

FIRST EDITION



SVĀDHYĀYA SERIES



GROUP 2

ENTERPRISE INFORMATION SYSTEMS

PAPER 7A

**CA INTERMEDIATE - NEW COURSE
APPLICABLE FOR MAY 2022 EXAMS AND ONWARDS**

**Complete ICAI Syllabus Covered
Chart, Table & Pictorial Presentation
Use of codes or Mnemonics
Chapter-wise Q/ Ans
Self Study detailed notes
Case study based questions**



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Chapter



FINANCIAL AND ACCOUNTING SYSTEMS

1. Introduction:

Financial and Accounting Systems forms an integral part of any business and acts as a backbone for it. In the process of learning about Financial and Accounting systems, there can be different views for a similar thing. These different views may be of:

- **Accountants View** – Balance Sheet and Profit & Loss Account must be prepared easily without putting much time / efforts.
- **Auditors View** – Balance Sheet and Profit & Loss Account must be correct at any point of time.
- **Business Manager / Owner's View** – I need right information at right point of time for right decision making.

2. Integrated (ERP) And Non-Integrated Systems:

2.1. ERP and non-integrated system:

Below are the dictionary meaning of “system”:

- A set of principles or procedures per which something is done; an organized scheme or method” OR
- A set of things working together as parts of a mechanism or an interconnecting network; a complex whole”
- A set of detailed methods, procedures and routines created to carry out a specific activity, perform a duty, or solve a problem”.

In systems there are various elements which are inter-related and inter-dependent and interact with each other to achieve the goals of the system. All systems generally have:

- **Inputs, outputs and feedback mechanisms,**
- **Maintain an internal steady-state despite a changing external environment,**
- **Have boundaries that are usually defined by the system observer.**

A system includes defined methods and process to perform a activity. So basically, processes are important components in any system.

2.2. What is a process:

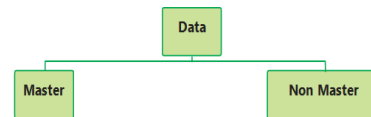
A **Process is defined as a sequence of events that uses inputs to produce outputs.** From a business perspective, a Process is a coordinated and standardized flow of activities performed by people or machines, which can traverse functional or departmental boundaries to achieve a business objective and creates value for internal or external customer.

2.3. Concepts in Computerized Accounting System:

2.3.1. Types of Data-

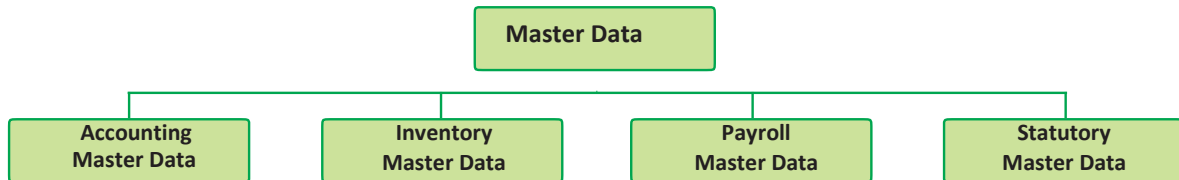
Every accounting system stores data in 2 ways:

- ∞ Master Data
- ∞ Non-Master Data



Master Data

- Master data is **permanent data that is not expected to change again and again.**
- It may change, but not again and again.
- Below are types of master data:



Accounting Master Data	Inventory Master Data
This includes names of ledgers, groups, cost centers, accounting voucher types, etc. E.g., Capital Ledger is created once and not expected to change frequently. Similarly, all other ledgers like, sales, purchase, expenses and income ledgers are created once and not expected to change again and again.	This includes stock items, stock groups, godowns, inventory voucher types, etc. Stock item is something which bought and sold for business purpose, trading goods.
Payroll Master Data	Statutory Master Data
Payroll is a system for calculation of salary and recoding of transactions relating to employees. Master data in case of payroll can be names of employees, group of employees, salary structure, pay heads, etc. These data are not expected to change frequently.	This is a master data relating to statute/law. It may be different for different type of taxes. E.g. Goods and Service Tax (GST), Nature of Payments for Tax Deducted at Source (TDS), etc.

Non-Master Data

- It is a data which is expected to change frequently and not a permanent data.
- Example: Amount covered under transactions differs each time. Date recorded in each transaction is expected to change again and again and will not be constant in all the transactions.

2.3.2. Voucher Type-

In accounting language, a Voucher is documentary evidence of a transaction. There may be different documentary evidences for different types of transactions. Following are types of transactions and documentary evidences of such transactions-

Receipt	Given to a customer after making payment by him/her.
Sales invoice	Given to a customer for goods sold.
Journal voucher	Evidence of a non-cash/bank transaction

Generally following types of vouchers are used in accounting systems as shown in the Table

S.N.	Voucher Type Name	Module	Use
2	Payment	Accounting	For recording of all types of payments. Whenever the money is going out of business by any mode (cash/bank)
3	Receipt	Accounting	For recording of all types of receipts. Whenever money is being received into business from outside by any mode (cash/bank).
4	Journal	Accounting	For recording of all non-cash/bank transactions. E.g., Depreciation, Provision, Write-off, Write-back, discount given/received, Purchase/Sale of fixed assets on credit, etc.
5	Sales	Accounting	For recording all types of trading sales by any mode (cash/bank/credit).
6	Purchase	Accounting	For recording all types of trading purchase by any mode (cash/bank/credit).
7	Credit/ Debit Note	Accounting	For making changes/corrections in already recorded sales/purchase transactions.
8	Purchase Order	Inventory	For recording of a purchase order raised on a vendor.
9	Sales Order	Inventory	For recording of a sales order received from a customer.
10	Stock Journal	Inventory	For recording of physical movement of stock from one location to another.
11	Physical Stock	Inventory	For making corrections in stock after physical counting.
12	Delivery Note	Inventory	For recording of physical delivery of goods sold to a customer.
13	Receipt Note	Inventory	For recording of physical receipt of goods purchased from a vendor.
14	Memorandum	Accounting	For recording of transaction which will be in the system but will not affect the trial balance.
15	Attendance	Payroll	For recording of attendance of employees.
16	Payroll	Payroll	For salary calculations.

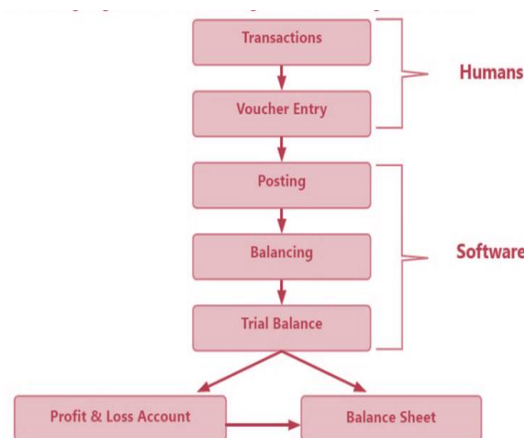
2.3.3. Voucher Number -

A Voucher Number or a Document Number **is a unique identity of any voucher/ document**. A voucher may be identified or searched using its unique voucher number. Following may be key features of voucher number-

- ♦ Voucher number must be unique.
- ♦ Every voucher type shall have a separate numbering series
- ♦ A voucher number may have prefix or suffix or both, E.g., MSIL/XXXX/18-19. Here, “MSIL” is the prefix, “18-19” is the suffix and “XXXX” is the actual number of the voucher.
- ♦ All vouchers must be numbered serially.
- ♦ All vouchers are recorded in chronological order and hence voucher recorded earlier must have an earlier number.

