



**UNIVERSITY OF COLOMBO, SRI LANKA**

**UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING**

**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY ( EXTERNAL)**

*Academic Year 2020 – 3<sup>rd</sup> Year Examination – Semester 6*

***IT6305: e-Business Applications***  
***Structured Question Paper***

**(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 **16 pages**.
- **Answer all questions.** All questions 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.
- Calculators are **not** allowed.
- *All Rights Reserved.*

**Questions Answered**

Indicate by a cross (x), (e.g. 

x
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) the numbers of the questions answered.

To be completed by the candidate by marking a cross (x).	Question numbers			
	1	2	3	4
To be completed by the examiners:				

- 1) Use the following case study to answer the questions given in Q1 and any other questions that refer to the case study.

A Medium-sized grocery supermarket store HAPPY SUPER has 8 branches in major cities in Sri Lanka including Colombo, Kandy, Galle, Matara & Negombo. They used to have a lot of customers in their respective local areas though they had an aggressive competition with other local supermarkets such as Cargills, Keells and Laughs. HAPPY SUPER focused on grocery items, vegetables, fruits, beverages, frozen food, bakery products, home-where, household items and pharmaceuticals. There were many other specialised shops that offered the same products in the same areas.

HAPPY SUPER had no online store and they did not need to go online to market themselves as the locals in their respective areas got leaflets and brochures (with newspapers) on special offers, and the storefront advertising was sufficient for marketing. They got all their vegetables and fresh fruits directly from farmers who provided their best products from their villages. Other products were bought directly from the suppliers and manufacturers. Customers were happy with their service though there was heavy competition for the same products by many superstores, bakeries, pharmacies and small vendors.

Coronavirus Pandemic pushed many grocery shoppers to do online shopping, and shoppers found it very difficult to keep up with the demand. Ecommerce was already a quickly growing segment, and then – along comes a pandemic. COVID-19, with its shutdowns and calls for social distancing, has further accelerated the growth of online shopping. Suddenly everything changed. That human connection became a detriment. And a no-touch version of goods and even services was preferable if not essential.

This situation changed everything. Customers were not able to visit stores due to lockdown, social distancing and curfew. Therefore, many customers preferred to get their products delivered to their doorstep through online sellers. HAPPY SUPER had to change their strategy. They had to go online to sell their products and think of collaborating with a delivery service as well. Since customers had many products to buy online, they decided to work jointly with other related product sellers such as cooked food, health products, Christmas hampers, and many more.

- (a) Due to the Covid-19 pandemic, the situation of the world changed with respect to many aspects of daily life as well as buying products for survival and sustainability. Carry out a SWOT analysis on HAPPY SUPER to understand the ground situation of the company and its environment. Write down all facts related to the SWOT analysis very briefly.

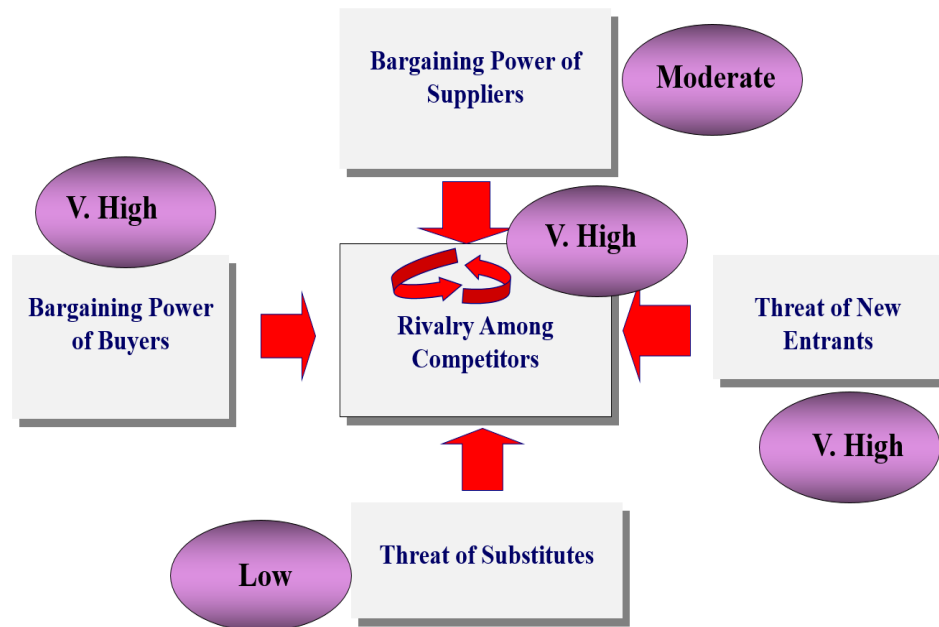
**(40 Marks)**

**ANSWER IN THIS BOX**

<b>Strengths</b>	<b>Wekanesses</b>
<ul style="list-style-type: none"> <li>• 8 branches in major cities in SL</li> <li>• Variety of products offered such as grocery items, vegetables, fruits, beverages, frozen food, bakery products, home-where, household items and pharmaceuticals</li> <li>• Used to have a lot of customers in their local area</li> <li>• Marketing through leaflets and brochures</li> <li>• Got vegetables and fruits directly from farmers</li> <li>• Quality goods directly from suppliers</li> <li>• Customers were happy with their service</li> </ul>	<ul style="list-style-type: none"> <li>• No Online store</li> <li>• Low budget on marketing</li> <li>• Advertising through leaflets and brochures in the local area only</li> <li>• No proper delivery service</li> <li>• Infrastructure issues to go online</li> <li>• No skilled staff to handle online operations once they start</li> </ul>
<b>Opportunities</b>	<b>Threats</b>
<ul style="list-style-type: none"> <li>• Customer faith can be used to get goods delivered to the doorstep</li> <li>• Online services through call ordering, Facebook advertisements, Whatsap ordering, etc.</li> <li>• Use social media to market in the local area as all people were online working from home</li> <li>• Collaborate with a delivery service</li> <li>• Collaborate with other specialised product sellers in the area such as cooked food, health products, Christmas hampers, and many more.</li> </ul>	<ul style="list-style-type: none"> <li>• Aggressive competition with other supermarkets, bakeries, pharmacies and grocery stores for same products</li> <li>• Mnay other specialised shops offered the same products in the same area</li> <li>• The Global Corona pandemic struck hard</li> <li>• The lockdown period hit these companies badly</li> <li>• Online shopping services of competitors were very active</li> <li>• Social distancing made people not physically come to the store</li> </ul>

- (b) Porters 5 Competitive forces are used to identify the market forces working on the company. Carry out an analysis to identify the competitive forces working on HAPPY SUPER. Justify your answer.

