

INSTITUTE OF MANAGEMENT TECHNOLOGY – IMT

Subject: Emerging Technologies and New Opportunities (ETNO)

PGDM – 1<sup>st</sup> yr (BATCH: 2014-16), TERM- IV

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Roll No. \_\_\_\_\_ Name \_\_\_\_\_

Section: \_\_\_\_\_ Date: 04.03.2015 Time: 60 Minutes, Marks – 10

- Questions

Open Book ; Open Internet

Imagine yourself in the year 2025 and chose any particular sector out of the following:

- a) Retail
- b) FMCG
- c) Health Care
- d) Education
- e) Entertainment
- f) Automobiles
- g) Manufacturing
- h) Governance

1. What kind of emergent technologies are expected to play a dominating role in the sector you have selected. Chose three most important technologies and specify the business challenges related to the sector which will be addressed by the selected technologies. (5 marks)
2. Highlight the key social and security issues which will need to be tackled when the technologies chosen by you in the given sector become predominant. (5 marks)

**INSTITUTE OF MANAGEMENT TECHNOLOGY – IMT**

**Emergent Technologies and New Opportunities**

**End-Term Examination –IV, BATCH: 2014-16\***

**Faculty: Prof. S. K. Batra / Prof. Poonam Garg / Prof. Jayanthi Ranjan Exam Date: 24.3.15**

Max. Marks: 40

Time Allowed: 90 minutes

**OPEN BOOK EXAM**

All Reading Material allowed

**Mobile Phones, Laptops and Internet NOT ALLOWED**

Please make any assumptions which are important and explicitly state those assumptions

Answer any one question from Section A and any two questions from Section B.

**SECTION A,**

**1. Case of BlazeClan Technologies**

BlazeClan Technologies was founded by four technocrats in 2010. BlazeClan was a cloud computing focused company offering Cloud Consulting, Migration, customized application development & services for enterprises of all sizes and had operations in Singapore, India, US & Canada. Customer base included large enterprise customers in the sectors of Engineering, Banking Finance Services & Insurance (BFSI), IT and Healthcare. It was also one of the largest advanced consulting partners for Amazon Web Services, the leader in cloud computing services. BlazeClan provided industry oriented strategic cloud roadmap consulting and its financial numbers stood steady in building up since its inception

Since it was promised as a pay-as-you-use service, clients were hesitant to pay for the initial customization. The biggest dilemma still unanswered for Blazeclan was the long and slow sales cycle in the Indian cloud market. BlazeClan was unable to pinpoint the exact reason why the cloud market had not shot up as expected. One needed a critical mass of adoption for the whole community to get behind an idea. Had Asia touched that critical point? BlazeClan participated in several customer events, webinars, and social media campaigns to educate the customer segments. The footfalls were good, yet the conversions did not pick up.

Initially the company presumed that the customers lacked the knowledge of cloud adoption. Also, there were serious security concerns for the customers. Data, despite its intangibility, had a sense of security and privacy when it was locked into an on-premise system. But, the distance and the 'cloudiness' created a perception of a lack of security. Though BlazeClan tried its best to convince customers on the security angle, the buy-in was seldom complete. To add to the woes, the companies that had not adopted cloud were happy with what they were currently having. Because of its small size and the associated reduced overheads, the price point offered by BlazeClan was 30% less compared to competitive market value and yet customers went for the big companies for cloud adoption. BlazeClan was in dilemma as to where it could fix its price



discrimination point to boost profits. There were issues related to internet connectivity especially with companies which had a heavy Indian presence. Sensing a dip in cloud market in India, BlazeClan was worried over their next plans to develop more products. The company wanted to expand its intellectual property base and also set up channels in North America and Asia Pacific Region. They were unsure if it would yield profits.

- a) What are various categories of cloud-based services which in your opinion can be offered by Blazeclan to its potential customers so that customers see value from such services and opt for those services? (10 marks)
- b) What kind of customers should Blazeclan target at? (Whether small or large enterprises) and which verticals? Give your reasons. (10 marks)

OR

## 2. Case of Dirt Bikes

Dirt Bikes would like to implement new production planning, quality control, and scheduling software for use by 25 members of its manufacturing staff. Management is trying to determine whether to purchase the software from a commercial vendor along with any hardware required to run the software or to use a hosted software solution from an application service provider (ASP). The hosted software runs on the ASP's computer. You have been asked to help management with this rent vs. buy decision by calculating the total cost of each option over a three-year period.

