



**UCSC**

**UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING**



**UNIVERSITY OF COLOMBO, SRI LANKA**



**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY**  
*Academic Year 2009/10 – 3<sup>rd</sup> Year Examination – Semester 6*

**IT6303: e-Business Applications**  
*Structured Question Paper*

**31<sup>st</sup> July, 2010**  
**(TWO HOURS)**

**To be completed by the candidate**

BIT Examination Index No: \_\_\_\_\_

**Important Instructions:**

- The duration of the paper is 2 **(Two) hours**.
- The medium of instruction and questions is English.
- This paper has **4 questions** and **17 pages**.
- **Answer all questions.**
- All questions will carry equal marks.
- **Write your answers** in English using the space provided **in this question paper**.
- Do not tear off any part of this answer book. Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate. Note that questions appear on both sides of the paper. If a page is not printed, please inform the supervisor immediately.

**Questions Answered**

Indicate by a cross (×), (e.g. ) the numbers of the questions answered.

<b>To be completed by the candidate by marking a cross (×).</b>	1	2	3	4
To be completed by the examiners:				

### Case Study

The broad aim of the health policy of Sri Lanka is to increase the life expectancy and the quality of life of its citizens. One of the strategic thrusts in healthcare is empowering communities towards more active participation on maintaining their health, strengthening the management functions of the health system. The Annual Health Bulletin states that in some districts, some of the common specialties such as general medicine, surgery, obstetrics and pediatrics are notably absent. Therefore, access to highly specialized consultancies such as neurosurgical, oncological, oncosurgical, fertility medicine, nephrological and endocrine medicine to name a few would involve the patient having to travel great distances, incurring heavy expenditure in obtaining such services. Especially, the follow up of post-operative and recovering patients after specialized treatment in a tertiary centre face greater difficulties as they have to travel for hours to meet the consultant.

Sri Lanka has three main levels of curative healthcare institutions: primary level in the rural sector, secondary level in the peripheral or urban sector and tertiary level teaching and large hospitals in the cities. There are 10 tertiary level hospitals, 27 secondary level hospitals and over 285 primary health care institutions. It is also stated that many of the medical specialists are concentrated in the Colombo district. However, Sri Lanka is fortunate in that the penetration of fixed line and mobile technology to rural areas is increasing at a rapid pace. According to the Telecom Regulatory Commission (TRC) statistics, the numbers of cellular mobile subscribers are placed as over 10 Million and the total tele-density (fixed and cellular) is nearly 70% in Sri Lanka. Sri Lanka is fortunate to have almost 100% fixed line connectivity to all the hospitals in the urban and rural areas of the country.

The rapidly growing population of elderly patients and the rising healthcare expenditure demands newer healthcare initiatives such as eHealthcare and Telemedicine. However, the challenge is in the introduction of eCare services to real life practice in a semi-urban and rural population in Sri Lanka. Internet based solutions could be adopted in the Sri Lankan context as the technology infrastructure is available in all teaching hospitals, base hospitals and some district hospitals. Though Internet penetration in Sri Lanka is low, accessibility is increasing due to cyber cafés, Nanasalas and many such resource centers being available island-wide.

Developing a successful eHealth strategy for a developing country requires the involvement and contribution of several key players such as Citizens, Patients, Medical Professionals, Hospital staff (consultants, doctors, nurses, administrative staff), Academia, Health-related businesses, Governments, International donor agencies, private and government ICT and Telecom service providers, etc who can play a major role in assisting the infrastructure needed for an eHealth system.

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(b) Propose two (2) solutions to improve the health sector of Sri Lanka using the technological advancements in the world and Internet based technologies. Discuss benefits of the proposed solutions.

(40 Marks)

**ANSWER IN THIS BOX**

**Telemedicine**

Benefits

- Access & Convenience
- Quicker/Correct Diagnoses Mean Reduced Healthcare is Required
- Cost Efficiencies
- Increased Independence
- Safety & Security

**Web based Hospital management system**

Benefits

- Look after inpatients, OPD patients, records, treatments,
- Status illness and billings. Maintains the hospital information such as ward ID, Doctors in Charge, and Department administering.

(c) Select one of the (1) solutions and discuss the features to be incorporated into the Internet based solution. Briefly state the importance of each feature.

