



Ethiopian TVET-System



customer contact works support LEVEL-II

Based on August 2012GC Occupational standard

Module Title: Using Multiple Information Systems

TTLM Code: EIS CCS2TTLM 0919 V-1

This module includes the following Learning Guides

LG05:Assessing a range of information systems

LG Code: EIS CCS2M02 LO1-LG-05

LG06:Processing customer information using multiple Information systems

LG Code: EIS CCS2M02 LO2-LG-06

LG07:Identifying and rectifying information system and processing errors

LG Code: EIS CCS2M02 LO3-LG-07

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Instruction Sheet

LG05: Assessing a range of information systems

This learning guide is developed to provide you the necessary information regarding the following **content coverage** and topics:

- Assessing a range of information systems
- Processing customer information using multiple Information systems
- Identifying and rectifying information system and processing errors

This guide will also assist you to attain the learning outcome stated in the cover page. Specifically, **upon completion of this Learning Guide, you will be able to:**

- Assess a range of information systems
- Process customer information using multiple Information systems
- Identify and rectifying information system and processing errors

Learning Instructions:

1. Read the specific objectives of this Learning Guide.
2. Follow the instructions described in number 3 to 7
3. Read the information written in the “Information Sheets 1”. Try to understand what are being discussed. Ask you trainer for assistance if you have hard time understanding them.
4. Accomplish the “Self-check 1” on page 10
5. Ask from your trainer the key to correction (key answers) or you can request your teacher to correct your work. (You are to get the key answer only after you finished answering the Self-check 1).
6. If you earned a satisfactory evaluation proceed to “Information Sheet 2”. However, if your rating is unsatisfactory, see your trainer for further instructions
7. Submit your accomplished Self-check. This will form part of your training portfolio.



Information Sheet-1	Assessing a range of information systems
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Introduction

Information system is not simply about computers - it's about how businesses can make the best use of computer technology to provide the information needed to achieve their goals. In the same way as your own needs and priorities are unique to you, each organization has different goals and requirements, and the successful implementation of Information System requires a through understanding of the business issues involved, as well as the different technologies that are available.

Most of the time there is no single “correct answer”, and you will need to draw on your own knowledge and judgment when planning or using an information system. The purpose of this information sheet is to provide you with a basic knowledge of the different elements of information systems

Data, information and system

Data is raw unprocessed facts and figures that have no context or purposeful meaning

Information is processed data that has meaning and is presented in a context.

For example, a computer operator may enter 36.41, which is data, because we do not know why or in what context it is being used. However, if this number then appears on a bill to show that you owe a company Birr 36.41 for goods received then this data has changed into information, because it has acquired a context (it's a bill) and meaning.

System

- A system is an organized assembly of components with special relationships between the components.
- The system does something, i.e. it exhibits a type of behavior unique to the system or has a specific objective or purpose.
- Each component contributes specifically towards the behavior of the system and is affected by being in the system. If a component is removed, it will change the system behavior.
- Someone has identified the system as being of special interest. Not just any random collection of parts or elements constitutes a system. For example, a pile of rocks is not a system, just like a random collection of words does not make up a meaningful sentence. There needs to be a definite (perceived) structure that has some form of order, pattern and purpose. Sometimes the structure may be very tenuous, apparent only to few observers.

Categorization of information

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Information can be categorized under many headings that help us to determine its overall usefulness. The main categories are Source, Nature, Level, Time, Frequency, Use, Form and Type. We will examine each of the categories and their sub-categories in some detail.

Sources of information

Primary information

A primary source of information is one that provides data from an original source document. This may be as simple as an invoice sent to a business or a cheque received. It may be more complex, such as a set of sales figures for a range of goods for a tinned food manufacturer for one week, or it may be a set of sales figures over several weeks and several locations. There are many examples of primary sources in many walks of life, but generally a primary source is defined as being where a piece of information appears for the first time.

Secondary information

A secondary source of information is one that provides information from a source other than the original. Secondary sources are processed primary sources, second-hand versions. Examples of secondary sources could be an accounts book detailing invoices received, a bank statement that shows details of cheques paid in and out. Where statistical information is gathered, such as in surveys or polls, the survey data or polling data is the primary source and the conclusions reached from the survey or the results of the poll are secondary sources.

Internal information

All organizations generate a substantial amount of information relating to their operation. This internal information is vital to the successful management of the organization. The information may be available from a number of sources within the organization, for example:

- Marketing and sales information on performance, revenues, markets shares, distribution channels, etc.
- Production and operational information on assets, quality, standards, etc.
- Financial information on profits, costs, margins, cash flows, investments, etc.
- Internal documentation such as order forms, invoices, credit notes, procedural manuals.

External information

An external source of information is concerned with what is happening beyond the boundaries of the organization. This covers any documentation relating to a subject area produced as a summary or detailed report by an agency external to an organization. Such information may be obtainable from government agencies or private information providers. Examples might include:

- census figures
- telephone directories
- judgments on court cases
- computer users' yearbook

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- legislation, for example the Data Protection Act
- trade journals
- professional publications
- industry standards
- the Internet
- gallup polls
- national opinion polls
- Ordnance Survey maps
- financial services agencies such as Dunn and Bradstreet

Nature of information

Formal information

This involves presenting information in a structured and consistent manner. It is usually defined, within an organization, as the main way of communicating between and within parts of the organization. It is also usually the main way of communicating externally from an organization. The main methods of formal communication are still the formal letter, properly structured reports, writing of training materials, etc. Formal information is communicated in cogent, coherent, well-structured language.

Informal information

This describes less well-structured information that is transmitted within an organization or between individuals who usually know each other. It tends to be categorized as ‘unofficial’ information, and is communicated by casual conversations, e-mails, or text messages between colleagues. The language used is less well structured than formal communication and tends to include colloquialisms and shorthand; and spelling is less important.

Quantitative information

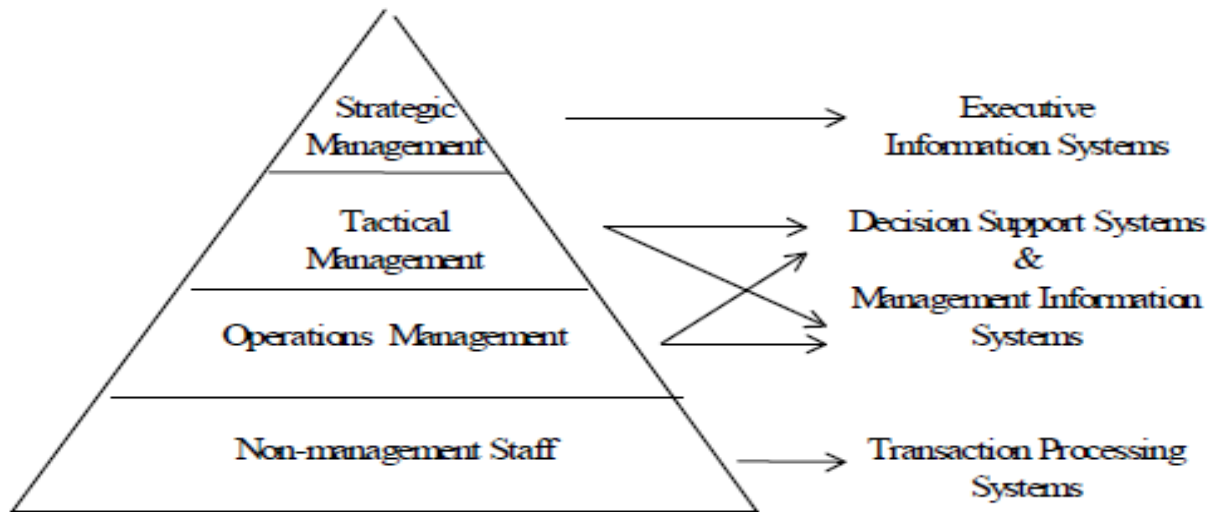
This is information that is represented numerically. Any event or object that can be represented as a set of numbers is an example of quantitative information.

Qualitative information

This is information that is represented using words. Any event or object that is represented using words to describe its attributes is an example of qualitative information.

Levels of information

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Within an organization planning, control and decision-making are carried out at various levels within the structure of the organization.

The three levels at which information can be used are *strategic*, *tactical* and *operational* and there is a direct correlation between the levels of importance of individuals or groups within an organization and the level of information that is being communicated.

Strategic information

Strategic information is used at the very top level of management within an organization. These are chief executives or directors who have to make decisions for the long term.

