
<tr>
<td></td>
<td>3. Ability to incorporate single sign-on</td>
</tr>
</tbody>
</table>

Asset Management:
It is important to ensure the provider maintains a current list of hardware and software assets under the CP's control. This enables checks that all systems have appropriate controls employed, and that systems cannot be used as a backdoor into the infrastructure.
- CP to have an automated means to inventory all assets, which facilitates their appropriate management
- List of assets that the customer has used over a specific period of time to be reviewed
- Assets to be classified in terms of sensitivity and criticality
- CP to employ appropriate segregation between systems with different classifications and for a single customer who has systems with different security classifications.

Data and Services Portability:
Recommendations on risks associated with vendor lock-in are:
- Documented procedures and APIs for exporting data from the cloud
- Vendors to provide interoperable export formats for all data stored within the cloud
- Processes for testing that data can be exported to another CP - should the client wish to change provider
- Client to perform their own data extraction to verify that the format is universal and is capable of being migrated to another CP

Business Continuity Management:
Providing continuity is important to an organization. Although it is possible to set service level agreements detailing the minimum amount of time systems are available, there remain a number of additional considerations.
- RPO (recovery point objective) and RTO (recovery time objective) for services to be detailed according to the criticality of the service
- Information security activities appropriately addressed in the restoriation process
- Lines of communication to end customers in the event of a disruption
- Roles and responsibilities of teams clearly identified when dealing with a disruption
- CP to categorize the priority for recovery and relative priority for restore
- CP to have a formal process in place for detecting, identifying, analyzing and responding to incidents
- Real time security monitoring (RTSM) service to be in place
- Periodical report on security incidents (e.g. according to the ITIL definition) to be provided
- Access & Management of retained security logs.
- Possibility to integrate the information collected by the intrusion detection and prevention systems of the customer into the RTSM service of the CP or that of a third party
- Escalation procedures to be defined
- CP to offer the customer a forensic image of the virtual machine
- Periodic test disaster recovery and business continuity plans
- CP to carry out vulnerability testing & process of rectifying vulnerabilities (hot fixes, re-configuration, uplift to later versions of software, etc.)

Physical security:
As with personnel security, many of the potential issues arise because the IT infrastructure is under the control of a third party.
- CP to assure customers on the physical security of the location with standards like Section 9 of ISO 270012.
- Regular access reviews, and revocation when required
- Policies for loading, unloading and installing equipment and deliveries inspection for risks before installation
- Up-to-date physical inventory of items in the data centre
- Regularly survey premises to look for unauthorized equipment.
- Access protection of personnel use portable equipment (e.g., laptops, smart phones) in datacenter
- Procedures to destroy old media or systems when required
- Measures to control access cards
- Periodic checks made to ensure that the environment complies with the appropriate legal and regulatory requirements

**Environmental Controls:**
- Procedures laid to ensure that environmental issues do not cause an interruption to service
- Additional security measures are to be in place to protect physical access both at the primary as well as the secondary sites
- Frequent monitor of temperature and humidity in data centre
- Buildings to be protected from lightening strikes and electrical communication lines to be included
- Stand-alone generators in the event of a power failure
- All utilities (electricity, water, etc) to be capable of supporting CP environment and to be re-evaluated & tested periodically
- Follow manufacturers recommended maintenance schedules
- Allow authorized maintenance or repair staff onto the site
- When equipment is sent away for repair, data to be cleaned from it first

**Legal Recommendations:**
Customers and potential customers of CP services should have regard to their respective national and supra-national obligations for compliance with regulatory frameworks and ensure that any such obligations are appropriately complied with. At the present time, most of the legal issues involved in cloud computing will be resolved during the evaluation of contracts, ToUs, User Licensing Agreements (ULAs) and SLAs by the customer.

Until legal precedent clarifies concerns in relation to data security that are specific to cloud, customers and CPs alike should look to the terms of their contract to effectively address risks. The following is a list of areas the customer should pay particular attention to when assessing SLAs, ToUs, ULAs and other agreements for cloud services:

<table>
<thead>
<tr>
<th>Component</th>
<th>Critical Area of Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Protection</td>
<td>Attention while choosing a processor that provides sufficient technical</td>
</tr>
<tr>
<td></td>
<td>security and organizational measures governing the processing to be carried</td>
</tr>
<tr>
<td></td>
<td>out, and ensuring compliance with those measures</td>
</tr>
<tr>
<td>Data Security</td>
<td>Mandate data security measures that potentially cause either the CP or the</td>
</tr>
<tr>
<td></td>
<td>customer to be subject to regulatory and judicial measures if the contract</td>
</tr>
<tr>
<td></td>
<td>does not address these obligations</td>
</tr>
<tr>
<td>Data Transfer</td>
<td>Attention on what information is provided to the customer regarding how</td>
</tr>
<tr>
<td></td>
<td>data is transferred within and outside the CP’s proprietary cloud.</td>
</tr>
<tr>
<td>Law Enforcement Access</td>
<td>Each country has unique restrictions on, and requirements providing for,</td>
</tr>
<tr>
<td></td>
<td>law enforcement access to data. The customer should pay attention to</td>
</tr>
<tr>
<td></td>
<td>information available from the provider about the jurisdictions in which</td>
</tr>
<tr>
<td></td>
<td>data may be stored and processed and evaluate any risks resulting from</td>
</tr>
<tr>
<td></td>
<td>the jurisdictions which may apply</td>
</tr>
<tr>
<td>Confidentiality and Non-disclosure</td>
<td>Duties and obligations related to this issue should be reviewed.</td>
</tr>
<tr>
<td>Risk Allocation and limitation of liability</td>
<td>When reviewing their respective contract obligations, the parties should underscore those obligations that present significant risk to them by including monetary remediation clauses, or obligations to indemnify, for the other party’s breach of that contract obligation. Furthermore, any standard clauses covering limitations of liability should be evaluated carefully.</td>
</tr>
<tr>
<td>Intellectual property</td>
<td>The cloud customer should ensure that the contract respects their rights to any intellectual property or original works as far as possible without compromising the quality of service offered</td>
</tr>
<tr>
<td>Change of Control</td>
<td>Transparency concerning the CP’s continuing ability to honor their contract obligations in the case of a change of control, as well as any possibility to rescind the contract.</td>
</tr>
</tbody>
</table>

**Other General Recommendations:**
In order to improve the effective cloud security, following are the recommendations:
- Certification processes and standards for clouds: more generally, cloud computing security lifecycle standards that can be certified against cloud specific provisions for governance standards – COBIT (52), ITIL (53), etc;
- Metrics for security in cloud computing
- Return on security investments (ROSI): the measures cloud computing can enable to improve the accuracy of ROI for security
- Effects of different forms of reporting breaches on security
- Techniques for increasing transparency while maintaining appropriate levels of security
  - Tagging, e.g., location tagging, data type tagging, policy tagging
  - Privacy preserving data provenance systems, e.g., tracing data end-to-end through systems
- End-to-end data confidentiality in the cloud and beyond
  - Encrypted search (long term)
  - Encrypted processing schemes (long term)
  - Encryption and confidentiality tools for social applications in the cloud
  - Trusted computing in clouds, e.g., trusted boot sequences for virtual machine stacks
- Higher assurance clouds, virtual private clouds, etc.
- Extending cloud-based trust to client-based data and applications

**Conclusion**
Cloud computing is now emerging from its early adopter stage and many of the risks associated has been learned. The advantages are clear, with the main ones being resiliency, efficiency, scalability, flexibility and easier outsourcing. However, investment is made in availability and continuity. Gartner analysis depicts that the Cloud services would be on peak in near future. On the other hand, if the wrong cloud supplier is chosen then IT service continuity will be at risk.