**(30 Marks)**

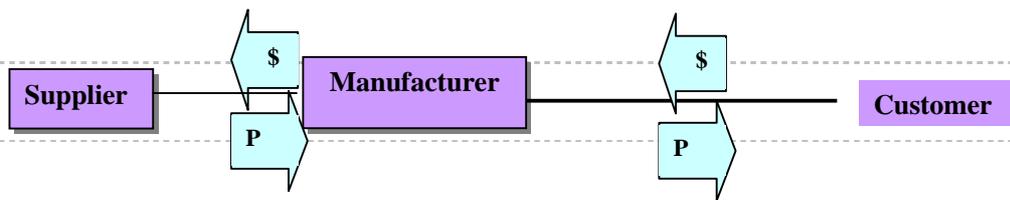
**ANSWER IN THIS BOX**

**Telemedicine**

- Medical records
- Patient History
- Pictures of records
- Video
- Scanned reports
- Allergen

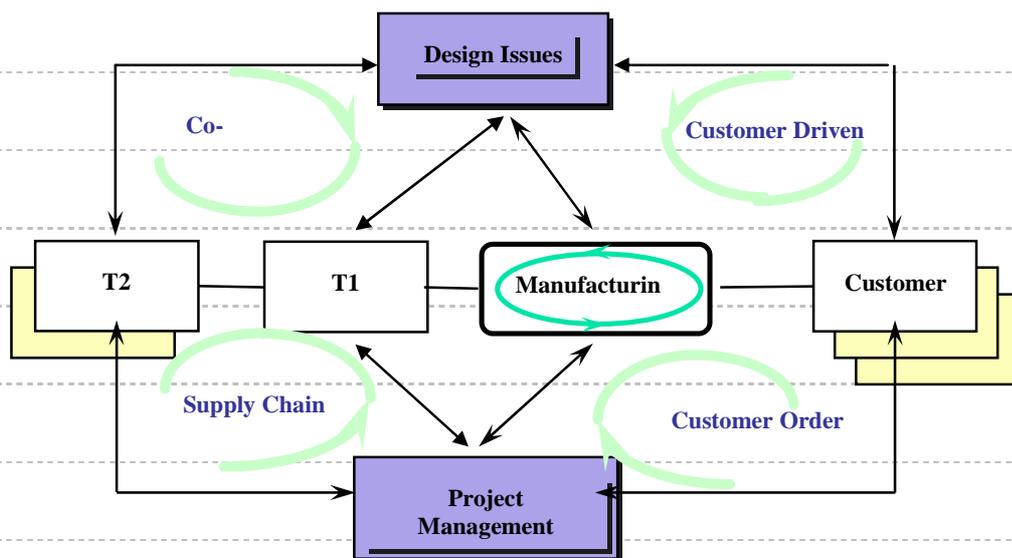
- 2 (a) Illustrate and describe the benefits of the following eBusiness models to the manufacturer/seller and the customer.
- (i) Direct-to-Customer Model (15 Marks)
  - (ii) The Extended Enterprise (15 Marks)
  - (iii) Supply Chain Model (15 Marks)

**ANSWER IN THIS BOX**



- Can sell at lower prices
- Build to customer order
- Receive payment earlier
- Speed up new product release cycles
- Use customer data to provide customized value added service
- Proactive decision making

**Extended enterprise**

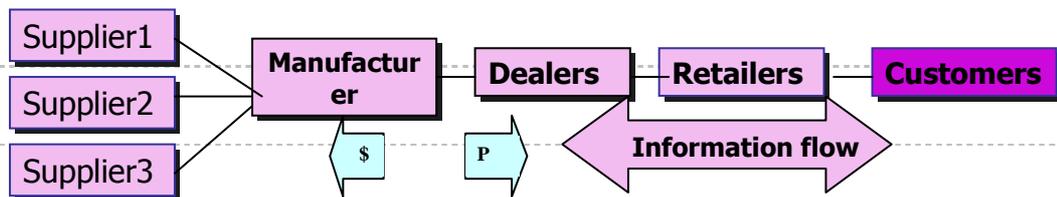


**Benefits to the Manufacture / seller**

1. Best designs
2. Customer Satisfaction
3. Select best quality from the whole world.

**Benefits to the Buyer / Customer**

1. Customer requirements incorporated
2. Global customer requirement addressed
3. Quick response to changes of customer requests
4. Individual cost goes down for buyer



- Information flow across the supply chain
- All parties have a strong electronic bond and backend systems
- Some companies do/don't own any part of the value chain
- They have access to information about all from supplier/manufacturer to the customer

(b) Compare and contrast the two concepts Mass Production and Mass Customization. Explain how eBusiness can help to implement these concepts.