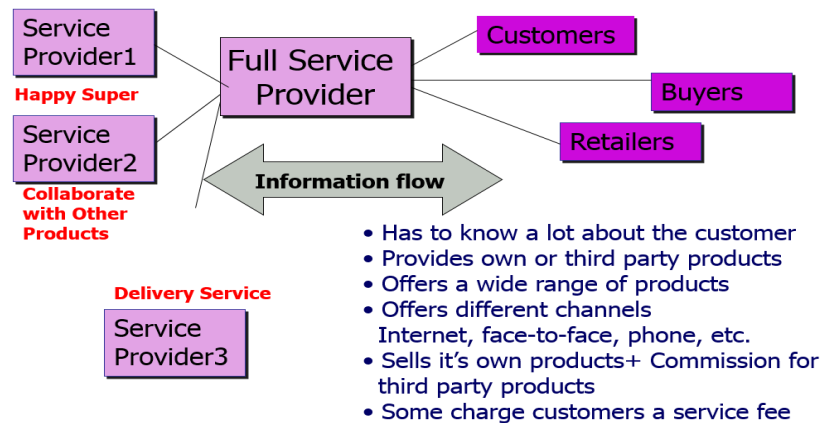
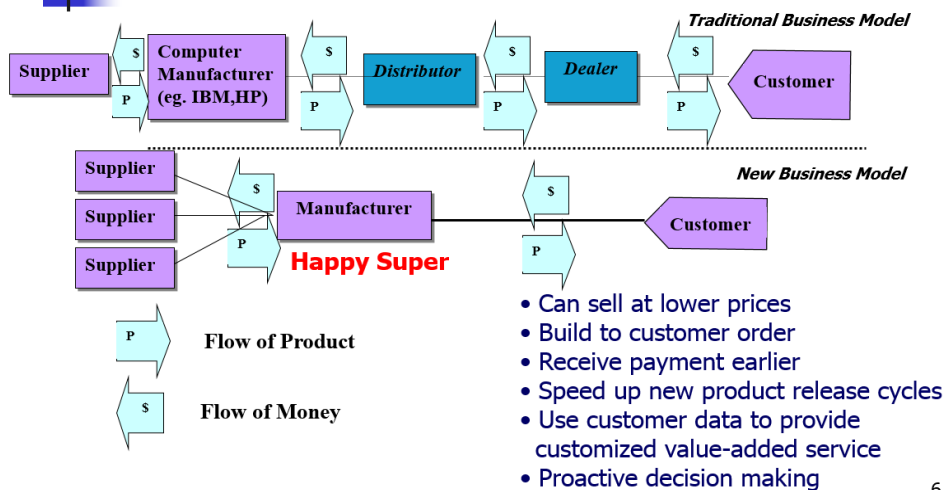
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**ANSWER IN THIS BOX****Porters 5 Competitive forces**

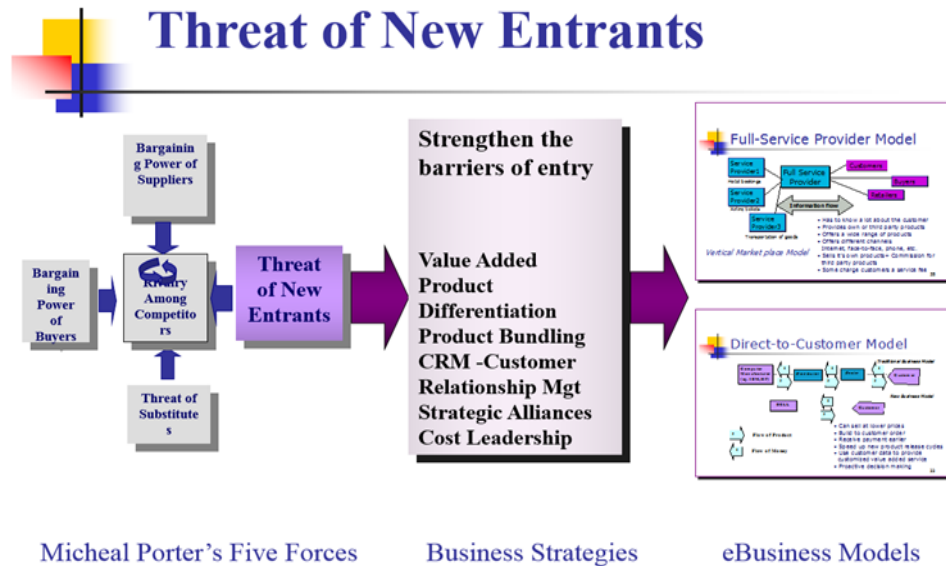
Justification of why each force is Very High, High, Moderate or low is expected. All facts are given in the case study.

- (c) Propose and illustrate two (2) eBusiness Models that are suitable for this company to improve the situation it is facing, focusing on the forces working on HAPPY SUPER. Justify why each model is considered as an appropriate model.