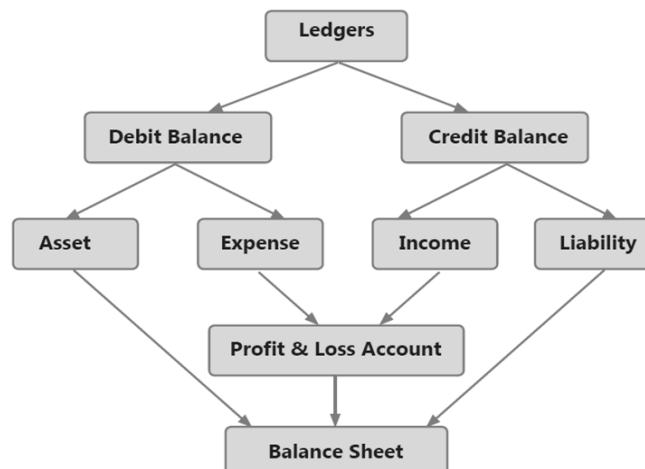
2.3.4. Accounting Flow-

Please refer to below flowchart where accounting flow has been summarized and also extent of human interference:



2.3.5. Type of Ledgers-

Under financial and accounting systems are concerned, ledgers may be classified in 2 broad types. Ledger has debit balance and ledger having credit balance.



Important points to be noted:

- Basic objective of accounting software is to generate two primary accounting reports, i.e., Profit & Loss Account and Balance Sheet. Income and Expense ledgers are considered in Profit & Loss Account and Asset and Liability ledgers are considered in Balance Sheet. Hence every ledger is classified in one of the four categories, i.e., Income, Expense, Asset or Liability.
- Difference between Total Income and Total Expenses, i.e., Profit or Loss as the case may be, is taken to Balance Sheet.
- Any ledger can be categorized in any one category only, i.e., Asset, Liability, Income or Expense. It cannot be categorized in more than one category

2.3.6. Grouping of Ledgers-

At the time of creation of any new ledger, it must be placed under a particular group. There are four basic groups in accounting, i.e., **Income, Expense, Asset, Liability**. For example, machinery account is an asset and has to be classified or categorized under ASSETS in balance sheet.

2.4. Technical Concept:**2.4.1. Working of a software:****Front End**

It is part of the overall software which actually interacts with the user who is using the software

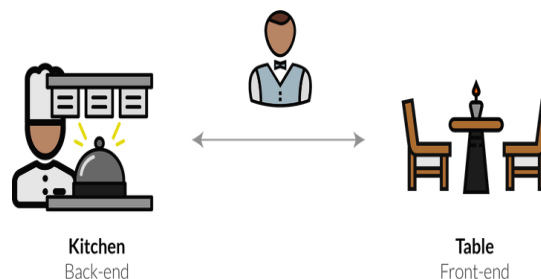
Back End

It is a part of the overall software which does not directly interact with the user, but interacts with Front End only

Now will study with the help of an example, what is front end and back end:-

There is a table within your restaurant- a place where a controlled interaction happens between customers and the restaurant staff. (Front End).

Waiter will receive the order and pass it on to the cook in the kitchen. Cook will process the food as per requirement and hand it over to the waiter. (Back End)

**2.4.2. Application Software-**

Application software performs many **functions** such as receiving the **inputs from the user**, **interprets** the instructions and **performs logical functions** so a **desired output** is achieved. There are mainly 3 layers which together form an application and as such called Three Tier architecture. These 3 layers are-

- **Application layer:** Receives the inputs from the users and performs certain validations like, if the user is authorized to request the transaction.
- **Operating system layer:** Carries these instructions and processes them using the data stored in the database and returns the results to the application layer.
- **Database layer** stores the data in a certain form.

Installed Application-

These are programs that are installed on the hard disc of the user's computer

Cloud-Based Application

Organizations increasingly are hosting their applications on Internet and outsource the IT functions. There are many methods through which this can be achieved. Most common among them being SaaS – Software as a Service or IaaS – Infrastructure as a Service

POD	Installed Application	Web Application
Code to Remember: M.F. - P.A.I.D.S. (Mutual fund खरीदा hence installed)		
Mobile Application	Using the software through mobile application is difficult in this case.	Mobile application becomes very easy as data is available 24x7.
Flexibility	It shall have more flexibility and controls as compared to web application. It is very easy to write desktop applications	Success of cloud-based applications is that they allow flexibility against both Capital Expenditure (CAPEX) & Operating Expense (OPEX) to the user.
Performance	A well written installed application shall always be faster than web application, reason being data is picked from local server.	Access is dependent on speed of internet. Slow internet slows access to information and may slow operations.
Accessibility	As software is installed on the hard disc of the user's computer, user needs to go to the computer in which the software is installed to use the software. It cannot be used from any other computer.	As software is available through online access, to use the software a browser and an internet connection are needed.
Installation & Maintenance	As software is installed on hard disc of the computer used by user, it needs to be installed on every computer one by one. This may take lot of time. Also, maintenance & updating of software may take lot of time and efforts.	Installation on user computer is not required. Update and maintenance are defined responsibility of service provider.
Data Storage	Data is physically stored in the premises of the user, i.e., on the hard disc of the user's server computer. Hence user will have full control over the data.	Data is not stored in the user's server computer. It is stored on a web server. Ownership of data is defined in Service Level Agreement (SLA). SLA defines responsibilities & authority of both service provider & service user.
Security of Data	As the data is in physical control of the user, user shall have the full physical control over the data and he/she can ensure that it is not accessed without proper access.	Data is not in control of user or owner of data. As time evolves; SLAs provide for details of back-up, disaster recovery alternatives being used by service provider.

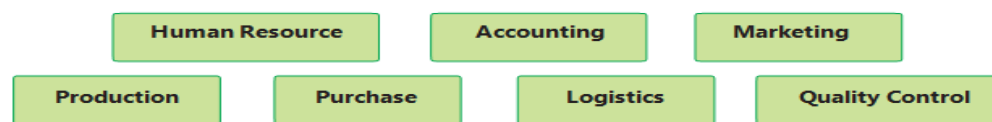
2.5. Non-integrated System:

Non-Integrated System is a system of maintaining data in a decentralized way. Each department shall maintain its own data separately and not in an integrated way. This is the major problem with non-integrated systems. All the departments are working independently and using their own set of data. They need to communicate with each but still they use their own data. This would result in 2 major problems:

- a. **Communication Gaps**
- b. **Mismatched Data**

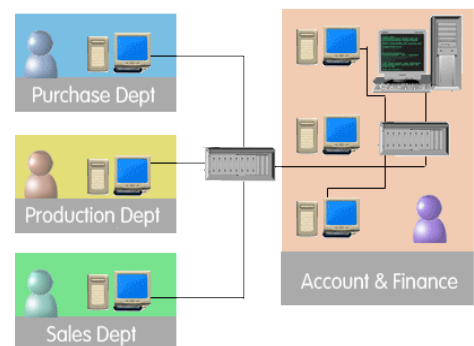
2.6. Enterprise Resource Planning (ERP) System:

Every organization uses variety of resources in achieving its organization goals. ERP is an enterprise-wide information system designed to coordinate all the resources, information, and activities needed to complete business processes.