(30 Marks)

**ANSWER IN THIS BOX**

<b>Mass production</b>	<b>Mass communication</b>
<ul style="list-style-type: none"> <li>• production of large amounts of standardized products</li> <li>• Assembly line production</li> <li>• Mass production is capital intensive and energy intensive</li> <li>• Machine use is high proportion to workers</li> <li>• mass production line is expensive such as robots</li> <li>• The probability of human error and variation is also reduced because of machine use</li> <li>• A reduction in labour costs</li> <li>• inflexible because it is difficult to alter a design or production process after a production line is implemented</li> <li>• Eg. food, chemicals and household appliance</li> </ul>	<ul style="list-style-type: none"> <li>• differentiating a product for a specific customer</li> <li>• possible to add and/or change functionalities of a core product or to build fully custom enclosures from scratch</li> <li>• Eg. softwares</li> </ul>

**Mass production**

- Customers from various regions
- Suppliers from different regions
- Market promotion from different segments
- Workers from different locations
- Job Specialist from different regions

**Mass Communications**

- Targeting the global market e.g. client from different locations
- Job Specialist from different regions

(c) Describe the importance of measuring the eReadiness of a company before eTransformation? What characteristics are measured in eReadiness Analysis?

(25 Marks)

**ANSWER IN THIS BOX**

eReadiness is important to see whether they are ready in e transformation

**Internal:**

- Business processes – Well defined processes
- Applications & Infrastructure
- Web presence – Existence/ usage
- Skills –Level of IT skills of the employees
- Executive mgt – Commitment/Support
- External connectivity – Channels
- Future directions – Plans for expansions

**External:** Do the same process for external partners too such as Customers, Suppliers, and Potential users

- 3 (a) Briefly discuss the eight (8) stages of the eBusiness Roadmap emphasizing on the External and Internal processes. Use illustrations where necessary.

(50 Marks)

**ANSWER IN THIS BOX**

**Basic Web site**  
 The organization has its own domain name and 'brochure ware' type of website hosted with an ISP. The website contains company information, static e-catalogue, e-mailing lists, Answers to FAQs, e-messages to masses.

**Interactive website**  
 Dynamic web site providing two-way flow of information. Answers structured queries. Existence of a news forum, chat area, feedback forms. Uses own domain name, database, scripting languages. Requires a web server and a high speed dedicated connection to the Internet. Strong back-end systems and security measures.

**eCommerce site**  
 The organization should have a secure web server to facilitate financial transactions or a link to a payment gateway to process online payments. Supporting back-end Systems, International Security standards, Business Contingency Planning, needs to be in place.

**Effective Individual**

Individuals using computers and standalone productivity software such as accounting packages, Payroll s/w, Inventory Control software, spreadsheets, word-processors, etc. May be connected to the Internet and using e-mail, too.

**Effective Team**

Computer network being used in functional units such as Accounting, Production. People work in teams using networked applications, e-mail, intranet capabilities to enhance team productivity. Existence of LAN, shared I/O devices, drive space, databases, etc.

**Effective organization**

All computers in the organization are networked, and the databases and information systems are interlinked. Enterprise wide applications are used for purchasing, manufacturing, sales, accounting, etc. Information integration and sharing across the enterprise. Existence of a VPN, Intranet. Strict Security and password protection.

**Convergence**

The organization has achieved integration of all information it needs to support all business processes and to interact with it's business partners.

**New Process**

Such organization can handle new processes such as SCM (Supply Chain Management), CRM (Customer Relationship Management), KM (Knowledge Management), etc.

3 (b) Briefly describe online and offline Marketing strategies.

**(20 Marks)**

**ANSWER IN THIS BOX**

Offline market	Online market
Business cards	Strategic Alliances
Industry Magazine	Email, Newsletters
Media Advertisement	Search Engines
Newspapers	Banner Adverts
News letters and brochures	Viral Marketing
Banners, Sponsorships	Analyse site traffic

(c) In the current post war environment in Sri Lanka, the tourism industry can be developed to make a significant impact to when economy of Sri Lanka. Information and Communication Technologies could be used very effectively for the development of the country. Describe a scenario where the eBusiness strategies, concepts and technologies could be used to improve tourism in Sri Lanka highlighting the strategies used and the benefits of each of the strategies.