The costs of purchasing the software (actually for purchasing a license from the vendor to use its software package) include the initial purchase price of the software (licensing fee of \$100,000 paid in the first year), the cost of implementing and customizing the software in the first year (\$20,000), one new server to run the software (a first-year purchase of \$4000), one information systems specialist devoting half of his or her time to supporting the software (\$55,000 in full-time annual salary and benefits with a 3% annual salary increase each year after the first year), user training in the first year (\$10,000), and the cost of annual software upgrades (\$5,000).

The costs of renting hosted software are the rental fees (\$2500 annually per user), implementation and customization costs (\$12,000 in the first year), and training (\$10,000 in the first year).

- a) What approach would you follow in calculating and comparing the total cost of operation (TCO) in both the options namely renting and purchasing over a three period? (10 marks)
- b) What other factors should Dirt Bikes consider besides cost in determining whether to rent or buy the hardware and software? (10 marks)?



## SECTION B

(Answer any two questions)

### Question B1

As per an article published in Business World in the year 2013, the biggest market for IT services, the US, is looking up slowly and there is a feeling that the worst may be over for Indian IT services companies. The results of last quarter of TCS, Infosys, Wipro and HCL are better than what the analysts were expecting.

Before the meltdown, many analysts felt the cost advantages and offshore delivery models perfected by Indian companies might not remain an advantage in the long run. For one, the cost arbitrage was bound to come down. Importantly, global players like IBM, Accenture, HP and CapeGemini had started their own India Centres and were aiming for the same type of customers.

- (a) Given the above facts, how can the Indian IT services companies leverage the power of social media, mobility, analytics and cloud computing (SMAC) in the next decade? (5 marks)
- (b) Why is the integration of SMAC stack important for the Indian IT Services industry to derive full benefits from it? (5 marks)

### Question B2

An online retail organization conducts its business through e-commerce. The organization offers customized shopping experience to their customers with attractive and responsive web page user interface. Now the company wants to collect data about customers' activities on the Internet.

Please explain how the company can leverage big data/ analytics w.r.t to (1) social media data (2) web logs of customers and (3) transactional data base for the growth of its business. (10 marks)

### Question B3

- (a) What do you mean by "things" in Internet of Things (IOT) and what are their important characteristics? Explain with five concrete examples of 'things' from day to day life. (5 marks)
- (b) Name three sectors that will be hugely impacted by "IOT". Please explain how, citing concrete examples for each of the three sectors. (5 marks)

### Question B4

Mobile is not merely a device, but a complete eco-system. Please elaborate this statement describing at least five critical applications of mobile based solutions in business, which justify this statement. (10 marks)

2015

Emergent Technologies and New Opportunities  
End-Term Examination

OPEN BOOK EXAM / LAPTOP

Max Marks: 40

Time: 90 Minute

- Paper is divided into 2 sections.
- Attempt one question from Section A and one question from Section B.
- In case of any doubt, write your assumption and proceed.
- Write in complete sentences
- All the best

SECTION A  
(Attempt any one question)

1. (a) Give reasons why SMAC technologies are being adopted in business practices with an accelerated pace in the last two years. Please illustrate with specific examples (10 marks)
- (b) "There is nothing new about the concept of collaboration technologies, but the recent technological trends have brought in a transformation in the way collaboration technologies are used" Please discuss this statement giving concrete examples. (10 marks)
2. (a) To what extent is the analogy of cloud computing with electricity supply in our houses valid? Please elaborate giving reasons. In which scenarios or situations, it is not desirable to adopt cloud-based solutions and why? (10 marks)
- (b) How would Internet of Things (IOT) be relevant for business enterprises? Please explain with examples (10 marks)

OR

- (b) Please elaborate the complete life cycle of Green IT for an enterprise using computers and the scope for reducing negative environmental impact of IT at each stage (10 marks)



SECTION B  
(Attempt any one question)

Q3. Read the case study given below and answer the questions at the end of the case.