Strategic information is broad based and will use a mixture of information gathered from both internal and external sources.

In general a timescale may be from one to five years or even longer depending on the project. Some oil related projects are planned from the outset to last for 25 or more years. A supermarket building a new superstore will look at a timescale of 20 years or so, whilst even a small business may have a five-year strategy.

Strategic plans will have little or no detail in them and more detailed strategic plans will be made slightly lower down the managerial ladder. A good strategic plan will be easier to flesh out lower down than a poor or vague strategic plan. Similarly, well constructed and more detailed plans will be easier to implement than poorly constructed plans.

Tactical information

The next level down is the tactical level, and tactical planning and decision-making takes place within the guidelines set by the strategic plan.

Tactical information will be mostly internal with a few external sources being used.

Internal information is likely to be function related: for example, how much 'down time' a production line must allocate for planned maintenance.



Tactical information is used by middle management (employees) when managing or planning projects.

The timescale is usually at least between 6 months and 5 years (depending on the scale of the strategic project). Circumstances vary but a small project may have a tactical timescale of between one and six months.

Tactical plans have a medium level of detail and will be very specific; they deal with such matters as who is doing what and within what specific budgets and timescales.

These plans have medium scope and will address details at the operational level. They will generally have specific objectives and be geared towards implementation by operational level employees.

Operational information

The lowest level is operational and operational planning takes place based on the tactical plans.

The lowest level of management or workers in an organization implements operational plans. These may be section leaders or foremen in a large organization or workers such as shop assistants, waiting staff, and kitchen staff, etc., in smaller businesses where there is no supervisory layer.

The timescale is usually very short, anything from immediately, daily or at most a week or month.

Results of operational work will usually be passed upwards to let the tactical planners evaluate their plans.

Time

Historic information

This is information gathered and stored over a period of time. It allows decision makers to draw comparisons between previous and present activities. Historic information can be used to identify trends over a period of time.

Present

This is information created from activities during the current work-window (day, week or month). In real-time systems this information would be created instantly from the data gathered (for example, the temperature in a nuclear power plant turbine), giving accurate and up-to-date information.

Future

This is information that is created using present and historic information to try to predict the future activities, trends and events relating to the operation of an organization. An example would be sales figures for a company: if the sales figures are up 10% from those recorded this time last year it might be anticipated that next month's sales figures will also be up by 10%.

Frequency of information

Continuous

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This is information created from data gathered several times a second. It is the type of information created by a real-time system. For example, sensors may be set up to collect temperature and humidity readings in a large commercial greenhouse. It will be important for that information to be collected constantly because any variation in either the temperature or the humidity could point to the failure of some machinery and an alarm could be sounded to alert the staff. A very important system exists on modern aircraft where the navigation and flight-control systems are continuously monitoring and making adjustments; another is on a computerized production line where constant monitoring allows the system to correct faults. Obviously many other types of real-time systems exist but a feature of them all will be that they check data continuously.

Periodic

This is information created at regular timely intervals (hourly, daily, monthly, annually). Different examples of information generated by an organisation are needed at specific periods of time.

- **Annually** – On an annual basis a company must submit its report and accounts to the shareholders.
- **Monthly** – Banks and credit-card companies produce monthly statements for the majority of their customers.
- **Daily** – A supermarket will make daily summaries of its sales and use the product information to update its stock levels and to reorder stock automatically.
- **Hourly** – A busy call centre will often update totals for each operator on an hourly basis and give the top employee for the hour some reward.

Use of information

Planning

Planning is the process of deciding, in advance, what has to be done and how it is to be done. Planning should be based on good information. Planning is not an end in itself; its primary purpose is to provide the necessary structure for decision-making and resulting actions, throughout the organization.

The process of planning provides an opportunity to construct a sequence of actions that, when executed, will achieve the required aims and objectives.

Basically, planning means decisions by management about:

- what is to be done in the future
- how to do it
- when to do it
- Who is to do it.

An objective is something that needs to be achieved and a plan contains the activities or actions required to achieve the objective.

Control

Control can be defined as the monitoring and evaluation of current progress against the steps of a pre-defined plan or standard. If these tasks are not proceeding in line with

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expectations then action is taken to bring the project back in line with what had been planned.

Control is carried out at strategic, tactical and operational levels. The type of control changes according to the level of management as does the amount of time spent on control.

At an operational level the majority of the time of the manager or supervisor will be spent on control activities where the work of staff is compared to very specific financial or quantifiable terms (e.g. how many boxes have been packed).

At higher levels, planning and control are more closely linked, with management being concerned with the monitoring of progress against the plan, assessing the suitability of the plan itself and predicting future conditions.

Organizations and individuals must plan in order to operate effectively. Likewise they must also operate controls to ensure that progress is being made against the plan. These controls are needed because unexpected events can cause actual results to change from the expected planned results.

Control activities attempt to keep the organization in line with the original plan or to enable the organization to change to meet the new conditions. Unexpected events range from short delays in the completion of an element of a plan – which may be relatively minor – to major disturbances such as a large new competitor entering the marketplace

Control measures actual progress against what is expected and provides information upon which remedial action can be taken, if required, either to change performance in order to conform to the original plan or to modify the plan.

Decision-making

Decision-making is the process of selecting an action or actions from those possible based on the information available. Decision-making involves determining and examining the available actions and then selecting the most appropriate actions in order to achieve the required results.

Decision-making is an essential part of management and is carried out at all levels of management for all tasks. All decisions are arrived at in the same way. The manager must choose, by some means, the result or results that s/he wishes to achieve and do some form of appraisal of the situation.

Decision-making is made up of four phases:

- finding occasions for decision making
- find possible courses of action (i.e. what choices are available)
- choosing among these courses of action
- Evaluating past choices.

Forms of information

Written

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The vast majority of information created within an organization is in the written form. This can include hand-written or word-processed information and information in e-mails as well as reports produced from different classes of software, both general-purpose packages and bespoke software solutions. Examples of written information are reports, memos and tables, receipts, invoices, statements, and summary accounting information. The list is almost endless and different businesses will produce their own type of written information.

Aural

Another common form of information is aural, which is information presented as sound. The commonest form of aural information is of course speech and examples of this would be formal meetings (where minutes are taken), informal meetings, talking on the phone and voice-mail messages. Nowadays many organizations will have employees giving a presentation or talk to a group where there may be use made of music and sound effects as well as speech.

Visual

This form of information includes when pictures, charts and graphs are used to communicate information. Again, many presentations will make use of data projectors and presentation software that will include text, graphics and animations. Full video can also be projected via a data projector, and presentations can use video filmed with a digital video camera and then edited on a computer and distributed via CD or DVD now that DVD writers are quite common.

Types of information

Detailed

Detailed information might be an inventory list showing stock levels, actual costs to the penny of goods, detailed operating instructions, and so on. This information is most often used at the operational level within an organization.

Sampled

This information usually refers only to selected records from a database: for example, only selected customers from a company’s full customer list. In a supermarket this may be product and sales summaries given to departmental managers (bakery, fruit and vegetables, etc.). Sampled information is often used at a tactical level within an organization. Depending on the size of the organization it may also be relevant at a strategic level.

Aggregated

This is information that consists of totals created when detailed information is collated. An example of aggregated information is the details of all purchases made by customers totaled each month and displayed in a chart showing total sales for each month over a year.

In order to show all three types of information, here is an example that some of you should be familiar with. In a league of teams who play each other twice in a season, the detailed information would be the score line for each game played by all the teams in the league. Sampled information would be the details for a team in the league relating to

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their performance. Aggregated information would be the goals for, goals against and goal difference for a team in a league

Characteristics of information

Good information is that which is used and which creates value. Experience and research shows that good information has numerous qualities.

Good information is

- + **relevant** for its purpose, sufficiently
- + **accurate** for its purpose,
- + **complete** enough for the problem,
- + **Reliable** and **targeted** to the right person.
- + It is also communicated **in time** for its purpose, contains the right level of detail and is communicated by an appropriate channel, i.e.
- + One that is **understandable** to the user.

Availability/accessibility

Information should be easy to obtain or access. Information kept in a book of some kind is only available and easy to access if you have the book to hand. A good example of availability is a telephone directory, as every home has one for its local area. It is probably the first place you look for a local number. But nobody keeps the whole country’s telephone books so for numbers further afield you probably phone a directory enquiry number. For business premises, say for a hotel in London, you would probably use the Internet.

