



ENGLISH FOR IT

PENULIS :

Dr. Sam Hermansyah, S.Pd., M.Pd
Prof. Dra. Nasmilah, M. Hum, Ph.D
Dr. Usman M, S.Pd., M.Pd
Dr. Khadijah Maming, S.Pd., M.Pd
Dr. Andi Sadapotto, M.Hum
Syahrir L, S.Pd., M.Pd
Syamsunir, S.Pd., M.Pd
Roni, S.Pd., M.Pd
Isumarni, S.Pd., M.Pd
Nurul faradillah, S.Pd., M.Pd
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GETPRESS INDONESIA

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website: www.getpress.co.id

email: adm.getpress@gmail.com

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Hak cipta dilindungi undang-undang

Dilarang memperbanyak karya tulis ini dalam bentuk
dan dengan cara apapun tanpa izin tertulis dari penerbit.

PREFACE

Besides being an international language, English also has a very important role in the development of science and technology. For a pupil or university student, mastering English is a requirement to develop their scientific capacity and also for the benefit of their career after graduation. It is important for pupils and students not only to learn English in general, but also to relate it to the field of science they study.

ESP emphasizes something beyond language, through the medium of language. This statement views that language mastery is a special skill that should be associated with a field of work in the future. So, unlike learning English in general, ESP is a means and not an end of language learning and teaching.

English for Information Technology was prepared to enrich and add references for teachers, lecturers, pupils and students in improving their mastery of English related to information technology. By studying this book, readers are expected to become more familiar with terms related to information technology in English. Considering that currently the role of information technology has penetrated almost all aspects of our lives.

The material and contents of this book are compiled from various English language sources or books related to information technology.

The book material emphasizes reading comprehension. However, teachers (teachers or lecturers) are expected to be able to integrate it with speaking, writing and structure.

On this occasion, allow the author to express many thanks to PT Kanisius for publishing this book. The author really hopes for suggestions and constructive criticism from readers to improve this book.

Dr. Sam Hermansyah,S.Pd.,M.Pd

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Information Systems

An Information system in organization provides processes and information useful to its members and clients. These should help it operate more effectively. The information might concern its customers, suppliers, products, equipment, procedure, operation and so on. Information in bank, for example, might concern the payment of its employees, the operation of its customer accounts, or the efficient running of its boundaries.

We are mainly concerned with computer-based information systems, for the computer can process data (the basic facts) speedily and accurately, and provide information when and where required, which is complete and at the correct level of detail, so that it is useful for some purpose. By comparison, manual systems may be slower (information must be timely to be of value) and unable to deal with large volumes (of customers, suppliers, or transaction). Further, manual systems may be less accurate because checking, procedures can be tedious, and not failure-proof (inaccurate 'information' can lead to poor decision making). In some circumstances, however, manual systems can be perfectly adequate or indeed superior to computerized information systems, such as in small business, or where particular flexibility or human judgement is required. In modern information systems, the basic data to be processed can include pictures, graphics, video, sound, and text as well as traditional alphanumeric data, such as customer record. The computer system might be used to store data or convert the data to useful information by producing reports, pictures, graphics, or handling management enquiries. This does not mean that a computerized information system is 'purely' a computer system—there may well be manual (or clerical) aspects, such

as keying-in (input) the data or some cross-checking—it simply means that part of the system is likely to be computerized. Nor does it mean that the computer technology itself is the most important aspect of the system (in the same way that a word processor is not the most important aspect of the system whereby an author produces a novel).

The information systems of an organization will be required to help it analyze the business, along with its environment, and formulate and check that it achieves its goal. These goals might be related to profitability, long term survival, service provision, expansion, greater market share, and employee and customer satisfaction. The information system may help the organization to achieve improved efficiency of its operation and effectiveness through better managerial decisions. Information systems are sometimes regarded as providing competitive advantage. Another way of looking at this would be to say that, without good information systems, a business would be at a considerable competitive disadvantage. They are therefore an important organizational resource.

Although many information systems are unique to particular types of organization—such as a system for placing and paying out bets in a betting office, a system to register voters for a local authority, a ticket reservation system for an airline, or a system for recording lottery choices—many information systems are common to a wide range of organization. These include payroll, invoicing, project planning, decision-support, and so on. Even systems designed for a particular type of organization can be of a more general type. Therefore, reservation systems, for example, can be found in travel agents, cinemas, theatres, and libraries as well as in airlines. The generic nature of such systems is not always recognized in systems development as many systems have been developed as a one-off for a particular company or industry sector. Application packages, such as word processing or project management, are an exception and they have been developed for generic use in different types of organization.

A. Based on the reading text above, Please answer as the following questions about Information Systems.

1. What does an information systems in organization provide?
2. What is the information used for? *Please give example, but not in the bank!
3. How can the computer process the data?
4. Would you please explain the weaknesses of the manual systems?
5. Where are the manual systems the best be used for?
6. Would you please compare the information systems and manual systems? *According to your opinion whis is the better one and giveyour reason?
7. What can the basis data to be processed include?
8. What may the information system help the organization? *Pleasegive examples relating to the business activity?
9. Could Information systems support a competitive advantage ofcompany? Why?
10. Why are the information systems unique to particular type oforganization?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below.

(keep, loyal buyers, quickly, precise, special, viewed, essential, major)

1. The information might concerns its *customers*, suppliers, products,equipment
2. We are *mainly* concerned with computer-based information systems
3. The computer can process data (the basic facts) *speedily*

and accurately, and provide information

4. Manual systems may be less **accurate** because checking, procedures can be tedious, and not failure-proof (inaccurate 'information' can lead to poor decision making).
5. The computer system might be used to **store** data or convert the data to useful information by producing reports, pictures, graphics, or handling management enquiries
6. Computer technology itself is the most **important** aspect of the system (in the same way that a word processor is not the most important aspect of the system whereby an author produces a novel).
7. Information systems are sometimes be **regarded** as providing competitive advantage.
8. Many information systems are unique to **particular** types of organization

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN

VERB

- | | |
|-----------------|-------------|
| 1. Information | |
| 2. | operate |
| 3. Comparison | |
| 4. | Require |
| 5. | Computerize |
| 6. | Produce |
| 7. Development | |
| 8. Decision | |
| 9. Reservation | |
| 10. Application | |

D. Would you please make a question based on the underlined word on the sentences below

Forexample, Question: The Experts designed marketing information systems last year

Answer : What did the experts design last year?

1. An Information system in organization provides processes and information useful to its members and clients
2. The computer can process data (the basic facts) speedily and accurately
3. Manual systems may be less accurate because checking, procedures can be tedious, and not failure-proof
4. Inaccurate information can lead to poor decision making
5. The computer system might be used to store data or convert the data to useful information by producing reports, pictures, graphics, or handling management enquiries.
6. The information system may help the organization to achieve improved efficiency of its operation and effectiveness trough better managerial decisions.
7. Information systems are sometimes be regarded as providing competitive advantage
8. Reservation systems, for example, can be found in travel agents, cinemas, theatres, and libraries as well as in airlines

Electronic Commerce

The digital economy includes electronic commerce or e-commerce which is simply the conducting of commercial transactions electronically, typically via the internet, between geographically separated parties. It may involve some or all parts of the transaction process relating to pre-sale, execution, settlement and after-sale activities. Clearly, e-commerce has been the subject of much debate over recent years, and it has been suggested that it has revolutionized business for the following reasons: eases access to global market (known as reach); extends business hour to 24 hours, 7 days a week; reduces the costs transacting business; reduces the costs of marketing; facilitates customized one-to-one communication with customers; shortens the transaction cycle; provides a more perfect market; that is, it is easy for customers to find and compare prices (sometimes termed electronic marketplaces).

Whether this is yet a true revolution is debatable, and whether all these benefits necessarily or automatically accrue is open to question. For example, the cost of marketing is thought by some to be higher because of the broader, more diverse markets that need be covered. Further, it is argued that the need for, and thus the cost of, establishing good brands and brand images might be greater than for traditional commerce. However, after a relatively slow start, e-commerce has grown dramatically with an estimated US\$ 2 trillion worth of goods and services currently traded on line. There is also view that e-commerce is really very little different from traditional commerce. The business processes are essentially the same, it is just the way that they are implemented that is different. In a few years nobody will bother to make a distinction in the way that transactions are

carried out. Nevertheless, e-commerce is certainly very important and here to stay and it is likely to continue to be influential even if all early type is not quite justified.

Although e-commerce takes most of the headlines, there are non-commercial impacts of the digital economy that are equally important. In many countries there is a large public sector that is responsible for many activities. In the UK, for example, it covers transportation, education, health, regulation, employment, customs and excise, the law and the environment, together with 388 English local government authorities. Together, these department and associated agencies are responsible for a large section of the economy and a large number of employees.

The UK government has recognized the importance of actively promoting the public sector and government agencies on the Web. They regard this as a key opportunity to provide higher quality services directly to citizens at lower cost and more efficiently 24 hours a day. It is thought that government departments should be able to achieve significant improvements in the provision of information to the public, especially allied with the push to more 'open government' and increasing freedom of information.

But this vision is not just confined to the provision of information. Citizens should be able to conduct business with the government on line. According to a report from the National Audit Office it 'requires a fundamental transformation of many central departments' and agencies' business processes' (National Audit Office, 1999). To this end the UK government committed itself to having all public services online and available for citizens and companies by the end of 2005. Progress has been made and government predictions suggest that a significant percentage, although probably not all, services will be online by this date. It seems that all local government services and around 80% of other public services will achieve this target. The government has established something called the Government Gateway which is the hub of its 'joined-up government' initiative, and this has over 6 million citizens registered and enabled to

carry out a range of electronics services including, for example, online tax returns, claiming child tax credit, paying parking fines, checking pension entitlement, and booking a blood donor session of the digital economy alongside the usual more commercial elements.

A. Based on the reading text above, Please answer as the following questions about Electronic Commerce.

1. What does the digital economy include?
2. Why has e-commerce been the subject of much debate over recent years?
3. Would you please explain the advantage of e-commerce?
4. Can e-commerce reduce the costs transacting business? *Please give your reason?
5. Is the e-commerce important in supporting marketing? *Please give examples?
6. What is the importance of e-commerce for the consumers?
7. Has the e-commerce grown very quickly? Please give your reason?
8. What are non-commercial impacts of the digital economy that are equally important?
9. What is the function of Government Gateway? *How is your country?
10. Has the UK government recognized the importance of actively promoting the public sector and government agencies on the Web? Please give your reason?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below.

(developed, influenced, vividly, chance, manage, larger, forecasts, get, executed, through)

1. The digital economy includes electronic commerce or e-commerce which is simply the conducting of commercial transactions electronically, typically *via* the internet, between geographically separated parties.
2. **Clearly**, e-commerce has been the subject of much debate over recent years
3. It is easy for customers to *find* and compare prices
4. The cost of marketing is thought by some to be higher because of the **broader**, more diverse markets that need be covered
5. E-commerce has **grown** dramatically with an estimated US\$ 2 trillion worth of goods and services currently traded on line.
6. The business processes are essentially the same, it is just the way that they are **implemented** that is different
7. There are non-commercial **impacts** of the digital economy that are equally important.
8. They regard this as a key **opportunity** to provide higher quality services directly to citizens at lower cost and more efficiently 24 hours a day
9. Citizens should be able to **conduct** business with the government on line.
10. Progress has been made and government **predictions** suggest that a significant percentage, although probably not all, services will be online by this date

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN	VERB
1. -----	Involve
2. Execution	-----
3. -----	Extend
4. -----	Reduce
5. Communication	-----
6. -----	Estimate
7. Improvements	-----
8. Predictions	-----
9. -----	Suggest
10. -----	Achieve

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed marketing information systems last year

Answer: What did the experts design last year?

1. Decision Support Systems can help the manager to take a decision
2. Most of companies are using internet as means of marketing the product
3. Information Technology develops very quickly
4. The consumers felt disappointed with the service of the hotel last week
5. The company will introduce new product next year
6. The foreign company has distributed the product around Indonesia

7. Business professions offer opportunity in **the area of dataprocessing**
8. The employee quit his job **because of the poor amount of money earned**
9. Within the field of data processing you can specialize in **systems analyst**
10. The area of marketing offers different types of jobs, such as **advertiser or seller**

Business Process Re-Engineering

One approach to information systems development, which takes into account strategic aspects, is business process re-engineering.

It has presented organizations with the opportunity to rethink outdated procedures, rules, and assumptions underlying their business activities. This opportunity is usually enabled partly by the application of technology to outdated processes.

Although it can be argued that BPR is evident in some of the notions of Scientific Management, it is usually suggested that the more modern origins of BPR are the descriptions of Hammer (1990) and Davenport and Short (1990) and its rapid adoption by consultancies around the same time. This was followed by its popularization with books such as Davenport (1993) and Hammer (1993), who defines BPR as: "The fundamental and radical of business to achieve dramatic improvement in critical, contemporary measure of performance, such as cost, quality, service and speed.

Reengineering determines what an organization should do, how it should do it, and what its concerns should be, as opposed to what they currently are. It is a radical approach and entails 'business reinvention—not business improvement, business enhancement, or business modification'. This early view of BPR is thus very different to incremental change (such as might be apparent when 'computerizing' clerical systems or 're-computerizing' computer systems), it is about fundamental change. Emphasis is placed on the business processes (and therefore information systems that reflect them and enable the change), but it also encompasses

managerial behavior, works patterns, and organizational structure. BPR is thus a total approach, involving top management, total organizational restructuring, and a change in the way people think. According to Hammer and Champy, organizations re-engineering for four mains reasons: (1) they face severe commercial pressure and have no choice; (2) competitiveforces present problems unless the organization takes radical steps to realign business processes with strategic positioning; (3) management in the organization regard re-engineering as an opportunity to take a lead overthe competition; (4) publicity about BPR has prompted organizations to follow the lead established by others. The essential first steps in planning a BPR programme are: to develop business vision and process objectives; to identify processes to be redesigned; to understand and measure the exisiting processes and to identify information systems levers that help push the changes; and finally to design and build prototypes.