Some of the ERP features in today's era:

1. An ERP system is based on a common database and a modular software design
2. Common database can allow every department of a business to store & retrieve information in real-time.
3. ERP system may comprise a set of discrete applications, each maintaining a discrete data store within one physical database.
4. Today's ERP systems can cover a wide range of functions & integrate them into one unified database.
5. Various functions such as Human Resources, Customer Relations Management, Financials, Manufacturing functions etc. were all once stand-alone software applications, and they can all fit under one name – the ERP system.



Following are the advantages of ERP system:

Code to Remember : C – T.O.U.R. – F.A.I.L.

(If no ERP, management office **tour** will **fail**, you **C**)

1. Customer satisfaction enhancement:

- Means **meeting or exceeding customers' requirement** for a product or service. With the help of web-enabled ERP systems, customers can place an order, track the status of the order and make the payment while sitting at home.
- Since all the details of the product and the customer are available to the person at the technical support department also, the company is able to better support the customer.

2. Technology usage:

- ERP packages are adapted to utilize the latest developments in Information Technology such as open systems, client/server technology, Cloud Computing, Mobile computing etc.
- It is this **adaptation of ERP** to the latest changes in IT **makes the adaptation to changes** in future development environments **possible**.

3. Ontime Shipment:

- Since **ERP encompasses integration and automation** of all functions of the business, hence chances of errors are minimal and the production efficiency is high.
- Thus, by integrating the various business functions and automating the procedures and tasks, the **ERP system ensures on-time delivery of goods to the customers**.

4. Utilization of resources efficiently:

- The efficient functioning of different modules in the ERP system like manufacturing, material management, plant maintenance, sales and distribution ensures that the inventory is kept to a minimum level, the machine down time is minimum etc.
- Thus, **ERP systems help the organization in drastically improving the capacity and resource utilization**.

5. Reduction in cycle time:

- The Cycle time is the **time between placement of the order and delivery** of the product.
- In an **ERP System all the data is updated to the minute and is available in centralized database** and all procedures are automated.

6. Flexibility:

- **ERP Systems** help companies to remain **flexible by making company information available** across the departmental barriers and automating most of the processes and procedures, thus enabling the company to react quickly to the changing market conditions

7. Better Analysis and planning capabilities:

- By enabling **comprehensive and unified management of related business** functions such as production, finance, inventory management etc. and their data;
- It becomes possible to utilize fully various types of Decision Support Systems (DSS), what-if analysis and so on. Hence, enabling decision-makers to make better and informed decisions.

8. Information Integration:

- The reason ERP systems are called integrated is because they **possess the ability to automatically update data** between related business functions and components.
- For example - one needs to only update the status of an order at one place in the order-processing system and all the other components will automatically get updated;

9. Low Cost:

- An ERP System's central database eliminates redundant specifications and ensures that a single change to standard procedures takes effect immediately throughout the organization.
- It also provides tools for implementing total quality management programs within an entity.

3. Risk and Controls in ERP Environment:

In case of integrated system, the data can be accessed from any place. As such, chance of loss of data is a big challenge. These risks can be summarized in below manner:

- All the persons in the organization access the same set of data on a day to basis. This again poses the risk of leakage of information.
- all users shall use the same data for recording of transactions. Hence there is one more risk of putting incorrect data in the system by unrelated user.

ERP system implementation is a huge task and requires lot of time, money and above all patience. The success or failure of any ERP or saying it in terms of payback or ROI of an ERP, is dependent on its successful implementation and once implemented proper usage. It provides extensive discussion on the risks related to various aspects including – **People, Process, Technological, Implementation and Post implementation** issues that arise during implementation and related controls respectively. Below is the tabular presentation of risk associated and control required on

PEOPLE ASPECT

Aspects	Risk Associated	Control Required
Change Management	The way in which entity functions will change, the planning, forecasting and decision-making capabilities will improve.	Project requirements are to be properly documented and signed by the users and senior management.
Training	Since, greater part of the training takes place towards end of ERP implementation cycle, mgmt. may curtail the training because of budget.	Training is a project-managed activity & shall be imparted to users in an entity by skilled consultants and representatives of hardware vendors.
Staff Turnover	Employee Turnover → Qualified and skilled personnel leaving company during the implementation and transition phases can affect the schedules and this results in delayed implementation and cost overrun.	This can be controlled and minimized by allocation of employees to tasks matching their skill-set; fixing of compensation package and other benefits accordingly.
Top Mgmt. Support	ERP implementation will fail if top management doesn't support and grant permission for the availability of the huge resources.	ERP implementation shall be started only after the top management is fully convinced & assure of providing full support.
Consultants	These are experts in implementation of the ERP package and might not be familiar with the internal workings and organizational culture.	The consultants should be assigned a liaison officer - a senior manager – who can familiarize them with the company and its working.

PROCESS ASPECT

Aspects	Risk Associated	Control Required
Program Management	There could be a possibility of information gap between day-to-day.	Requires bridging the information gap between traditional ERP-based function & operational mgmt. functions.
Business Process Reengineering (BPR)	BPR means not just change but dramatic change and dramatic improvements.	Requires overhauling of organizational structure, management structure and systems, job descriptions etc.

TECHNOLOGICAL ASPECT

Aspects	Risk Associated	Control Required
Software Functionality	Implementing all the functionality and features just for the sake of it can be dangerous for an organization.	Care should be taken to incorporate the features that are required by the organization and supporting additional features and functionality that might be required at a future date.
Technological Obsolescence	With launch of efficient technologies every day, the ERP system also becomes obsolete as time goes on.	Requires critical choice of technology, architecture of product, easy enhancements and upgrading, quality of vendor support.
Enhancement and Upgrades	ERP Systems are not upgraded and kept up-to date. Patches & upgrades are not installed	Care must be taken while selecting the vendor and upgrade/support contracts should be signed to minimize the risks.
Application Portfolio Management	Processes focus on the selection of new business applications and the projects required in delivering them.	IT organizations can begin to reduce duplication and complexity.

IMPLEMENTATION ASPECT

Aspects	Risk Associated	Control Required
Lengthy implementation time	ERP projects are lengthy that takes between 1 to 4 years depending upon size of entity.	Care must be taken to keep the momentum high and enthusiasm live amongst the employees, so as to minimize the risk.
Insufficient Funding	Budget for ERP implementation is allocated without consulting the experts & then implementation is stopped due to lack of funds.	It is necessary to allocate necessary funds for the ERP implementation project and then allocate some more for contingencies.
Speed of Operation	Centralized database leads to heavy size and thereby reducing speed of operations.	This can be controlled by removing the redundant data, use of warehouse etc.

POST IMPLEMENTATION ASPECT

Aspects	Risk Associated	Control Required
Lifelong Commitment	There will always be new modules to install, new persons to be trained, new technologies to be embraced etc.	This requires a strong level of commitment and consistency by the management and users of the system.