Businesses used to keep customer details on a card-index system at the customer’s branch. If the customer visited a different branch a telephone call would be needed to check details. Now, with centralized computer systems, businesses like banks and building societies can access any customer’s data from any branch.

Accuracy

Information needs to be accurate enough for the use to which it is going to be put. To obtain information that is 100% accurate is usually unrealistic as it is likely to be too expensive to produce on time. The degree of accuracy depends upon the circumstances. At operational levels information may need to be accurate to the nearest penny – on a supermarket till receipt, for example. At tactical level department heads may see weekly summaries correct to the nearest £100, whereas at strategic level directors may look at comparing stores’ performances over several months to the nearest £100,000 per month.

Accuracy is important. As an example, if government statistics based on the last census wrongly show an increase in births within an area, plans may be made to build schools and construction companies may invest in new housing developments. In these cases any investment may not be recouped.

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Reliability or objectivity

Reliability deals with the truth of information or the objectivity with which it is presented. You can only really use information confidently if you are sure of its reliability and objectivity.

When researching for an essay in any subject, we might make straight for the library to find a suitable book. We are reasonably confident that the information found in a book, especially one that the library has purchased, is reliable and (in the case of factual information) objective. The book has been written and the author's name is usually printed for all to see. The publisher should have employed an editor and an expert in the field to edit the book and question any factual doubts they may have. In short, much time and energy goes into publishing a book and for that reason we can be reasonably confident that the information is reliable and objective.

Compare that to finding information on the Internet where anybody can write unedited and unverified material and 'publish' it on the web. Unless you know who the author is, or a reputable university or government agency backs up the research, then you cannot be sure that the information is reliable. Some Internet websites are like vanity publishing, where anyone can write a book and pay certain (vanity) publishers to publish it.

Relevance/appropriateness

Information should be relevant to the purpose for which it is required. It must be suitable. What is relevant for one manager may not be relevant for another. The user will become frustrated if information contains data irrelevant to the task in hand.

For example, a market research company may give information on users' perceptions of the *quality* of a product. This is not relevant for the manager who wants to know opinions on *relative prices* of the product and its rivals. The information gained would not be relevant to the purpose.

Completeness

Information should contain all the details required by the user. Otherwise, it may not be useful as the basis for making a decision. For example, if an organization is supplied with information regarding the costs of supplying a fleet of cars for the sales force, and servicing and maintenance costs are not included, then a costing based on the information supplied will be considerably underestimated.

Ideally all the information needed for a particular decision should be available. However, this rarely happens; good information is often incomplete. To meet *all* the needs of the situation, you often have to collect it from a variety of sources.

1.1. Logging on to information systems

Log on may include:

- **compliance with information technology security protocols**

Security protocols are concerned with properties such as integrity and secrecy. Primary examples are protocols that establish communication channels with authenticity and

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confidentiality properties—in other words, communication channels that protect the integrity and secrecy of the data sent between the intended protocol participants. Other examples include protocols for commerce and for electronic voting

Security in Information and Communication Technology is defined as adequate protection of information against unauthorized disclosure, unauthorized modification and unauthorized withholding. It has a close relationship with privacy as insecure information cannot ensure users privacy. In E-mail messaging, security can be defined as the ability of the system to provide

- i) privacy,
- ii) sender authentication,
- iii) message integrity,
- iv) non-repudiation, and
- v) consistency



These parameters are briefly described below:

- I. Privacy guarantees confidentiality of a message transmitted over open medium which otherwise can be intercepted or altered.
- II. Sender authentication is the verification of the claimed identity of the sender.
- III. Message integrity refers to policies that ensure security against mail forgery which includes policies to stop transmission of spam e-mails; phishing e-mails and e-mails containing viruses, etc.
- IV. Non-repudiation means non-denial by sender; an e-mail sender should not be able to disown an e-mail sent by him due to weak security mechanism.
- V. Consistency refers to uniformity of both header and body of the message from source to the destination.



- **logging into telephone system**



Telecommunication networks carry information signals among entities, which are geographically far apart. An entity may be a computer or human being, a facsimile machine, a teleprinter, a data terminal and so on. The entities are involved in the process of information transfer who may be in the form of a telephone conversation (telephony) or a file transfer between two computers or message transfer between two terminals etc. Today it is almost truism to state that telecommunication systems are the symbol of our information age.

The communication switching system enables the universal connectivity. The universal connectivity is realized when any entity in one part of the world can communicate with any other entity in another part of the world. In many ways telecommunication will acts as a substitute for the increasingly expensive physical transportation.

The telecommunication links and switching were mainly designed for voice communication. With the appropriate attachments/equipments, they can be used to transmit data. A modern society, therefore needs new facilities including very high bandwidth switched data networks, and large communication satellites with small, cheap earth antennas.



Telecommunication is mainly concerned with the transmission of messages between two distant points. The signal that contains the messages is usually converted into electrical waves before transmission. Our voice is an analog signal which has amplitude and frequency characteristic.

- **Opening of most frequently used applications**

As you learn more and more about computing, you will also become familiar with jargon. The "jargon" of any discipline just means the particular words that have specific meanings in this context. Software and hardware are two of the most frequently used computer jargon words. Hardware is the physical (touchable) computer itself, the keyboard, disk drive, monitor, etc. Software is made up of the instructions that tell the hardware what to do. You may have heard

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about Microsoft Word. This is a software program that allows you to create and edit text documents

Software might also be called an application. To open an application on your computer first click on the start menu (found in the lower left-hand corner of the illustration to the right). In the left hand column you will see your most recently used applications. The list at right shows applications from four of the largest vendors, Microsoft, Macromedida, Adobe and AOL, as well as one from a small independent company (CaptureEze Pro). Windows provides this list so that you can easily access your favorite software. Each user's list is unique, and reflects the software installed on that particular computer. If the application you currently want is on that list, then double-click to open that particular piece of software. Many times, however, you will find that the desired application is not in the favorites group. When that happens you have to navigate to your desired piece of software

Say, for example, that you want to open Excel the very popular business program for creating electronic spreadsheets. but you notice it is not currently in the favorites group. You would then click on "All Programs".

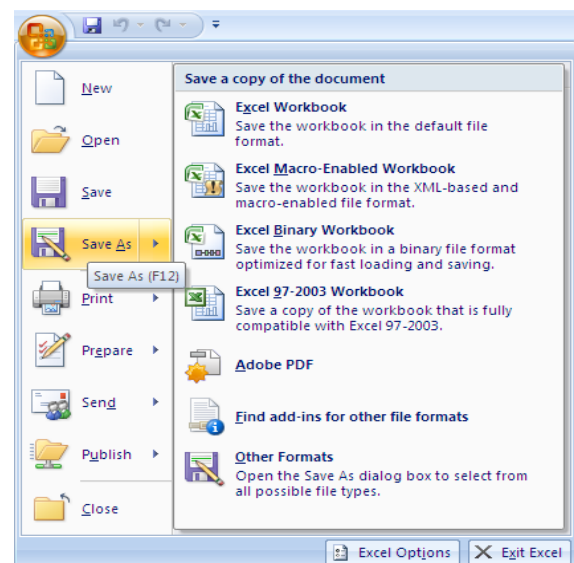
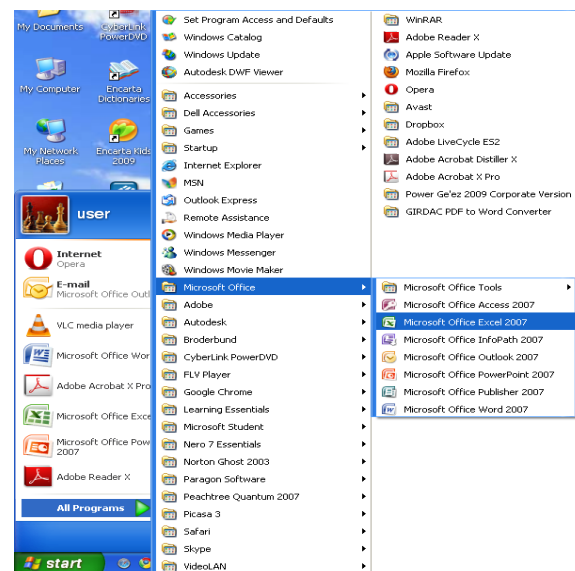
This brings up a list of program categories. As you study this list, you note that Excel is still not available to you. The reason for this is that the system software categorizes programs automatically. In this way it is able to keep the overall list to a manageable size. Now, study this list again. Since you know that Excel is one of the programs that is included in Microsoft Office application suite, you conclude that you will find Excel in that group

You access that particular group by clicking on the solid black arrow to the right of the words "Microsoft Office". Whenever you see one of the little arrows, it tells you that there is an additional menu of choices available. Next, move your mouse over the arrow. Don't click! Just move your mouse. A new menu appears, giving you a list of all available Microsoft Office programs.