The model of BPR created by Hammer and Champy describes the characteristics of reengineering proceses as follows. Several jobs are combined, performed by ' a case worker' responsible process. 'Case team' members are empowered fo find innovative ways to improve service, quality, and reduce costs and cycle times. Due to process integration, fewer controls and checks are necessary, and defects are minimized by an entire process being followed through by those ultimately of the whole process. The step in a process are performed and sequential tasks, and this enables the parallel processing of entire operations. The outcomes of such BPR programmes often include: flatter organizational structures; grater focus on customers; and improved teamwork, leading to a more widespread understanding of the roles of others. As originally conceived in the early 1990s, BPR often necessitated the recruitment of re-engineering teams consisting of, for example, strategists in information systems, business analysts with computer skills, organizational development specialists, and organization and methods experts. Customer service teams were used to maintain and develop a focus on future business, and team 'facilitators' to coach team members, resolve conflicts, and rectify operational problem

A. Based on the reading text above, Please answer as the following questions about Business Process Re-Engineering.

1. What is one approach to information systems development which is very important in business?
2. What is the role of re-engineering process in business?
3. Would you please define Business Process Re-Engineering?
4. What does reengineering determine?
5. Is the view of BPR the same as incremental change?
6. Why is the BPR called a total approach in business?
7. Please mention the main reason of implementing organizations re-engineering ?
8. What are the essential first steps in planning a BPR programme?
9. Would you please describe the characteristics of reengineering processes?
10. What do the outcomes of such BPR programmes often include?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(attempted, portrays, consider, available, keep, supposition, assess, challenged)

1. One approach to information systems development, which ***takes into account*** strategic aspects, is business process re-engineering
2. It has presented organizations with the opportunity to rethink outdated procedures, rules, and ***assumptions*** underlying their business activities
3. The fundamental and radical of business to achieve dramatic improvement in critical, contemporary ***measure*** of performance, such as cost, quality, service and speed.

4. Reengineering determines what an organization should do, how it should do it, and what its concerns should be, as ***opposed*** to what they currently are.
5. To understand and measure ***the existing*** processes and to identify information systems levers that help push the changes
6. Hammer and Champy ***describes*** the characteristics of reengineering processes a
7. Publicity about BPR has ***prompted*** organizations to follow the lead established by others.
8. Customer service teams were used to ***maintain*** and develop a focus on future business

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN

VERB

- | | |
|-------------------|----------|
| 1. Development | ----- |
| 2. ----- | Assume |
| 3. Application | ----- |
| 4. ----- | Describe |
| 5. Popularization | ----- |
| 6. ----- | Enhance |
| 7. Improvement | ----- |
| 8. Competition | ----- |
| 9. ----- | Identify |
| 10. ----- | Empower |

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed marketing information systems last year

Answer : What did the experts design last year?

1. Hardware and software engineering have always been important aspect building computer systems
2. Information Technology has significant implications for our quality life
3. Computers perform numerous common data processing task in business
4. The secretary is processing the data of inventory now
5. The information might concern its customers, suppliers, and products
6. The product is not available in your favourite stores
7. The advertising sometimes gives a false information
8. The two major forms of promotion are personal selling and advertising
9. Products are sometimes sold directly by the manufacturer
10. Once market researchers have determined the target market

Strategic Management and Information Systems

Although strategic management and Information Systems developed in parallel over the last 50 years, the two fields have also had substantial impact on each other. The interaction and co-evolution of the two fields have experienced significant increase in recent years.

The short history of computer Its development can be divided into three areas: the mainframe era from the 1950s to the 1970s, the microcomputer era from 1980s to the early 1990s, and the internet era from 1990s to the present. The mainframe is characterized by centralized computing, where all computing needs were serviced by powerful computers at the computer center. The proliferation of microcomputers led to decentralized computing. Computing resources become readily accessible to more users. This is a period that witnessed improved user performance and decision-making quality. When computer networks became pervasive in the Internet era, decentralized computing evolved to distributed computing, where computing resources are located in multiple sites, as in decentralized systems, but all of the computing resources are connected through computer networks. People in the internet era are far more empowered than in previous eras, because they have access to not only technology tools as before, but also to shared knowledge from others.

Clearly, the role of business IS has evolved and expanded over the last 5 decades. Early systems in the 1950s and 1960s were used primarily for dealing with business transactions with associated data collection, processing and storage. Management Information Systems (MIS) were

developed in the 1960s to provide information for managerial support. Typical MIS are report capabilities. Decision support systems (DSS) first appeared in the 1970s. They offer various analytical tools, models and flexible user interface for decision support at solving difficult problems, such as planning forecasting and scheduling. Executive support systems (ESS) are specialized DSS designed to support top-level management in strategic decision making.

The 1990s saw an increased emphasis on Strategic Information Systems as a result of the changing competitive environment. Competitive advantage became a hot strategic management topic. IT and IS were developed to support business strategic initiatives. The commercialization of the Internet in the mid 1990s created an explosive growth of the Internet and Internet-based business applications. Using the Internet standards, corporations are converting their old incompatible internal networks to intranets. Also based on Internet standards. Extranets are built to link companies with their customers, suppliers and other business partners. What kind of information systems would be considered strategic information systems? Although strategic support systems are almost exclusively used for top executives dealing with strategic problems, a strategic information system can be any type of IS that plays a key role in supporting business strategies.

A. Based on the reading text above, Please answer as the following questions below.

1. How did strategic management and Information Systems develop?
2. Had the two fields have also substantial impact on each other?
3. Would you please explain the short history of computer Its development?
4. Do computing resources become readily accessible to more users?
5. Why are people in the internet era far more empowered than in previous eras?

6. How were early systems in the 1950s and 1960s used primarily for?
7. Did competitive advantage become a hot strategic management topic?
8. What are Executive support systems (ESS) specialized DSS designed for?
9. What are corporations converting their old incompatible internal networks to intranets?
10. What are extranets built?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(glimpse, overcoming, came up, touchable, grew, match, undergone, unsuitable, enlarged, penetrated)

1. Strategic management and Information Systems *developed* in parallel over the last 50 years
2. The interaction and co-evolution of the two fields have *experienced* significant increase in recent years.
3. The *brief* history of computer. Its development can be divided into three areas
4. Computing resources become readily *accessible* to more users
5. Computer networks became *pervasive* in the Internet era
6. Clearly, the role of business IS has evolved and *expanded* over the last 5 decades
7. Decision support systems (DSS) first *appeared* in the 1970s
8. They offer various analytical tools, models and flexible user interface for decision support at *solving* difficult problems, such as planning forecasting and scheduling.

9. Using the Internet standards, corporations are converting their old ***incompatible*** internal networks to intranets.
10. Extranets are built to ***link*** companies with their customers, suppliers and other business partners.

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN

VERB

- | | |
|----------------------|------------------|
| 1. Information | ----- |
| 2. Interaction | ----- |
| 3. Centralize | |
| 4. Empower | |
| 5. | Connect |
| 6. Decision | ----- |
| 7. | Evolve |
| 8. Commercialization | Commercialize |
| 9. | Convert Consider |
| 10. | |

D. Would you please make a question based on the underlined word on the sentences below.

For example, Question: The Experts designed **marketing information systems** last year

Answer : What did the experts design last year?

1. Computers are able to manipulate certain kinds of data **very quickly**

2. A computer system can store **information** on magnetic tape for future use
3. The company focuses on **the consumers** in its marketing strategy
4. **Experts** predict that computers will play an important role in the lives of people around the world
5. Companies try to meet **the needs and desires** of the individual who ultimately buy and use the product
6. The director promoted John as sales manager **last month**
7. **In the marketplace** businesses compete each other
8. Many small businesses focus only on **the home market**
9. There are two main elements of computer systems—**hardware and software**
10. IBM advised the company **to invest money in developing computer**

Information Systems Security

How do you secure information systems from viruses and other threats? The rule of thumb for deciding whether an information system is at risk is simple: all systems connected to networks are vulnerable to security violations from outsiders as well as insiders and to virus infection and other forms of computer crime. Threats to information systems can come from a variety of places inside and external to an organization. Information systems security refers to precautions taken to keep all aspects of information systems (e.g., all hardware, software, network equipment, and data) safe from unauthorized use or access. That means that you have to secure not only the personal computers on people's desk but also notebook computers, the handhelds, the servers, all levels of the network, and any gateway between the network and the outside world.

As use of the internet and related telecommunications technologies and systems has become more pervasive, use of these networks now creates a new vulnerability for organizations. These networks can be infiltrated and/or subverted in a number of ways. As a result, the need for tight computer and network security has increased dramatically. Fortunately, there are a variety of managerial methods and security technologies that can be used to manage information systems security effectively.

Everyone who uses an information system knows that disasters can happen to stored information or to computer systems. Some disasters are accidents, caused by power outgaes, inexperienced computer users, or mistakes, while others caused on purpose by malicious crackers.

The primary threats to the security of information systems include the following: Accidents and Natural Disasters (Power outages, inexperienced or careless computer operators, cats walking across keyboard and so on); Employees and consultants (People within an organization who have access to electronic files); Links to outside business contacts (Electronic information can be at risk when it travels between or among business affiliates as part of doing business); Outsiders (Hackers and crackers who penetrate networks and computer systems to snoop or to cause damage--viruses, currently rampant on the internet, are included in this category). An unauthorized attack takes place whenever people who are not authorized to see, manipulate, or otherwise handle information look through electronically stored information files for interesting or useful data, peek at monitors displaying proprietary or confidential information, or intercept electronic information on the way to its destination.

Unauthorized access can be achieved by physically stealing computers, stealing storage media (e.g. removable flash drives, CD-ROMs, or backup), or simply opening files on a computer that has not been set up to limit access. When computer information is shared by several users, as in an organization, in-house system administrators can prevent casual snooping or theft of information by requiring correct permissions. Further, administrators can log attempts by unauthorized individuals to obtain access. Determined attackers, however, will try to give themselves system administrator status or to otherwise elevate their permission level—sometimes by stealing password and logging on to a system as authorized users.

One common way to gain access to a password-protected system is using a brute-force approach, i.e., trying a tremendous number of different passwords (usually in an automated fashion) until a match is found. Some systems attempt to combat this by increasing the wait time required after an unsuccessful log-in attempt, or by using CAPTCHAs. A CAPTCHA (completely Automated Public Turing Test to tell Computers and Humans Apart) usually is a distorted image displaying a combination of letters and/or numbers a user has to input into a form (in addition to other required

information) before submitting it. As the image distorted, (currently) only humans can interpret the letters/numbers, and thus it can be avoided that an automated mechanism is repeatedly attempting to submit the form to gain access to a system.

A. Based on the reading text above, Please answer as the following questions below

1. Where can threats to information systems come from?
2. What does Information systems security refer to?
3. What do you do as use of the internet and related telecommunications technologies and systems has become more pervasive?
4. Has the need for tight computer and network security increased dramatically?
5. Can disasters happen to stored information or to computer systems? Please give examples?
6. What do the primary threats to the security of information systems include?
7. When does an unauthorized attacks take place?
8. How can anauthorized access be acheieved by?
9. What happen when computer information is shared by several users?
10. What is one common way to gain access to a password-proetected system?

B. Please substitute appropriate terms for the italicized words in sentence with the available below

(derive, denote, fight, get, occur, tries, protect, linked)

- 1. You *secure* information systems from viruses and other threats
- 2. All systems *connected* to networks are vulnerable to security violations from outsiders as well as insiders and to virus infection and other forms of computer crime
- 3. Threats to information systems can *come* from a variety of places inside and external to an organization.
- 4. Information systems security *refers* to precautions taken to keep all aspects of information systems.
- 5. Everyone who uses an information system knows that disasters can *happen* to stored information or to computer systems.
- 6. Further, administrators can log *attempts* by anauthorized individuals to obtain access.
- 7. One common way to *gain* access to a password-proetected system is using a brute-force approach
- 8. Some systems attempt to *combat* this by increasing the wait time required after an unsuccessful log-in attempt, or by usingCAPTHAS

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN	VERB
1. Violation	-----
2. -----	Create
3. -----	Infiltrate
4. -----	Relate

- | | |
|----------------|-----------|
| 5. | Store |
| 6. | Penetrate |
| 7. | Intercept |
| 8. | Limit |
| 9. Combination | ----- |
| 10. Addition | ----- |

D. Would you please change the sentences below with negative form

For example, Question: The Experts designed marketing information systems last year

Answer : The experts did not design marketing information system last year

1. International trade has done much to improve global conditions
2. Managers try to motivate employees to be efficient and productive
3. Foreign competition endangers domestic industries
4. A nation will become too dependent upon its foreign market
5. A graduate student uses a computer terminal to add new data to her research project
6. An operator has entered the October sales into the computer
7. Storage and warehousing of goods are one factor in the cost of production
8. A supervisor in a chemical plant should equip the workers with protective clothing
9. The technological development of computer hardware and software has affected the business around the world
10. Since 1950's the computer industry has increased tremendously

Data Base Management

A large collection of books owned by the local council is not public library. It only becomes one when, among other things, the books have been catalogued and cross-referenced so that they can be found easily and used for many purposes and by many readers. Similarly, a database is more than a collection of data. It has to be organized and integrated. It is also expected to be used by a number of users in different ways. In some companies the whole organization is modeled on a database, so that, in theory at least, users can find out many information about any aspect of the organization by making enquiries using the database.