3.1. Role Based Access Control (RBAC) in ERP system:

Role-based access control is an approach to restricting system access to authorized users. It is used by most enterprises and can implement mandatory access control or discretionary access control. Some of the features of RBAC:

- (a) **RBAC** is a policy neutral access control mechanism defined around roles and privileges
- (b) The components of RBAC such as role-permissions, user-role and role-role relationships make it simple to perform user assignments.
- (c) RBAC can be used to facilitate administration of security in large organizations.
- (d) Roles for staff are defined in organization and access to the system can be given according to the role assigned.

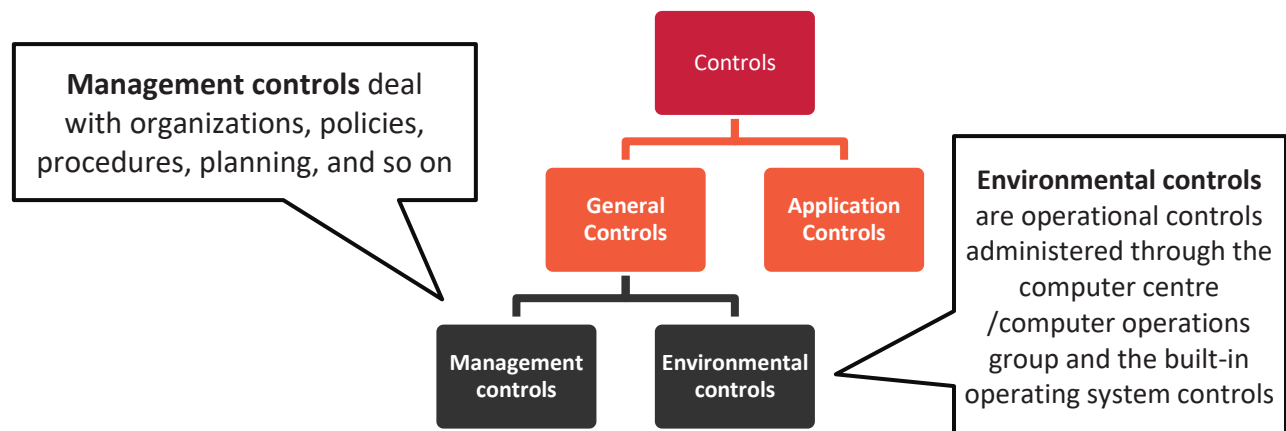
3.2. Role Based Access Control (RBAC) in ERP system:

While assigning access to different users, following options are possible.

- ♪ **Create** – Allows to create data
- ♪ **Alter** – Allows to alter data
- ♪ **View** – Allows only to view data
- ♪ **Print** – Allows to print data

4. Audit of ERP system:

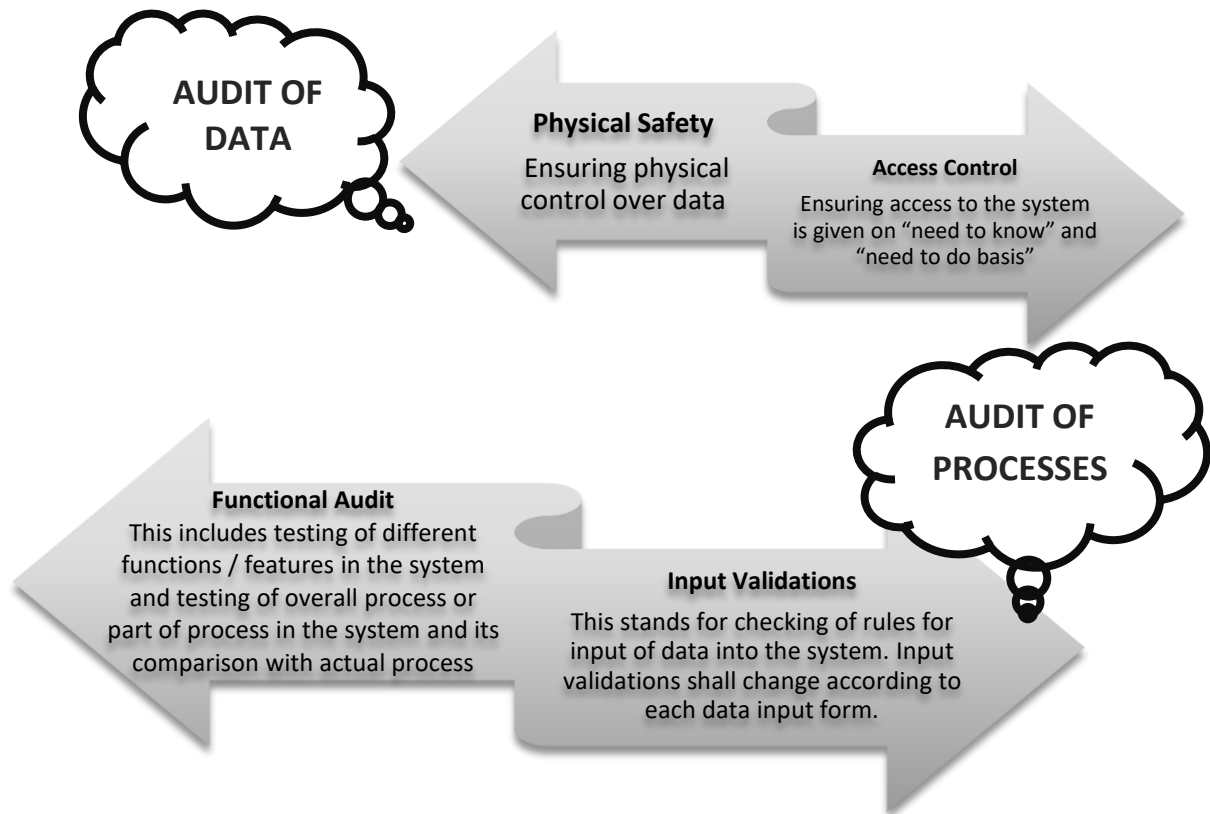
ERP systems should produce accurate, complete, and authorized information that is supportable and timely. All these can be accomplished or achieved by combination of various controls in ERP system. Controls are divided into General Controls and Application Controls. Below is the diagrammatic representation of controls:



Some of the queries may be made by the auditor during ERP audit:

Does the system process according to GAAP	Does it meet needs for reporting?
Are effective system operations and support functions provided	Does system protect confidentiality & integrity of information assets?
Are there adequate audit trails and monitoring of user activities	Is there an ERP system administrator with clearly defined responsibilities?
Are users trained? Do they have completed and current documentation?	Is there a problem-escalation process?

Auditing aspects in case of any ERP system can be summarized as under:



5. Business process modules and integration with financial and accounting system:

5.1. What is business process:

It consists of set of activities that are performed in an organizational and technical environment. Each business process is enacted by a single organization, but it may interact with business processes performed by other organizations. In order to understand and manage a task, we

- Should define the process first. This involves process of defining the tasks in the process and mapping the tasks to the roles involved in the process.
- Once the process is mapped and implemented, performance measures can be established.
- Organizational setup that enables standardization of & adherence to process throughout the organization. Assigning enterprise process owners and aligning employees' performance reviews and compensation to the value creation of the processes could accomplish this.