Next, move your mouse over "Microsoft Office Excel 2003" (you might not have the same software version on your computer, but move the mouse over whatever name contains "Excel"). When the application name turns blue, it is available to be opened. Now click on the name. The Excel application will open onscreen.

After you have completed work in the open application, there are two tasks to complete the **first is to save your work**. Go to office button > **Save and single click**

You have closed the file, but the application is still running. Sometimes you want to keep the application open because you are planning to open another file that requires that software. When you do want to close the application, simply go to office button > Close



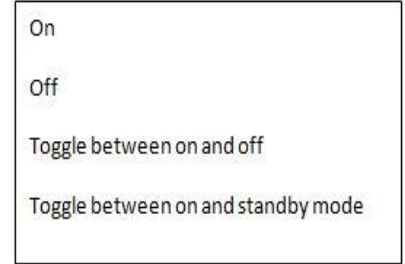
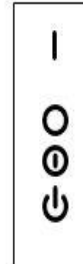
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Turning on computer equipment:

One thing a computer definitely needs to work is electricity! A desktop computer must always be connected to a power outlet, while a laptop may operate on its own internal battery for a few hours. In any case, without power the computer is pretty useless.

A desktop computer has a power button on the front. By pushing in on the button and then releasing it, you turn the computer on. You should hear a noise like a fan or a vacuum cleaner, and some lights will appear on the front of the computer. Here is a picture of a typical power button:



The power button on a computer (and many other devices) displays shapes which come from a standard of the International Electro technical Commission (IEC)



Information systems may include:

- Username and passwords to access information systems: A **user is a person** who uses a computer or network service. A user often has a user account and is identified by a username (also user name). Other terms for username include login name, screen name (also screen name) and A **password is a word** or string of characters used for user authentication to prove identity or access approval to gain access to a resource (example: an access code is a type of password), which should be kept secret from those not allowed access.



- Billing systems: The process of sending an invoice (An invoice, bill or tab is a commercial document issued by a seller to a buyer, relating to a sale transaction and indicating the products, quantities, and agreed prices for products or services the seller has provided the buyer. Invoices can only be issued by legal entities.) to customers for goods or service
- Databases: A database package allows the user to organize and store information, which the computer will sort, search and navigate (browse) for the user. Databases contain files or tables, which may be related. The files or tables contain records and each record is made up of fields, which contain single items of data
- Internet: worldwide network of computers. If you have access to the Internet, you can retrieve information from millions of sources, including schools, governments, businesses, and individuals (World Wide Web –(www)A system for exploring the Internet by using hyperlinks. When you use a Web browser, the Web appears as a collection of text, pictures, sounds, and digital movies.)
- Intranet: A network within an organization that uses Internet technologies and protocols, but is available only to certain people, such as employees of a company. An intranet is also called a private network.

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- Telephone systems: A telephone system is a multiline telephone system typically used in business environments, encompassing systems ranging from small key systems to large-scale private branch exchanges.



1.2. Navigating screens efficiently

With a computer, navigation refers to the act of opening and moving through computer menus, like the Start menu in Windows, opening software programs, or viewing files in Windows Explorer. More generally, to navigate is to move your mouse around the screen to access icons and the other features of an operating system

Navigating around the computer desktop can seem like a web with multiple windows open. Minimizing every single window to simply get to the desktop can take precious time you would like to spend working or relaxing. After all, every minute adds up. To switch between windows, you don't have to go through the trouble of minimizing. Instead, there are a series of keyboard shortcuts that allow you to switch between all open windows quickly and without even touching the mouse.

Switch between open applications in all versions of Windows. Reverse the direction by pressing Alt+Shift+Tab at the same time. Switches between program groups, tabs, or document windows in applications that support this feature. Reverse the direction by pressing Ctrl+Shift+Tab at the same time

Instructions Windows

- Press and hold "Alt" and "Tab." This will bring up a small window with all open programs.
- While holding "Alt," press "Tab" repeatedly until you reach the program window you would like to switch to. Pressing "Tab" once will open the window to the first program to the right.
- Let go of both "Alt" and Tab." Letting go of both keys will open the window you selected. If you selected the wrong window, or would like to switch back, press and hold "Alt" and "Tab" again.

1.3. Using multiple windows or interfaces

Most computer user's work with multiple software programs running simultaneously. This can easily become tiring and frustrating if you use the mouse to toggle between each every few seconds. Fortunately, accessing multiple application screens or even several tabs within a web browser can be done efficiently without the need of the mouse. Whether you are a Windows or Mac user, there are built-in system shortcuts that allow you to quickly toggle between active program screens.

What is the importance of multiple document interfaces?

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MDI (Multiple Document Interface) is a Microsoft Windows programming interface for creating an application that enables users to work with multiple documents at the same time. Each document is in a separate space with its own controls for scrolling.

What are the advantages of using a split window and when would you use it?

The benefits of working with a split screen are mainly for multi-tasking and productivity purposes, it's way easier to work on a number of different tasks and get them all done quickly when you can see them side-by-side instead of dipping in and out of them

What do you mean by multiple document interfaces?

A multiple document interface (MDI) is a graphical user interface in which multiple windows reside under a single parent window. Such systems often allow child windows to embed other windows inside them as well, creating complex nested hierarchies

What do you use dual monitors for?

Advantages of Dual Monitors

- Use Programs Simultaneously.
- By having two monitors, a person can run multiple applications simultaneously. ...
- Reference Critical Information. ...
- Simple to Use. ...
- Increased Collaboration and Communication. ...
- Dual Monitors Work Well with Laptops.

Instructions Windows

- Launch the software applications you need work with and to toggle between.
- Press the "Alt" and "Tab" keys simultaneously. A list of icons that correspond to the open applications opens up for quick access.
- Keep the "Alt" key pressed and press the "Tab" key to toggle between the available application icons.
- Release both "Alt" and "Tab" keys when the cursor is focused on the application to which you wish to switch. The system automatically switches focus to the chosen application.

How do I have 4 windows open at the same time?

Snap 4 Windows on Screen at One Time

- Drag each window to the corner of the screen where you want it.
- Push the window's corner against the screen corner until you see an outline.
- MORE: How to Upgrade to Windows 10.
- Repeat for all four corners.
- Select the window you wish to move.

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- Hit Windows Key + Left or Right.

1.4. Managing information systems using bookmarks and other strategies

The ability to **store** your favorite Web sites on an Internet browser is called bookmarking. When you bookmark a Web site, you are adding its URL to a list of favorites that you can refer to again and again any time you want to visit them. With Internet Explorer, there is no limit to the number of bookmarks you can make. Knowing how to manage your bookmarks comes in handy when you start to accumulate a lot of them.

Instructions

Keep Your Bookmarks in Order

- Engage Internet Explorer on your computer. Go to the 'Favorites' heading at the top of the browser window.
- Click on 'Add to Favorites.' This will bookmark the Web page you are currently on. You can do this with any Web page you visit that you wish to save.
- Organize your bookmarks. Go to the 'Favorites' heading again and click on 'Organize Favorites.' This will give you the opportunity to create categories for your bookmarks.
- Click 'New Folder' to make a folder for a category of bookmarks. You can name this folder anything you like.
- Manage your bookmarks. When you add a new Web site to your bookmarks and want it to be placed in a particular category, click on 'Favorites,' then 'Add to Favorites.' You will then select the category for your bookmark from the drop-down menu. Click the 'Add' button when you have made your selection.
- Move, rename or delete your bookmark categories. This is another way in which you can manage your bookmarks. Click on 'Favorites,' then 'Organize Favorites.' You can then use the buttons provided to move bookmarks from one category to another, rename bookmarks or categories or delete them.

Self-Check -1	Written Test
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Short Answer Questions

Directions: Answer all the questions listed as you instructed. (5 points each)

1. Explain the followings
 - a. Data, information and system
 - b. Sources of information
 - c. Nature information
2. Demonstrate points that are included in Log on

3. What is navigation? describe how to navigate multiple windows

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4. Explain what to mean using multiple windows or interfaces

5. Describe about bookmarks?

Note: Satisfactory rating – 18 points Unsatisfactory - below 18 points

You can ask your Trainer for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____



LG06:	Processing customer information using multiple Information systems
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Information Sheet-2	Processing customer information using multiple Information systems
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2.1. Analyzing customer inquiry accurately to identify information needs

How do you identify customer needs and expectations?