In order to make this feasible, there needs to be a large piece of software which will handle the many access to the database. This software is the database management system (DBMS). The DBMS will store the data and the data relationship on storage devices. It must also provide an effective of the business, the data resource, is used effectively. Efficient data retrieval may be accomplished by computer programs written in conventional computer programming languages accessing the database. It can also be accomplished through the use of query language, such as SQL, or in other ways which are more suitable to people who are not computer experts.

Figure 8.4. represents a potential architecture for database system. It has three views of the database: external, conceptual, and internal views.

The external view is the view of the data as 'seen' by application programs and users. It will be a subset of the conceptual model, which is a global or organizational view of data. There may be a number of different users views, and different users and programs may share views.

In the diagram, two users share the same view (External View 2), but

their methods of accessing the data are different. This arrangement enables aspects of the database in which a user may not be interested or does not have rights of access to be hidden from that users. This reduces the complexity from the users' points of view. To enable this, there is a series of mappings or transformations between the external views and the conceptual view, which is handled by DBMS software.

The internal view of the data describes how and where the data stored. It describes the access path to the data storage and provides details of the data storage. Again there is a mapping between the conceptual and internal views. The latter will not be of direct interest to users, but will be of indirect interest in terms of speed of access and the general efficiency of database use. It will be of direct interest to the database administrator who is normally responsible, among other things, for the efficient organization and effective use of the database.

This is a series of mappings from the conceptual view (the overall data model) to the various external views (the subsets of the data to which applications or users have access) and to the internal view (the way in which the data are organized on computer storage devices). These mappings will be carried out by the database management system software.

The separation of different views of the data enables data independence, which is a crucial element in the database approach. This means that it is possible to change the conceptual view without changing the external views (and the application programs that use them). It is also possible to change the internal view without changing the conceptual and external views. In other words, data independence provides flexibility and efficiency.

A. Based on the reading text above, Please answer as the following questions below

1. Why is a database more than a collection of data?
2. How can users find out many information about any aspect of the organization?
3. What kind of software will you use to handle the many access to the database?
4. Where will the DBMS store the data and the data relationship?
5. What is SQL used for?
6. What does the internal view of the data describe?
7. What is database administrator usually responsible for?
8. What does data independence provide?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(executed, illustrates, important, via, discover, aims, kept, concealed)

1. Users can *find out* many information about any aspect of the organization by making enquiries using the database
2. They can be found easily and used for many *purposes* and by many readers
3. The DBMS will *store* the data and the data relationship on storage devices
4. The internal view of the data *describes* how and where the data stored
5. This arrangement enables aspects of the database in which a user may not be interested or does not have rights of access to be *hidden* from that users.

6. It can also be accomplished ***trough*** the use of query language, suchas SQL
7. These mappings will be ***carried out*** by the database management system software
8. The separation of different views of the data enables data independence, which is ***crucial*** element in the database approach.

C. Fill in the blanks with noun or verb forms. Please use yourdictionary if necessary

NOUN	VERB
1. Collection	-----
2. -----	Integrate
3. Information	-----
4. -----	Accomplish
5. -----	Reduce
6. Transformation	-----
7. -----	Direct
8. Administraton	-----
9. -----	Organize
10. Separation	-----

D. Would you please change sentences below with yes/no question form

For example, Question: The Experts designed marketing information systems last year

Answer: Did the experts design marketing information system last year?

1. Computers perform numerous common data processing task in business
2. Decision making is an essential part of the managerial process
3. Computers handle large amounts of data rapidly and efficiently
4. Products are stored in warehouse until they are shipped to wholesaler and retailer
5. A multinational corporation operates in a complex business environment
6. The development of multinational business is focusing on the world market
7. A successful marketing depends on the knowledge about consumers and their buying habit gained through market research
8. The computer programmer had an appropriate job because he didn't like to work with people
9. Factory representatives will distribute products to wholesalers and retailers
10. An annual report includes the sales figures of the company for the current fiscal year

Data Flow Diagramming (DFD)

The Data flow diagram (DFD) is fundamental to structured systems methodologies and was developed as an integrated part of those methodologies. However, the DFD has been adopted and adapted by a number of other methodologies, not all structured system type, including Multiview and ISAC. In these methodologies the DFD or similar is not the major technique of the methodology but is used in conjunction with other techniques in the analysis process. Like entity modeling and normalization, DFDs are an important technique in a variety of systems development methodology.

The DFD provides the key means of achieving one of the most important requirements of structured systems, that is, the notion of structure. The DFD enables a system to be partitioned (or structured) into independent units of a desirable size so that they, and thereby the system, can be more easily understood. In addition, information is graphical and concise. The graphical aspect means it can be used both as a static piece of documentation and as a communication tool, enabling communication at all levels: between analyst and user, analyst and designer, and analyst and analyst. The graphical nature of the DFD means that it can be explained more easily to users and also means a more concise document, as it is argued that a picture can more quickly convey meaning than traditional methods, such as textual narrative. The DFD also provides the ability to abstract to the level of detail required. Therefore, it is possible to examine a system in overview and at a detailed level, while maintaining the links and interfaces between the different levels.

The DFD provides the analyst with the ability to specify a system at the logical level. This means that it describes what a system will do, rather than how it will be done. Considerations of a physical and implementation nature are not usually depicted using data flow diagram, and it is possible for logical DFD to be mapped to a variety of different physical implementation. The benefit of this is that it separates the task of analysis (what is required) from design (how is it to be achieved). This separation means that the users can specify their requirements without any restrictions being imposed of a design nature, for example, the technology or the type of access method. There exists a logical and physical independence; the hardware can be changed or upgraded without changing the functions of the system. Alternatively, if as often happens functional change is required, the relevant part of the logical specification is changed and a new mapping to the physical system is designed. The change is thus effected at the logical level, which is the correct place, and the implementation of the change is agreed, and only then the necessary design changes are made. This improves and speeds up the maintenance process which, as we have seen, is a major time and resource-consuming activity.

The form of DFDs differs between the various proponents of structured systems analysis. The differences are relatively small and the basic concepts are the same. For example, the symbol used to represent a process differs. Gane and Sarson (1979) use a rectangle with rounded corners (a 'soft box') whereas many other authors use a circle. This means that superficially the DFDs look different but in practice the differences are relatively minor.

A logical DFD represents logical information, not the physical aspects. A data flow specifies what flows, for example, customer credit details. How it flows, for example, by carrier pigeon or via twisted copper wires, is immaterial and not represented in a logical DFD. A DFD is a geographical representation and is composed of four elements: The data flow; The processes; The data store and The source or sink (external entity).

A. Based on the reading text above, Please answer as the following questions below.

1. What has the DFD been adopted and adapted?
2. Are DFDs an important technique in a variety of systems development methodology?
3. What does the graphical aspect means?
4. Would you please explain the graphical nature of the DFD?
5. What does the DFD also provide?
6. Does the DFD provides the analyst with the ability to specify a system at the logical level?
7. What does the DFD describe?
8. Is possible for logical DFD to be mapped to a variety of different physical implementation? And what its benefit?
9. What a logical DFD represent?
10. What a data flow specify?

B. Please substitute appropriate terms for the italicized words insentence with the available words below

(advantage, permanent, execution, distinguishes, basic, essential, rational, stage)

1. The Data flow diagram (DFD) is *fundamental* to structured systems methodologies and was developed as an integrated part of those methodologies.
2. The DFD provides the key means of achieving one of the most *important* requirements of structured systems, that is, the notion of structure
3. The graphical aspect means it can be used both a *static* piece of documentation and as a communication tool, enabling communication at all levels

4. The DFD provides the analyst with the ability to specify a system at the **logical** level
5. The DFD also provides the ability to abstract to the **level** of detail required.
6. The **benefit** of this that it separates the task of analysis (what is required) from design (how is it to be achieved)
7. The **implementation** of the change are agreed, and only then the necessary design changes made
8. The form of DFDs **differs** between the various proponent of structured systems analysis

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

	NOUN	VERB
1.	-----	Develope
2.	-----	AdaptAdopt
3.	-----	
4.	Normanlization	-----
5.	-----	Explain
6.	-----	Depict
7.	Design	-----
8.	-----	Improve
9.	-----	Represent
10.	-----	Compose

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed marketing information systems last year

Answer : What did the experts design last year?

1. Computers function as useful aids in the analysis of data
2. Nations import goods that they lack or cannot produce as efficiently as possible
3. The computer program used for inventory control determines how much stock to reorder
4. Computers have become essential for day-to-day business transaction
5. Market researchers identify the target market for a particular product
6. The buying habit of consumers are influenced by promotion
7. Supervisors should strive for two-way communication with their employee
8. Financial information is essential for organizational decision making
9. The stock market is closely watched every day
10. The financial condition of a company is reflected in its financial statement

Web-Based Development

Web development is sometimes argued to be different to others forms of systems development. This argument was heard in the early days of developing systems of the web, from around 1995, because the focus was on the user interface and the multimedia nature of the web. A new breed of developers seemed to be required who were more like graphic designers than traditional developers or programmers. This changed over time as more complex web-based systems, particularly e-commerce systems, became the norm. These still required some traditional development attributes as they usually integration with existing and legacy information systems, a knowledge of various platforms and architectures, as well as high levels of robustness and security.

Web development involves users in symmetrically communication to exchange information and undertake tasks. This is, according to Holck (2003), a view of web information systems (WIS) as 'information system' rather than as information provider, advertisement, or community. Holck provides a discussion of whether web development is different from traditional development or not and concludes, perhaps not surprisingly, that it depends on who one defines a WIS.

One aspect that was different in the early days of web-based development of e-commerce systems was that eliciting requirements presented particular problems. Requirements were not well understood and often completely unknown because the web was so new. Further, there were no or few users, especially end-users might want, but there were few real users as yet. So how could you ask them what they wanted when you did not yet know who they were? As a result, new relationship had to be built with people and hopefully new customers found.

Frequently, requirements were only understood when a product or service was actually in the market-place after its launch. The market then responded by either using the website and undertaking transactions or not. Thus the feedback was provided through the use of the site. The website itself had to be adapted again and again over time. In the early days of web-based development it was wasteful often about providing the market with something, it did not matter very much what was provided but it was important to provide something and then evolve it rapidly in response to market perception and feedback. It had to be a 'build it, see it, try it, change it' approach.

However, over time as more experience was gained with web-based systems and e-commerce it became somewhat easier to contact customers. Focus groups from the marketing area were often used to help elicit and confirm requirements. Nevertheless, it remained, and still remains, a somewhat difficult and essentially 'trial and error' process.

A. Based on the reading text above, Please answer the following questions about Web-Based Development.

1. Why is Web development sometimes argued to be different to other forms of systems development?
2. What did a new breed of developers seem to be required?
3. What does web development involve?
4. Does Holck provide a discussion of web development?
5. How does the company build new relationships and new customers?
6. Does the web-based development provide the market with something?
7. How does the company communicate to the customers easier?
8. What were Focus Groups used for?

B. Please substitute appropriate terms for the italicized words insentence with the available words below

(merely, especially,obstacles, just, debated, connect, discovered, centre)

1. Web development is sometimes *argued* to be different to others forms of systems development
2. The focus was on the user interface and the multimedia nature of the web
3. This changed over time as more complex web-based systems, *particularly* e-commerce systems, became the norm
4. These still required some *traditional* development attributes
5. One aspect that was different in the early days of web-based development of e-commerce systems was that eliciting requirements presented particular *problems*.
6. As a result, new relationship had to be built with people and hopefully new customers *found*.
7. Frequently, requirements were *only* understood when a product or service was actually in the market-place after its launch
8. However, over time as more expensive was gained with web-based systems and e-commerce it became somewhat easier to *contact* customers.

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN

VERB

- | | |
|------------|----------|
| 1. Argue | ----- |
| 2. Require | ----- |
| 3. ----- | exchange |

4. ----- advertisement
5. Evolve -----
6. ----- perception
7. Adapted -----
8. Confirm -----

D. Would you please fill in the missing words on the sentences with the available words below

(promoting , exchange, performance , earning, insured, processor, consider, transported, pay, develop)

1. Companies commercial website is to inform about an idea or event
2. Social networking websites help people to personal information
3. When a company exports goods abroad there are many problems it must
4. Goods can be by sea or by air
5. The shipment must be against loss or damage in transit
6. The company must packaging charge
7. Every company must pay a proportion of its to the government in the form of tax
8. Another way of a new product is to place advertisements in magazines or newspapers
9. You can increase the functions or of a computer with an expansion card
10. My new computer has a very high speed

Decision Support Systems

A decision support system (DSS) is special-purpose information system designed to support organizational decision making. A DSS is designed to support the decision making related to a particular recurring problem in organization through the combination of hardware, software, data and procedures. DSSs are typically used by managerial employees to help them solve semistructured problems such as sales and resource forecasting, yet a DSS can be used to support decisions at virtually all levels of the organization. With a DSS, the manager uses decision analysis tool such as Microsoft Excel—the most commonly used DSS environment—to either analyze or create meaningful information to support the decision making related to nonroutine problems.

A DSS augments human decision- making performance and problem solving by enabling users to examine alternative solution to a problem via “what-if” analyses. A what-if analysis allows you to make hypothetical changes to the data associated with a problem (e.g., loan duration or interest rate) and observe how these changes influence the results. For example, a cash manager for a bank could examine what-if scenarios of the effect of various interest rates on cash availability. Results are displayed in both textual and graphical forms.