5.2. Business process flow:

Business Process is a prescribed sequence of work steps performed to produce a desired result for the organization. Each of the business processes has either a direct or indirect effect on the financial status of the organization.

Accounting or Book keeping cycle covers the business processes involved in recording and processing accounting events of a company. It begins when a transaction or financial event occurs and ends with its inclusion in the financial statements.

1. **Source Document:** A document that captures data from transactions and events.
2. **Journal:** Transactions are recorded into journals from the source document.
3. **Ledger:** Entries are posted to the ledger from the journal.
4. **Trial Balance:** Unadjusted trial balance containing totals from all account heads is prepared.
5. **Adjustments:** Appropriate adjustment entries are passed.
6. **Adjusted Trial balance:** The trial balance is finalized post adjustments.
7. **Closing Entries:** Appropriate entries are passed to transfer accounts to financial statements.
8. **Financial statement:** The accounts are organized into the financial statements.

5.3. ERP-Business Process Modules:

In today's time, there are mainly 3 types of industries working. These are **manufacturing, trading and service industries**. Each type of business has distinctive features.

- **Trading Business** – Trading simply means buying and selling goods without any modifications, as it is. Hence **inventory accounting** is a major aspect in this case. This industry requires accounting as well as inventory modules
- **Manufacturing Business** – This type of business includes all aspects of trading business plus aspect of manufacturing also. Manufacturing is simply **buying raw material, changing its form and selling it as a part of trading**. This type of industry requires accounting and complete inventory along with manufacturing module.
- **Service Business** – This type of business does not have any inventory. It is selling of skills / knowledge/Efforts/time. E.g., Doctors, Architects, Chartered Accountants, are professionals into service business. **This industry does not require inventory module.**



There may be different business units within a business. Hence different modules are possible in an integrated system. Diagram on next page denotes types of modules in ERP system:

Financial Accounting Module:

This module is the most important module of the overall ERP System and it connects all the modules to each other. Following are the features of this module:

- Tracking of flow of financial data across the organization in a controlled manner.
- General Ledger Accounting
- Tax Configuration
- Account Payables (Creation of Vendor Master data).
- Account Receivables (Creation of Customer Master data).
- Asset Accounting.
- Integration with Sales and Distribution and Materials Management.

Controlling Module:

This module facilitates coordinating, monitoring, & optimizing all processes in an organization. It controls the business flow in an organization. Two kinds of elements are managed in Controlling –**Cost Elements** and **Revenue Elements**. Following are the key features of this module:

- Overview of the costs and revenues that occur in an organization.
- Cost Center Accounting;
- Activity-Based-Accounting
- Internal Orders;
- Product Cost Controlling

Sales and Distribution Module:

Sales and Distribution is used by organizations to support sales and distribution activities of products and services, starting from enquiry to order and then ending with delivery. Key Features:

- Setting up Organization Structure;
- Assigning organizational units.
- Defining Pricing Components.
- Setting up sales document types, billing types & tax related.
- Setting up customer master data records and configuration.

Human Resource Module:

This module enhances work process and data management within HR department of enterprises. The task of managing the details and task flow of the most important resource i.e., human resource is managed using this module. The most important task in HR is to maintain the employee related information.

- (a) Payroll & Personnel departments deal with Human Resource of the organization.
- (b) This department maintains total employee database.
- (c) Wage and attendance related information comes to this department.
- (d) Handle Provident Fund, ESI related formalities.
- (e) Concerning manpower, its requirement and utilization is one of the major chunks of profit for an organization.

Production Planning Module:

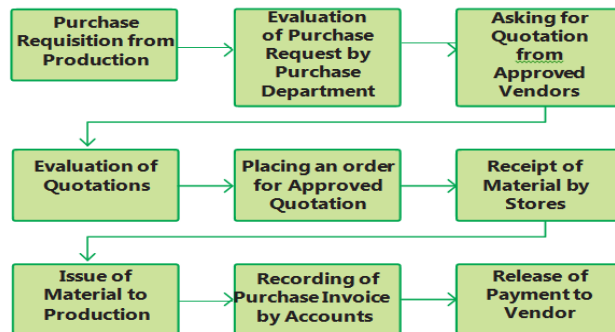
PP Module is another important module that includes software designed specifically for production planning and management. This module also consists of master data, system configuration and transactions in order to accomplish plan procedure for production. PP module collaborates with master data, sales and operations planning, distribution resource planning, material requirements planning, product cost planning.



Conversion into Work in Process (WIP) may include more than one steps. Also, conversion into Finished Goods may include packing process also.

Material Management Module:

MM Module manages materials required, processed and produced in enterprises. Some of the popular sub-components in MM module are vendor master data, consumption-based planning, purchasing, inventory management, invoice verification and so on. Material Management also deals with movement of materials via other modules like logistics, Supply Chain Management, sales and delivery, warehouse management, production and planning.



1. Purchase Requisition from Production Department:

Production department sends a request to purchase department for purchase of raw material required for production.

2. Evaluation of Requisition:

Production department sends a request to purchase department for purchase of raw material required for production.

3. Asking for Quotation:

If requisition is accepted, quotations shall be asked to approve vendors for purchase of material.

4. Evaluation of Quotations:

Quotations received shall be evaluated and compared.

5. Purchase Order:

This is a transaction for letting an approved vendor know what we want to purchase, how much we want to purchase etc. A purchase order contains the following details:

6. Material Receipt:

This is a transaction of receipt of material against purchase order. This is known as Material Receipt Note (MRN) or Goods Receipt Note (GRN). This transaction shall have a linking with Purchase Order.

7. Issue of Material:

Material received by stores shall be issued to production department as per requirement.

8. Purchase Invoice:

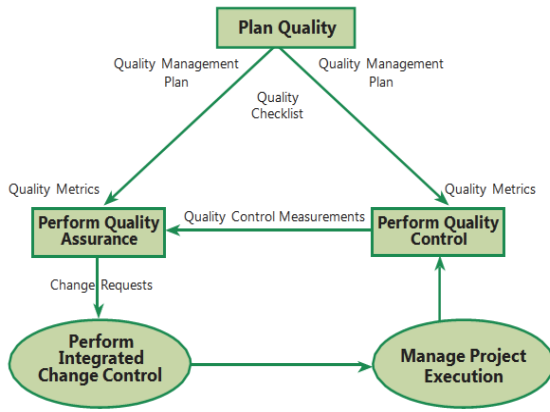
This is a financial transaction. This transaction shall have a linking with Material Receipt and all the details of material received shall be copied automatically in purchase invoice.

9. Payment to vendor:

Payment shall be made to vendor based on purchase invoice recorded earlier. Payment transaction shall have a linking with purchase invoice.

Quality Management Module:

It helps in management of quality in productions across processes in an organization. This quality management module helps an organization to accelerate their business by adopting a structured and functional way of managing quality in different processes.



- Master data & standards are set for quality mgmt.
- Set Quality Targets to be met;
- Quality management plan is prepared;
- Take the actions needed to measure quality;
- Identify quality issues and improvements and changes to be made;
- In case of any change is needed in the product, change requests are sent;
- Report on the overall level of quality achieved; and
- Quality is checked at multiple points, e.g., inwards of goods at warehouse, manufacturing, returns.