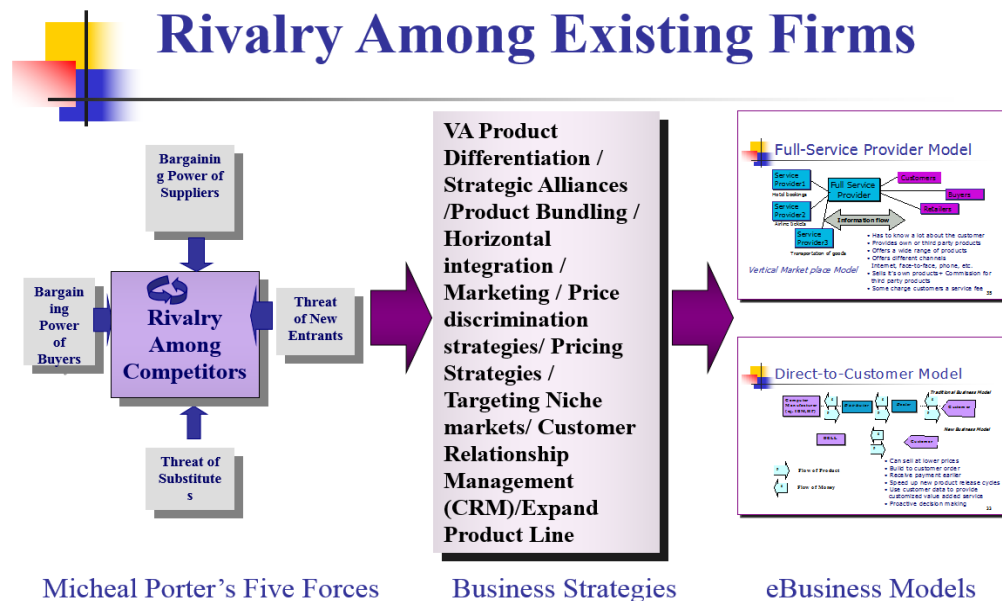
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**ANSWER IN THIS BOX****Proposed eBusiness Models****Full-Service Provider Model****Direct-to-Customer Model**

**Justification as to why they are the most appropriate and suitable Models.**



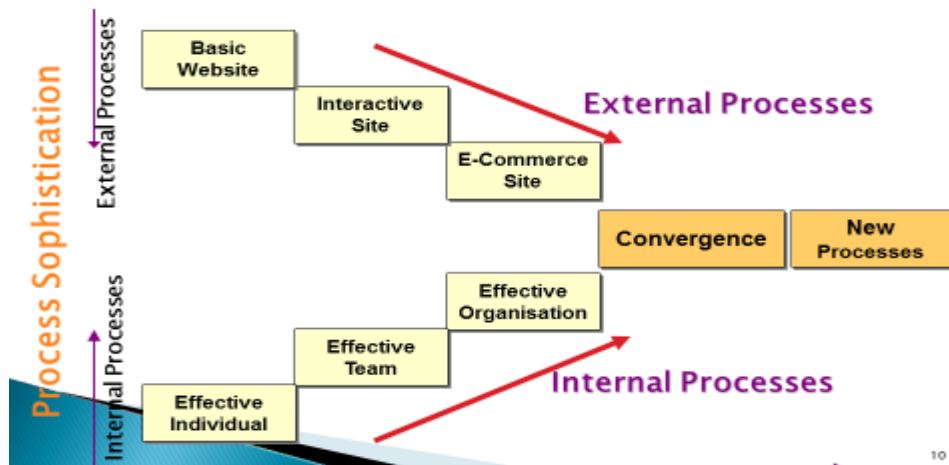
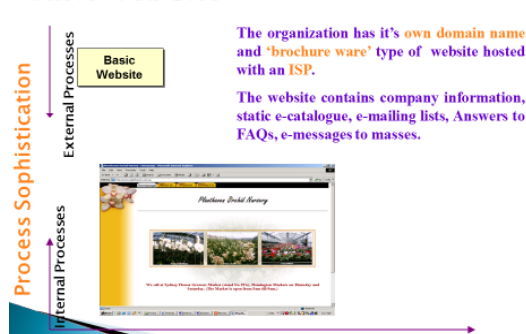
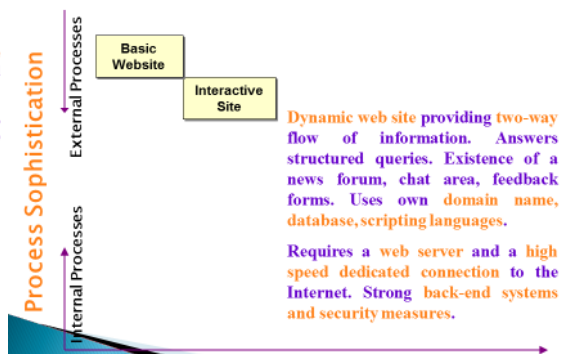
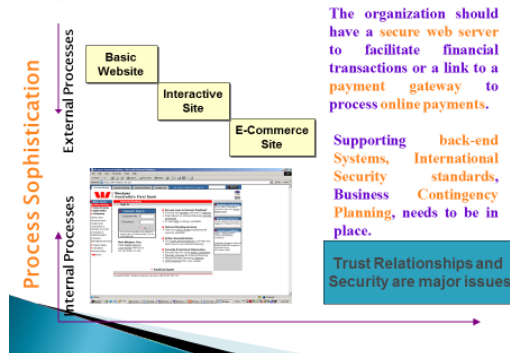
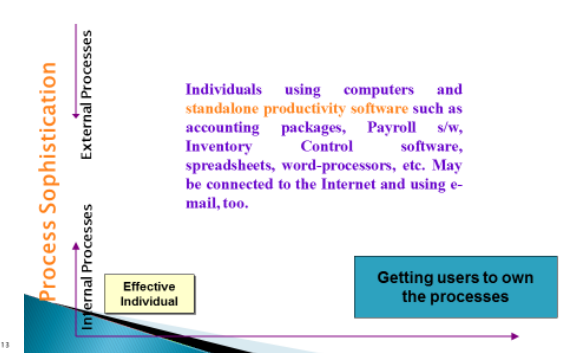
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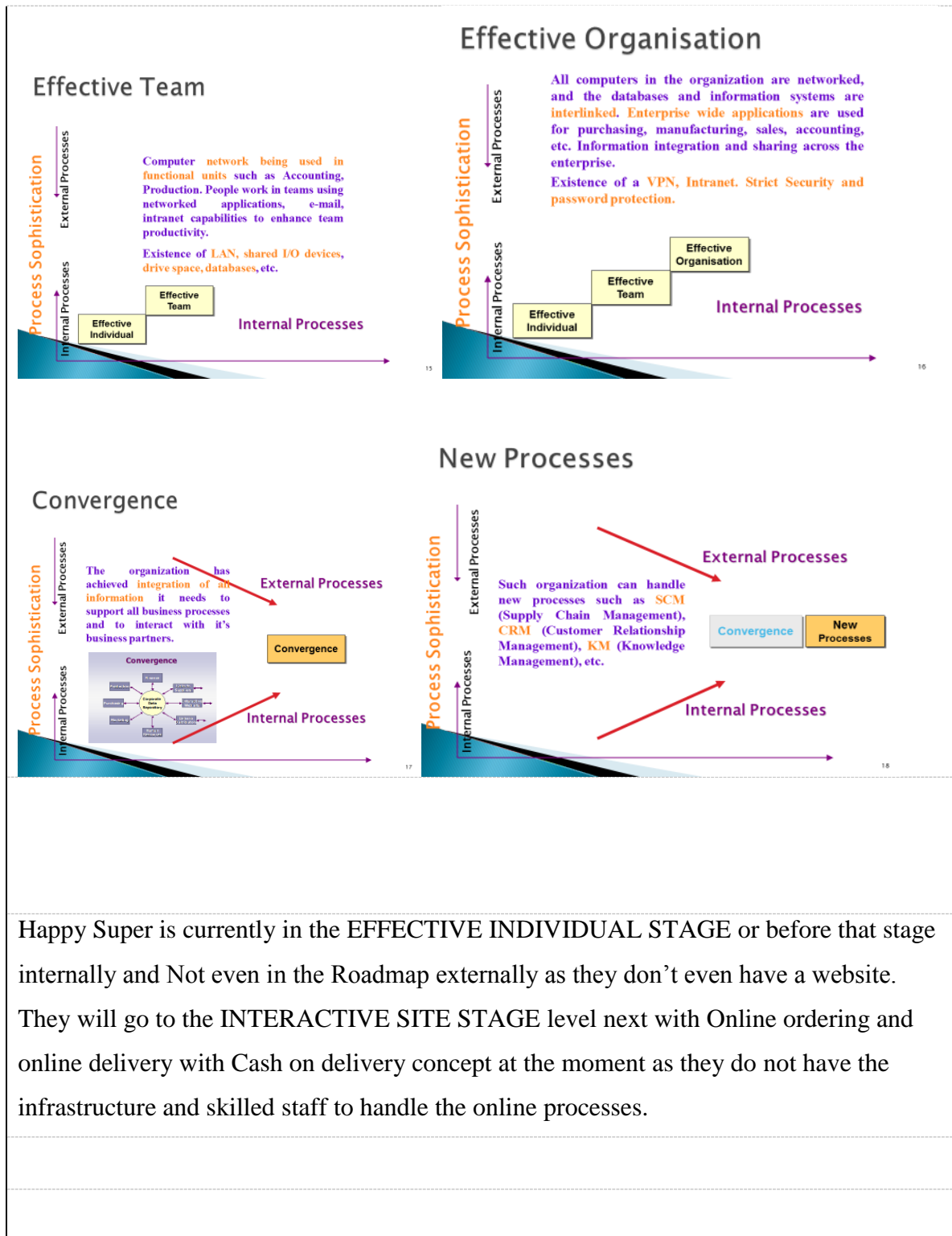