As such, the differences in methods and responsibility for securing the cloud services mean that consumers of cloud services are faced with a challenging endeavor. Unless CPs can effectively adopt the security standards and readily disclose their security controls to the extent to which they are implemented to the consumer and the consumer knows which controls are needed to maintain the security of their information, there is tremendous potential for misguided decisions and detrimental outcomes.
Organizations should now be evaluating how and where they can benefit from transferring systems and applications over to a cloud environment. Making the most of cloud will enable IT systems more efficient and cost effective; in turn helping to make business more profitable and secure.

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National Conference on Research Issues in Computer Science and Engineering 2010 (NCRICSE 2010)

Report prepared by: M. Somasundaram, RMK Engineering College, Organizing Committee, NCRICSE 2010 Conference

The Department of Computer Science and Engineering (CSE), of RMK Engineering College, organized the National Conference NCRICSE 2010 on March 1-2, 2010 at their college campus. The conference was sponsored by Computer Society of India (CSI) and IEEE.

The Chief Guest for the inauguration of the conference was Mr. S. Ramasamy, the Chairman of CSI Chennai Chapter who inaugurated the conference and gave a key note address.

The Guest of Honor was Mr. H. R. Mohan, Chairman, Division II (Software), and Member of the Executive Committee, IEEE Madras Section who gave a key note address and chaired a technical session.

The RMK Engineering College has entered into MoUs with some organizations like NexGTech, Poseidon Solar and University of Technology, Sydney, Australia to conduct collaborative research in the areas of CSE.

In his welcome speech Prof. M. Somasundaram spoke about the R&D in the areas of CSE by the Government through organizations like CDAC, NIC etc. and private companies including Multi Nationals like IBM, Microsoft, TCS, Infosys, etc. The Government Bodies like DST, AICTE etc have been funding research projects in academic institutions like engineering colleges and universities.

Prof. Somasundaram also highlighted that CSI has been actively facilitating research, knowledge sharing, learning and career enhancement to all professionals in the IT industry by bringing together the Government, Academia, IT industry and many industry associations.

Dr. K. L. Shunmuganathan, Professor and Head of Department of CSE, RMK Engineering College and Conference Organizing Secretary provided an overview of the Conference and Technical Paper Sessions. He said that over 100 papers were received from various organizations across India and they were reviewed by a team of Professors. Based on the series of review, 34 papers were selected for publication in the proceedings out of which 20 were selected for presentation.

Dr. K. Rameshwaran, Principal, RMK Engineering College provided an overview of the R&D activities of the College and encouraged all the research scholars, delegates and students to use the conference to network with the peers and share knowledge towards their research.

Chief Guest Mr. S. Ramasamy, (4th from left) releasing the Conference Proceedings and handing over to Dr. K. Rameshwaran (3rd from left). Others in the picture from the left are Prof. M. Somasundaram, Dr. K. L. Shunmuganathan, and Prof. K A Mohamed Junaid.

Mr. S Ramasamy inaugurated the conference and released the Conference Proceedings. In his key note address, he said that the general public sometimes confuses computer science with careers that deal with computers (such as information technology), or think that it relates to their own experience of computers, which typically involves activities such as gaming, web-browsing, and word-processing. In view of this, he said that the research in computer science should focus on what can be efficiently automated and hence carry out research on such fundamental issues.

He said that such possible branches of computer science research and study are Theoretical computer science (i.e. Automata theory, Number theory, Graph theory, Qunatum computer theory etc.), Theory of computation (i.e. Computational complexity theory etc.), Algorithms and data structures (i.e. Programming methodology and languages etc.), Computer elements and architecture (i.e. Digital logic, Multiprocessing etc.), Computational science (i.e. Numerical Analysis, computational neuro science, Cognitive Science, Bio informatics etc.), Applied Computer Science (i.e. OS,
Computer Graphics, AI, Robotics, Computer Vision, Human-computer interaction, Info. Security etc.) He appealed to research scholars to take up these areas for research.

Mr. H.R.Mohan who chaired the technical paper session on the theme of Data Mining, gave a keynote address to research scholars and students highlighting the importance of being part of international professional bodies like IEEE, ACM, etc so that students can network with others in their areas of interest across the world. He also said that all the research papers and work should aim towards the practical applications of such research findings in the industry. In view of this he pointed out that industries are actively involved in professional bodies like IEEE, ACM etc and so membership in these professional bodies will help the research scholars towards applying their research findings in practical applications.

Mr. Mohan chaired the Technical Session on Data Mining where papers were presented on Gene Ontology (GO) Clustering and Ontology based Ranking of Documents. (Picture 2). In his role as the Associate VP (Systems) in the Hindu, he shared his views on data and text mining being used in the The Hindu group of companies where large volumes of data and text are maintained and used for references from time to time.

The Technical paper sessions were held over 2 days on March 1st and 2nd in the areas of Image Processing, Architecture and Security, Networks and Communications and Mobile Communications.

Dr. A. Kannan, Professor in Department of CSE, Anna University gave a special lecture to a group of research scholars pursuing Ph.D. Program and students wishing to register for the Ph.D. Program. He gave a comprehensive briefing on the procedures of registering and pursuing the Program and various suggestions and advises in conducting research. He covered aspects like conducting literature surveys, narrowing down the research topic, writing papers in international journals and conferences, significance of maintaining the quality of the papers, applying ideas from one area of study to another during research etc. It was an interactive session where the research scholars could discuss and clarify various aspects of doing research.

Dr. P. Yogesh, Assistant Professor, Department of CSE, Anna University participated in the conference and gave a special lecture to the group of students doing their Masters Degree.

The Conference was organized by the Organizing Secretary Dr. K. L. Shunmuganathan, Professor and Head, Dept of CSE and the organizing committee of faculty members namely Prof. M. Somasundaram, Prof. S. Vimala, Ms. T. Sethukkarasi, Ms. S. Selvi, Mr. R. Jagadeesh Kannan and Mr. B. Jaison and students namely Mr. S. Raj Ganesh and Mr. M. Ravi Krishnan. (Picture 3). The Conference organization was guided by Sri. R.S.Munirathinam, Chairman, Mr. R.M. Kishore, Vice Chairman, Dr. K. Rameshwaran, Principal, Prof. K.A. Mohamed Junaid, Vice Principal and Dr. K. Chandrasekaran, Dean.

The faculty members and students of the Department of Computer Science and Engineering (CSE) who coordinated the activities of the National Conference.
CloudCamp India Tour’10

[Focus on Unpanel Questions]

Report prepared by:
Dave Nielsen, Co-Founder, Cloud Camp, http://twitter.com/dnielsen, dnielsen@gmail.com
Prem Sankar G, Founder, India Cloud Users Group, India Region Organizer, Cloud Camp,
http://twitter.com/premsankar, premsankar@gmail.com

About India Cloud Users Group

India Cloud Users Group was formed with a vision to popularize Cloud Computing in India. Aim is to build a strong community around Cloud users that would comprise of developers, administrators, entrepreneurs, business users, researchers and students. Also, provide them a platform to collaborate, share and learn from each other.

Some long term vision:
• To build Community Cloud in India
• Organize events and invite people from around the world for the benefit of the community
• Partner with academic institutions and help them move to Cloud computing for research
• Crowdsource and development of Cloud related open Source products

India Cloud Users Group URL: http://groups.google.com/group/cloud-meetup

Prelude:

With the grand success of the first CloudCamp Bangalore in 2009, plans for having an all India event started in early Jan between Prem Sankar and Dave Nielsen, Co-Founder of CloudCamp. Discussion started and thanks to Manish Dhingra, Founder and COO, Tekriti Software, who agreed to help us Delhi and Pune camp that gave us more confidence and headstart to conduct the India tour. We began our planning and decided to conduct the event during Feb. Meanwhile, I had a discussion with Yahoo folks for possible sponsorship and eventually ended in a partnership to host First India Hadoop Summit along with CloudCamp in Bangalore. In the end, we decided to organize CloudCamp’s in Delhi, Chennai, Hyderabad, Pune and Bangalore.