Plant Maintenance Module:

This is a functional module which handles the maintaining of equipment and enables efficient planning of production & generation schedules. **Plant Maintenance (PM)** application component provides you with a comprehensive software solution for all maintenance activities that are performed within a company.

Project system Module:

This is an integrated project management tool used for planning and managing projects. It has several tools that enable project management process such as cost and planning budget, scheduling, requisitioning of materials and services.

Supply Chain Module:

This module provides extensive functionality for logistics, manufacturing, planning, and analytics. Take advantage of a training curriculum that can help you drive maximum value from your investment.

In Supply Chain Management System, any product which is manufactured in a company, reaches directly from manufacturer to distributors where manufacturer sells the product to the distributor with some profit of margin. Distributors supply that product to retailer with his/her profit and then finally customers receive that product from retailer. This is called Supply Chain Management System which implies that a product reaches from manufacturer to customer through supply.

Customer relationship Management (CRM):

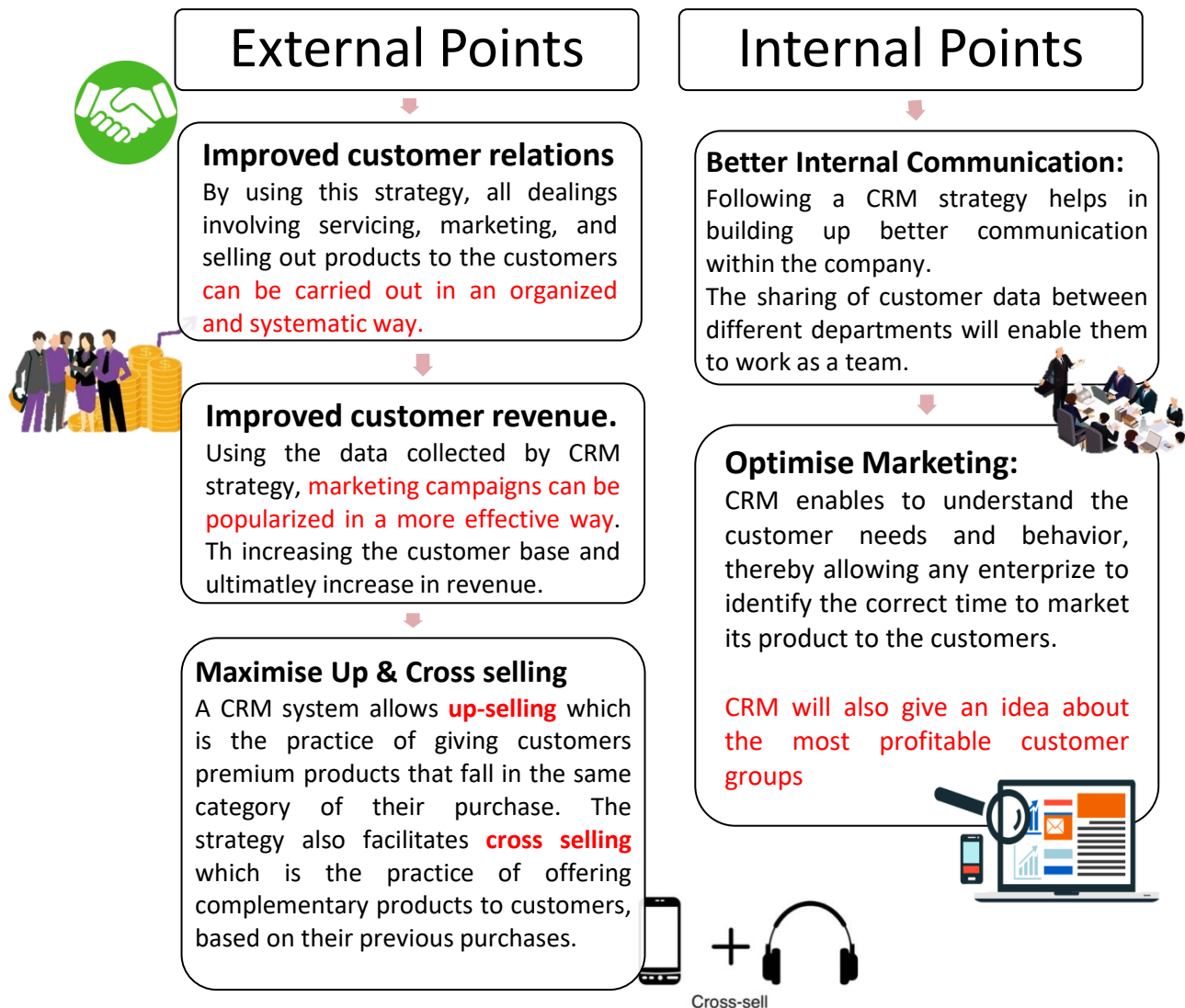
Customer Relationship Management is a system which aims at improving the relationship with existing customers, finding new prospective customers, and winning back former customers.

Following are the features/working of CRM module:

- CRM manages the enterprise's relationship with its customers.
- CRM does not exchange transactions with other modules as CRM does not have transactions.
- Implementing a CRM strategy is advantageous to both small-scale and large-scale business ventures.

Following are the benefits of CRM module:

There are five points under this topic. We will understand the same as below:



5.4. Integration with other modules:

All the units in ERP must work in harmony with other units to generate desired result. In order to integrate the same with other module, following things to be considered:

- (a) Master data across all the modules must be same and must be shared with other modules.
- (b) Common transaction data must be shared with other module whenever required.
- (c) Separate voucher types to be used for each module for easy identification.
- (d) Figures & transaction may flow across all departments, e.g. stock values are taken to Trading Account as well as Balance Sheet.

Material management integration with finance & controlling (fico)	(a) Whenever any inventory posting is done, it updates the G/L accounts online in the background. (b) Logistics invoice verification will create vendor liability in vendor account immediately on posting the document. (c) Any advance given against the purchase order updates the Purchase Order history.
Material management integration with production planning	(a) Material requirement Planning is based on Stocks, expected receipts, expected issues. (b) It generates planned orders or purchase requisitions which can be converted to purchase orders/Contracts (c) Receipt of finished products in Warehouse is posted in Inventory Mgmt.
Material management integration with sales & distribution	(a) As soon as a sales order is created, it can initiate a dynamic availability check of stocks on hand. (b) When the delivery is created, the quantity to be delivered is marked as "Scheduled for delivery" (c) It is deducted from the total stock when the goods issue is posted
Material management integration with quality Mgmt.	(a) It is integrated with QM for Quality inspection at Goods Receipt (b) In the case of a goods movement, the system determines whether the material is subject to an inspection operation. (c) Based on quality parameters vendor evaluation is done.
Material management integration with plant maintenance	(a) Material/service requirement is mentioned in Maintenance order. This leads to generation of Purchase Requisition. (b) This PR will be converted to Purchase Order by MM. (c) The goods for a PO will be in warded to Maintenance by MM.

6. Reporting System and Management Information system (MIS):

6.1. Reporting System:

Reporting system is a **system of regular reporting on the pre-decided aspects**. The basic purpose of any Financial and Accounting system is to give right information at right point of time to right people for right decision making. **Two basic reports, i.e. Balance Sheet and Profit & Loss Account are used for basic analysis of financial position and financial performance**. Key reports are analyzed by management to determine if appropriate financial decisions are made at the right time.