Architecture of a DSS like the architecture of all systems, a DSS consists of input, process, and output components. Within the process component, models and data are utilized. The DSS uses model to manipulate data. For example, if you have some historic sales data, you can use many different types of models to create a forecast of future sales. One technique is to take an average of the past sales. The formula you would use to calculate the average is the model. A more complicated

forecasting model might use time-series analysis or linear regression. See the table 7.7 for summary of the models used to support decision making in organizations.

Table 7.7 Common DSS Models for Specific Organizational Areas

AREA	Common DSS Models
Accounting	Cost analysis, discriminant analysis, break-even analysis, auditing, tax computation and analysis, depreciation methods and budgeting
Corporate Level	Corporate planning, venture analysis, mergers and acquisition
Finance	Discounted cash flow analysis, return on investment, buy or release, capital budgeting, bond refinancing, stock portfolio management, compound interest, after-tax yield, foreign exchange values
Marketing	Product demand forecasting, advertising strategy analysis, pricing strategies, market share analysis, sales growth, and sales performance
Human Resources	Labor negotiations, labor market analysis, personnel skills assessment, employee business expense, fringe benefit computations, payroll and deductions
Production	Product design, production scheduling, transportation analysis, product-mix, inventory level, quality control, plant location, material allocation, maintenance analysis, machine replacement, job assignment, material requirements planning
Management sciences	Linear programming, decision trees, simulation, project evaluation and planning, queuing, dynamic programming, network analysis
Statistics	Regression and correlation analysis, exponential smoothing, sampling, time-series analysis, hypothesis testing

Table 7.8 summarizes the characteristics of a DSS. Inputs are data and models. Processing supports the merging of data with models so that decision makers can examine alternative solution scenarios. Outputs are graphs and textual reports.

Table 7.8 Characteristics of a Decision Support System

Inputs	Data and models; data entry and data manipulation commands (via user interface)
Processing	Interactive processing of data and models; simulations, optimization, forecast
Outputs	Graph and textual reports; feedback to system operator (via user interface)
Typical Users	Midlevel managers (although a DSS could be used at any level of the organization)

A. Based on the reading text above, Please answer as the following questions below

1. What is meant by Decision Support System (DSS)?
2. How does DSS support the decision making?
3. What for does the manager use decision analysis tool such as Microsoft Excel?
4. Could DSS help the manager to solve the problem of sales and resources forecasting?
5. How does a Decision Support System (DSS) augment human decision-making performance and problem solving ?
6. What is a function of a what-if analysis? Please give an examples?
7. What does DSS consist of?
8. Does The DSS use model to manipulate data?
9. What is DSS model in marketing area used for?

10. What is Time-series analysis or linear regression used for?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(enlarges, influence, permits, exhibited, stage, count, predictions, built)

- 1. A decision support system (DSS) is special-purpose information system *designed* to support organizational decision making.
- 2. DSSs are typically used by managerial employees to help them solve semistructured problems such as sales and resource *forecasting*
- 3. A DSS can be used to support decisions at virtually all *levels* of the organization.
- 4. A DSS *augments* human decision- making performance and problem solving by enabling users to examine alternative solution to a problem via “what-if” analyses.
- 5. A what-if analysis *allows* you to make hyphothetical changes to the data associated with a problem
- 6. A cash manager for a bank could examine what-if scenarios of the *effect* of various interest rates on cash availability
- 7. Results are *displayed* in both textual and graphical forms
- 8. The formula you would use to *calculate* the average is the model.

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN

VERB

- | | |
|-----------------|-----------|
| 1. Decision | ----- |
| 2. Organization | ----- |
| 3. ----- | associate |
| 4. ----- | observe |
| 5. ----- | calculate |

6. Negotiations -----
7. Replacement -----
8. Manipulation -----

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed marketing information systems last year

Answer: What did the experts design last year?

1. The Director informed his employee that they would all receive a 5% pay increase last week
2. The computer department has standardized its procedure for storing and retrieving data
3. When a country imports goods, it spends its currency abroad
4. The company always takes into consideration the profit
5. The managers of big company will arrange to meet for business gathering next week
6. The companies can exhibit samples of their product in trade fair
7. Creating an economic surplus or profit is a primary goal of business activity
8. The computer programmer had an appropriate job because he didn't like to work with people
9. Anti-virus software can scan your computer for viruses
10. Laptops are powered by batteries

How Electronic Data Interchange

Electronic Data Interchange (EDI) is the forefather of modern Business to Business (B2B) and continues to maintain a stronghold in B2B computing. Forrester, an independent technology research company, estimates that U.S. companies continue to buy hundreds of billions of dollars worth of goods and services electronically each year via EDI networks and that EDI will continue to be the most widely used standard for B2B activity for several more years (Vollmer, 2003). EDI refers to the digital, or electronic, transmission of business documents and related data between organizations via telecommunications networks. More specifically, these telecommunications networks commonly take the form of value-added networks (VANs), which provide a direct link over which data can be transmitted. VANs are telephone communication lines that are leased from telecommunications providers, creating a secure, dedicated circuit between a company and its business partners.

EDI Streamlines Business Processes. Companies use EDI to exchange a wide variety of business documents, including purchase orders, invoices, shipping manifests, delivery schedules, and electronic payments. The exchange of data in EDI follows a set of formatting standards that specify how information is transmitted electronically. EDI began in the mid-1960s as an initiative to reduce paperwork. Although EDI has never totally eliminated paper, it does help reduce the number of times business documents need to be handled. EDI provides many efficiencies because it helps to streamline business processes. By reducing the number of times documents need to be handled, business partners can exchange data

faster and with fewer errors. EDI shortens the time spend producing and delivering business documents from days to seconds, allowing companies to process and update information faster. Having up-to-date information at the company's disposal allows it to make more accurate forecasts and decisions.

EDI Reduces Errors. EDI helps to reduce errors by providing a single point of entry. For example, in a paper-based environment, a supplier must enter an invoice into its own system, print it, and send the invoice via surface mail to its customer. When the customer receives the invoice, someone must reenter it into the customer's system so that the invoice can be processed. In this situation, errors can occur the original point of entry in the supplier's system as well as the point of re-entry in the customer's system. EDI eliminates dual entry. By using EDI, the supplier enters the invoice into its system and transmits the invoice to the customer electronically. The customer's computer automatically receives the invoice via EDI and updates the system accordingly, eliminating reentry and potential source of error.

EDI enabled RJR Nabisco to reduce the cost of processing a paper-based purchase order from \$70 to less than \$1. However, the cost associated with EDI-based systems has limited its usefulness to large companies. EDI is costly to implement and maintain. Software and hardware required to enable EDI can cost upward of \$100,000, and monthly telecommunications charges associated with VANs can approach several thousand dollars, depending on the number of communication lines necessary to connect the company with its business partners.

Large enterprises can afford the enormous costs associated with EDI. They can justify the costs since EDI has created such dramatic efficiencies for their organizations. Yet EDI has proved to be beyond the reach of smaller enterprises. Before the introduction of internet and web, a viable, economical alternative to EDI was unavailable, preventing small to mid-sized firms from participating in B2B markets. To make matters worse, some large corporations and government agencies had gone so far as to refuse business to companies that were not EDI-enabled. What

small and mid-sized companies needed was a technology that would level the playing field, making B2B affordable and accessible. This leads to the next generation of internet-based B2B architecture

A. Based on the reading text above, Please answer as the following questions below

1. Which one is earlier Electronic Data Interchange (EDI) and Business to Business (B2B)? Please give your reason?
2. What does an Independent Technology Research Company estimate?
3. How do U.S. companies continue to buy hundreds of billions of dollars worth of goods and services electronically each year?
4. What does EDI refer to?
5. What does The exchange of data in EDI follow?
6. When did the EDI begin?
7. Does EDI help to reduce the number of times business documents need to be handled?
8. Why does EDI provide many efficiencies?
9. Does EDI help to reduce errors by providing a single point of entry? Please give an example?
10. Why does EDI eliminate dual entry?
11. How much did EDI enable RJR Nabisco to reduce the cost of processing a paper-based purchase order?
12. How can Large enterprises afford the enormous costs associated with EDI?

B. Please substitute appropriate terms italicized words in sentence with the available words below

(dispatch, rent, huge, reduce, accept, occur, medium, decrease, through, keep)

1. Electronic Data Iterchange (EDI) is the forefather of modern Business to Business (B2B) and continues to ***maintain*** a stronghold in B2B computing.
2. EDI refers to the digital, or electronic, transmission of business documents and related data between organizations ***via*** telecommunications networks.
3. VANs are telephone communication lines that are ***leased*** from telecommunications providers, creating a secure, dedicated circuit between a company and its business partners.
4. Companies use EDI to exchange a wide variety of business documents, including purchase orders, invoices, shipping manifests, ***delivery*** schedules, and electronic payments.
5. Although EDI has never totally eliminated paper, it does help ***reduce*** the number of times business documents need to be handled
6. EDI ***shortens*** the time spend producing and delivering business documents from days to seconds, allowing companies to process and update information faster.
7. Errors can ***occur*** the original point of entry in the supplier's system as well as the point of re-entry in the customer's system.
8. The customer's computer automatically ***receives*** the invoice via EDI and updates the system accordingly, eliminating reentry and potential source of error
9. Large enterprises can afford the ***enormous*** costs associated with EDI
10. What small and ***midsized*** companies needed was a technology that would level the playing field, making B2B affordable and accessible

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN	VERB
1. -----	maintain
2. -----	estimates
3. Payment	-----
4. -----	reduce
5. -----	eliminate
6. -----	associate
7. communication	-----
8. -----	connect
9. -----	justify
10. Introduction	-----

D. Would you please change the sentences below with negative forms

For example, Question: The Experts designed marketing information systems last year

Answer: The experts did not design marketing information system last year

1. Decision-making is an essential part of managerial process
2. The manager offers an industry analysis framework of competitive strategy to help identify the competitive forces
3. The framework can be helpful in focusing the role of information systems to improve competitive positioning
4. Customers had access to the order distribution systems
5. The digital economy includes electronic commerce or e-commerce to conduct the commercial transaction electronically

6. The e-commerce may involve some or all parts of the transaction process relating to pre-sale, execution, and after sales activities
7. Competition can come from anywhere in this information technology era
8. The company focuses on strategic planning and alignment of information systems
9. Managers may also set standards for information systems
10. The marketing manager always considers the customers' satisfaction

Intelligent System

Artificial Intelligence (AI) is the science of enabling information—software, hardware, networks, and so on—to stimulate, such as reasoning and learning, as well as gaining sensing capabilities, such as seeing, hearing, walking, talking, and feeling. AI has had a strong connection applications to science fiction writers where AI enabled technologies aid humans (e.g., Mr. Data in *Star Trek: The Next Generation*) or attempt world domination (e.g., *The Matrix*). The current reality of AI is that lagging far behind the imagination of most science fiction writers, but, nevertheless, great strides have been made. Most notably, the development of several types of intelligent systems are having great successes for a variety of applications. An intelligent system—comprised of sensors, software, and computers embedded in machines and devices—emulates and enhances human capabilities. Intelligent systems are having tremendous impact in a variety of areas, including banking and financial management, medicine, engineering, and the military. Three types of intelligent systems—expert systems, neural networks, and intelligent agents—are particularly relevant in business contexts.

An expert system (ES) is a type of intelligent system that uses reasoning methods based on knowledge about a specific problem domain in order to manipulating knowledge (understanding acquired through experience and extensive learning) rather than simply manipulating information. Human knowledge can be represented in an ES by facts and rules about a problem coded in a form that can be manipulated by a computer. When you use an ES, the system asks you a series of questions, much as human expert would. It continues to ask questions, and each new question is determined by your response to the preceding question. The ES matches

the responses with the defined facts and rules until the response point the system to a solution. A rule is a way of encoding knowledge, such as recommendation, after collecting information from the user. Rules are typically expressed using an “if-then” format. For example, a rule in an expert system for assisting with decisions related to the approval of automobile loans for individuals could be represented as follows: if personal income is \$50,000 or more, then approve the loan.

Given that most experts make decisions with limited information as well as use general categories of information when making judgments, researchers have developed fuzzy logic to broaden the capabilities of ESs and other intelligent systems. Specifically, fuzzy logic allows ES rules to be represented using approximations or subjective values in order to handle situations where information about a problem is incomplete. For example, a loan officer when assessing a customer’s loan application may generally categorize some of the customer’s financial information, such as income and debt level, as high, moderate, or low rather than using precise amount. In addition to numerous business applications, fuzzy logic is used to better control antilock braking systems and household appliances as well as when making medical diagnoses or filtering offensive language in chat rooms.

The most difficult part of building an ES is acquiring the knowledge from the expert and gathering and compiling it into a consistent and complete form capable of making recommendations. ESs are used when expertise for a particular problem is rare or expensive, such as in the case of a complex machine repair or medical diagnosis. Using fuzzy logic, ESs are also utilized when knowledge about a problem is incomplete.

The emergence of the Internet and Web has resulted in the globalization of customer and supplier networks, opening up new opportunities and methods to conduct business. Customers have an increasing number of options available to them, so they are demanding more sophisticated products that are customized to their unique needs. They also expect a higher level of customer service. If companies cannot keep their customers satisfied, the customers will not hesitate to do a business with

a competitor. Companies need to provide quality customer service and develop products faster and more efficiently to compete in global markets. Enterprise systems can be extended to streamline communications with customers and suppliers. Rather than focusing only on internal operations, these systems can also focus on business activities that occur outside organizational boundaries. Enterprise systems can help companies find innovative ways to increase accurate on-time shipments, avoid (or at least anticipate) surprises, minimize costs, and ultimately increase customer satisfaction and the overall profitability of the company.