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- 2) (a) Illustrate and briefly describe the stages of the eBusiness Roadmap. In the roadmap, point out where the company HAPPY SUPER (mentioned in the case study in Q1) is, and the next step it should take. Justify your answer.

(40 marks)

**ANSWER IN THIS BOX****E-Business Road Map****Basic Web Site****Interactive Site****eCommerce Site****Effective Individual**





- (b) Briefly describe ten (10) essential features and functionalities to be included in the Web-based solution planned by HAPPY SUPER to execute the planned expansion to go online due to the Covid-19 Pandemic.

**(30 Marks)**

**ANSWER IN THIS BOX**

- 1. Product Catalog – Clearly defined categorised product catalogues should be available**
- 2. Description and Prices of each product**
- 3. Discounts available currently**
- 4. Search function to search for any products or services**
- 5. Shopping Cart to add the selected products**
- 6. Calculation of Prices for the selected products**
- 7. FAQs for customers**
- 8. Privacy Statements and Rules**
- 9. Security features**
- 10. Payment Handling and Payment gateway**
- 11. Location and Places where delivery is available**
- 12. Contact details**
- 13. Social media buttons**
- 14. Easy Navigational tools and Use-friendly interface**
- 15. Customer Reviews**

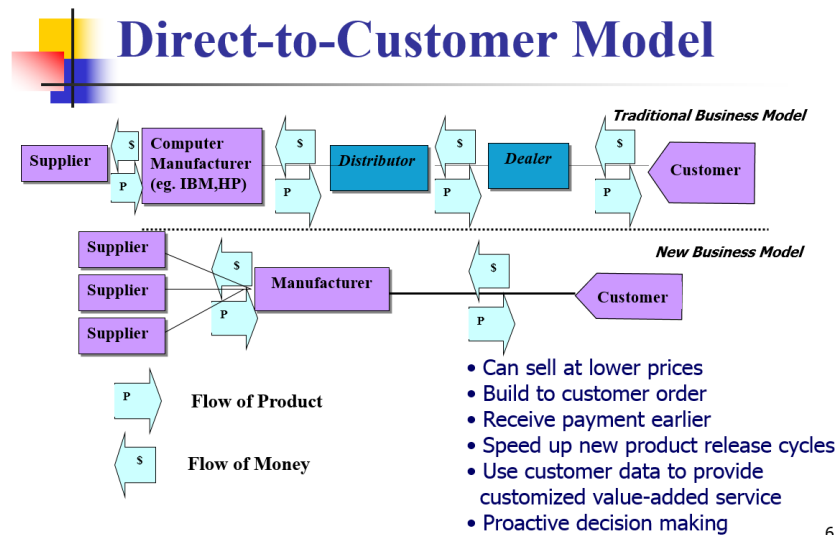
(c) Illustrate and describe the benefits of using the following eBusiness Models for the customers and companies using them. Also, explain the ideal situation in the market for using the following eBusiness Models.