For any feedback on CloudCamp India tour ’10 write to Prem Sankar.

India Tour Summary:

CloudCamp Delhi - Feb 20th

CloudCamp India Tour’10 started on Feb 20th in New Delhi. The venue was carefully selected to be accessible from all corners of the National Capital Region. Sure enough, with the help of Prof. Sorav Bansal and Gaurav Bhatnagar (CEO, Mediolytics Software), the Bharti Building at IIT-Delhi was selected as the venue. The lead organizer Manish Dhingra (Founder and COO of Tekriti Software) did a fantastic job in lining up speakers from Amazon Web Services, Microsoft, Salesforce and Slideshare as part of the conference. Prof. Sorav Bansal drew on his experience and research done on Virtualization during his PhD at Stanford University, to kick start the proceedings with a great talk on the topic.

With the strong grounding set on Virtualization, the audience, an interesting mix of students and professionals started participating in the Unpanel. Led by Dave Nielsen, the Unpanel got so interesting that Simone Brunozzi, Technology Evangelist with AWS decided to skip his session and take on the Unpanel questions as below:
1. How to move our existing apps onto the cloud?
2. How can a cloud provision 10K new servers?
3. How does software licensing work?
4. How to achieve dynamic and scalable data storage?
5. How secure is a cloud network?
6. How fast can we recover a server that crashed in cloud?
7. What is the breakeven point for moving an app to the cloud?
8. How can P2P cloud work?
9. How is versioning handled in the cloud?
10. Has cloud overtaken Grid?
11. Where does cloud configuration take place and how?

Post Lunch saw sessions from Microsoft on Windows Azure, Salesforce.com and an interesting case study by Slideshare on their experience with Amazon Web Services.

CloudCamp Chennai - Feb 23rd

CloudCamp India Tour moved on to Chennai which was hosted at Anna University on Feb 23rd.

Thanks to
• ChandraKumar, President, SPIN Chennai, Dr. L. Suganthi, HOD, Dept. of Management Studies,
CloudCamp Pune - Feb 27th
Persistent systems hosted the Pune event in the Dewang Mehta Auditorium. There was good response to the event with about 70 people showing up for the event from Pune region. There was a strong showing of students as well as professionals from IT industry.

VMware sponsored the event as well. We had some interesting sessions from VMware, Prashant Advani presented the overall VMware cloud enablement vision.

Mukund Deshpande from Persistent presented on the area of Analytics in the Cloud.

Dr Deepak Singh from Amazon dialed in during the event and spoke about Amazon offerings and how Amazon provides some of its services.

Shreekanth of Persistent Systems was pretty much the man behind Pune camp along with Manish of Tekriti Software.

Security was one of the top topics at this event and lot of people had several comments and experiences to share. There was a healthy debate around PaaS as well as various offerings in this space

Unpanel questions:
1. What security precautions are made to prevent accessing my data?
2. What standards are evolving w.r.t security?
3. Why is more players not providing cloud?
4. How secure is CC and can banks use it?
5. Where can PHP developers put your code?
7. How many interesting session from CSS Labs, Congizant, Microsoft and OrangeScape team. There were sessions on Key-value pair, Private cloud, business aspect of Cloud.
8. The Chennai event was attended by a mix of industry, researchers and students.

CloudCamp Hyderabad - Feb 25th
Sudhakar of Microsoft and his team of volunteers had got things put up nicely. The event happened in IIIT, Hyderabad. It was supported by HexaGrid.

Unpanel Questions of Hyderabad:
1. How will CC Change how IT supports?
2. How is Private Cloud different Data Center?
3. How is CC different than Virtualization?
4. How secure is CC and can banks use it?
5. How difficult is it to move applications to cloud?
6. Are there standards for PAAS?
7. Why is more players not providing IAAS?
8. In Layman’s term what is CC?
9. Where can PHP developers put your code?
10. Will CC co-exist with traditional systems?
11. How can we reproduce a Ghost image in CC?

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The growth of wireless embedded technology and their advancements are very rapid and there are tremendous strides in this realm. However, the industries strive to get and make use of computing devices to be faster, inexpensive and tiny without sacrificing sophistication and versatility. In the realm of wireless communication and mobile computing, with the fast changing technologies and customer-driven product development, the researchers and design engineers have to stride with the industries’, ultimately end-users’ requirement. Tremendous developments in such technologies as wireless communications and networking, mobile computing and handheld devices, embedded systems, wearable computers, sensors, RFID tags, smart spaces, middleware, software agents, and the like, have led to the evolution of pervasive computing platforms as natural successor of mobile computing systems. The goal of pervasive computing is to create ambient intelligence, where network devices embedded in the environment provide unobtrusive connectivity and services all the time, thus improving human experience and quality of life without explicit awareness of the underlying communications and computing technologies.

This conference would focus on the challenges and issues to design and to build the new spectrum of human-computer interfaces prevalent in Mobile Computing. It aims to bring experts, researchers, faculty and students together to discuss about the technological advancements.

The technical sessions of the conference will include presentation of original papers reporting on theoretical and experimental research and development. Original contributions in pervasive computing & services, research and industrial applications are solicited. The topics of interest are as follows and are not limited to:

- Autonomic computing and communications
- Mobile computing systems and services
- Ambient, invisible, implicit, and adaptive computing
- Smart spaces and intelligent environments
- Enabling technologies (e.g., Bluetooth, BANs, PANs, 802.11 wireless LANs)
- Embedded systems and wearable computers
- Wireless sensors networks and RFID
- Virtual immersion communications
- Multiple inter-connected networking technologies (e.g., cellular, ad hoc, hybrid)
- Positioning and tracking technologies
- Auto-configuration and authentication
- Context-aware computing and location-based services and applications
- Service creation, discovery, management, and delivery mechanisms
- Middleware and agent technologies
- Application layer protocols and services
- User interfaces and interaction models
- Runtime support for intelligent, adaptive agents
- (Innovative) applications requirements, performance and benchmarking
- Security, privacy, fault-tolerance and resiliency issues
- Energy efficient algorithms

Technical Papers will be included in the Conference Proceedings with ISBN reference to be published and distributed at the conference. Authors are requested to submit the paper in the format as per the template in MS-WORD available at www.velammal.org

Pre Conference Tutorial and workshop proposals are also solicited.

**Important Dates:**
- Paper submission deadline : May 2, 2010;
- Notification of acceptance : June 14, 2010;
- Early registration deadline : July 2, 2010;
- Camera-ready versions due : July 2, 2010;

**Registration:**
- Non CSI members : Rs. 2,500;
- CSI Members & Academicians : Rs. 2,000;
- CSI Student Members : Rs. 750;
- NRIs and Foreign Delegates : US $ 100

The registration fee includes conference materials and working lunch. Accommodation can be arranged to a limited number of participants on request with an extra payment of Rs 100/- per day.

Participants are requested to send their registrations along with the registration fee (and accommodation charges if applicable) by Demand Draft drawn in favor of ‘TIFAC-CORE, Velammal Engineering College’ and payable at Chennai.
Networking 2010 is the 9th event of the series of International Conferences on Networking, sponsored by the IFIP Technical Committee on Communication Systems (TC6). The main objectives of Networking 2010 are to bring together members of the networking community from both academia and industry, to discuss recent advances in the broad and fast-evolving field of telecommunications, and to highlight key issues, identify trends and develop visions. The conference will have dedicated sessions on the following topics:

- P2P and Overlay Networks
- Performance measurement
- Quality of Service
- Wireless Networks
- Addressing and Routing
- Applications and Services
- Ad hoc and Sensor Networks
- Work in Progress sessions

Researchers from all over the globe are likely to participate and it is a unique event for all those doing advanced work in the area of networking. The conference is co-hosted by Computer Society of India and Indian Institute of Technology Madras, Chennai.