Enterprise systems come in a variety of shapes and sizes, each providing a unique set of feature and functionality. When deciding to implement enterprise solutions, managers need to be aware of a number of issues. One of the most important involves selecting and implementing applications that meet the requirements of the business as well as of its customers and suppliers.

A. Based on the reading text above, Please answer as the following questions below

1. What is meant by an Artificial Intelligence (AI) ?
2. Has AI had a strong connection to science fiction writers?
3. What kinds of areas are Intelligent systems having tremendous impact?
4. What are an intelligent system comprised of?
5. Would you please mention three types of intelligent systems particularly relevant in business contexts?
6. Can't human knowledge be represented in an ES by facts and rules about a problem coded in a form that can be manipulated by a computer?
7. What do most experts do to make decisions?
8. What is the function of fuzzy logic in business application?
9. What happen If companies cannot keep their customers satisfied?
10. What can enterprise systems help companies?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(handicap, scare, lengthened, increase, carry out, appearance, links, doubt, big, up-to-date)

1. Intelligent systems are having **tremendous** impact in a variety of areas, including banking and financial management, medicine, engineering, and the military.
2. The **current** reality of AI is that lagging far behind the imagination of most science fiction writers, but, nevertheless, great strides have been made.
3. An intelligent system—comprised of sensors, software, and computers embedded in machines and devices—emulates and **enhances** human capabilities.
4. Human knowledge can be represented in an ES by facts and rules about a problem coded in a form that can be manipulated by a computer.
5. The ES **matches** the responses with the defined facts and rules until the response point the system to a solution.
6. ESs are used when expertise for particular problem is **rare** or expensive, such as in the case of a complex machine repair or medical diagnosis.
7. **The emergence** of the Internet and Web has resulted in the globalization of customer and supplier networks, opening up new opportunities and mehdods to conduct business.
8. If companies cannot keep their customers satisfied, the customers will not **hesitate** to do a business with a competitor.
9. Enterprise systems can be **extended** to streamline communications with customers and suppliers.
10. When deciding to **implement** enterprise solutions, managers need to be aware of a number of issues

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN	VERB
1. -----	stimulate
2. Imagination	-----
3. Applications	-----
4. -----	enhance
5. Recommendation	-----
6. Diagnosis	-----
7. Globalization	-----
8. -----	occur
9. -----	extende
10. Requirement	-----

D. Would you please change the sentences below with yes/no question form

For example, Question: The Experts designed marketing information systems last year

Answer: The experts didn't design marketing information systems last year

1. New information systems are likely to affect the people and culture of the organization
2. The files can change without necessarily altering the user views of the data
3. Early database experience did not always bring about the expected flexibility of computer applications
4. The concept of object orientation emerged simultaneously in a number of different fields 1970s

5. The data model can reflect a variety of different views of the data
6. The basic object oriented concepts are quite different to traditional one in systems analysis
7. Data analysis concentrates on understanding and documenting data
8. Sometimes the term business intelligence is used to describe the successful use of data for an organization
9. The data provides a complete picture of the customers and this information is used to provide a better service
10. The data is normally collected from heterogeneous transaction systems

What is The Potential of Computer Intelligence in Mass Transit?

“Just 15 years ago, I was spending a lot of my time educating the people of microprocessors,” said Linda Sue Boehmer, a transportation consultant specializing in rail systems. “Now, microprocessor-controlled systems are everywhere. The next step is getting the maximum benefit from that built-in intelligence.”

For years, “I had a vision of using a built-in intelligence for diagnosis,” Boehmer said. “One of the biggest problems for the people who have to take care of mass transportation systems is fixing them. You hate to have a whole trainload of people stalled in a dark tunnel in the New York City subway.” Because microprocessor now control everything from the optimal operation of motors to optimal comfort for passengers, however, they also “know” which parts of the systems are doing their job—and which ones are about to quit. Thus, “one you have all that processing power, if something goes wrong or is about to go wrong, you can flag it” so a human operator can do something about it, said Boehmer.

Moreover, since the many intelligent systems can talk to one another via various networks, “you can collect information about any of the problems the systems are having,” she continued. “You have the built-in diagnostic capabilities of each intelligent systems being networked and available in a centralized place.” The result? “One newer train cars, there is a central receptacle where you can plug in (a laptop computer), just like in the movie Star Wars, where R2D2 plugged in and was able to find the heroes in one of the trash compactors,” Boehmer declared.

"We are just barely scratching the surface of that functionality," which to her, as a designer and specification writer, is very exciting. In her view, the next challenge is linking onboard control intelligence, diagnosis capability, and test equipment with documentation to present technical information "in a way that can be (readily) assimilated by the people who have the care and feeding of that systems."

She envisions the full integration of technical manuals and training techniques into the transportation system's information backbone, to provide the necessary information, instantaneously, in the most effective forms to the people who need it. "Traditionally, the maintenance personnel have been provided with written manuals and training classes. But if you want to make an engineer cranky, just say, 'Now that you have designed this great widget, you have to write the manual for it and provide the training to the guy who is going to take care of it for 20 years.' "The traditional result, she said, has been manuals that are cumbersome to cross-reference and use, and training classes that are variable in quality and completeness, both of which could make mastery of the information tedious and slow.

Increasingly, however, documentation is automated, she said. "Now maintenance manuals are commonly provided on CD-ROM. The obvious next step is to take the World Wide Web and just hyperlink it" to the system's database so the user doesn't have to carry even the Cd-ROM.

The next frontier, she speculated, is "systems that will be, to an extent, self-repairing." When a problem is discovered by the train's diagnostic systems, it could be radioed to a human operator or artificial intelligence at a wayside location; the wayside, in turn, could suggest several options for fixing the problem that the onboard technology can actually implement autonomously. That's the exciting thing I can envision."

A. Based on the reading text above, Please answer as the following questions below

1. When was she spending a lot of her time educating the people of microprocessors?
2. What is Linda's profession?
3. Could you find a microprocessor at any place?
4. What is one of the biggest problems for the people who have to take care of mass transportation systems?
5. What can microprocessor control?
6. How can the many intelligent systems talk to?
7. What is next challenge of intelligent systems?
8. What does she envision?
9. Are maintenance manuals commonly provided on CD-ROM?
10. What did she speculate the next frontier?

B. Please fill in the missing words on the sentence with the available words below

(scarcely, execute, dream, constructed, utilizing, gather, greatest, advantage)

1. I had a vision of **using** a built-in intelligence for diagnosis
2. The next step is getting the maximum **benefit** from that built-in intelligence."
3. you can **collect** information about any of the problems the systems are having
4. One of the **biggest** problems for the people who have to take care of mass transportation systems is fixing them
5. We are just **barely** scratching the surface of that functionality
6. She **envisions** the full integration of technical manuals and training techniques into the transportation system's information backbone

7. Now that you have ***designed*** this great widget
8. technology can actually ***implement*** autonomously.

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN

VERB

- | | |
|----------------|------------|
| 1. Education | ----- |
| 2. ----- | specialize |
| 3. Operation | ----- |
| 4. ----- | collect |
| 5. ----- | assimilate |
| 6. Integration | ----- |
| 7. ----- | use |
| 8. ----- | speculate |

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed **marketing information systems** last year

Answer: What did the experts design last year?

1. The data needed will normally be **too complex and too large** for manual analysis
2. The manager presented a report on **the home market** yesterday
3. She will go to the trade fair **next week**
4. The bank usually gives **an export credit**
5. The foreign company has expanded its factory **around the world**
6. **The investor** has got the information for feasibility study

7. Production manager tried **to reduce the production cost** last year
8. The consumers always think **the price** before buying the product
9. My company has received export orders **from many countries**
10. When a country imports goods, **it spends its currency abroad**

When Computer Intelligence Exceeds Human Intelligence, What Will It Mean To Be Human?

“Once computer intelligence matches human intelligence, it will quickly soar past it,” said Ray Kurzweil, an artificial intelligence pioneer who is chairman and CEO of Kurzweil Technologies Inc., in Wellesley, Massachusetts. One reason he cites is “the inherent speed of electronic circuits, which are 10 million times faster than human neurons.” Another reason is the ability of computer-based intelligence to transfer its knowledge and learning rapidly to another machine, something that humans can do only very slowly.

From observing current trends and rates of change in hardware and software, Kurzweil projects that “by 2029, computer intelligence will be more powerful than the human brain”—well within his own anticipated lifetime. At that point, he feels, one of the major difficulties facing people will be “getting used to the presence of nonbiological entities that are more intelligent than humans.”

By intelligence, kurzweil includes “all the diverse and subtle ways in which humans are intelligent—including musical aptitude, creativity, physically moving through the world, and even recognizing and responding to emotion,” he said. “Will they be conscious?” he asked. “They will seem to be conscious. They will claim to be conscious. And they will be very convincing” to any objective test.

But, he pointed out, there is about objective measurements and logical implications,” he explained. “But the very nature of objectivity is that you can’t measure subjective experience—you can only measure correlates of it, such as behavior. You can’t penetrate the subjective experience of another entity.”

As a result, he continued, “we simply assume other humans are conscious. But there is not a consensus in human about the consciousness of other higher non-human living beings that are known to be intelligent,”—such as primates, elephants, dolphins, and whales—and their ability to use tools and to possess sophisticated means of communication. “I feel my cat is conscious. Others say ‘no, it’s just a dumb beast operating by reflex’. Inability to know for sure is at the foundation of much misunderstanding and conflict,” he said, pointing to entire races of people and other species that have been oppressed or exterminated by conquering invaders and settlers making similar arguments.

The questions of consciousness and humanity is further complicated, he said, because in 20 or 30 years ‘there is no longer going to be a sharp distinction between humans and machines,” he said. “ We will put intelligent entities inside our bodies and brains to communicate with our environment.” Blind persons, for example, may have a completely artificial visual cortex in their brains, just as some deaf people today have cochlear implants for doing auditory processing, and some parkinson’s disease patients have had neural implants installed in their brains to restore function, Before the end of the twenty-first century, he projected, “we’ll be able to replace portions or even all of the brain.” Even people without disabilities may elect to have neural transplants to augment their capabilities, he added—to the point where, in some individuals, “the balance between human and machine is dominated by nonbiological intelligence.”

Moreover, by the end of the century, there may even be individuals “with biological origins who are in nonbiological substrate,” Kurzweil speculated. There currently exist invasive ways of scanning and mapping neurons in a brain and their interconnections, although not yet with

sufficient speed to scan an entire brains. Noninvasive techniques for doing the same thing are more difficult, but progress is accelerating, he said. "Some people might choose to scan their loved ones into a computer so they can visit with them after their carbon-based body has died," Kurzweil suggested. "Or some people might be motivated for their own longevity to scan their own brains" into a nonbiological entity. "Such an entity would have all your memories, your mannerisms, your creativity, your personality. But would it be you?" he said. "Would it be conscious?"

Would it be entitled to all civil rights?

Would dispensing with it be considered murder? Would it be human?

Although Kurzweil did not answer directly, he concludes that "its requirements that one must demonstrate one's biological basis to counted is unimportant.

A. Based on the reading text above, Please answer as the following questions below

1. What happen if once computer intelligence matche human intelligence?
2. Is Ray Kuzweil an artificial intelligence pioneer?
3. Would you pleaee compare the ability of computer-based intelligence and humans?
4. When will computer intelligence be more powerful than the human brain?
5. What does kurzweil includes by intelligence?
6. Why is The questions of consciousness and humanity further complicated?
7. When will we be able to replace portions or even all of the brain?
8. Is the balance between human and machine is dominated by nonbiological intelligence?

B. Please substitute appropriate terms for the italicized words in sentence with available words below

(choose, infers, quote, quickening, assess, main, differentiations, defeating)

- 1. One reason he *cites* is “the inherent speed of electronic circuits, which are 10 million times faster than human neurons.”
- 2. The *major* difficulties facing people will be “getting used to the presence of nonbiological entities that are more intelligent than humans.”
- 3. But the very nature of objectivity is that you can’t *measure* subjective experience—you can only measure correlates of it, such as behavior.
- 4. Other species that have been oppressed or exterminated by *conquering* invaders and settlers making similar arguments.
- 5. There is no longer going to be a sharp *distinction* between humans and machines
- 6. Even people without disabilities may *elect* to have neural transplants to augment their capabilities
- 7. Noninvasive techniques for doing the same thing are more difficult, but progress is *accelerating*
- 8. he *concludes* that “its requirements that one must demonstrate one’s biological basis to counted is unimportant.

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN VERB

- 1. Chairman -----
- 2. ----- observe

3. ----- anticipate
4. Measurement -----
5. ----- penetrate
6. ----- complicate
7. ----- dominate
8. ----- demonstrate

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed marketing information systems last year

Answer: What did the experts design last year?

1. The exchange rate can affect the price of exported products
2. Trade restrictions are enforced by the the Customs and Excise department
3. Traders may require a license to import goods
4. The warehouse charges are called storage costs
5. The buyer signs the delivery note which is then a receipt for the seller to prove the buyer received the goods
6. The aim of publicity is to interest the buyers
7. The trend of sale is declining continuously because of poor quality
8. An accountant makes an accurate determination the expenses of a company
9. Businesses compete each other in the market place
10. Market researchers identify the target market for a particular product every month

Technology in Service of Humankind

“Dramatic changes come when multiple technologies merge to meet human needs,” Said Arno A. Pinzes, former vice president of research at AT & T Bell Laboratories. From the vantage point of his various managerial positions in encouraging research over several decades at Bell at Bell Labs (later Lucent Technologies), he came to the realization that combinations of existing technologies to meet new needs are what will be “the big driver of the next century.”