- i. Direct-to-Customer eBusiness Model
- ii. Revenue Sharing eBusiness Model
- iii. Digital Value Hub

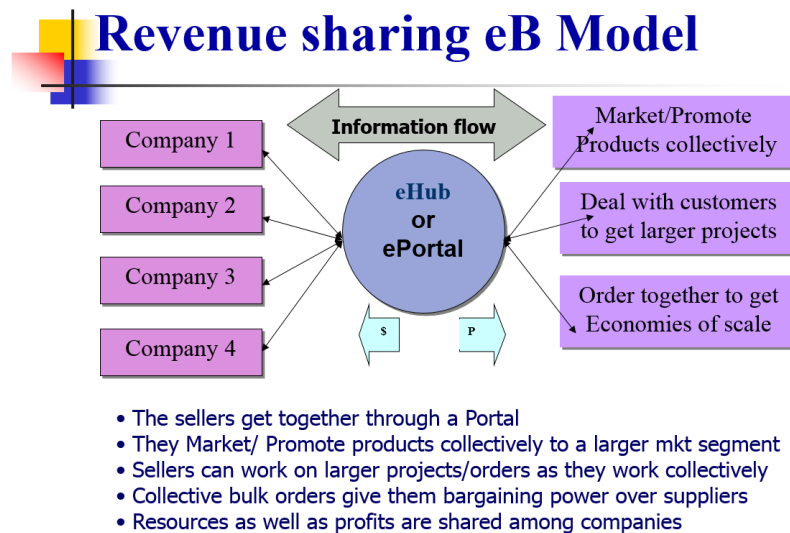
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### ANSWER IN THIS BOX

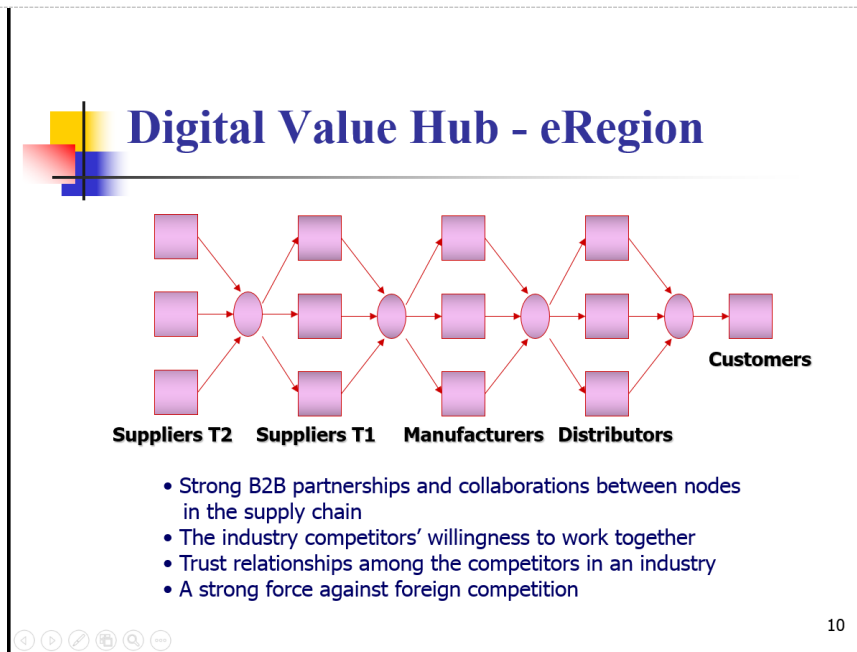
(i)



(ii)



(iii)



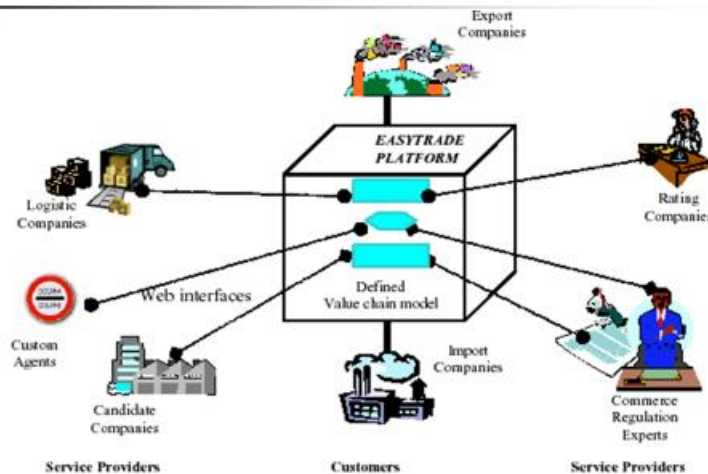
(3)

- (a) Are the following statements TRUE or FALSE? Justify your answer giving an illustration of the model mentioned in each and discussing the Pros & Cons while highlighting the validity of the statement.
- “When an industry consists of many large companies and many SMEs (Small and Medium Enterprises), and when Rivalry of Competitors is low, it is advisable to go for a **Global Trade Platform** model to be more competitive in the Market”
  - “Due to the Covid-19 pandemic, a lot of companies selling clothes have decided to go online, and due to high rivalry among the companies and high bargaining power of buyers, it is advisable for these companies to follow the **Revenue sharing eBusiness Model** to sell their products to customers.

(40 Marks)

**ANSWER IN THIS BOX****(i) TRUE**

## A Global Trade Platform for SMEs



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## An Innovative Global Trade Platform for SMEs

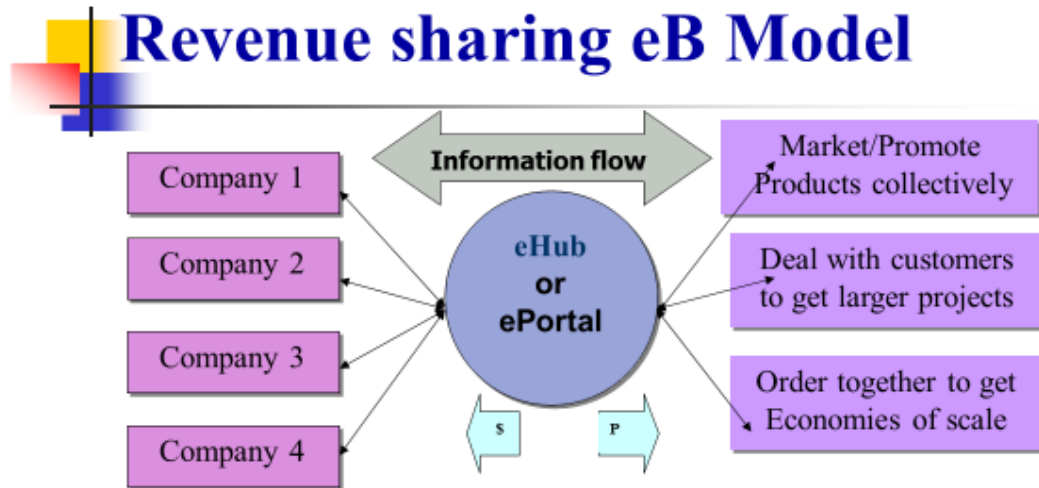
It is an innovative ICT platform

- dedicated to foreign trade
- which allows organisations (especially SMEs) to manage and carry out their business to business transactions on the Internet
- inside a high security environment
- involving different types of users such as companies, banks and other foreign trade sector operators.