**Venue:** The Centre for Industrial Consultancy and Sponsored Research (IC&SR), Indian Institute of Technology Madras (IITM), Chennai - 600 036

**Dates:**
- Workshop: 10th May 2010
- Conference: 11th – 13th May 2010
- Tutorials: 14th May 2010

For other details, please visit the conference website at www.networking-2010.org

### Registration Fees

<table>
<thead>
<tr>
<th>Attendee’s Registration</th>
<th>Regular</th>
<th>Reduced (TC 6 Delegates, TPC Members)</th>
<th>Full time students</th>
<th>Indian Participants</th>
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<tr>
<td>Main Conference (May 11-13)</td>
<td>475 USD</td>
<td>375 USD</td>
<td>200 USD</td>
<td>Rs. 3,000</td>
<td>Rs. 1,250</td>
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<tr>
<td>Workshop (May 10)</td>
<td>160 USD</td>
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<td>Tutorial (May 14)</td>
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<td>Rs. 500</td>
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Registration can be done online. Alternatively, pl. contact:

**Mr. S. Ramasamy, Chennai Chapter Chairman**
Ph: +91 98400 09417 :: Email: sypsys@vsnl.com

**Mr. K. Adhivarahan, Past Chennai Chapter Chairman**
Ph: +91 94442 75315 :: Email: adhi53@gmail.com OR adhivarahan@gmail.com

**Network Systems Laboratory, IIT Madras**
Ph: +91 44 2257 5374 :: Email: networking2010@cs.iitm.ernet.in
A two-day national conference on Information and Software Engineering, was organized during 26-27, Feb 2010 at the TTDC Beach Resorts, Mahabalipuram by the Department of Information Technology, Aarupadai Veedu Institute of Technology in association with IEEE Computer Society Madras Chapter, IEEE Computer Society Branch Chapter-AVIT. The event was supported by CSIR and the Division II on Software of CSI. The Conference was inaugurated by Capt. K. Srinivas, Vice-President, Cape Gemini. In his inaugural address Capt. Srinivas stressed the necessity of in-depth knowledge in the design so as to produce quality software. Following the inauguration, Mr. V. Viswanathan, Senior Manager-HR, Wipro Technologies, Chennai, released the conference souvenir and delivered the keynote address. Sri. H.R. Mohan, Chairman, IEEE Computer Society Madras Chapter & Div II, CSI and AVP (Systems), The Hindu, released the conference proceedings and delivered a special address to the delegates, focusing the importance of research under Software Engineering, in particular software design and development. He also outlined the benefits of being the member of IEEE CS which certifies professionals in the Software Engineering. Dr. A. Anthony Irudhayaraj, Dean (IT), Program Chair of the conference welcomed the gathering and provided the highlights of the conference. Prof. C. Karthikeyan, Head of the Department (IT) & Vice Chair of the conference, proposed the vote of thanks.

Around 200 delegates including research scholars, faculty members, professionals from industry and students from all over the country participated in the conference. About 70 technical papers out of 180+ papers received were presented both in Information and Software Engineering. Renowned specialists and domain experts from industry and academia delivered invited talks lectures and shared their rich and varied experiences. The following were the invited talk sessions.

- “Software Performance Engineering” by Mr. Ramesh Lakshmanan, Senior IT Manager, Infosys, Chennai.
- “Effective Project Management -- Key to overall Software Engineering Success” by Prof. Gopalaswamy Ramesh, Consultant and Adjunct Professor, IIITB.
- “Producing Quality through better understanding of Software Engineering fundamentals” by Mr. Srinivasan Desikan, HP Research Lab, Bangalore.
- Dr. D. Damodharan, Additional Director & Scientist ‘E’, Centre for Reliability, Department of Information Technology, Government of India, Chennai addressed the delegates during the valedictory function and distributed certificates. Dr. (Mrs) N.R.Alamelu, Principal, AVIT, Chairperson of the conference, gave away the presidential address.

Release of the Conference Proceedings: (L to R): Prof. Karthikeyan, Mr. H R Mohan, Capt. K Srinivas, Mr. V Viswanathan and Dr. A Anthony Irudhayaraj
Computer Society of India (CSI) and Bombay Management Association (BMA) have jointly organized a one-day Information Technology conference “India IT 2020” in Mumbai on February 26, 2010 to deliberate and discuss how organizations can use these evolving trends effectively. The theme of the conference was Business and Technology.

India has been acknowledged by the world as an Information Technology Superpower in software services for many years. The economic meltdown has been an eye opener for Business users and IT companies to re-evaluate their strategy. We are seeing a dramatic shift on application of Technology in end-user organizations and solutions provided by IT consulting organizations. It is important that senior managers and IT professionals are aware of the benefits and risks associated with evolving trends before they implement them for their clients or in their organization.

Collaborative computing and the power of Networking was on full display at the IT 2020 in Mumbai on 26th February 2010. When the nation was tuned in to the budget, a band of IT professionals was taking in the inspirational thoughts of two great leaders, Dr S. Ramadorai and Dr Vijay Bhatkar.

Dr. Ramadorai laid out a great perspective for the industry in his well researched talk, that spelt out a blueprint for the IT industry to move forward and assume world leadership in Computing - software and hardware.

The text of speech by Dr. S Ramadorai is reproduced on page 37 this issue with special permission.

Dr Vijay Bhatkar’s Keynote address outlined evolving technologies and how it can continue to play the key role of Business Enabler. His talk focused on education, adaptation of technologies and benefits and issues faced by Business from evolving technologies.

Dr. Bhatkar touched the spiritual chord that took us beyond computing to the realm of inclusive computing - caring for those who do not have as well as those who do.

The Conference was divided into Technology Track I, Business Track & Technology Track II and Tutorials. Other eminent speakers included:

Every one of the speakers who spoke on topics ranging from Green IT to Innovation, and cloud computing to open source, gave us a lot of think, digest and work on.

The Conference was supported and sponsored by companies like Microsoft, TCS, CMC, BSA, Novell, RedHat & Net magic.

The conference concluded with a Panel Discussion “Challenges of sustainability through Green IT” which was chaired by S. Ramanan, Managing Director, CMC Ltd.

In partnership with Microsoft India, India IT 2020 organized CIO Summit on 26th Feb, 2010 onward.

The Central Statistical Organization’s projections substantiate the fact that the economic recovery in the country is on track. The GDP is projected to grow at 7.2%. With this, India still holds its ground as the world’s second fastest growing economy, after China.

Hence, CIOs in India have a golden opportunity at hand to metamorphose the roles they play for their organizations. CIOs, much more than ever before, need to increase their business relevance; gain deeper...
insights, necessitate changing expectations, develop skills and figure out key metrics for performance and ROI to harbor business excellence, nurture growth and create competitive advantage.

As the economy is showing signs of sustained growth, CIOs will have to gear up their organizations to be agile enough to tap expected or unexpected growth opportunities while successfully mitigating various impediments. Here, the CIOs will have to figure out answers to various key questions along the way:

- Which metrics best prove the business value and relevance of IT?
- How best to identify and act on evolving enterprise growth opportunities?
- Which technologies and approaches will drive sustained growth and innovation?
- How best to keep a tab on the dynamic changes of the global economic climate? How best to stay ahead of the curve?
- How to mitigate the challenges of competing in a world of growing transparency?
- How to best strengthen your influence on executive strategies and decisions?
- How to leverage the ensuing economic upturn to reshape goals and outcomes both on individual and organizational levels?