(30 Marks)

**ANSWER IN THIS BOX**

- **e-Ticketing:** The avoidance of classical paper-based tickets is one of the core elements of the low-cost business model. e-ticketing is not limited to no-frills airlines. The adoption of e-ticketing is also increasingly pursued by network carriers.
- **Customer self-service:** Another measure for cost reduction and the acceleration of passenger flows at airports is to introduce customer self-service check-in solutions. This may be done on the spot by self-service kiosks or in the form of web based check-ins, which may even allow users to check-in from home or their office.
- **Bar-coded boarding passes** offer a natural link with e-ticketing and self-service check-in. Most recently, it is not only possible to print boarding passes at the passenger's home, but also to place bar codes on the passenger's cell phone which makes a paper document completely obsolete.
- **RFID for luggage handling** might replace classical baggage tags in the near future. It might simplify airline baggage management considerably, improve customer service in terms of reductions in mishandled baggage and provide new security requirements.
- Ticketing linked with Hotel booking, car rentals, tours in the country

- 4 (a) Compare and contrast traditional business models and new business models in today's context.

(20 Marks)

**ANSWER IN THIS BOX**

	<b>Offline market</b>	<b>Online market</b>
Production	Mass	Personalized
Distribution	Middle man	Direct
Communication	Chained/ closed	Networked
Finance	Slow/ difficult	Faster/open
Markets	Local / geographical	Global/ no boundaries
Assets	Tangible/ physical	Intangible /virtual

(b) Discuss the importance of the transformation of “Atoms to Bits” which has revolutionized the business world.

(20 Marks)

**ANSWER IN THIS BOX**

**Atoms – Physical - Manual**

- Business cards
- Industry magazine
- Media advertisement
- Newspapers news letters and brochures
- Banners, Sponsorships

**Bits - Digital - Electronics**

- Strategic alliances
- Email, newsletters
- Search engines
- Banner adverts
- Viral marketing

(c) Briefly discuss the importance of change management in eTransformation and the aspects that need to be looked in to in the management of change.

(30 Marks)

**ANSWER IN THIS BOX**

Change management is the process during which the changes of a system are implemented in a controlled manner by following a pre-defined framework/model

**1. Strategy** – This defines key actions and capabilities along the major dimensions of marketing, product and service development, sales and channel distribution, business systems and processes, and management of alliances and partnerships in order to achieve organizational goals.

**2. Structure** – The way the organization’s units relate to each other and the chain of command and formal/informal communication channels

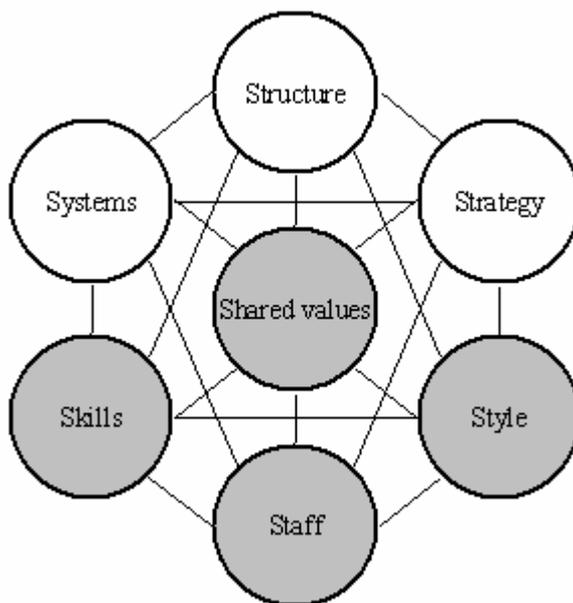
**3. Systems** –The information flow which requires capabilities in both information technology and in organizational processes, methods, procedures and controls.

**4. Style** – The behavior of the key managers and the way they relate to employees in order to achieve the organizational goals.

**5. Staff** - The types of people employed in the organization, their positions, levels and numbers.

**6. Skills** - The skills and aptitude for developing customer relationships, service and sales for staff to develop appropriate new skills requires a learning environment.

**7. Shared Values** – The guiding concepts, values and aspirations, often unwritten, which direct all the personnel in the organization in the same direction.



(d) A well established toothpaste manufacturing company in Sri Lanka is offering toothpaste for fresh breath, tartar control, cavity protection, gum protection and whitening. The toothpaste market in Sri Lanka is very competitive and there are many local and multinational companies involved in manufacturing toothpaste here in Sri Lanka. Raw materials are not a problem and are available in abundance. Globally, there is a new trend in the toothpaste industry to move towards natural products and herbal products. Explain how they can use eBusiness to be cost effective in introducing the new product to the Asian market.

**(30 Marks)**

**ANSWER IN THIS BOX**

Use as advertisement media web to promote herbal toothpaste

E Marketing

- Mail – introduce
- Web – catalogue  
– into to new product
- Health forum – introduce herbal product
- Social Networks – Feedback send about new product to millions  
of people around the globe

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