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The Global Trade Platform allows SMEs to comfortably do business online globally. All SMEs and other companies are working in the same environment and the same platform sharing space in the same online trade platform. They are provided with all other facilities such as courier service and financial services by the high security environment that is provided for them to carry out business online.

(ii) FALSE



- The sellers get together through a Portal
- They Market/ Promote products collectively to a larger mkt segment
- Sellers can work on larger projects/orders as they work collectively
- Collective bulk orders give them bargaining power over suppliers
- Resources as well as profits are shared among companies

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In the Revenue Sharing eBusiness Model, companies in the same industry have to work together as a large company sharing their profits.

However, when there is high rivalry, it is difficult to build trust in order to work together. Therefore, this eBusiness Model is not suitable.

(b) Describe how we can use eBusiness Strategies and Models that can be used to solve the following problems. Give illustrations and examples where necessary.

- i. Poverty Alleviation in Sri Lanka – To help the poor
- ii. To solve the problem of Hunger in Asian countries

(30 marks)

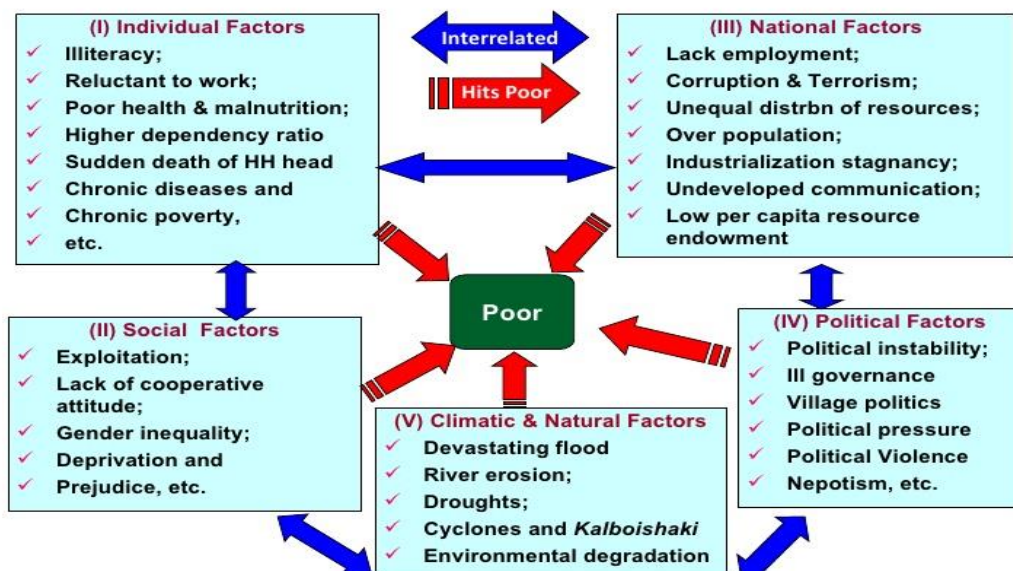
### ANSWER IN THIS BOX

#### i. Poverty Alleviation in Sri Lanka – To help the poor

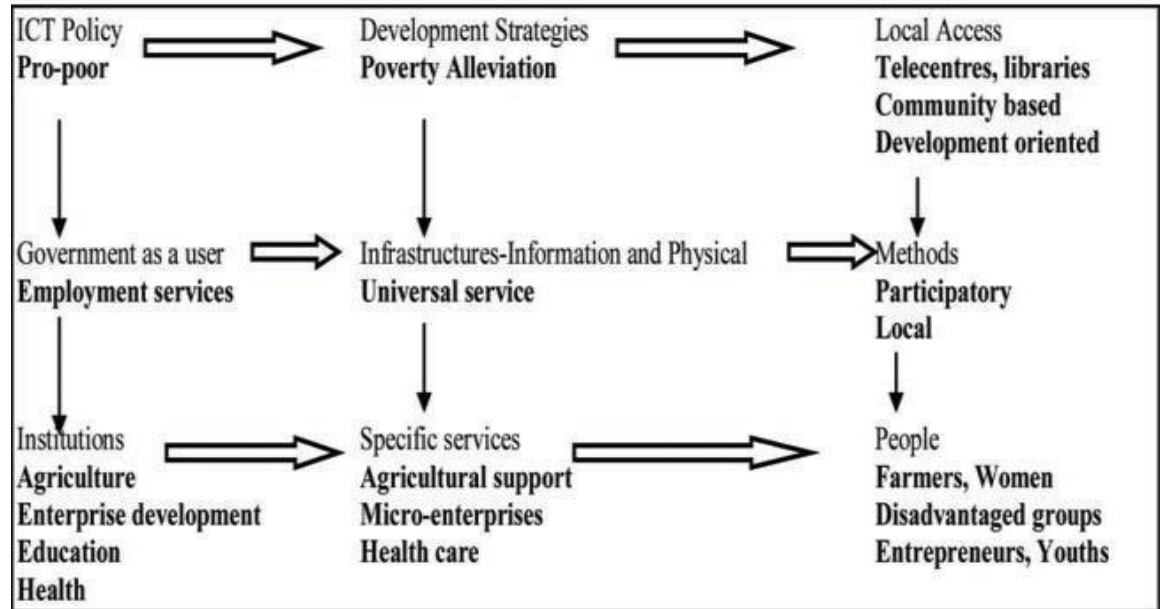
There are many strategies that can be adopted for poverty alleviation. Some are given below:



Using eBusiness Strategies and Collaborative models to support the market places after identifying the causes for the existence of poverty.