To **identify needs**, you must both listen and ask the right questions. After **identifying needs**, always check for additional or related **needs**. Use your knowledge and experience to **identify** and present the right products, services, and solutions to meet your **customers' needs**.



You can represent pre-sales business processes in the system using the functions for inquiries and quotations. Customer inquiries and quotations to the customer can be entered and monitored.



For example, a customer inquires whether you have a certain product in your warehouse, how much it will cost, or whether the product will be available for a certain date. ***The inquiry is therefore a request from the customer for you to provide him with a sales quotation.***



A quotation presents the customer with a legally binding offer for delivering a product or providing a service within certain fixed conditions.

Customer may include:

- colleague
- internal or external customer of the organization
- user, purchaser, or beneficiary of a service, product or process

Information may include:

- details required from core business systems or other sources in order to complete a transaction or process
- specific details requested by a customer or others

The four crucial things a customer needs are:

Fair price

- Pricing should be important to you for revenue, but also it's important to your customers. They need the pricing to be fair.



- When deciding if your price is fair, you could benefit from looking at your competitors ecommerce stores so you can gauge the customer expectations. While we agree that price anchoring is not always the smartest way to decide on pricing, it's important to know where you stand in comparison with your competition.
- If you are charging significantly more than your competition then think seriously about whether your offering is better than theirs.
- It's okay to charge more, however, compensate that with better customer service, like a loyalty program or bonus features to justify the higher price point.
- The key thing with pricing is to be transparent. Whether you're above or below the market rate, let your customers know why this is the case and exactly what they get for their money.

Good service

Good customer service has been proven time and time again to allow business' to charge more.

Customers continually suggest they would be happy paying more for a product if it meant it would improve the level of customer service. So you need to think how to meet customer expectations.

Having a strong customer support team increases the level of trust your customers have for you. They understand problems will be addressed and fixed in a timely manner and they're more receptive to when things do end up going wrong.

Good customer service, however, is not an excuse to increase your prices. If you can keep your products affordable and provide excellent customer service, even better

Good product

- Creating a solid product is obviously a major need for the consumer, and a major need for you too. There is no point in excessive manufacture costs if no one is buying your poor product.
- Be confident in your product, be open to improvement suggestions and always aim to give the customer exactly what they need, not what you think they need.

Feel valued

- How much your customers feel valued by your company is often overlooked. Some companies seem to forget that without your customers, you would have no business.
- Customer value is the one need we think most ecommerce stores overlook.
- A great example of this is by UK supermarket chain Sainsbury's who upon receiving a letter from a three-year-old child, changed the name of one of their products.

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2.2. Identifying information systems required to satisfy information needs

The various types of information systems that an organization uses may be classified into the following categories:

- Office automation systems.
- Transaction processing system.
- Decision support systems.
- Executive information systems.
- Business expert system

Apart from these broad classes of information systems, organizations also use specific information systems for some special tasks like executive information system, enterprise (wide) resource planning systems, customer relationship management systems and supply chain management system. These systems also fall under the above broad classification.

Office Automation Systems

This type of information system aids in automating office tasks. They have a limited role in decision-making and are more useful for operational level people. The information coming out of this kind of system can be used for rule-based decision-making for managers at the operational level. These systems however play an important role in automating several functions of an office and thus help in creating paperless offices. These kinds of systems help in increasing the productivity and efficiency of the office workforce by automating simple tasks. These systems mostly deal with operational data. More and more modern businesses are opting for this paperless office environment as this brings in the following unique advantages for the business:

1. Office work becomes faster and process driven.
2. All basic level data is digitized and stored for future action.

An example of office automation system is the office suite of software that helps in automating simple office tasks like presentations and documentation. Sometimes we also come across a class of systems called the operations support system (OSS). OSS also work with the lowest level of management is ensuring that the operations of the firm are performed smoothly. OSS can be very different from Office Automation System even though they both help bottom level managers, in term of the information complexity involved.

Transaction Processing System

This type of system is critical to the smooth functioning of an organization. The objective of this kind of system is to capture all transaction related data between the organization and its external and internal customers. Typically, these transaction level data are stored in a pre-formatted manner in a relational database for further action in future. TPS

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is the most widely used form of information systems as they provide the management with the flexibility of storing data in a structured manner and retrieving it at a later date using a query facility. The system also helps in aggregating and summarizing the data for creating of management reports. These reports are further improved by using visualization tools that help the management in understanding situations and scenarios better. These systems deal with tactical data from within the organization.

An example of TPS would be the sales management system with a relational database management system at the server side back end and a customized front end to interact with the users.

Decision Support Systems

Decision support systems help senior management to take strategic decisions. Contrary to the other systems, decision support systems are developed with the objective of providing the users (top management personnel) with unstructured information. These systems help the management to develop 'what if analysis' so that different scenarios can be developed for decision-making. Decision support systems deal with both internal and external data. Such systems are custom built with features like business dashboard and scenario panel.

Such systems are complex with working models (internal) on the data to provide the senior managers with decision support. Unlike transaction processing systems, these systems are not query dependent only. Their main role is to access data from a data repository and then pass that data through a model (mathematical, heuristic, statistical, econometric, operations research and combinatorial), so that the senior management can take better decisions by doing either 'what if analysis' and scenario building or by doing 'predictive analysis' to get some insight into a business issue. Such systems are very costly to build and require advanced analytics tools.

Executive Support System

Executive support system is also known as the executive information (support) system. It began to gain acceptance in the mid-eighties in large corporations and is now used even in smaller corporations. In functionality, it is nearer to decision support systems than management information systems. Its main objectives are to provide a macro-organization wide view for senior executives, by providing a very user-friendly user-interface so that proactive steps may be taken to beat competition. It provides timely and proactive organization tracking and control. It is able to perform these tasks by providing fast access to all type of data and by filtering and tracking critical data and information. It helps to identify problems and opportunities and thus, helps senior executives to troubleshoot problems and take advantage of opportunities.

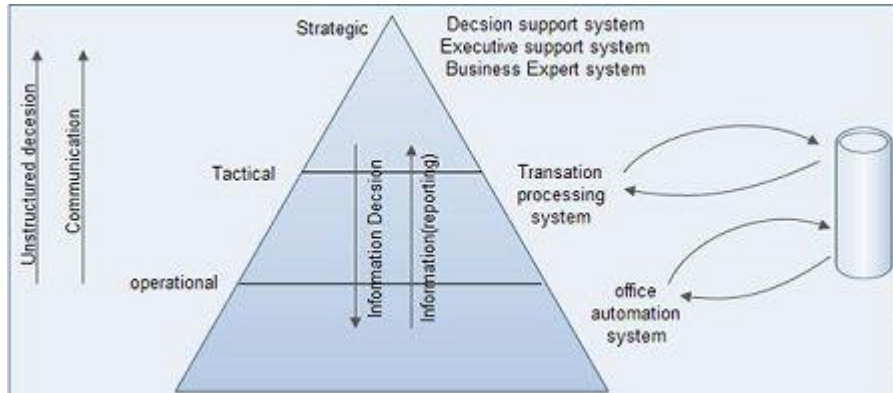
Business Expert System

Some business scenarios are so complex that they require the help of advanced systems that can provide expert solutions. These systems use artificial intelligence and neural networks to reach the performance level of a human expert thereby helping the organization. These systems are different from any other information system as they are capable of decision-making by themselves without human intervention. Actually, these

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systems are loaded with the knowledge of experts and these systems simply simulate the expert knowledge to arrive at decisions.



2.3. Using information systems effectively to complete customer inquiry or transaction

Information and its use has become the competitive advantage of today's world. The efficiency with which a firm manages its information determines its success in the marketplace. This enormous power of information unleashed in today's world has brought down reaction times for decision-making of managers, made customers more aware, competitors more efficient and regulators more alert.

Today, one can no longer hide behind excuses of 'plausible deniability'. These changes have resulted in a change in mindset of managers and have transformed the way business is conducted. Management of information itself has become a key success factor for firms. However, information is not to be seen in isolation. Information in the current competitive business environment is available to business firms in a computerized environment. Computerization is required to make the information supplied to be timely and accurate, which are critical factors for success in these competitive times.