The World Wide Web, for example, “happened because for the first time personal computer had enough memory and processing power that people could put bit-mapped displays in place so users could look at images instead of text. At the same time, communications networking was also good enough to support the needed data rates.” And, of course, the cost of all the technology was cheap enough to be widespread throughout the populace.

“Some of it looks obvious in retrospect, and also looks simple in prospect.” Penzias said. “But picking the right combination takes intuition. It has to be a combination that meets a market need. That’s the hard part: be seeing what it is that people still need that they don’t have.

“Now, to many engineers, combining exiting technologies doesn’t look ‘techie’ enough. They undervalue marketing—the ability to pick the right combination—because they confuse it with sales. But engineers have to remember that a big part of all technological advance is understanding market needs, because otherwise they will put the wrong things together,” he said, and perhaps end up with a market flop. What’s most tricky about

marketing, he's found, is that" customers themselves often don't know what they want."

But engineers can gain a sense of potential markets by listening to people and observing them closely—and even watching and observing themselves, Penzias advised. "What are the things that annoy you?" he asked. "What are the things that make you say, 'I wish they would...' Then think about becoming the 'they.'"

To take just one example, in Penzias' view, "transportation will be huge win" in this type of combinatorial thinking. "I am firmly convinced that within 10 or 20 years, there will be an enormous renaissance in public transportation. There is no place for continued growth in private automobiles." Even in U.S. cities such as Boston, Los Angeles, or New York City, where rush-hour driving is an exercise in tedium and frustration, "we are spoiled compared to Sao Paulo or Bangkok," Penzias asserted. "We don't know what traffic jams are—or how bad air pollution can be, as it is in cities like Beijing."

In Penzias' view, with home pagers that would alert each regular limousine-quality public transportation could increase its attractiveness enough to draw significant ridership—complete passenger when the bus is about to reach his or her stop. Global Positioning System (GPS) input to routing maps could alert the driver to traffic jams ahead and could plot out a suggested alternative route—technology already commercially available from at least one high-end auto maker. It would even be possible for people to have a business meeting on the way to work, he noted. "These are simple things we could do today," he said. Ultimately, a local cab company might "use as many MIPS (million instructions per second) as an international airline."

A. Based on the reading text above, Please answer as the following questions below

1. What will happen when multiple technologies merge to meet human needs?
2. What is Arno A. Pinzes ?
3. What does “the big driver of the next century” mean?
4. What is the function of communications networking?
5. Why was the cost of all the technology cheap enough to be widespread throughout the populace?
6. What have engineers to remember that a big part of all technological advance?
7. How can engineers gain a sense of potential markets?
8. When will there be an enormous renaissance in public transportation?
9. What could limousine-quality public transportation increase?
10. What is the function of Global Positioning System (GPS)?

B. Please fill in the missing words on the sentence with the available words below

(annoy, convinced, meet, gain, enough, look at, enormous, needs)

1. Dramatic changes come when multiple technologies merge to human needs
2. Users could.....images instead of text
3. Engineers have to remember that a big part of all technological advance is understanding market
4. There will be anrenaissance in public transportation.
5. What are the things that.....you?
6. Engineers can a sense of potential markets by listening to people and observing them closely

7. I am firmly that within 10 or 20 years, there will be an enormous renaissance in public transportation.
8. Limousine-quality public transportation could increase its attractiveness.....to draw significant ridership

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN	VERB
1. -----	encourage
2. Realization	-----
3. Communication	-----
4. Combination	-----
5. Growth	-----
6. Frustration	-----
7. -----	compare
8. -----	suggest

D. Would you please change the sentences below with negative forms

For example, Question: The Experts designed marketing information

Answer: The Experts did not design marketing information systems last year

1. Generally a nation specializes in certain products
2. Multinational corporations have grown rapidly since 1945
3. The computer plays a vital role in the business today

4. There are two main elements of any computer system—hardware and software
5. The chief executive of IBM advised the company to invest money in developing computer
6. The manager foresaw a limited market for new product last year
7. Programmers must be familiar with the computer language used in each program
8. The first business application of computer system was made for the processing of payroll
9. Computers have a virtually unlimited capacity for processing business data
10. Computers can process information more effectively and efficiently

Communication

Communication is the dominant vision for the twenty-first century, as expressed by many of the industry's practitioners. To that might be added "any type", for the ultimate vision is that of a wireless handheld terminal that a person would carry everywhere, and which is capable of receiving everything from phone calls to e-mail to television programming to electronic books, and can allow its users two-way internet access.

To make that vision reality, many businesses that have been traditionally regarded as separate media have been getting their hands into one another's technologies and markets over the last decade. Wireline telephone companies are buying up or partnering with cable television companies and wireless communication companies to offer TV and Web services over coaxial cable, optical fibers, and wireless channels. Cable TV companies and internet service providers are competing with each other and the traditional telephone companies to offer voice telephone as well as Web access. Magazine publishers are experimenting with "Webzines" while book publishers and retailers are investing in manufacturers of electronic book (e-book) reader devices and services that download e-books through the internet. And every traditional communications industry—telephony, television, radio, and publishing—is looking over both shoulders at the encroachment of all the aggressive broadband competitors, nervous that something might be gaining on it.

What form those technologies will ultimately take and which industries will dominate communications in the twenty-first century, however, are up for grabs. "people talk about 'convergence' as if communications and computing are coming together into a center," remarked Bennet Z. Kobb, president of New Signals Press in Airlington, Virginia. Kobb, a veteran

observer of wireless communications and U.S. Federal Communication Commission (FCC) rulings for technical publication, is co-founder of the Wireless Information Networks Forum, a wireless-communications industry trade group. "I see it as businesses spashing around into each other's former territories."

No one, however, doubts that the internet is going to be the primary driver. "The growth of Internet traffic in the long-distance arena is presently doubling about every 12 months while voice traffic is increasing around 10 percent per year," observed Tingye Li. Li, a communication consultant Boulder, Colorado, spent more than four decades at AT&T Bell Laboratories (and, in the last two years before his retirement in 1998, at AT&T Laboratories-Research). "We expect that as soon as 2001 or 2002, data traffic will overtake voice traffic on long-distance trunks"—and then keep on accelerating, both in developed and developing nations.

In other words, "instead of a voice-based telephone network, we are moving to a data-based network," said Rod C. Alferness, chief technical officer for the optical networking group at Lucent Technologies Inc. in Holmdel, New Jersey. Moreover, the explosive demand for internet access is "coming at the same time as the potential for an enormous increase in bandwidth" on optical fibers.

Probably within the twenty-first century's first decade, "we will reach a point where all communications traffic is packet-switched, although packets associated with real-time services, such as voice, may be singled out for special handling," added A. Robert Calderbank, vice president of Information Sciences Research at AT&T Laboratories in Florham Park, New Jersey. And, in his view, all this data will not be carried out only by optical fibers: "What's going to transform (local access) communications in the twenty-first century is wireless data."

A. Based on the reading text above, Please answer as the following questions below

1. Who said that Communication is the dominant vision for the twenty-first century?
2. How to make the vision into reality?
3. What for are Wireline telephone companies buying up or partnering with cable television companies and wireless communication companies?
4. What are the cable TV companies and internet service providers?
5. When will Industries dominate communications?
6. What does the statement of "I see it as businesses spashing around into each other's former territories" mean?
7. How is The growth of Internet traffic in the long-distance arena?
8. Will traffic overtake voice traffic on long-distance trunks"—and then keep on accelerating, both in developed and developing nations?
9. What did Rod C. Alferness, chief technical officer for the optical networking group at Lucent Technologies Inc. in Holmdel, New Jersey say?
10. When will we reach a point where all communications traffic is packet-switched?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(enhancing, discuss, merely, development, hesitates, main, viewed, integrating with)

1. For the *ultimate* vision is that of a wireless handheld terminal that a person would carry everywhere
2. Many businesses that have been traditionally *regarded* as separate media have been getting their hands into one another's technologies and markets over the last decade

3. People **talk about** 'convergence' as if communications and computing are coming together into a center
4. Wireline telephone companies are buying up or **partnering with** cable television companies and wireless communication companies
5. No one, however, **doubts** that the internet is going to be the primary driver
6. Voice traffic is **increasing** around 10 percent per year
7. The **growth** of Internet traffic in the long-distance arena is presently doubling about every 12 months
8. All this data will not be carried out **only** by optical fibers

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN	VERB
1. -----	Express
2. Market	-----
3. -----	compete
4. Publication	-----
5. Growth	-----
6. Retirement	-----
7. Accelerating	-----
8. Explosion	-----

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed marketing information systems last year

Answer: What did the experts design last year?

1. Information technology makes manager more productive and increases the number of employees who can report to a single manager
2. Computers have become an integral part of day-to-day business transaction
3. Products are kept in warehouse until they are shipped to wholesalers and retailers
4. Computer functions as essential tools in problem solving
5. Information technology often provides manager with new real time information
6. The rapid change in the marketplace have necessitated an acceleration of the product development process
7. The product element of marketing refers to the good or service that a company wants to sell
8. A company will consider the price to charge its product
9. Wholesaler generally sells large quantities of product to retailers
10. The communication about the product can take place between buyer and seller

How Will Information Technology Transform Global Culture?

“I’m not clairvoyant, but one thing is certain: communication services—the internet, the telephone, television, and other information technologies—will force cultural changes around the world,” stated Donald R. Scifres, CEO, president, and chairman of the board of SDL Inc. in San Jose, California. Scifres and his company have pioneered commercial developments in high-power semiconductor optoelectronics and laser technology for optical communication.

“The combination of computers and communications becoming less expensive and the internet becoming more pervasive will create lessened differentiation among people around the world. Information technologies will make it possible for people to get educational degrees in every country and to keep up-to speed on technical trends, just by getting on computer, instead of having to live in the right country,” he said.

Information is very powerful. Part of the reason the former Soviet Union dissolved is that information technology made it impossible any longer for thoughts and ideas to be controlled by political leadership. Technology allowed the ideas to spread. Even though China and other countries may attempt to control access, that will be difficult to do, because people in those nations will want more rights, just in the former Soviet did.

“Will information technologies lead to a common global language and cultural values, with all that Western materialism implies?” Scifres asked. “That’s an interesting thought—the Internet is tending to promote

English as common language because so far the Internet is largely in English.

“But it is not necessarily good for the world to have one common culture, language, and financial structure. The concerns of those who fear the loss of diversity and the death of unique cultures and values and spiritual security are well-founded. We’ve already seen cultural backlash against such as homogenization in Canada (Quebec) and France.

“Moreover, technology does not always mean a better life for people,” he cautioned. “For example, it is certain that the pollution in China resulting from increased demand for more automobiles and infrastructure technologies will be significant problem of global proportions.”

A. Based on the reading text above, Please answer as the following questions below.

1. What will force cultural changes around the world ?
2. Who have pioneered commercial developments in hig-power semiconductor optoelectronics and laser technology for optical communication ?
3. Will Information technologies make it possible for people to get educational degrees in every country ? and why ?
4. Why is Information very powerful ? Please give examples?
5. Does internet promote English as common language ? Why?
6. Will the country be difficult or easy to control the access of internet ? please give your reason?
7. Does technology always bring a better life ? Why?
8. Will infrastructure technologies be significant problem of global proportions? Why?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(essential, manage, mostly, push, augment, increase, try, only)

1. communication services—the internet, the telephone, television, and other information technologies—will *force* cultural changes around the world
2. Technology allowed the ideas to *spread*
3. Even though China and other countries may *attempt* to control access
4. Will information technologies *lead* to a common global language and cultural values, with all that Western materialism implies?
5. to promote English as common language because so far the Internet is *largely* in English.
6. The Internet is tending to *promote* English as common language
7. People in those nations will want more rights, *just* in the former Soviet did.
8. infrastructure technologies will be *significant* problem of global proportions

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN

VERB

- | | |
|--------------------|--------|
| 1. Communication | ----- |
| 2. Information | ----- |
| 3. | State |
| 4. Differentiation | ----- |
| 5. | Create |
| 6. Materialism | ----- |

7. Homogenization -----
8. Proportion -----

D. Would you please change the sentences below with negative form

For example, Question: The Experts designed marketing information systems last year

Answer: The experts did not design marketing information systems last year

1. Information technologies are deeply embedded in your life
2. Your network enables you to pull information about virtually anything from anywhere
3. You can comfortably use a computer to perform many activities
4. Information systems have enormous strategic value to organization
5. An information systems collects, processes, stores, analyzes and disseminates information for a specific purposes
6. Information systems are intended to supply useful information
7. Hardware consists of devices such as the processors, monitor, keyboard and printers
8. Modern organizations employ many different type of information systems
9. The software manipulates this information to visualize chains of events
10. Marketing managers also use Information Technology to manage their relationship with their customers

What Are Key Policy and Social Issues Facing Internet?

There are wide-ranging policy, social, and economic issues concerning the new medium of internet,” stated Vinton G. Cerf, senior vice president of Internet architecture and technology at MCI WorldCom Corp. in Reston, Virginia. “I don’t believe they’ll be settled easily or quickly, but they must be addressed within the next few years.”

Cerf is known as one of the two “fathers of the internet”; the other is Robert E. Kahn (president of the corporation for National Research Initiatives, Reston, Virginia). Together Cerf and Kahn designed TCP/IP, the computer protocol that gave birth to the internet in the early 1970s, for which they received the U.S. National Medal of Technology in December, 1997, from President William J. Clinton.

In addition to concerns about preserving confidentiality in financial transactions in electronic commerce, verifying the authenticity of transactions, sources, and customers, protecting intellectual property, taxing electronic transactions, and determining liability for illegal content—all of which are already widely recognized and under public debate—Cerf pointed to two other significant open sociotechnical questions.