### iii. To solve the problem of Hunger in Asian countries

In 1996, at the World Food Summit, the Food and Agriculture Organization of the United Nations stated, “Food security exists when all people, at all times, have physical and economic access to sufficient, safe, and nutritious food to meet their dietary needs and food preferences for an active and healthy life.” The World Health Organization (WHO) adds to this definition the following aspects of food security:

- **Availability:** Sufficient quantities of appropriate food are available from domestic production, commercial imports or food assistance on a consistent base.
- **Access:** Adequate income or other resources are available to access appropriate food through home production, buying, exchange, gifts, borrowing or food aid.
- **Utilization:** Food is properly used through appropriate food processing and storage practices, adequate knowledge and application of nutrition and child care practices, and adequate health and sanitation services.
- **Stability:** Adequate food must be obtainable at all times so that access and availability of food is not curtailed by acute or recurring emergencies (sudden crises or seasonal shortages).

Digital Technologies can be used to create awareness on markets, create knowledge on what to buy and how much to produce and the availability and distribution of food among the have and have-nots. Most of the collaborative strategies and eBusiness models can be used depending on the need for collaboration and who should collaborate and work together.

**This question is given to make people think of real life situations and come up with realistic and innovative solutions to face and resolve the most important problems we face today.**

- (c) Discuss Six (6) benefits of eBusiness explaining how the customer and the company benefits from doing eBusiness.

(30 Marks)

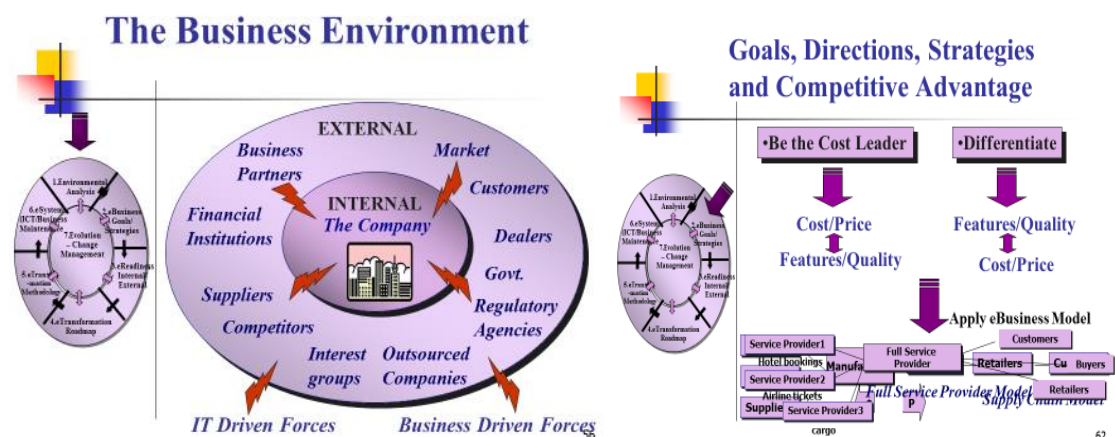
**ANSWER IN THIS BOX**





- 4) (a) It is important for any organisation to use a proper eTransformation methodology when they are trying to successfully fall into the path of eBusiness. Illustrate the 7Es in eTransformation and discuss the characteristics and importance of each stage.

(50 Marks)

**ANSWER IN THIS BOX**

## eReadiness (Internal/External)



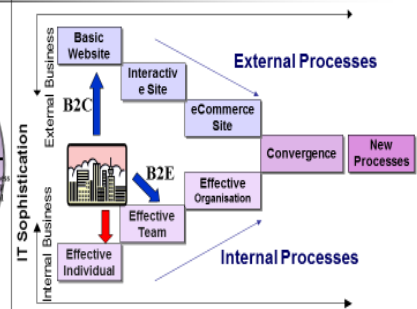
### Internal:

- 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

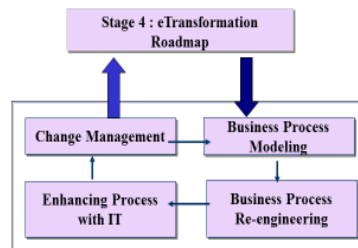
### External:

- Customers, Suppliers, Potential users

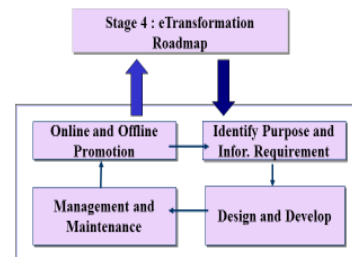
## The Company's Position and Path in the eTransformation Roadmap



## Internal eTransformation Methodology



## External eTransformation Methodology

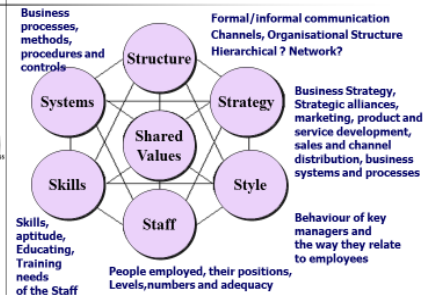


## eSystems (Policies, Support, Maintenance)



- **Management Controls** : Standards, guidelines to users, Procedures, Manuals
- **Security Measures** : To deal with common threats (sabotage, hacking, privacy, etc.) and contingency planning and disaster recovery
- **IT Maintenance and Support:** (Support for ICT infrastructure, upgrading, backing up, maintenance, troubleshooting, Support by the ISP and Vendors)

## 7S Model for Change Management



- (b) Describe an application where ICT could be effectively used in the Health Sector in developing countries. Briefly discuss the following:
- The problem being addressed
  - The solution proposed
  - The challenges faced

(30 Marks)

**ANSWER IN THIS BOX**

- i. The problem being addressed

## The Need for eHealth



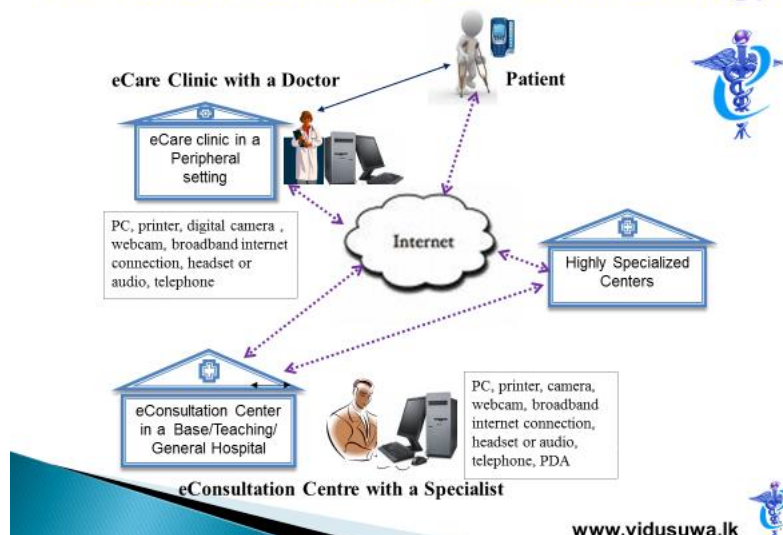
Accessibility to Quality Healthcare and highly specialized consultancies are limited in some peripheral areas!