Hence, the study of information management entails an understanding of information and communication technology also. However, information management is a distinct subject not related (other than the practical considerations of providing the output information timely and accurately) to information and communication technology. Let us now delve deeper into the subject to get a clear understanding of the basic concepts that drive management information systems.

As is clear, the advantage that a modern corporate house enjoys can be traced to its management of information. If the business house cannot manage its information, then it is likely that it will not have any competitive advantage. Typically an organization can develop competitive advantage if it can, does or have what others can't, do or have. In modern times, the advantages on account of raw materials, technological edge, etc., is being neutralized by the forces of modern business. The last frontier so to say is information management. Companies that have managed to do it successfully like Dell, Google, etc., have generated an unparalleled competitive advantage as their reaction time to changes in the market and/or competition is much less and hence, they can shift

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business gears faster than their competitors and hence the advantage. Competitive advantage through managing information can accrue to an organization if it:

1. Manages information to reduce reaction time for change
2. Managing information makes the organization efficient
3. Information management leads to insights into the business that the competitors cannot have
4. Information management is used for predictive analysis so that the organization is one step ahead of competition.

This competitive advantage gained by managing information also requires changes in organization cultures. Companies need to create a culture of information based management and decision-making to take advantage of the opportunities of information management. This is a challenge, as installing an organizational culture is not as straightforward as installing an information management system. It is a process that takes a lot of time.

2.4. Recording customer information

Recording customer information accurately in information systems to complete customer inquiry or transaction

The following information will be recorded in:

- customer’s name and contact details
- the issue type (complaint, compliment, query, suggestion, other)
- how the feedback/complaint was received (email, fax, in person, internet, letter, telephone, other)
- the feedback/complaint priority (1 = Urgent attention, 2 = Serious, 3 = Less serious)
- incident date and time
- the issues relevant to the feedback or complaint
- the feedback and complaint summary section
- diary notes to capture all work that has been done and action that has been taken relevant to the feedback or complaint
- where possible the incident location, driver’s name (relevant details will then be populated from Resolve), vehicle registration number, place of pick up and drop off
- The outcome code and description for each issue. Note that these fields cannot be completed until the assessment and/or investigation has been finalised and required actions have been determined.



2.5. Using the shortest reasonable pathways to navigate between and within information systems

How can you use shortcut keys to move (Navigate) between office programs?

How to navigate Windows using a keyboard

Navigating Microsoft Windows using the keyboard for many commonly performed tasks can dramatically increase your productivity. Also, a situation may arise when the mouse stops functioning or you need to work on a computer without one. The following sections contain many key combinations used to navigate Windows using your keyboard. You can navigate this document by clicking on one of the links below, or you can scroll through the entire document and learn all of the methods individually.

Activity	Short pathways to navigate in information system
Opening a program from the Start menu	<p>To start off, you can access the Microsoft Windows Start menu by pressing the Windows Key on the keyboard or by pressing the Ctrl and Esc keys at the same time.</p> <p>Note: Because Windows 8 does not have a Start menu, pressing the Windows key or Ctrl+Esc keys shows the Windows Start screen or go to the Windows desktop.</p> <p>In the Start menu, you can use the arrow keys on the keyboard to move up, down, left, or right in the Start menu. Once you've located the program you want to run, press the Enter key</p>
Opening a program on the desktop	<p>If there is a program you want to run that has an icon (shortcut) on the desktop, you can move to the desktop by pressing your Tab key on your keyboard. Pressing Tab while on the desktop will switch between the desktop, Start, and each of the items on the taskbar. You can determine what area you're currently at by looking for an item that is selected. An item that is selected will either be highlighted or have a border of dots.</p> <p>In some cases, you may have to press Tab several times before getting to the desktop icons. Once one of the desktop icons is selected, you can move to other icons by using your arrow keys.</p> <p>Once the icon on the desktop you want to run is selected, press the Enter key to open that program.</p>
Closing, window	<p>press the Ctrl and F4 keys on the keyboard at the same time to close the current open program or window.</p> <p>Users may also press the Alt and spacebar keys at the same time, then arrow down to the Close or Exit option in the menu and press Enter.</p>



window	time (sometimes twice).
Moving a window	Before you can move any window, it must not be maximized. To make the window appear in windowed mode, press the Alt and spacebar keys at the same time, move to the restore option, and press Enter. In windowed mode, you can move a window if you press Alt+spacebar, choose Move from the menu, then use the arrow keys to move it.
Closing a tab	In most programs, pressing the Ctrl and F4 keys at the same time closes a tab.
Switching tabs	To move left to right between tabs in the currently selected window, press the Ctrl and Tab keys at the same time. To move right to left between tabs in the currently selected window, press the Ctrl, Shift, and Tab keys at the same time.
Moving between open windows and applications	To move between any open programs on your computer, press and hold the Alt key, then press the Tab key. If this is done successfully, a window appears that displays each of the open programs on your computer. Repeatedly pressing Tab while continuing to hold Alt moves between each of the open programs. When the program you want to switch to is selected, let go of both keys to make it your current window.
Navigating between fields and buttons on a window	To move your cursor between objects of fields in a window (such as a dialog box), you'll often use the Tab, spacebar, arrow, and the Enter keys. Tab is usually the default, but if it does not work, try using the arrow keys. If you need to press a button, such as OK or Cancel, press the spacebar or Enter key.
Manipulating and moving through text	Below are the different methods of how you can move through text in a document without the aid of a mouse. Not only does this help users who do not have access to a mouse, it can also save you a great deal of time when working with text documents.
Arrow keys	Using the arrow keys on the keyboard move the cursor up, down, left, or right in the document.
Ctrl and Arrow keys	Holding down the Ctrl key while pressing the left or right arrow keys move the cursor one word at a time. Using this shortcut is much faster than only using the arrow keys. Holding Ctrl while pressing up or down moves through each of the paragraphs in the document.
End and Home keys	Pressing the End key takes you to the end of a line or document, while pressing the Home key moves you to the beginning.
Shift key -	The Shift key allows you to highlight text. For example, holding down the Shift key while using the right or left arrow keys will highlight the text to the left or right. If you hold down shift while pressing the down arrow keys, you will highlight one line at a time in that direction. Finally, you can use the Shift key in combination with the other above recommendations. For example, pressing and holding Shift and Ctrl and using the arrows will highlight a word at a time. Holding down Shift and pressing the End key will highlight from the current cursor position to the end of the line or document.
Scrolling in a	Scrolling up or down in a window is often accomplished by using any of the



windown	following keys: up and down arrow keys, Page up and Page down keys, or the spacebar.
Right-clicking an icon or other element of Windows	In some situations, you may need to right-click on an icon, text, or other Windows element. To do this without a mouse, select the icon or move the cursor to the text you need to right-click, then press and hold the Shift and F10 keys at the same time.
Checking and unchecking a checkbox	Some Windows settings pages require you to check or uncheck a checkbox to change settings. Press the Tab key to cycle through each entry in a settings page and press the spacebar to check or uncheck a checkbox for the highlighted entry.
Alt+F1	Open the Main Menu at the location of your mouse pointer. You can customize this keyboard shortcut.
Alt+F2	Open the Run Program dialog. You can customize this keyboard shortcut.
Print Screen	Take a screenshot of the entire screen. You can customize this keyboard shortcut.
Alt+ Print Screen	Take a screenshot of the window that currently has focus. You can customize this keyboard shortcut.
F1	If the focused desktop element is an application window or dialog, this keyboard shortcut opens the online help for the application.
Ctrl+ F1	If the focused desktop element is a panel or application window, this keyboard shortcut switches the display of tooltips for the window or panel objects on and off.
Shift+ F10	Open a popup menu for the desktop element that has focus, if a popup menu exists.