The first is international agreement about freedom of speech. “Freedom of speech is viewed differently from one century to the next,” he observed. “Yet the Internet and the Web are so decentralized, knowing no geopolitical boundaries, that the ‘Net is the ultimate tool of free speech. Technological and political attempts to restrict it are not

very successful. Take the requirements in China that every Web link must go through a proxy server (a computer that filters every Web search and download). All it takes is a phone call outside China for a user to land on something that is not a proxy server. Thus, it is no surprise that the Saudi Arabian government has religious concerns about the Internet—because with widespread access, its nation's population would likely be exposed to things they consider immoral. The German Government has also expressed concern about internet being misused by skinheads or neo-Nazi groups to spread hate speech.

The other open issue—which is less about public policy than about socioeconomic—is “that technology and Internet services may create a wider gap between haves and have-nots.” Cerf noted. “Right now that is true. But throughout history, people with more resources have been better informed than their brethren with fewer resources. The real question is whether that gap will continue to widen or will start to narrow. The jury is out.

I’m a ‘Net optimist,” Cerf continued. “First, the ‘Net may increase the total amount of information to which all people have access, just as a rising tide raises all boats, even though some may be yachts and others may be dinghies. Even more important, hardware and software costs are dropping so fast that the capital cost of being equipped is getting more affordable every year—increasing the opportunities for schools and libraries to offer access to everyone, even if individuals don’t have home service.

“What would the price have to drop to for internet access to be affordable even to low-income households in inner cities?” Cerf speculated. “I dare say that most poor families today have television sets and telephones. Yet, when televisions were first available in the 1950s, they were extremely expensive—\$500 to \$1,000 in 1950 dollars. Today, half a century later, they can be bought for under \$500 in current dollars. So I think that as soon as the cost of dedicated Internet-enabled appliances—if not full-up personal computer—falls to within the same consumer price

range as televisions and telephones, they'll be universally affordable to all families.

"And," Cerf added, "I think that will happen soon—by the end of the decade, if not within the next three or four years. I'm not willing to accept the argument that all low-income families will permanently be barred economically from access to the internet and the Web."

A. Based on the reading text above, Please answer as the following questions below.

1. When will wide-ranging policy, social, and economic issues be concerning the new medium of internet?
2. Who are fathers of the internet?
3. When did the computer protocol give birth to the internet?
4. Who designed TCP/IP, the computer protocol?
5. Did they received the U.S. National Medal of Technology in December, 1997, from President William J. Clinton?
6. What is a proxy server?
7. Why does Saudi Arabian government have religious concerns about the Internet?
8. Whay may Internet services create?
9. Do most poor families today have television sets and telephones?
10. Will all low-income families permanently be barred economically from access to the internet and the Web?

B. Please substitute appropriate terms for the italicized words insentence with the available below below

(quick, larger, enlarge, trust, receive, beginning, regarded, limit)

1. I don't ***believe*** they'll be settled easily or quickly
2. The computer protocol that gave birth to the internet in the ***early*** 1970s
3. Freedom of speech is ***viewed*** differently from one century to the next
4. Technological and political attempts to ***restrict*** it are not very successful
5. that technology and Internet services may create a ***wider*** gap between haves and have-nots
6. The real question is whether that gap will continue to ***widen*** or will start to narrow
7. Even more important, hardware and software costs are dropping so ***fast*** that the capital cost being equipped is getting more affordable every year
8. I'm not willing to ***accept*** the argumentthat all low-income families will permanently be barred economically from access to the internet and the Web

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN

VERB

- | | |
|-----------|---------|
| 1. | believe |
| 2. Verify | ----- |
| 3. | protect |
| 4. | promote |

5. recognize
6. equip
7. speculate
8. Argument

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed marketing information systems last year

Answer: What did the experts design last year?

1. The role of management information systems is described and analyzed in light of its capability for decision making
2. Information generally refers to analyzed data
3. The quality of managerial decision making depends on directly on the quality of available information
4. Management information system gives manager quick access to information
5. Decision support system is usually used by all levels of people within a business organization
6. Top level management uses DSS for strategic decision
7. Middle management uses DSS for tactical decision
8. Computerization has benefited organizations by increasing productivity
9. Computers can create new employment opportunities for all people
10. Many organizations achieve competitive advantage through the efforts of their employees

How Will The Internet Affect Social Relationship?

“Unlike some people, who fear that the Internet is squelching human relationship, I think it is enhancing them,” mused Stephen B. Weinstein, a fellow in NEC USA Inc.’s C&C Research Laboratory in Princeton, New Jersey. “But it is also stressing them. “One study done by Robert Kraut at Carnegie Mellon University 1998 suggested that people who use the internet a lot were more lonely. And a number of researchers have expressed concern about young people and adults spending so many hours in front of a computer screen surfing the Web, fearing that the Internet could have the effect of isolating human beings from one another.

“I doubt that the Internet makes people lonely. In fact, lonely people are probably using the Internet to reach out, to make themselves less lonely. It’s been my observation, in fact, that the Internet increases the number of people with whom you’re in contact, and how often you interact with them. E-mail, for example, allows you to do what people do when they’re physically proximate, ranging from planning conferences to sharing personal information and photos of their kids. I’ve also seen it let disabled people or elderly people who’d lost direct personal contact—say, with children who’ve moved away—regain part of that daily immediacy that is not felt through the mail or phone.

:But the pleasure of having a huge circle of contacts is complicated by the effort of maintaining that enlarged circle—and by the guilt of not succeeding. Responding to an e-mail message, for example, requires the physical act of writing, and I can spend an hour composing a reply

because I want to think about what I have to say. But with e-mail there is an expectation that you'll get a quick answer, as you do in spoken conversation—and so you feel under pressure to respond instantaneously. Moreover, if a group of people in an e-mail discussion gets too large, the discussion can lose concurrency and can collapse in confusion as replies cross—just as if everyone were in a group talking at once, but not so easy to stop and correct.

“Hopefully, over time, social etiquette will develop around these electronic media, to relieve the pressure for an immediate response in e-mail and to moderate group discussions.

“There is also the issue of kids on the Internet—the social question of how much time a child or teen should be spending in front of a computer screen instead of playing outdoors face-to-face with other kids.

“And what about human rights? This same technology makes it possible for people to create what's in their imagination with graphic realism. So what happens when someone can create disturbing images without the exploitation of actual human beings? How should society react to the exchange of disturbing material that is 100-percent computer generated? What will it mean for personal relationship when highly realistic virtual people enter our lives?”

A. Based on the reading text above, Please answer as the following questions below

1. Is the Internet squelching human relationship? Why?
2. What was the bad result of the study of internet?
3. Do the people use the internet more lonely? Why?
4. Do internet isolate human beings from one another?
5. What was the benefit of using the internet?
6. What is the function of an-email?

7. Will social etiquette develop around these electronic media?
8. What is the social question concerning the issue of kids on the internet?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(great, deal, occur, frighten, solitary, influence, for instance, handicap)

1. Unlike some people, who *fear* that the Internet is squelching human relationship
2. The Internet could have the *effect* of isolating human beings from one another.
3. I doubt that the Internet makes people *lonely*
4. The Internet increases the number of people with whom you're in contact, and how often you *interact* with them.
5. E-mail, *for example*, allows you to do what people do when they are physically proximate
6. I've also seen it let *disabled* people or elderly people who'd lost direct personal contact
7. The pleasure of having a *huge* circle of contacts is complicated by the effort of maintaining that enlarged circle—and by the guilt of not succeeding
8. What *happens* when someone can create disturbing images without the exploitation of actual human beings?

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN	VERB
1.	express enhanceisolate interact
2.	
3.	
4.	
5. Observation	-----
6.	compose
7. Confusion	-----
8. Exploitation	-----

D. Would you please change the sentences below with yes/no questions

For example, Question: The Experts designed marketing information systems last year

Answer: Did the experts design marketing information systems?

1. Modern organizations compete in challenging environment
2. You will learn about three major types of business pressure: market, technology and societal pressures
3. The amount of information available on the internet doubles approximately every year
4. The second generation of the laptop was scrapped because the price remained too high
5. The internet can facilitate acts of generously and true information
6. Many web sites help concerned individuals provide goods and services to others

7. Information Technology managers should tap that expertise to improve their own departments' energy performance
8. Information Technology executives must understand their entire organization's energy need
9. Information Technology professionals are expected to help create green facilities
10. A good management of information systems leads to a good making in business

How Can Effective Communication Helps Engineers Develop The Best Product?

“The biggest problem in product development is communication,” declared Samuel J. Keene, chief technology officer of Performance Technology Consultancy in Boulder, Colorado, a firm that specializes in the newest reliability engineering practices. “Engineers are often not the strongest communication. As a result, they too often don’t talk with their counterparts in materials and manufacturing.”

In Keene’s experience, the best product have been built by cross-functional teams that were given tools to maximize communication. Specially, experts from different disciplines were gathered together in one common location and were focused on one goal: designing a product to be a simple, reliable, efficient, and cost-effective as possible.

“Since good communication is the seed of the problem, it’s also the seed of the solution.” Said Keene, who has long consulted and conducted seminars on team experts from different disciplines were gathered together in one common location and were focusd on one goal building and facilitation in product development. In his opinion, all parties need to share “crisp, clear understanding” on four main issues: requirements, interfaces, contingencies, and oversight.

“The biggest opportunity is in defining requirements,” Keene asserted. “The U.S. Army, in fact, has reported that up to 99 percent of the product development field problems stem from shortfalls in fathoming

and understanding the requirements.” He has found that “all too often, engineers tend to develop products that aren’t what the customer wants—even though it’s built to the customer’s specifications! The fact is, often customers don’t know thoroughly what they want, even though they put out a spec. Often they need help to complete the concept and to discover the exceptions the product needs to handle.”

Keene’s second big opportunity for improvement in product development is assuring good subsystem interfaces—which is, he noted, actually another tier of requirements having to do with the interaction of hardware and software, of both of these with testing, and of the whole product with the human user. “Since the best products are designed to accommodate the users’ need, the system should be developed to fit the human capabilities, not the other way around,” Keene observed.

The third big opportunity needing good communication in product development is in handling operational contingencies. “You want a product to fail into safe modes,” he said. “That doesn’t happen automatically. Engineers need to think along negative paths to see how a product might fail, and envision how to mitigate the effects analysis.” One powerful tool Keene recommends is FMEA: failure modes and effects analysis— “asking ‘what if’ questions to see how a product reacts to abnormal operating conditions,” he said. “You don’t want to do something no one ever thought about if subjected to unanticipated variations in temperature, humidity, or inadequate training of the human user.”

The major area in product development Keene has identified for improvement in communication is the catching of oversight. “We tend to relive history unless we formalize the lessons learned from past experiences, so we can apply them to the next projects,” Keene said. “That’s how engineers end up with silly but expensive design flaws, such as that of the Porsche model in the 1960s in which to change the sparkplugs you had to pull the engine,” he said. “Throughout the design and test process, as you identify defects, you need to study them as a team, fix them, and look for similar ones elsewhere in the product. Most

important, people need to learn from the experience so they don't repeat the same errors in the future."

Since all four areas of opportunity depend on effective communication, "that's why it is important—especially for a large team of several hundred people—to have team building and project facilitation exercise," Keene said. "People need to come to know one another, feel free to talk openly with one another, brainstorm together, and develop the confidence to trust one another."

A. Based on the reading text above, Please answer as the following questions below

1. What is the biggest problem in product development?
2. Why were experts from different disciplines gathered together in one common location and were focused on one goal?
3. Is good communication both the seed of the problem and the seed of the solution?
4. What has Keene found?
5. What is Keene's second big opportunity for improvement in product development?
6. Should the system be developed to fit the human capabilities?
7. What does FMEA mean?
8. What has Keene identified for improvement in communication?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(recognized, collected, alike, seek, instruments, stated, discuss, do over)

- 1. The biggest problem in product development is communication,” **declared** Samuel J. Keene, chief technology officer of Performance Technology Consultancy in Boulder, Colorado
- 2. The best product have been built by cross-functional teams that were given **tools** to maximize communication.
- 3. They too often don’t **talk** with their counterparts in materials and manufacturing.
- 4. Experts from different disciplines were **gathered** together in one common location and were focused on one goal
- 5. The major area in product development Keene has **identified** for improvement in communication is the catching of oversight
- 6. You need to study them as a team, fix them, and **look for** similar ones elsewhere in the product
- 7. Most important, people need to learn from the experience so they don’t **repeat** the same errors in the future.
- 8. Throughout the design and test process, as you identify defects, you need to study them as a team, fix them, and look for **similar** ones elsewhere in the product.

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN

VERB

- | | |
|-------------|---------|
| 1. ----- | Declare |
| 2. Strength | ----- |

- | | | |
|-----|--------------|-------------|
| 3. | Solution | ----- |
| 4. | Requirement | ----- |
| 5. | ----- | Accommodate |
| 6. | ----- | Mitigate |
| 7. | ----- | React |
| 8. | ----- | Apply |
| 9. | Facilitation | ----- |
| 10. | ----- | Develop |

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed marketing information systems last year

Answer : What did the experts design last year?