The INDIA IT 2020 CIO Summit deliberated on such issues and offered a platform to constructively discuss and share Best Practices, Knowledge and Learnings.

The Keynote address was given by Prof. N. Ravichandran, Director, IIM, Indore & Management Guru. Prof. Ravichandran inspired the CIOs with his talk on what strategy the CIOs must adopt to leverage their position for business growth.

Mr. Vijay Ramachandran, Editor-in-chief, CIO Magazine moderated the panel discussion "With Economy Opening up, how best can CIOs help their organizations to prepare for growth". Other Panelists included Mr. Sunil Mehta, Group CIO, JWT, Mr. Satish Joshi, Exec. Vice President & CIO, Patni Computer, Mr. Porus Munshi, Strategy Consultant & Author.
Venture Capital

Venture capital (also known as VC or Venture) is a type of private equity capital typically provided for early-stage, high-potential, growth companies in the interest of generating a return through an eventual realization event such as an IPO or trade sale of the company. Venture capital investments are generally made as cash in exchange for shares in the invested company. It is typical for venture capital investors to identify and back companies in high technology industries such as biotechnology and ICT (information and communication technology).

Venture capital typically comes from institutional investors and high net worth individuals and is pooled together by dedicated investment firms.

Venture capital firms typically comprise small teams with technology backgrounds (scientists, researchers) or those with business training or deep industry experience.

A core skill within VC is the ability to identify novel technologies that have the potential to generate high commercial returns at an early stage. By definition, VCs also take a role in managing entrepreneurial companies at an early stage, thus adding skills as well as capital (thereby differentiating VC from buy out private equity which typically invest in companies with proven revenue), and thereby potentially realizing much higher rates of returns. Inherent in realizing abnormally high rates of returns is the risk of losing all of one’s investment in a given startup company. As a consequence, most venture capital investments are done in a pool format where several investors combine their investments into one large fund that invests in many different startup companies. By investing in the pool format the investors are spreading out their risk to many different investments versus taking the chance of putting all of their money in one start up firm.

A venture capitalist (also known as a VC) is a person or investment firm that makes venture investments, and these venture capitalists are expected to bring managerial and technical expertise as well as capital to their investments. A venture capital fund refers to a pooled investment vehicle (often an LP or LLC) that primarily invests the financial capital of third-party investors in enterprises that are too risky for the standard capital markets or bank loans.

Venture capital is also associated with job creation, the knowledge economy and used as a proxy measure of innovation within an economic sector or geography.

Venture capital is most attractive for new companies with limited operating history that are too small to raise capital in the public markets and have not reached the point where they are able to secure a bank loan or complete a debt offering. In exchange for the high risk that venture capitalists assume by investing in smaller and less mature companies, venture capitalists usually get significant control over company decisions, in addition to a significant portion of the company’s ownership (and consequently value).

Young companies wishing to raise venture capital require a combination of extremely rare yet sought after qualities, such as innovative technology, potential for rapid growth, a well-developed business model, and an impressive management team. VCs typically reject 98% of opportunities presented to them, reflecting the rarity of this combination.

Types of Venture Capital Firms

Depending on your business type, the venture capital firm you approach will differ. For instance, if you’re a startup internet company, funding requests from a more manufacturing-focused firm will not be effective. Doing some initial research on which firms to approach will save time and effort. When approaching a VC firm, consider their portfolio:

- **Business Cycle:** Do they invest in budding or established businesses?
- **Industry:** What is their industry focus?
- **Investment:** Is their typical investment sufficient for your needs?
- **Location:** Are they regional, national or international?
- **Return:** What is their expected return on investment?
- **Involvement:** What is their involvement level?

Targeting specific types of firms will yield the best results when seeking VC financing. Wikipedia has a list of venture capital firms that can help you in your initial exploration. The National Venture Capital Association segments dozens of VC firms into ways that might assist you in your search. It is important to note that many VC firms have diverse portfolios with a range of clients. If this is the case, finding gaps in their portfolio is one strategy that might succeed.

There are typically six stages of financing offered in Venture Capital, that roughly correspond to these stages of a company’s development:

- **Seed Money:** Low level financing needed to prove a new idea (Often provided by “angel investors”)
- **Start-up:** Early stage firms that need funding for expenses associated with marketing and product development
- **First-Round:** Early sales and manufacturing funds
- **Second-Round:** Working capital for early stage companies that are selling product, but not yet turning a profit
- **Third-Round:** Also called Mezzanine financing, this is expansion money for a newly profitable company
- **Fourth-Round:** Also called bridge financing, 4th round is intended to finance the “going public” process
CHENNAI: Mr. H R Mohan conducting quiz for the members.

The chapter celebrated CSI Day on 06.03.2010 as usual in presence the senior members, CSI fellows, Past Education Directors, Chapter Patrons, Past Chapter Chairpersons.

In his welcome address, Chapter Chairman Mr. S. Ramasamy stressed the importance of CSI Day.

The chapter invited student members from all the student chapter branches associated with the chapter for the presentation of the projects which were developed by them. The members also appreciated the student presentation and gave valuable feedback and suggestions for the improvement & success of the projects. Instead of selecting the best project among the presented projects, Chairman S. Ramasamy choose to present mementoes to all the project presenters who were present.

Then our CSI fellow, past Chairman Mr. H.R. Mohan got into his act of being a quiz master. He divided the entire floor into three groups and started shooting the questions. The winners were presented cash prizes immediately by the chapter Chairman S. Ramasamy.

All the CSI fellows, past chapter chairpersons, Chapter patrons, past Directors of Education Directorate were honoured by presenting them a memento. Each member was called to present the memento to the senior guiding members. On behalf of senior members, Major General Balasubramanian, our founder Secretary of CSI, talked about CSI, responsibility of CSI member and future plans and aims of CSI.

The meeting ended with a vote of thanks by Treasurer Mr. Srinivasan.

KONERU: Mr. Sandeep M., Mr. Pavan K., Dr. JKR Sastry, Dr. DBV Sarma, Dr. P. Thrimurthy, Dr. K. Raja Sekhararao, Mr. K. Raju and Mr. P. Venkatesh kumar

The Chapter has organized a national Seminar on “Six Sigma” on March 1st 2010 at Peacock Hall of KL University, Vaddeswaram. The main objective is to promote and uphold the Six Sigma and its influence on implementing diverse systems of various domains including health care, transport, insurance and other precious ones. More than 300 members consisting of CSI members of various chapters, UG students of computer science, Information Technology, Electronics & computers and PG students of M.Tech and MCA of KL University have participated in the seminar.

Mr. Pavan K., CEO KINDUZ Consulting and M Sandeep Workshop Coordinator of CSI have delivered an interactive lecture with case studies and practical issues pertinent to software development and project management. Dr. P Thrimurthy President Elect CSI has chaired the function and motivated the audience with his dynamic & vibrant speech. Dr. DBV Sarma Vice president Region V CSI was the Guest of Honour. Mr. P Venkatesh Kumar and K Raju management committee members of Hyderabad chapter have also delivered with their energetic speech. Dr. K Raja Sekhararao
chairman CSI Koneru chapter & Dr. JKR Sastry patron CSI Koneru chapter spoke about the theme of the seminar.

CSI Regional meet was held on March 1st 2010 with the main agenda on chapter elections and results, financial accounts and calendar of events for the next year. Management committee members from Hyderabad, Vijayawada, Koneru, New Guntur, chirala and Ongole chapters have participated. Founder chairman of Koneru chapter Mr. K Satyanarayana has given welcome speech and appealed the chapter members for their active role in promoting CSI to further levels. All the members have welcomed and congratulated president elect Prof. P. Thrimurthy. Dr. DBV Sarma Regional Vice president has chaired the meeting. Members of all the chapters have talked about their chapter activities for the last quarter and also proposed the future events.