Big Data Is Opening Doors, but Maybe Too Many

- 1 In the 1960s, mainframe computers posed a significant technological challenge to common notions of privacy. That is when the U.S. federal government started putting tax returns into those giant machines, and consumer credit bureaus began building databases containing the personal financial information of millions of Americans. Many people feared that the new computerised databanks would be put in the service of an intrusive corporate or government Big Brother. "It really freaked people out," says Daniel J. Weitzner, a former senior Internet policy official in the Obama administration. "The people who cared about privacy were every bit as worried as we are now." Along with fueling privacy concerns the mainframes helped prompt the growth and innovation that we have come to associate with the computer age.
- 2 Today, many experts predict that the next wave will be driven by technologies that fly under the banner of Big Data — data including web pages, browsing habits, sensor signals, smartphone location trails and genomic information, combined with clever software to make sense of it all. Proponents of this new technology say it is allowing us to see and measure things as never before — much as the microscope has allowed scientists to examine the mysteries of life at cellular level. Big Data, they say, will open the door to making smarter decisions in every field, from business and biology to public health and energy conservation.
- 3 "This data is a new asset," says Alex Pentland, a computational social scientist and director of the Human Dynamics Lab at the M.I.T. "You want it to be liquid and to be used." However, the latest leaps in data-collection are raising new concern about infringements on privacy — an issue so crucial that it could trump all others and upset the Big Data bandwagon. Dr. Pentland is a champion of the Big Data vision and believes the future will be a data-driven society. Yet the surveillance possibilities of the technology, he acknowledges, could leave George Orwell in the dust.
- 4 The World Economic Forum published a report that offered one path — one that leans heavily on technology to protect privacy. The report grew out of a series of workshops on privacy held over the last year, sponsored by the forum and attended by government officials and privacy advocates, as well as business executives. The corporate members, more than others, shaped the final document. The report, "Unlocking the Value of Personal Data: From Collection to Usage", recommends a major shift in the focus of regulation toward restricting the use of data. Curbs on the use of personal data, combined with new technological



options, can give individuals control of their own information, according to the report, while permitting important data assets to flow relatively freely. "There's no bad data, only bad uses of data," says Craig Mundie, a senior adviser at Microsoft, who worked on the position paper.

5. The report contains echoes of earlier times. The Fair Credit Reporting Act, passed in 1970, was the main response to the mainframe privacy challenge. The law permitted the collection of personal financial information by the credit bureaus, but restricted its use mainly to three areas: credit, insurance and employment. The forum report suggests a future in which all collected data would be tagged with software code that included an individual's preferences for how his or her data is used. All uses of data would have to be registered, and there would be penalties for violators. For example, one violation might be a smartphone application that stored more data than is necessary for a registered service like a smartphone game or a restaurant finder.
6. The corporate members of the forum say they recognise the need to address privacy concerns if useful data is going to keep flowing. George C. Halvorson, chief executive of Kaiser Permanente, the large health care provider, extols the benefits of its growing database on nine million patients, tracking treatments and outcomes to improve care, especially in managing costly chronic and debilitating conditions like heart disease, diabetes and depression. New smartphone applications, he says, promise further gains — for example, a person with a history of depression whose movement patterns slowed sharply would get a check-in call. "We're on the cusp of a golden age of medical science and care delivery," Mr. Halvorson says. "But a privacy backlash could cripple progress."
7. Corporate executives and privacy experts agree that the best way forward combines new rules and technology tools. However some privacy professionals say the approach in the recent forum report puts way too much faith in the tools and too little emphasis on strong rules, particularly in moving away from curbs on data collection. "We do need use restrictions, but there is a real problem with getting rid of data collection restrictions," says David C. Vladeck, a professor of law at Georgetown University. "And that's where they are headed."
8. "I don't buy the argument that all data is innocuous until it's used improperly," adds Mr. Vladeck, a former director of the Bureau of Consumer Protection at the Federal Trade Commission. He offers this example: Imagine spending a few hours looking online for information on deep fat fryers. You could be looking for a gift for a friend or researching a report for cooking school. However, to a data miner, tracking your click stream, this hunt could be read as a telltale signal of an unhealthy habit — a data-based prediction that could make its way to a health insurer or potential employer.
9. Dr. Pentland, an academic adviser to the World Economic Forum's initiatives on Big Data and personal data, agrees that limitations on data collection still make the public good. He is leading a group at the M.I.T. Media Lab that is at the forefront of a number of personal data and privacy programme and real-world



experiments. He espouses what he calls "a new deal on data" with three basic tenets: you have the right to possess your data, to control how it is used, and to destroy or distribute it as you see fit. Personal data, Dr. Pentland says, is like modern money — digital packets that move around the planet, travelling rapidly but needing to be controlled. "You give it to a bank, but there are only so many things the bank can do with it," he says.