Large listed corporations publish their annual reports to public at large providing many insights as to their operations, their future plans and their social responsibilities too. MD&A (Management Discussion & Analysis) section in these annual reports discusses how management has prepared the financial position, their interpretation of the company's performance etc.

6.2. Management information System

An MIS report is a tool that managers use to evaluate business processes and operations. Hence, MIS system:

(a) **Automatically collect data from various areas within a business.**

(b) **These systems can produce daily reports that can be sent to key members throughout the organization.**

Many large businesses have specialized MIS departments which gather business information and create MIS reports. There can be as many types of MIS reports as there are divisions within a business. In all scenarios of MIS reporting, what is important??? Yes, it is **INFORMATION**. MIS is all about presenting information to management in a meaningful way. As such, to make the **information more meaningful, it should meet the following criteria: (Features of Information)**

Code to Remember : R.A.T.S.

1. **Relevant:**

(a) MIS reports need to be specific to the business area they address.

(b) This is important because a report that includes unnecessary information might be ignored.

2. **Accurate:**

(a) It's important that numbers add up and that dates and times are correct.

(b) It is rather common that a manager would like to decide upon anything on the basis of wrong information.

3. **Timely:**

(a) Information is said to be useful, when it is available on time.

(b) In case any information is old, it will not serve any purpose.

4. **Structured:**

(a) Information in an MIS report can be complicated.

(b) Making information easy to follow helps management understand what the report is saying.

(c) Try to break long passages of information into more readable blocks or chunks.

7. Data Analytics and business Intelligence:

7.1. Meaning:

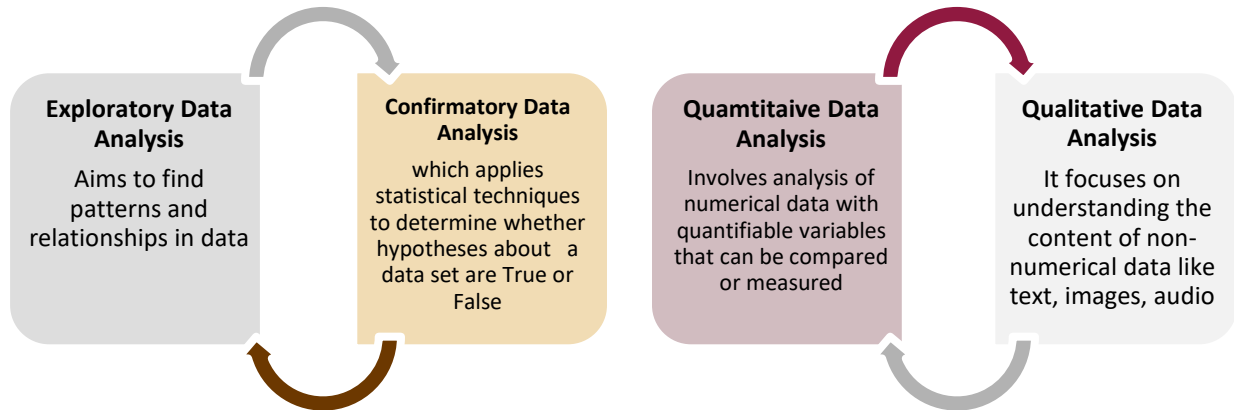
(a) **Data Analytics** is the **process of examining data sets** to draw conclusions about the information they contain. Various software and techniques are used to draw meaningful conclusion out of information we have.

(b) Data analytics technologies and techniques are widely used in commercial industries to enable organizations to make more-informed business decisions.

(c) Data Analytics initiatives **can help businesses increase revenues**, improve operational efficiency, optimize marketing campaigns and customer service efforts

(d) Data that's analyzed can consist of either historical records or new information that has been processed for real-time analytics uses.

7.2. Types of Data Analytical applications:



These data analysis happens to be done by different industries by different means. Below are the types of data analysis done by these industries:

1. Advanced types of data analytics include data mining, which involves sorting through large data sets to identify trends, patterns & relationships. Big data analytics applies data mining.
2. **E-commerce companies** and marketing services providers do clickstream analysis to identify website visitors who are more likely to buy a product or service based on navigation and page-viewing patterns.
3. **Mobile network operators** examine customer data to prevent defections to business rivals; to boost customer relationship management efforts etc.
4. **Healthcare organizations** mine patient data to evaluate the effectiveness of treatments for cancer and other diseases.

7.3. Data Analytical Process:

- (a) The analytics process starts with data collection, in which data scientists identify the information they need for analytics.
- (b) Data from different source systems may need to be combined via data integration routines, transformed into a common format and loaded into an analytics system.
- (c) Once the data that's needed is in place, the next step is to find and fix data quality problems that could affect the accuracy of analytics applications.
- (d) A data scientist builds an analytical model. The model is initially run against a partial data set to test its accuracy until it functions as intended.
- (e) Various analytics applications can be set to automatically trigger business actions.
- (f) Last step in the data analytics process is communicating the results generated by analytical models to business executives and other end users to aid in their decision-making.

7.4. Business Intelligence (BI):

7.4.1. Meaning:

- ❑ **Business Intelligence (BI)** is a **technology-driven process** for analyzing data and presenting actionable information.
- ❑ BI encompasses a wide variety of tools, applications and methodologies that enable organizations to collect data from internal systems and external sources.

7.4.2. Benefits of BI:

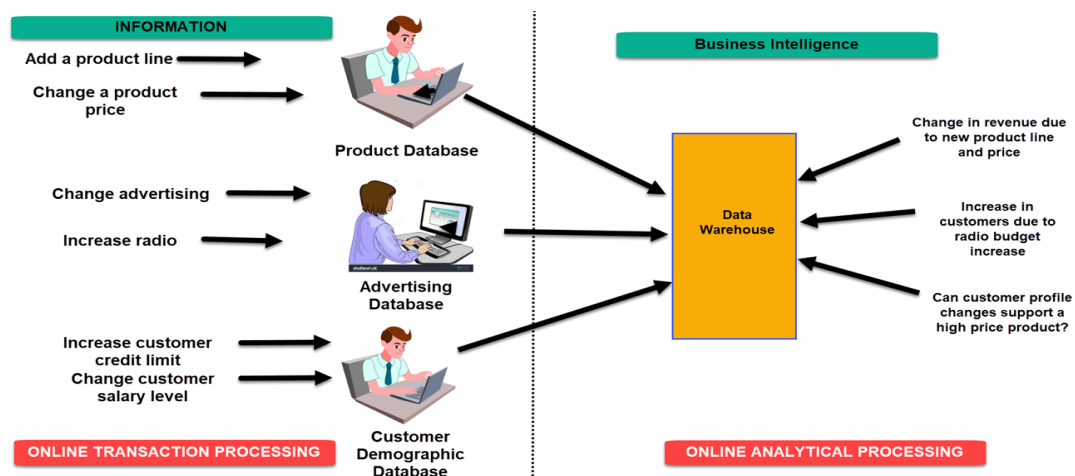
Code to remember :

A. – D.O.T.

- ❑ Helps in **A**ccelerating and improving decision making.
- ❑ **D**riving new revenues & gaining competitive advantage.
- ❑ **O**ptimization of internal business processes, increasing operational efficiency.
- ❑ BI systems can also help companies identify market **T**rends.