**SRIJI, ONGOLE**

The Chapter conducted “Quiz Competition on C, C++, Data Structures and Java” on 13th March, 2010. Contest was organized with a view to identify young talent with sharp skills of programming, comprehension and motivate them towards to improve good programming techniques. 100 CSI members had participated with great enthusiasm. Top 3 groups are awarded with prizes and certificates and the remaining groups are honored with participation certificates. This event was sponsored by SRIJI COLLEGE, Maddiralapadu. Mr. P. Kishan Kumar, Principal, Mr. P. Ajith, head, department of Computer Science and other staff of SRIJI College extended excellent support in conducting the event.

**TIRUCHIRAPPALLI**

Scientists began to investigate the nature of crystals as early as the seventeenth century, they found that every piece of salt will be cubic in shape, and that smashing a piece of salt will yield smaller and smaller cubes. They also succeeded in classifying most known crystals according to their optical properties. Another phenomenon displayed by certain crystals is piezoelectricity. Using a crystal, scientists could now measure the wavelength of any x ray as long as they knew the internal structure of their crystal. Crystals find numerous applications in research and modern technology. Knowledge of crystal properties and of their magnitude is the determining factor in their selection for a given purpose.

About 50 Members Participated & got Benefitted from the lecture by Mr. V Kannan. Mr. N Sridar, Hon. JT IEI –TPC Secretary welcomed the gathering. Mr. K Ramadoss,Senior most member & former GM /BHEL/ Tiruchirapalli introduced the speaker to the Audience. Mr. S Dharmalingam, Past Chairman, IEI-TLC & Mr. J Sankaran, Hon. Secretary handed over the momento on behalf of the participating Institutions. Mr. R Selvaraj, Immnd .Past Secretary,CSI Tiruchirapalli Chapter Proposed the vote of thanks.

**UDAIPUR**

The chapter has organized a technical talk on “Spatial Decision Support Systems” at Aishwarya College, Udaipur on 13th February, 2010. Dr. Archana Golwarkar, Director, Aishwarya College welcomed all the participants. Mr. R. S. Dhakar, Chapter Chairman introduced Dr. Rajveer Shekhawat, Secure Meters Ltd., Udaipur. The talk by Dr. Rajveer S Shekhawat on Decision Support System put the developmental planning in the context after having exposed the basic principles of GIS and SDSS to the budding planners and managers of the country. The role of SDSS was illustrated by citing burning problems that are faced by administrators and planners of the country due to lack of knowledge of the modern tools, some of these in focus are NREGA, PDS and BPL families.

The talk was attended by 50 students of Aishwarya College and faculty members from Department of Computer Science & IT. Mr. R.S. Dhakar, Chairman and Mr. Azimuddin Khan, Secretary explained the benefits of student membership and encouraged to start a student chapter in their college.

The chapter has celebrated the “CSI Day” at IICE College, Udaipur on 6th March, 2010. Mr. R.S. Dhakar, Chairman, CSI Udaipur welcomed Chief Guest Prof. T.M. Dak, Secretary General, University of Third Age(U3A), India. A technical talk delivered by Mr. Ashok Jain, Director IICE College, on “e-Learning in Rural Areas”. Mr. Jain talked about the strategies to promote e-learning in rural areas in India. The potential impact of e-learning is to improve the lives of many people and bridge the cultural and educational gap existing in society. Various corporate–government initiatives were also being discussed.

Prof. T M Dak shared the experiences about use of information technology in U3A groups. He said, Information Technology is
helping a lot for communicating with near and dears. P. Dhawanjar, VP, Lipi Data Systems has also shared the old day’s memories, when he was office bearer of CSI.

Mr. Azimuddin Khan, Secretary Udaipur chapter given vote of thanks and congratulated to all for CSI day. The programme was attended by members of CSI, students and faculty members of IICE.

VISHAKHAPATNAM

Mr. Allam Appa Rao Vice Chancellor JNTU Kakinada has inaugurated this Southern Regional Conference-2010 on 28.01.2010 at Taj Hotel in Visakhapatnam. Mr. P. K Bhishnoi CMD RINL have graced the inaugural function as Guests of Honor. other dignitaries present on the day were Mr. C G Patil, Director (Commercial) RINL and Chapter Chairman, Mr. Umesh Chandra, Director (Operations) RINL and Vice Chairman CSI Visakhapatnam Chapter, Mr. P.K.Bhishnoi, CMD RINL, (Guest of Honor), Mr. Allam Apparao, Vice Chancellor, JNTU Kakinada (Chief Guest), Mr. CMDR J Jena (Keynote Speaker) and Prof. P Thrimurthy, President elect CSI. More than 400 delegates and invitees have taken part in the Inaugural function of this mega event.

Mr. DVGARG Varma, Hony. Secretary welcomed the delegates and invitees and explained about the Southern Regional Conference and Mr. C G Patil, Chairman, CSI & Director (Commercial), RINL has presided over the Seminar and delivered Chairman address.

Cmdr J Jena Sr. Director COAI & Director TCOE India gave the key note address on: “Emerging Telecom Technology and Government initiative in India for building Eco systems.

C S Rao, Managing Director, Emerging markets WiMAX Programme office, Intel and Chairman WiMAX Forum, India Bangalore has delivered a talk on “Connecting the next billion People-3Cs(Computers, Communications and content)”.

The inauguration programme ended with vote of thanks by Mr. Umesh Chandra Vice-Chairman CSI and Director(Operations)/RINL.

The seminar was fully loaded with high technical content and will continue on next two days. The event is sponsored by CISCO, SAP, IBM, HP, WIPRO and they have presented their products and services.

The Seminar witnessed about 8 sessions. In all there were about 2 Webinars, 10 Invited talks, 8 Manufacturers Presentations, 10 Technical talks, 10-15 papers were presented.

Delegates numbering more than 200 from all parts of the country have taken part in the Seminar.

The Sessions were held to cover themes like Digital India, wireless India, Self defending networks, Cloud computing, Distributed Computing, Grid computing, Data Mining recent trends and applications, Security Technologies, Integrated Cyber security, SAP in Manufacturing, CMMi journey in Vizag Steel, Technologies for collaborative applications, The changing Landscape of Information Security Threats to Govt Networks, MES-the road map for operational excellence, MES implementation Challenges, Integrated Production operations, MES implementation challenges in Steel Industry, Latest trend in ICT deployment for eGovernance, e commerce and elearning scenarios, Data centre network and security, latest trends in web concepts, Building sound ISMS etc.

Some of the important papers that were presented during the Seminar include “A Novel approach to Image Edge Enhancement using Particle Swarm Optimization Algorithm for Hybridized Smoothening Filters”, “A comparative study of spam filters- Bayesian to fuzzy similarity approach” from ANITS students and faculty and “A study of evolutionary computing approach to partitional clustering” from Andhra University students.

The valedictory function was held on 30th Jan. 2010 for this 3-day Southern Regional Conference. Mr. Bhujanga Rao, Director, NSTL have graced the Valedictory as the Chief Guest and Mr. Y. Manohar Director(Personnel) RINL was the Guest of Honour. Mr. Umesh Chandra Vice Chairman, CSI Visakhapatnam chapter has presided over the Valedictory. Secretary CSI, Mr. D. Kameswara Rao summarized the proceedings of the entire seminar and informed that more and more such seminars will be organized under the aegis of Visakhapatnam Chapter for the benefit of IT professionals and Industries at large. Mr. DBV Sarma has indicated that after seeing this seminar the Visakhapatnam CSI chapter can conduct the international seminar.