Note: Some of these key combinations have different effects or not work the same way for Windows 8 and 8.1



Other shortcut keys to move (Navigate) between office programs

Press this key	To do this	Press this key	To do this
Ctrl + X	Cut the selected item.	Ctrl + Y	Redo an action.
Ctrl + C (or Ctrl + Insert)	Copy the selected item.	Ctrl + Right arrow	Move the cursor to the beginning of the next word.
Ctrl + V (or Shift + Insert)	Paste the selected item.	Ctrl + Left arrow	Move the cursor to the beginning of the previous word.
Ctrl + Z	Undo an action.	Ctrl + Down arrow	Move the cursor to the beginning of the next paragraph.
Alt + Tab	Switch between open apps.	Ctrl + Up arrow	Move the cursor to the beginning of the previous paragraph.
Alt + F4	Close the active item, or exit the active app.	Ctrl + Alt + Tab	Use the arrow keys to switch between all open apps.
Windows logo key + L	Lock your PC.	Alt + Shift + arrow keys	When a group or tile is in focus on the Start menu, move it in the direction specified.
Windows logo key + D	Display and hide the desktop.	Ctrl + Shift + arrow keys	When a tile is in focus on the Start menu, move it into another tile to create a folder.
F2	Rename the selected item.	Ctrl + arrow keys	Resize the Start menu when it's open.
F3	Search for a file or folder in File Explorer.	Ctrl + arrow key (to move to an item) + Spacebar	Select multiple individual items in a window or on the desktop.
F4	Display the address bar list in File Explorer.		
F5	Refresh the active window.		
F6	Cycle through screen elements in a window or on the desktop.		
F10	Activate the Menu bar in the active app.	Ctrl + Shift with an arrow key	Select a block of text.
Alt + F8	Show your password on the sign-in screen.	Ctrl + Esc	Open Start.
Alt + Esc	Cycle through items in the order in which they were opened.	Ctrl + Shift + Esc	Open Task Manager.
Alt + underlined letter	Perform the command for that letter.	Ctrl + Shift	Switch the keyboard layout when multiple keyboard layouts are available.
Alt + Enter	Display properties for the selected item.	Ctrl + Spacebar	Turn the Chinese input method editor (IME) on or off.
Alt + Spacebar	Open the shortcut menu for the active window.	Shift + F10	Display the shortcut menu for the selected item.
Alt + Left arrow	Go back.	Shift with any arrow key	Select more than one item in a window or on the desktop, or select text in a document.
Alt + Right arrow	Go forward.	Shift + Delete	Delete the selected item without moving it to the Recycle Bin first.
Alt + Page Up	Move up one screen.	Right arrow	Open the next menu to the right, or open a submenu.
Alt + Page Down	Move down one screen.	Left arrow	Open the next menu to the left, or close a submenu.
Ctrl + F4	Close the active document (in apps that are full-screen and let you have multiple documents open at the same time).		
Ctrl + A	Select all items in a document or window.		
Ctrl + D (or Delete)	Delete the selected item and move it to the Recycle Bin.		



3. Make customer service calls a priority.

Customer service is one of the main forms of communication between a customer and a business, so your business can't afford to drop the ball. A recent survey found that 78 percent of consumers have bailed on a transaction or not made an intended purchase because of a poor service experience.

In other words, when communication breaks down over the phone, people take it personally, and they tend to not give you their business.

4. Speak to your customers like real people.

Improving communication with customers extends to the language your company uses in conversation with them -- even to having real conversations at all. That means having telephone interactions that are less scripted and that use less transactional language.

To start, try to frame your language in a positive way rather than a negative one.

One of the easiest ways to botch your business's first impression is to simply not answer your phone correctly. More specifically, if you're getting a decent amount of calls on a daily basis and you don't have an automated system that communicates with callers effectively, it can damage your business more than you may know.

In a customer service setting, it is important to have good communication skills to show customers you understand what they actually mean. Speaking clearly and effectively is important for customers to walk away without questions and to leave no room for error in communication.

How do you maintain regular contact with customers?

Simple Ways You Can Strengthen Customer Relationships

1. Send greeting cards.

Simple gestures can go a long way. For the holidays, send cards to your customers to express how grateful you are for them and their business. That one simple act will make your customers feel respected, valued, and, best of all, appreciated. Taking a few breaks from selling your company to do an unselfish act will make your customers feel good.

2. Keep lines of communication with customers open.

Research shows that when customers receive multiple methods of communication, they are more likely to remain loyal. And, in many instances, the most effective communications incorporate soft sells rather than hard-hitting sales language.

Newsletters, emails, tweets, and Facebook status updates (social media in general) are easy-to-use, appropriate ways for staying connected and incorporating soft sells.

Product quality reports and annual company reports can also keep customers apprised.

3. Know the stages of customer loyalty.

- Suspect

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- Prospect
- First-time customer
- Repeat customer
- Client
- Advocate

When you know the stages of customer loyalty, it's easier to bring people from the suspect stage all the way to the advocate stage. To achieve that transition, marketers need to understand how to entice people to convert them into customers while nurturing the relationship.

Marketers and other business executives can work together to educate the client and build the relationship so that the client is willing to provide positive word of mouth about the company, becoming a recruiting advocate for the business.

4. Provide customer support.

Marketing specialists are equipped to provide businesses the type of customer support that also builds customer relationships. Via blog posts, newsletters, Facebook, Twitter, and an all-encompassing social media marketplace blitz, marketers can provide information, insight, news, advice, and even technical assistance to customers. Those acts establish the company's interest in its customers, making them feel valued and needed by the company.

5. Ask for customers' opinions.

What better way to make someone feel valued than by asking for his or her opinion and advice? Business owners not only gain much insight from trusted clients but also establish that they respect and value those clients. Businesses can gain insight via surveys, online discussion questions, personal phone calls, and in-person meetings.

By reaching out to customers, you give them a way to become involved and make their voices heard. They will feel that they are a part of the company, and you will get valuable feedback on what's working and what needs to be changed in your company's marketing strategies and business plan.

6. Don't overlook current customers in your marketing.

Welcome to the "80/20 rule": 80% of a company's business comes from 20% of its customers. By making a concerted marketing effort toward current customers, you will have a higher ROI on your marketing dollars and will strengthen your customer relationships. You can use a variety of marketing tactics on your clientele, including free consultations and personalized service.

7. Adapt your business plan/model.

Marketing specialists should work with businesses to keep current. One of the best ways to achieve that is to adapt the business plan as the economic climate and industry trends change. Your business plan should be a living, breathing document, not a static manuscript that resides on a bookcase.

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Schedule time to review and refresh your business plan annually. If you have noticed major changes on the horizon, you may need to schedule an additional planning session to address changes.

Be sure to include all of the major players at your company in the business plan review. Though the marketing department will play a major role in developing the business plan, other areas of expertise, such as Finance and Customer Service, have ideas that need to be heard. Incorporating information from all company departments will ensure that all of your customers' needs are taken into account.

The US Small Business Administration recommends taking the following questions into consideration when developing and updating your business plan:

- What does your business offer, and what need does it fulfill?
- Who are your potential customers, and why would they choose your company?
- What tactics will you use to reach your customers?
- What is your financial plan?
- What is the organizational structure of your business, and how is it managed?

To get the most out of your business plan review sessions, ask all involved parties to review the plan in advance. They should not only read the document but also note their changes. And, independent of the plan, ask them to complete a SWOT analysis of the company. That is, writing out what they perceive to be your company's strengths, weaknesses, opportunities, and threats in relation to your clients' needs.

Once the departments have completed their SWOT analysis, ask them to come up with concrete tactics their departments can deploy to take advantage of strengths and opportunities while smoothing over the weaknesses and threats.

2.7. Verifying information with customer to complete transaction

Transaction verification is a process of comparing and then verifying all transactions within a specific product type, group or region over a given time period.

Confirmation of customer details isn't just sound business sense; it's also the law. Make sure that you are protecting your assets and your reputation by completing your customer verification in the most efficient and effective way possible.

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Self-Check -2	Written Test
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Short Answer Questions

Directions: Answer all the questions listed as you instructed. (5 points each)

1. Demonstrate how to Process customer information using multiple Information systems

2. Explain crucial things that a customer needs

3. Discuss the various types of information systems that an organization uses

4. Competitive advantage through managing information can accrue to an organization if it:

5. List down the information that are recorded during complete customer inquiry or transaction

6. Demonstrate how to use the shortest reasonable pathways to navigate between and within information systems

7. A, Discuss on ways to improve customer experience and communication over the phone to improve customer happiness.

B, List out Simple Ways You Can Strengthen Customer Relationships

8. Explain what we mean transaction verification?

Note: Satisfactory rating – 18 points Unsatisfactory - below 18 points
 You can ask your Trainer for the copy of the correct answers.

Answer Sheet

Name: _____

Date: _____

Score = _____
Rating: _____



LG07: Identify and rectify information system and processing errors

Information Sheet-3	Identify and rectify information system and processing errors
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3.1 Identifying errors in information system,

An error is an action which is inaccurate or incorrect. In some usages, an error is synonymous with a mistake. In statistics, "error" refers to the difference between the value which has been computed and the correct value. An error could result in failure or in a deviation from the intended performance or behavior

An error message is information displayed when an unexpected condition occurs, usually on a computer or other device. On modern operating systems with graphical user interfaces, error messages are often displayed using dialog boxes. Error messages are used when user intervention is required, to indicate that a desired operation has failed, or to relay important warnings (such as warning a computer user that they are almost out of hard disk space). Error messages are seen widely throughout computing, and are part of every operating system or computer hardware device. Proper design of error messages is an important topic in usability and other fields of human-computer interaction.