1. The organizations view Information Technology as an engine of inovation
2. I couldn't open the document you emailed me
3. You can access all the application on your computer from the start menu
4. I asked the computer to search the files
5. He forwarded the data of sale to head of office
6. You should become familiar with data of warehouse
7. You can also choose the format for dates and times.
8. You may wish to change the desktop background to a picture, for example a personal taken on a digital camera
9. You need to change or refill this when your printer runs out of ink
10. These data are frequently also stored in numerous servers

Technology Helps Speed The Design Process

Working at a computer or work station with a high-resolution screen, a designer can apply computer-aided design (CAD) to generate various views of components and assemblies. Designs can be developed, analyzed, and modified with this technology faster than by drawing lines on paper with conventional drafting procedures. The computer can rotate images, construct various views, zoom in and magnify parts, and check for possible interference between parts. Computer-generated designs also have other advantages. They can be stored in a computer data base facilitates coordination (with very little paperwork) of the efforts of other parts of the company, such as tool design, quality control, and purchasing, which often need accurate descriptions of the latest product design.

Computer-aided engineering (CAE) can use the product's description to analyze some aspects of its performance and to estimate the deflection of its part under various loads. Several designs can be subjected to preliminary tests and compared without being taking time to make prototypes of all. Computer-aided manufacturing (CAM) software can use stored data about the parts to generate commands that operate automated machines, so much of the paperwork and human programming can be reduced. When CAD and CAM are combined, it is called computer-aided design and manufacturing (CAD/CAM).

Many of the suggestions and guidelines for good design, such as those that would be made by members of a multifunction design team, have been incorporated into rules for artificial intelligence software that will review a design and recommend improvements. These packages try

to reduce the number of components, make the components simple and inexpensive to fabricate, make all the parts so they fit together easily, reduce the assembly task. Such programs have been used by General Electric, Westinghouse, Xerox, IBM, New York Air Brake, and Texas instruments. Table 2.5 shows some of the results achieved by Texas Instruments from running a design-for-assembly (DFA) program on sighting device that it makes for the Pentagon. A program of this type, called design for manufacturability and assembly (DFMA), is credited with reducing manufacturing costs by over \$1.2 billion in one year at FordMotor Co. Ford plants to use this program from bumper to bumper for its 1993 model. In the future this technology may be combined with artificial intelligence and CAE to serve as real-time design adviser. The program would run while the designer worked and would then offer suggestions on how to improve the product’s design.

TABLE. 2.5.Making More with Less
(Results of using DFA to analyze a gun-sight component)

	Before	After	Reduction %
Assembly time (minutes)	129	20	85
Number of parts	47	12	75
Number of assembly steps	56	13	78
Metal fabrication (minutes)	757	219	71

It is evident that companies are using technology to design products that are better and more easily produced and to develop and introduce the products more quickly. These capabilities can be used to gain competitive advantage. Thus, strategic planning should address the methods of design and applications of technology in addition to considering the items that are designed for the company to offer in the market.

When companies evaluate possible strategies, one important measurement is a forecast of the market demand for each alternative. Since the operation function is to implement much of the strategy, it must

have some forecast of the level of activity that it will be called upon to provide.

A. Based on the reading text above, Please answer as the following questions below

1. What can a designer apply computer-aided design (CAD)?
2. Would you please compare CAD and conventional drafting procedures?
3. Can computer construct various views? Please mention another ability of computer?
4. What can computer-aided engineering (CAE) use the product's description+
5. What can computer-aided manufacturing (CAM) software use stored data about the parts?
6. What programs have been used by General Electric, Westinghouse, Xerox, IBM, New York Air Brake, and Texas instruments?
7. What should strategic planning address?
8. What is one important measurement when companies evaluate possible strategies?

B. Please substitute appropriate terms for the italicized words in sentence with the available words below

(predict, advices, amend, fact, assessment, produce, quicker, utilize)

1. A designer can apply computer-aided design (CAD) to *generate* various views of components and assemblies
2. Designs can be developed, analyzed, and modified with this technology *faster* than by drawing lines on paper with conventional drafting procedures

3. Computer-Aided Manufacturing (CAM) software can ***use*** stored data
4. CAE can use the product's description to analyze some aspects of its performance and to ***estimate*** the deflection of its part under various loads
5. It is ***evident*** that companies are using technology to design products
6. Many of the ***suggestions*** and guidelines for good design, such as those that would be made by members of a multifunction design team
7. The program would run while the designer worked and would then offer suggestions on how to ***improve*** the product's design.
8. When companies examine possible strategies, one important ***measurement*** is a forecast of the market demand for each alternative.

C. Fill in the blanks with noun or verb forms. Please use your dictionary if necessary

NOUN	VERB
1. -----	generate
2. Description	-----
3. -----	modify
4. Human	-----
5. -----	incorporate
6. -----	fabricate
7. -----	reduce
8. -----	evaluate

D. Would you please make a question based on the underlined word on the sentences below

For example, Question: The Experts designed marketing information systems last year

Answer: What did the experts design last year?

1. Information ethics related specifically to standard of right and wrong in information practices
2. Rapid information in information technologies have made it much easier to collect, store and integrate data on individuals in large database
3. You might want to create personal database using a software product such as Microsoft Access
4. Organizations should accomplish this objective by developing data of warehouse
5. Organizations have developed information systems for specific business processes
6. Applications can access data associated with other applications
7. You will examine how modern organizations design their databases
8. Tables allow people to compare information quickly by row or column
9. Structured Query Language (SQL) allows people to perform complicated or by key words
10. Most companies ultimately use commercial software

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AUTHOR BIOGRAPHY



Dr Sam Hermansyah,S.Pd.,M.Pd,

He was born Rappang on 12 June 1982. He started his study at SD 4 Maroangin and finished In 1996, he continued his Studi in SMPN 1 maiwa and finished 1998, Private SMAN 1 Maiwa and Finished 2001. Then He completed His Under Graduate Program on English Education of STAIN Parepare and finished 2007, He also completed His Magister Program on English Education in University of Muhammadiyah Parepare and finished 2012. He also completed His Doctoral Program on English Language Study of Hasanuddin University and finished 2021. Now He is a lecturer on English Education Program in Muhammadiyah University Sidenreng Rappang. He wrote a book entitled "English for Tourism Industry.

AUTHOR BIOGRAPHY



Prof. Dra. Nasmilah, M. Hum, Ph.D

She is a teaching staff of English department, Faculty of Cultural Sciences Hasanuddin University. She is also directing a private school of English called English Language Institute. This Ph.D holder from The University of Newcastle Australia has research interest in Adult EFL learners and Teachers Education. Nasmilah has presented papers in various national and international conferences and is frequently invited as Guest speakers and Guest lecturers in many related events. She has been supervising Master and Doctoral students in various universities across Indonesia. Nasmilah is having research collaboration with Monash University Australia. She has recently won a Research Travel Grant from The University of Newcastle Australia. E-mail address: imla63@yahoo.com.au

AUTHOR BIOGRAPHY



Dr. Usman M, S.Pd.,M.Pd.

He was born Wala wala on 02 Februari 1973. He started his study at SD 43 Batu in and finished In 1987, he continued his Studi in SMPN 2 Rappang and finished 1990, Private SMEA 1 Pancarijang and Finished 1993. Then He completed His Under Graduate Program on Indonesia Education of STKIP Muhammadiyah Rappang and finished 1999, He also completed His Magister Program on Teknologi Education in University of PGRI ADIBUANA Surabaya and finished 2005. He also completed His Doctoral Program on Teknologi Pembelajaran of Universitas Negeri Malang and finished 2021. Now He is a lecturer on Teknologi Pendidikan Program in Muhammadiyah University Sidenreng Rappang.

AUTHOR BIOGRAPHY



Dr. Khadijah Maming, S.Pd., M.Pd.

KHADIJAH MAMING is a lecturer in the English Education Study Program, Universitas Muhammadiyah Parepare. She completed her doctoral program from linguistics study concentrating on applied linguistics of language education at Universitas Hasanuddin, Makassar, Indonesia. Her research interests are in the area of language teaching methodology, instructional model development, task-based language teaching, second language acquisition, and applied linguistics. She published her articles in ASIA TEFL Journal, LITERA Journal, Diksi Journal, EDUVELOP Journal, ELS-JISH and in other reputable and accredited journals. She has been an active presenter in several international conferences, such as; TESOL International Conference, TEFLIN International Conference, The 52nd RELC International Conference in Singapura, The 16th ASIA TEFL International Conference in Macao SAR China, LSCAC International Conference, UTIC, ICOLE and Annual Seminar of English Language Studies.

AUTHOR BIOGRAPHY



Syahrir L.S.Pd., M.Pd.

He Was Born in Lautang Salo, 2 May 1987. The youngest of 3 siblings. His Father name is Lauda and Mother name is Saniba. He Completed education at SD Negeri 4 Macorawalie, Pondok Pesantren Al Urwatul Wutstqaa Benteng Baranti, and SMA Negeri 1 Panca Rijang. The undergraduate program was completed in 2015 at STKIP Muhammadiyah Rappang. In 2018 he completed the Postgraduate program at Muhammadiyah University of Parepare majoring in English Education. He has served in several internal and external campus organizations, including as chairman of the Muhammadiyah Student Association Commissariat, Chairman of the Muhammadiyah Sidrap Student Association Branch, Chairman of the Panca Rijang Indonesian Mosque Youth and Youth Communication Agency. His career began as an elementary school teacher for 5 years, then became a middle school and high school teacher for two years. Currently, he is a English Lecturer at Muhammadiyah Sidenreng Rappang University since 2020.

AUTHOR BIOGRAPHY



Syamsunir, S.Pd., M.Pd.

he was born in Baranti, 21 April 1991. His education started from SD Negeri 9 Baranti in 2003, continued to SMPN 1 Baranti in 2006 and SMAN 1 Panca Rijang in 2009. Completed his Bachelor's Degree in Educational Technology Study Program in in 2013 at STKIP Muhammadiyah Sidrap, Masters in Educational Technology at Makassar State University in 2020.

he is a Lecturer at the Educational Technology Study Program, Faculty of Teacher Training and Education, Muhammadiyah Sidenreng Rappang University since 2020 – until now.

AUTHOR BIOGRAPHY



Roni, S.Pd.I.,M.Pd

He was born in Battallopi on 8 Desember 1986. He started his study at SDN 24 Batutaku and finished In 2001, he continued his Studi in SMPN 4 Sendana and finished 2004, and he continued his study at SMKN 2 Parepare and Finished 2007. Then He completed His Under Graduate Program on English Education of STAIN Parepare and finished 2012, He also completed His Magister Program on English Education in University of Muhammadiyah Parepare and finished 2016.. Now He is a lecturer in Institut Teknologi Kesehatan Dan Sains Muhammadiyah Sidenreng Rappang. He wrote a book entitled "Tips Dan Trik Menguasai Rumus 16 Tenses, 24 Jam Menaklukkan Tenses, The Secret To Master 16 Tenses.

AUTHOR BIOGRAPHY



Isumarni, S.Pd., M.Pd.

Lecturer of English Education Program
Universitas Muhammadiyah Sidenreng Rappang (UMS)

Isumarni, S.Pd., M.Pd. was born in Sandakan, Malaysian on 30 July 1989. Her Bachelor's degree was English Education of Universitas Negeri Makassar (UNM) which she received in 2012. She complete her Master's Degree in English Education at Pascasarjana Universitas Negeri Makassar (UNM) at 2016. The author is an English lecturer at Universitas Muhammadiyah Sidenreng Rappang (UMS) Sulawesi Selatan. Now she focuses on teaching, writing book, doing research and as a business women. She can be reached at isumarni89@gmail.com.

AUTHOR BIOGRAPHY



Nurul Faradillah, S.Pd.,M.Pd

Lecturer of English Education Program
Universitas Muhammadiyah Sidenreng Rappang (UMS)

She was born in Sidrap on 14 Januari 1995. She started her study at SDN 5 Kulo and finished In 2006, she continued her Studi in SMPN 3 Parepare and finished 2009, and she continued her study at SMAN 2 Parepare and Finished 2012. Then She completed Her Under Graduate Program on English Education of University Muhammadiyah Parepare and finished 2016, She also completed her Magister Program on English Education in University Negeri Makassar and finished 2020. Now She is a lecturer on English Education Program, Faculty of Teacher Training and Education, Muhammadiyah Sidenreng Rappang University.

AUTHOR BIOGRAPHY



Basuki Rahmat Masdi Siduppa, S.Kom., M.M.

Penulis lahir di Batarang, 15 April 1989, memulai Pendidikan formal di sekolah dasar 14 Batarang dan selesai pada tahun 2001, kemudian melanjutkan di PPM Rahmatul Asri sampai tahun 2003, lalu pendidika sekolah menengah atas di SMA 1 Maiwa sampai tahun 2007. Pada tahun 2012 telah menyelesaikan Pendidikan program sarjana pada jurusan Teknik Informatika di Sekolah Tinggi Ilmu Manajemen dan Informatika dipanegara pada tahun 2012. Lalu melanjutkan program megister di STIE Nobel Indonesia dan selesai pada tahun 2015. Saat ini sedang bekerja sebagai dosen tetap di Institut Ilmu Kesehatan Pelamonia Makassar.

AUTHOR BIOGRAPHY



Agus Hambing,S.Pd.I

Was born on august 15,1982 in Maroangin, Enrekang regency, South Sulawesi province. Graduated from SD Negeri 55 Maroangin, Enrekang in 1995. Graduated from SMP Negeri 1 Maiwa, Enrekang in 1998. Graduated from SMUN 1 Maiwa,Enrekang in 2001. In the following year, he continued his study at One Year English diploma in international English Course (IEC) Pare-pare. After that he continued his study at the S1 Program of English Education Department Of Sekolah Tinggi Agama Islam Negeri (STAIN) Pare-pare in 2003 and graduated in 2007. During his study in STAIN, he is a member of Himpunan Pariwisata Indonesia (HPI) Pare-pare. Since 2008, he has been an English teacher of SMKN 3 Sidrap. At present he is registered as a student of Muhammadiyah University of Sidenreng Rappang in post gradute program of English Education Department.