VALLABH VIDYNAGAR

A state-level 1 day novel competition “Web Khoj – 2010” was organized at Institute of Science & Technology for Advanced Studies & Research (ISTAR) on 4th March–2010 in collaboration with Chapter. More than 135 teams from various institutes across Gujarat state took part in the competitions for programming, web-site designing, paper & poster presentation besides quiz-competition.

Dr. Vipul Desai (management advisor - Charutar Vidya Mandal– CVM, & honorary Ex. Director of ISTAR) inaugurated the event. In the Inaugural session, Dr. Dipti Shah, a Chapter Chairperson gave information about CSI. Apart from various competitions, very informative expert lectures were delivered by Dr. D B Choksi–Director of G H Patel Post Graduate Department of Computer Science & Technology (GCDS) and Dr. P V Virparia.

A National Level Seminar - “IT - FUTURA-2010” was organized by Anand Institute of Information Science (AIIS), in association with CSI Chapter on 06.03.2010 at Shri Ramkrishna Seva Mandal, Anand. The event was convened by the I/c Principal of the Institute Mrs. Chhaya N. Patel and co-ordinated by the faculty member Mr. Himanshu Patel.

The keynote address by Prof. P. Thirimurthy was based on ‘Skill for Career Empowerment’. He highlighted various aspects related to IT Profession and enlightened the audience about the opportunities and challenges for Indian IT Industry.

A Technical talk on ‘Distributed Computing’ was given by Dr. D B Choksi. The Chapter Chairperson, Dr. Dipti Shah gave introduction CSI and provided an overview of various activities performed by CSI to the participants.

More than 70 papers were submitted by faculty members and students on various topics related to Seminar theme, 20 of which were selected for presentation and 17 student’s papers were selected for Poster Session.
AMSSOI

An Inverse Quiz was conducted on 24th February, 2010 for the students of MCA, AMSSOI in the seminar hall of Andhra Mahila Sabha School of Informatics (AMSSOI) by the Branch.

The concepts for Inverse Quiz were contributed by Prof Putcha V. Narasimham, Director, AMSSOI and Ms Taranum, Lecturer and Student Counselor of the Branch. The concepts were rigorously reviewed by Ms B Hari Priya, Reader, AMSSOI and Ms K Kavita, Lecturer, AMSSOI.

Six teams participated and made the session truly interesting and interactive. The participants created questions which were evaluated by a panel of jury. Prof Putcha V. Narasimham, Director, AMSSOI, Ms B Hari Priya, Reader, AMSSOI and Ms M Sailaja, Lecturer, AMSSOI were the members of the jury. The questions were judged depending on the creativity of the participants, their understanding and analysis of the concept and representation.

Team C, Ms A Jyothi and Ms P Mythri of MCA I yr II sem, was declared the winner and will be awarded on the College Annual Day.

BDCE, SEVAGRAM, WARDHA

The installation Ceremony of Student Branch of Computer Society of India (CSI) at Department of Computer Engineering & Information Technology of Bapurao Deshmukh College of Engineering, Sevagram, Wardha with hands of Mr. Sangeet Chopra & Sulabh Jain from Kyiron Security, Delhi. Followed by two days workshop on Ethical Hacking on 6th & 7th March 2010. Ms. A. V. Mire Coordinating the program & Mr. A. N. Thakare as a Student Counsellor of the CSI student branch successfully completed the two days workshop.

CIT, GUBBI, TUMKUR

As a mark of inauguration, Prof. Shantharam Nayak addressed the students and told about the importance of associating with professional bodies like CSI. He gave an insight about CSI and the activities organized by CSI-BC. He also opined that the youngsters should come forward to serve the society. Dr. Anirban Basu delivered a keynote address on “Software Quality & Testing”. He discussed various aspects of Quality, Importance of Testing etc. His talk focused on the initiative by the young professionals towards innovations to achieve best quality result of the work-done.

Finally Prof. G S Suresh summarized the proceedings of the event and thanked all the students and requested the students to take the light forward.

More than 150 students participated in the Inauguration and reaped the benefits.

GEC, GUDLAVALLERU

The Branch organized an expert lecture on “Free Open Source Software Systems” on Saturday, March 13, 2010 in the college auditorium.

Dr. A. Govardhan, Principal JNTUH, Jagityal, acted as the resource person for the lecture. 300 students were attended the lecture. Prof G.V.S.N.R.V. Prasad, HoD CSE introduced the guest to the gathering.

Dr. Govardhan initiated his talk on freely available software’s and he explained the advantages of open source software’s over proprietary software’s with examples. He not only shared his technical experience, but also he gave some tips on how to study.

GJUST, HARYANA

A branch inaugurated at Guru Jambheshwar University of Science & Technology in a function organised by faculty of Engineering
& Technology on March 6, 2010. All the student members of CSI along with the staff were presented in the function. The special guests invited for the function were Prof. M N Hoda, Chairman CSI, Delhi Chapter, Prof. A K Saini Immediate Past Chairman CSI, Delhi Chapter and Mr. V K. Verma, AGM (HR), TCS, Delhi.

GIUST, HARYANA: Welcoming Prof. A K Saini, Immd. Past Chairman

The function started with the welcome address by Prof. Dharminder Kumar, Dean Faculty of Engg. & Technology after that Prof. M.N. Hoda presented the inaugural address. He elaborate “Changing Teaching-Learning Paradigm” and use of ICT in learning process. Mr. V K Verma unleashed the challenges in the software development and current market scenario.

JDITE, YAVATMAL

The Branch organized the Expert Lecture on various topics. Dr. G R Bamnote from Prof. Ram Meghe Institute of Research & Tech., Badnera, Amaravati has delivered expert lecture on topic “Biometrics” on 15th March 2010. He has given the idea about basic of Biometrics and latest development in Biometrics. All the Third Year Computer Science & Engineering Student attended the gathering.

JDITE, YAVATMAL: Lect. In Computer Science and Engineering Department, Jawaharlal Darda Institute of Engineering and Technology, Yavatmal(M.S), India

Expert Lecture on topic “Fuzzy Logic Control ” was delivered by Dr. Mohd. Atique from Government College of Engg. Sant Gadge Baba Amaravati University, Amaravati, on 15th March 2010. He has given the idea about Fuzzy Logic & its Control Systems. All final year Computer Science & Engineering Student attended the gathering.

JNEC, AURANGABAD

The Branch is a strong self motivated group of 76 individuals

The branch inaugurated by Mr. K C Bahuguna, DGM-Information Technology, Infodart Technology India Ltd., Videocon Group, Aurangabad. In his speech he said, “Educational institute will give knowledge as per curriculum but you need to explore. You need to subscribe to various technical magazines and use internet to optimum.

JNEC, AURANGABAD: Chief Guest Mr. K C Bahuguna addressing the gathering during inauguration ceremony. On the dias - Ms. Parminder Kaur, Ms. D S Deshpande, Dr. H H Shinde, Mr. Bhupinder Gulati Student Convener.

Vice Principal Dr. H. H. Shinde motivated students for such activities. Student Branch Counselor Ms. Parminder Kaur spoke on role of IT in today’s life. Student convener Mr. Bhupinder Gulati welcomed all the audience for inauguration and spoke about Computer Society of India. HOD CSE Ms. D S Despande and HOD IT Mr. S N Jaiswal were present for the program. Ms. Minal, Chandni, Komal anchored the program. Mr. Rishoo proposed vote of thanks.