- 10 His M.I.T. group is developing tools for controlling, storing and auditing flows of personal data. Its data store is an open-source version, called openPDS: In theory, this kind of technology would undermine the role of data brokers and perhaps, mitigate privacy risks. In the search mentioned earlier for a deep fryer, for example, an audit trail should have detected unauthorised use. Dr. Pentland's group is also collaborating with law experts, like Scott L. David of the University of Washington, to develop innovative contract rules for handling and exchanging data that insures privacy and security and minimises risk.
- 11 The M.I.T. team is also working on living laboratory projects. One that began recently is in the region around Trento, Italy, in cooperation with Telecom Italia and Telefónica, the Spanish mobile carrier. About 100 young families with young children are participating. The goal is to study how much and what kind of information they share on smartphones with one another, and with social and medical services — and their privacy concerns.
- 12 "Like anything new," Dr. Pentland says, "people make up just-so stories about Big Data, privacy and data sharing, often based on their existing beliefs and personal bias. We're trying to test and learn," he says.

Adapted from: Lohr, S., 2013. Big Data Is Opening Doors, but Maybe Too Many. *New York Times*, [online] 23 March. Available at: <[http://www.nytimes.com/2013/03/24/technology/big-data-and-a-renewed-debate-over-privacy.html?pagewanted=2&\\_r=0&hpw](http://www.nytimes.com/2013/03/24/technology/big-data-and-a-renewed-debate-over-privacy.html?pagewanted=2&_r=0&hpw)> [Accessed 25 March 2013].

#### Case Study Questions:

- a) What in essence is your understanding of Big Data? (8 marks)
- b) Give three examples of how the technology of Big Data supports Business Enterprises. (6 marks)
- c) How do you justify role of Big Data in the light of privacy issues highlighted in the above case? (6 marks)



Q4. Read the case study given below and answer the questions at the end of the case.

### The Deutsche Bank Challenge

#### The Facts

- A German global banking and financial services company with its headquarters in the Deutsche Bank Twin Towers in Frankfurt, Germany
- It has more than 100,000 employees in over 70 countries, and has a large presence in Europe, the Americas, Asia-Pacific and the emerging markets
- It offers financial products and services for corporate and institutional clients along with private and business clients
- Services include sales, trading, research and origination of debt and equity; mergers and acquisitions (M&A); risk management products, such as derivatives, corporate finance, wealth management, retail banking, fund management, and transaction banking.
- Listed on both the Frankfurt (FWB) and New York stock exchanges (NYSE)

#### Background on Challenge

- Reserve Bank of India (RBI) has mandated all banks to prevent themselves from being used, intentionally or unintentionally, by criminal elements for money laundering or terrorist-financing activities
  - Vide the RBI circular on
    - Know Your Customer (KYC) norms
    - Anti-Money Laundering (AML) standards
    - Combating of Financing of Terrorism (CFT)
    - Obligation of banks under PMLA, 2002
    - KYC procedures (forming part of above guideline) enable banks to know/understand their customers and their financial dealings better
- This helps banks manage their risks prudently
- Apart from performing KYC checks on the client at the time of adoption —after the account is opened — banks are also required to introduce a system of periodic updation and review of KYC information and documentation including photographs
- The periodicity of such updation is (at a minimum) once in 2 years for high-risk, 8 years for medium-risk and 10 years for low-risk clients



- Non-completion of required updation and review of KYC documentation within the stipulated time requires account closure

#### The Business Challenge

- The overall compliance with this regulatory guideline is largely dependent on the client's ability to support and provide required documentation within stipulated time and on a periodic basis
- Review/renewal of KYC document is delayed due to diversified customer segmentation
- Collection of updated KYC documents from certain customers requires deployment of internal and external resources (external agencies), which has additional cost implication on the Banks
- Any delay in review/renewal has adverse implications

You have studied about many emerging technologies and their business applications.

- (a) Suggest an appropriate solution to facilitate customer submission of KYC documentation across geographies with the least cost and efforts involved (10 marks)
- (b) Please give reasons for the same, specifying the technology/technologies which would be appropriate and in what manner that technology/technologies would be made use of? (10 marks)