Errors may include:

- corrupt data

✚ Data corruption refers to errors in computer data that occur during writing, reading, storage, transmission, or processing, which introduce unintended changes to the original data. Computer, transmission and storage systems use a number of measures to provide end-to-end data integrity, or lack of errors.

✚ In general, when data corruption occurs, a file containing that data will produce unexpected results when accessed by the system or the related application; results could range from a minor loss of data to a system crash. For example, if a Microsoft Word file is corrupted, when a person tries to open that file with MS Word, they may get an error message, thus the file would not be opened or the file might open with some of the data corrupted. The image to the right is a corrupted jpg file in which most of the information has been lost.

✚ Some programs can give a suggestion to repair the file automatically (after the error), and some programs cannot repair it. It depends on the level of corruption, and the built-in functionality of the application to handle the error. There are various causes of the corruption.

- inaccurate data

Dirty data is inaccurate, incomplete or erroneous data, especially in a computer system or database. In reference to databases, this is data that contain errors. Unclean data can contain



File not found

The file concerned may have been damaged, moved, deleted, or a bug may have caused the error. Alternatively, the file simply might not exist, or the user has mistyped its name.



Low Disk Space

This error occurs when the hard drive is (nearly) full. To fix this, the user should close some programs (to free swap file usage) and delete some files (normally temporary files, or other files after they have been backed up), or get a bigger hard drive.



3.2. Analyzing errors for their impact on information system and customers

Steps in error analysis

1. collecting samples of data with error
2. identifying the errors
3. describing the errors
4. explaining the errors
5. evaluating/correcting the errors

3.3. Identifying source of errors, where possible

Common **sources of error** include instrumental, environmental, procedural, and human. All of these **errors** can be either random or systematic depending on how they affect the results.

There are three basic types of errors that will be described below: human **error**, systematic **error**, and random **error**.

Human Errors – This occurs when the researcher simply makes a mistake such as misreading an instrument or setting up the experiment wrong.

Random errors are natural **errors**. Systematic **errors** are due to imprecision or problems with instruments.

Systematic errors are caused by imperfect calibration of measurement instruments or imperfect methods of observation, or interference of the environment with the measurement process, and always affect the results of an experiment in a predictable direction.

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3.4. Consulting with stakeholders to identify actions to rectify errors

What is stakeholder consultation?

For stakeholders, a company's consultation process is an opportunity to get information, as well as to educate company staff about the local context in which a project will take place, to raise issues and concerns, ask questions, and potentially help shape the project by making suggestions for the company

What are the benefits of consultation?

Consultation can identify opportunities, assist decision making and help ensure any new ideas work effectively in practice. Consultation may take the form of: establishment of employer/employee (and employee representative) committees. regular staff meetings and communication with employees.

Stakeholders may include

- **information technology department or help desk**

What is an IT help desk?

A help desk is a resource intended to provide the customer or internal user with information and support related to a company's processes, products and services. The purpose of a help desk is to provide a centralized resource to answer questions, troubleshoot problems and facilitate solutions to known problems.

- **marketing and other departments**

What are the functions of a marketing department?

It serves as the face of your company, coordinating and producing all materials representing the business. It is the Marketing Department's job to reach out to prospects, customers, investors and/or the community, while creating an overarching image that represents your company in a positive light.

- **owners of database or system**

What is a database owner?

Database owner. The term database owner refers to the current authorization identifier when the database is created, that is, the user creating the database. ... The database owner has automatic SQL level permissions when SQL authorization is enabled, see more about this in User authorizations.

SQL (pronounced "ess-que-el") stands for Structured Query Language. SQL is used to communicate with a database. According to ANSI (American National Standards Institute), it is the standard language for relational database management systems

- **team leader or manager**

What is the role of a team leader?

A team leader is responsible for guiding a group of employees as they complete a project. They are responsible for developing and implementing a timeline their team will use to reach its end goal. Some of the ways team leaders ensure they reach their goals is by delegating tasks to their members, including themselves.

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- training department
What does the training department do?
Training and development managers conduct and supervise development programs for employees. They assess where training is most needed, conduct the training, and evaluate its effectiveness. In addition to enhancing productivity and quality of work, training can increase morale and build loyalty to the firm.



3.5. Arranging rectification and confirm that amendments are accurate

What does it mean to rectify something?

- Rectification is the action of putting something right; correction.
- a formal way to correct **something** or make **something** right

How do you rectify a problem?

Here are seven-steps for an effective problem-solving process.

1. Identify the issues.

- Be clear about what the problem is.
- Remember that different people might have different views of what the issues are.
- *Separate the listing of issues from the identification of interests (that's the next step!).*

2. Understand everyone's interests.

- This is a critical step that is usually missing.
- Interests are the needs that you want satisfied by any given solution. We often ignore our true interests as we become attached to one particular solution.
- The best solution is the one that satisfies everyone's interests.
- This is the time for active listening. Put down your differences for awhile and listen to each other with the intention to understand.
- *Separate the naming of interests from the listing of solutions.*

3. List the possible solutions (options)

- This is the time to do some brainstorming. There may be lots of room for creativity.
- *Separate the listing of options from the evaluation of the options.*

4. Evaluate the options.

- What are the pluses and minuses? Honestly!
- *Separate the evaluation of options from the selection of options.*

5. Select an option or options.

- What's the best option, in the balance?
- Is there a way to "bundle" a number of options together for a more satisfactory solution?

6. Document the agreement(s).

- Don't rely on memory.
- Writing it down will help you think through all the details and implications.

7. Agree on contingencies, monitoring, and evaluation

- Conditions may change. Make contingency agreements about foreseeable future circumstances (If-then!).
- How will you monitor compliance and follow-through?

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- Create opportunities to evaluate the agreements and their implementation. ("Let's try it this way for three months and then look at it.")

3.6. Informing customers errors and take necessary action

During informing customers for correction of errors you may use letters, to write for informing error correction follow the following guidelines

- You will explain the error and ask for review and correction. Your tone should be formal and courteous.
- Introduce yourself and give your policy and claim number if it seems appropriate to you.
- Explain the error.
- Tell the reader how the error occurred.
- Request the reader to fix it.

3.7. Identifying information system faults and notify relevant personnel according to policy

What is information system failure?

A **system failure** can occur because of a hardware **failure** or a severe software issue, causing the **system** to freeze, reboot, or stop functioning altogether.

A **system failure** may or may not result in an error being displayed on the screen

What are the reasons for failure of information system?

These **failures** are those that are primarily caused by hardware faults or by the entity not having the resources necessary to make the specified **system** usable. Damaged hardware, Badly designed hardware, A poor fit between the **system** and the organization.

What are the types of system failure?

Following are the **types of failure**: Hardware **failures**: Hardware **failures** may include memory errors, disk crashes, bad disk sectors, disk full errors and so on. Software **failures**:

Software **failures** may include **failures** related to software such as, operating **system**, DBMS software, application programs and so on.

3.8. Recommending procedural change according to policy

What is change procedure?

The **change management process** is the sequence of steps or activities that a **change** management team or project leader follow to apply **change** management to a **change** in order to drive individual transitions and ensure the project meets its intended outcomes.

What is change management policy?

Change Management refers to a formal process for making **changes** to IT systems.

The goal of **change management** is to increase awareness and understanding of proposed **changes** across an organization and ensure that all **changes** are made in a thoughtful way that minimize negative impact to services and customers.

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Self-Check -3	Written Test
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Short Answer Questions

Directions: Answer all the questions listed as you instructed. (5 points each)

1. Demonstrate how to Identify and rectifying information system and processing **errors**

.....

2. Explain Steps in error analysis

.....

3. List sources of error

.....

4. Demonstrate who are *stakeholders* to rectify errors

.....

5. What are steps in rectification (problem solving) process?

.....

6. Write guide lines that you should follow while writing letter to informing customers for correction of error

.....

7. Identify what are system failure

.....

8. What is change management policy ?

.....

Note: Satisfactory rating – 18 points Unsatisfactory - below 18 points

You can ask your Trainer for the copy of the correct answers.

Answer Sheet

Score = _____
Rating: _____

Name: _____

Date: _____