LOYOLA COLLEGE, CHENNAI

Under the Guidance of Rev. Dr. A. Albert Muthumalai S. J, Principal, Loyola College, Prof. J Jerald Inico, Faculty In Charge, Resource Centre for Differently-Abled (RCDA) in association with the Training and Placement Cell of Loyola College conducted an exclusive workshop on Soft skills to Empower Differently-Abled on 10 March 2010. This programme is supported by UGC – HEPSN.

There are more than sixty Differently-Abled participants are ready now to take up jobs attended the workshop.

The soft skills resource support was provided by SMART Training Resources, a pioneering leader in Placement Training with a dominant presence in South India.

The SMART Resource Person gave an overview of the recruitment process touching the essential components, and an assessment of the prevailing job potentials and opportunities before dwelling on the subject main of soft skills.

Various dimensions of soft skills such as communication skill, language flow, verbal toning etc were enunciated with a spectrum...
of live examples. The resource person made the exposition so very interactive that virtually every participant had said something or the other during the programme.

Before closing of the workshop, an open house session saw the enthusiastic and responsive audience airing a number of queries and own suggestions and contributions and the resource person handling these deftly to the fullest satisfaction of the participants.

That the workshop was very effective came out very clearly during the Vote of Thanks bringing out the uniqueness of the programme, showering laurels on the resource person and requesting for more such programmes. At the end of it, it was abundantly evident that the efforts put in by the organizers were more than rewarded.

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**MMCOE, PUNE**

A one day workshop on “CLOUD COMPUTING” was organized in association with branch, at MMCOE for Third Year Computer and IT students on 16th January 2010. Mr. Shekhar Sahasrabudhe, Director CSI-chapter Pune has helped a lot for organizing this workshop at MMCOE. Mr. Monish Darda CTO, Websym Technologies and Mr. Sudhindra, Software Developer, Persistent Technology have given valuable guidance during the workshop and it was interactive, useful and beneficial for the students. Approximately 180 students were present for the workshop. Workshop was organized by Prof. Mrs. S. B. Sonkamble, HOD IT (CSI Coordinator) and Prof. Mrs. Rupali Chopade (CSI Coordinator). Mr. Rajan Erande, Pune Chapter Chairman, Mr. Ashok Pawar, Vice Chairman, CSI Pune, Mr. Nikhil Karkare, Secretary, CSI Pune were present for the workshop.

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**ST. JOSEPH’S COLLEGE OF ENGG., SRIPERUMBUDHUR**

One of the memorable day of St. Joseph College of Engineering was the inauguration function of this student branch CSI for the department of IT &CSI on 6th march 2010.

Following the felicitation, the principle Dr. Henry Xavier gave a talk about the extra curricular activities that has to be cultivated among the students for their future carrier and about student branch CSI. Then he welcomed the new Dean Academics Mrs. MalarVizhi to the institution.

A brief introduction about the chief guest Mr. S Ramasamy was given by Ms. M Ashwini department of CSE. The most important moment of the whole program was the declaration of beginning the student branch CSI. The membership was received by Dr. Henry Xavier, Principal from Mr. S Ramasamy, chief guest.

The chief guest Mr. S Ramasamy addressed his future colleague i.e. students by his innovated speech which contain the powerful message of punctuality, once love to their job, self confident and the C’s (cooperation, common sense) which has to be cultivated among the Indians by many short stories.

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**REC, CHENNAI**

National Conference on Grid and Database Technologies titled NCGDBT’10 was inaugurated on 5th March 2010 at Rajalakshmi Engineering College, Chennai. It was jointly organized by the Department of Computer Science & Engineering and CSI Student Branch of Rajalakshmi Engineering College.

Dr. S Chandrasekaran, Dean (CSE) welcomed the Chief Guests and the participants. Dr. M Subbiah, Mentor, Rajalakshmi Engineering College, delivered the Presidential Address. Dr. S. Thamaraiselvi, Professor, Department of IT, MIT Chennai, released the Proceedings to Mrs. Rajalakshmi Subramanian, Co Founder, Radien Software Technology Ltd. The Conference proceeded with a Technical Keynote address by Dr. S Thamarai Selvi on “Grid and Cloud Computing”. The Conference Coordinators were Mrs. S. Poonkuzhali, Asst. Professor and Mr. M. Prakash, Asst. Professor, C.S.E. Department. CSI Chennai Chapter was represented by MC Member, Mr. Benedict J. Nicholas.

In all 143 papers were received and among them 19 papers were sent from the states of Andhra Pradesh, Chattisgarh, Punjab, Haryana, Karnataka, Madhya Pradesh and Pondicherry. 25 papers were finally reviewed by the Selection Committee based on Criteria Interest/Relevance, Technical Content and Clarity of presentation. Paper Presentation was conducted in two parallel tracks.
Mrs. Rajalakshmi Subramaniam presented the Certificates to the participants. Mrs. S. Pramila, H.O.D (CSE) and Convener of the Conference, delivered the Vote of Thanks.

**RVCE, BANGALORE**

As a mark of CSI Day celebrations, Departments of CSE & ISE (PG Studies), RVCE, Bangalore had organized a Technical talk on “Recent trends in Optical Networks” on 8th March, 2010. Dr. Srinivas T from IISc was the resource person for this talk. The talk was arranged by Dr. Shobha G - Dean of PG Studies started the event with a welcome to the speaker. She introduced the speaker to the audience. Dr. Srinivas, started this talk with basic information about the principles of network and discussed various aspects of optical networks. He also presented an insight about the importance of networking, its past, present & future significance in the communication era. More than 100 students & few faculty members have participated and benefited from this talk. The session was very informative & interactive.

An Invited Talk was arranged for the 6th sem B.E students & 2nd semester M.Tech & MCA students on Friday, 12th March 2010. The topic of the talk was “Latest Trends in Web Technologies” and “Open Source Technologies”. The talks were very interactive and informative. More than 130 students attended the talk and drawn benefit from this event.

**TCE, MADURAI**

As part of branch activity, a Group Discussion was held on 08.07.2009 in order to test and improve the students’ interactive skills. Final year coordinators organized the event. Many CSI members from second year as well as pre final year participated.

It was a grand occasion for the students to learn how to behave and communicate as part of a team and also get trained to be open minded in discussions.

**VEC, CHENNAI**

The branch organized an extravagant event “FEMBOTZ” - A Intra-college technical symposium on 02.03.2010. The head of Computer Science and Engineering, Prof. B Rajalakshmi welcomed the gathering and released the souvenir. Events like paper presentation, ad-zap, mock interview, quiz, dumb-c and debate were conducted to rekindle the passion and talent in everyone. All the events acted as the springboard for erudite to showcase their novel ideas on recent technologies. It discovered the raging spirit of innovation and inventiveness of the budding engineers. Eminent professors from various spectrum judged the events and the deserving students were selected. Encouraging words of the judges truly inspired participants to go to greater heights of success. In the valedictory function, prizes and gift vouchers were distributed to all winners. Winning alone does not matter. Participation is even more appropriate. As a token of appreciation, all the participants were given consolation prizes.

The function concluded with Mr. M Somnath, Branch Chairman proposing the vote of thanks.

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**Internet Improves Intelligence**

A study conducted by the Imagining the Internet Center at Elon University in North Carolina and the Pew Internet and American Life project revealed that in next 10 years ,Internet will make people smarter and would help to improve reading and writing. 895 people were interviewed and 371 out of them were considered “Experts”. Most of the respondents believe that internet would make people smarter in next 10 years. Co-author Janna Anderson, director of the Imagining the Internet Center said, “ Three out of four experts believe that human intelligence is enhanced by Internet and two-thirds said Internet also helps to improve reading and writing to greater extent.” “There are many people who criticized internet especially the role of Google, Wikipedia and other online tools in view of lowering the IQs of people.” She added.

- Excerpted from a blog posted on 16th March 2010 at http://www.softpicks.net/