- A dearth of specialists in highly specialized fields
- Some Patients have to travel great distances and incur heavy expenditure
- Post-operative and re-convalescing patients after treatment travel with great difficulty
- Unnecessary Transfer of Patients to tertiary centers for treatment/investigations

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- i. The solution proposed

## The Patient Centric eConsultation Strategy



## The eConsultation Clinic

- an **eCare Clinic** in a peripheral hospital,
- a **web-based eHealth Record** system,
- **mCommunication** system and
- an **eConsultation Centre** with a specialist in a base hospital or above



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## The eCare Clinic

- A **Doctor** in a District/Rural Hospital with the patient
- Basic **Facilities** – PC, Printer, Digital Camera, Webcam, BB connectivity, Headset, Audio Facility
- standard diagnosis **checklist** (eClinic patient record checklist), through the web-based system
- Still **images** of particular medical and surgical lesions will be transmitted via the e-system to the specialist
- The clinic will have all the basic amenities of a medical or surgical outpatient **clinic**.

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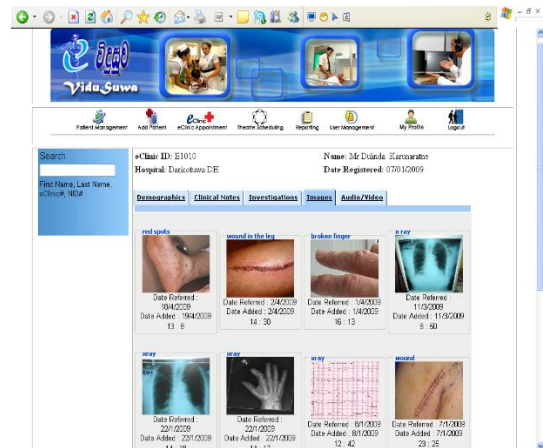
## Web based eHealth record system

The eClinic patient record checklist

- Patient's Personal Information
- the patient's current complaints
- condition of wounds, images, x-rays, ECG/EEG
- general medical status such as
  - blood pressure, pulse rate, respiratory rate,
  - SPO<sub>2</sub>, peak respiratory flow rates, temperature,
  - investigations
    - Haematological rpts, Bio-chemical data, lab tests
    - Radiological data, USS, CT Scan, etc.

• Prescribed Medication and Follow-up plan

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## Benefits to the Specialist & Doctor

- Virtual Availability of the Specialist across a distance at many e-clinics **within the shortest possible time frame**
- **knowledge transfer** occurs which benefits the doctor at the peripheral eClinic
- Access to **Electronic Medical Records** of patients leading to easier and accurate decision making (DSS)
- Potential for **Research** as data is stored electronically
- Reduces unnecessary transfers of patients for follow up visits to specialised clinics
- Creates a **comfortable environment** and privacy

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## Benefits to the Patient

- **Virtual Presence** of Specialist at the Local Hospital
- The patient's **travel expenditure and travel time** will be reduced considerably
- **Comfortable** environment in the clinic
- **Unnecessary** secondary visits to tertiary centers will be reduced
- **Diagnostic cards** being often lost due to patient negligence, ignorance or natural calamities could be avoided as all data is securely stored.

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## ii. The challenges faced

- **Challenge in the Health Sector :**
  - Around 10 tertiary level hospitals,
  - Over 27 secondary level hospitals
  - Over 285 primary health care Centres
  - 35% of the medical specialists in the curative sector are concentrated in Colombo

## Medical Records– Data Storage



## Key Players in a successful eHealth strategy for a developing country



- Citizens (including patients)
- Professionals
- Hospitals and academia
- Health-related businesses
- Governments
- International donor agencies
- Private and Public Sector ICT and Telecom service providers

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How the Challenges can be resolved to implement a successful solution:

- **Start with existing technology and expand**
- **Keep the technology simple and local**
- **Involve the users in the design to feel ownership**
- **Use a participatory approach to introduce ICT**
- **Use a strategy that is relatively flexible in the face of developing-world conditions**
- **Strengthen the infrastructure and create a conducive environment for the society**

- (c) Describe the meaning of the following statement discussing the benefits and problems associated with it giving 2 examples of products that fall into this category.  
“eBusiness moves products from Atoms to Bits!”

**(20 Marks)**

### **ANSWER IN THIS BOX**

The meaning of eBusiness is your business becomes from a Brick-&-Mortar physical organisation to a Virtual Organisation. Your assets become from tangible to intangible. Your documents are changed from **From Atoms to Bits, From place to space, From, Brick to click, From Real to Virtual.**

With eBusiness → Cash, cheques, paper documents, store fronts, face-to-face meetings are changed in to → Digital/Electronic/Virtual interconnections !!



The organisations become **Borderless !! Faceless !! & Paperless !!**

With these changes, TRUST and SECURITY become more important than ever..

TRUST in the people who are handling the operation and SECURITY in the eBusiness systems (web based solutions) customers/partners are using.

## Product Disruption:



### Examples of Digitization Across Industries

Industry	Traditional Format	Digital Format
<b>Product Substitution</b>		
Recorded music 	LP records, tapes	→ CDs, MP3
Journalism 	Newspaper, magazine, television, radio	→ Web site

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## Product Digitization:

### Examples of Digitization Across Industries

Industry	Traditional Format	Digital Format
<b>Service Substitution</b>		
Banking 	Cash, check	→ Smart card, web banking and payment systems
Photo-finishing 	Film to paper	→ Digital to paper, film to digital

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