7.4.3. Examples of BI:

- ❑ BI uses data from different sources and helps to find solutions to various questions.
- ❑ Below is the example for business intelligence:



In an Online Transaction Processing (OLTP) system information that could be fed into product database could be

- **Add a product line**
- **Change a product price**

Correspondingly, in a Business Intelligence system query that would be executed for the product subject area could be did the addition of new product line or change in product price increase revenues. In an advertising database of OLTP system query that could be executed

- **Changed in advertisement options**
- **Increase radio budget**

In BI system query that could be executed would be how many new clients added due to change in radio budget. In OLTP system dealing with customer demographic data bases data that could be fed would be:

- **Increase customer credit limit.**
- **Change in customer salary level.**

8. Business reporting and fundamentals of XBRL:

8.1.1. Meaning:

1. **Business Reporting or Enterprise Reporting** is the **public reporting of operating** and financial data by a business enterprise.
2. With the drastic expansion of information technology, there has been an increase in use of computing power to produce single reports for different views of the enterprise.
3. This **reporting process involves querying data sources** with different logical models to produce a readable report for the stakeholders.
4. Organizations conduct a wide range of reporting, including financial and regulatory reporting; Environmental, Social, and Governance (ESG) reporting (or sustainability reporting); and, increasingly, integrated reporting.
5. Organizations communicate with their stakeholders about:
 - Mission, vision, objectives, and strategy;
 - Governance arrangements and risk management;
 - Trade-offs between the shorter and longer-term strategies; and
 - Financial, social, and environmental performance.

8.1.2. Importance of Business Reporting/Why reporting important:

1. Business **reporting allows** organizations to present a **cohesive explanation** of their business.
2. Helps in engaging with internal and external stakeholders, including customers, employees, shareholders, creditors, and regulators.
3. Information contained in business reporting is crucial for stakeholders to assess organizational performance.
4. High-quality information is integral to the successful management of the business, and is one of the major drivers of sustainable organizational success.

8.1.3. What is XBRL:

1. XBRL (eXtensible Business Reporting Language) is a freely available and global standard for exchanging business information.
2. XBRL provides a language in which reporting terms can be authoritatively defined.
3. XBRL is the international standard for digital business reporting.
4. XBRL helps in reporting information move between organizations rapidly, accurately and digitally.

Working of XBRL:

1. XBRL is a standards-based way to communicate and exchange business information between business systems.
2. These communications are defined by metadata set out in taxonomies;
3. That captures the definition of individual reporting concepts as well as the relationships between concepts.
4. The new digital format allows us to have information being clearly defined, platform-independent, testable and also digital.

What does XBRL do?

XBRL makes reporting more accurate and more efficient. It allows unique tags to be associated with reported facts. This tagging allows:

1. People publishing report will do with confidence since the information contained in them can be consumed and analyzed correctly.
2. People consuming reports to test them against a set of business and logical rules.
3. People using the information to do so in the way that best suits their needs.
4. People consuming the information to do so confident that the data is as per pre-defined definitions/standards.

What is XBRL tagging?

1. **XBRL Tagging** is process by which any financial data is tagged with most appropriate element in an accounting taxonomy,
2. Represents the data in addition to tags that facilitate identification/classification (such as enterprise, reporting period, reporting currency, unit of measurement etc.)
3. Comprehensive definitions & accurate data tags allow preparation, validation, publication, exchange, consumption; & analysis of business information of all kinds.
4. Information in reports prepared using the XBRL standard is interchangeable between different information systems.

Users of XBRL information:

Users	Description
Regulators	1. Securities regulators and stock exchanges that need to analyze the performance and compliance of listed companies and securities. 2. Business registrars need to receive and make publicly available a range of corporate data including annual financial statements. 3. Tax authorities need financial statements & other compliance information from companies to process & review corporate tax.
Companies	1. Enterprises need to accurately move information around within a complex group. 2. Supply chains that need to exchange information to help manage risk.
Government	1. Simplifying the process of businesses reporting to government and reducing red tape, by either harmonizing data definitions or consolidating reporting obligations. 2. Standardization of reporting process.
Data Provider	1. Specialist data providers that use performance and risk information published into the market place and create comparisons; 2. Ratings and other value-added information products for other market participants
Analyst & Investors	1. Analyst need to understand relative risk and performance. 2. Investors are required to read and understand the financial position & earning capacity of a business, before investing into that company.

Important features of XBRL:

- **Clear Definitions**

XBRL allows the creation of reusable, authoritative definitions, called taxonomies that capture the meaning contained in all the reporting terms used in a business report.

- **Testable Business Rules:**

XBRL allows creation of business rules that constrain what can be reported. Business rules can be logical or mathematical, or both.

- **Multi-lingual Support:**

- (a) XBRL allows concept definitions to be prepared in as many languages as necessary.
- (b) The XBRL community makes extensive use of this capability as it can automatically open-up reports to different communities.

- **Strong software Support:**

XBRL is supported by a very wide range of software from vendors large and small, allowing a very wide range of stakeholders to work with the standard.

9. Applicable regulatory and compliance requirements:

9.1. What is regulatory compliance?

Compliance means conforming to a rule, such as a specification, policy, standard or law. **Regulatory Compliance** describes the goal that organizations aspire to achieve in their efforts to ensure that they are aware of and take steps to comply with relevant laws, policies, and regulations. Regulatory compliance is an organization's adherence to laws, regulations, guidelines and specifications relevant to its business. Violations of regulatory compliance regulations may result in legal interest, penalty, prosecution etc. We can classify compliance & regulatory requirement into:

- a. **General – Applicable to all irrespective of anything.**
- b. **Specific – Applicable to specific type of businesses only.**

9.2. Regulatory compliance and accounting system:

Regulatory Compliance describes the goal that organizations aspire to achieve in their efforts to ensure that they are aware of and take steps to comply with relevant laws, policies, and regulations. Below are 2 types of software which have both negative and positive aspects.

S. N.	Particulars	Accounting & Tax Compliance Software	Only Tax Compliance Software
1	Ease of software operation	Less - As this is integrated system of accounting & tax compliance, everything connected with other and making changes at one place may affect other aspects also.	More - As this is used only for one single purpose so it is less complicated and bound to be easy.
2	Features and facilities	Less - Since this system is not an exclusive system for tax compliance, it may have limited features for tax compliance.	More - Since this is an exclusive designed system for tax compliance, more features & facilities shall exist here.
3	Time and efforts required	Less - Since this is an integrated system, time required to transfer data to compliance software is zero.	More - Since this is separate software, data from accounting software need to put. This may take extra time and efforts.

4	Accuracy	More - As this is an integrated system and hence accounting data and tax compliance data shall always be same, ensuring more accuracy in data.	Less - There are two separate system, reconciliation with accounting data is needed, possibility of mismatch of data is always there.
5	Cost	More - If tax compliance feature is not available in accounting system, getting it customized may require good amount of money.	Less - Since this is specific purpose software, there shall be less complications and the cost also shall be less.

