Course Title: Principles of Management and Information Systems

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Ques: Briefly describe different types of organisations. Explain in brief the basic principles that should be considered while designing an organisation structure.

Types of Organization:

- Formal organization
- Informal organization

Formal organization:

In every enterprise, there are certain rules and procedures that establish work relationships among the employees. These facilitate the smooth functioning of the enterprise. Further, they introduce a systematic flow of interactions among the employees. Effectively, all of this is done through a formal organization.

Again, the management builds the formal organisa-tion. It ensures smooth functioning of the enterprise as it defines the nature of inter-relationships among the diverse job positions. Additionally, these ensure that the organisational goals are collectively achieved. Also, formal organisation facilitates coordination, interlinking and integration of the diverse departments within an enterprise. Lastly, it lays more emphasis on the work to be done without stressing much on interpersonal relationships.

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Informal organisation :

It's easy to understand that if we interact with certain people regularly we tend to get more informal with them. This is because we develop interpersonal relationships with them which are not based solely on work purposes. Rather, these relationships might arise because of shared interests, like if you get to know that your colleague likes the same football club of which you're a fan of.

As a matter of fact, informal organisation arises out of the formal organisation. This is because when people frequently contact each other we can not force them into a rigid and completely formal structure. Instead, they bond over common interests and form groups, based upon friendship and social interactions. Unlike formal organizations, informal organisation is fluid and there are no written or predefined rules for it. Essentially, it is a complex web of social relationships among members which are born spontaneously. Further, unlike the formal organisation, it cannot be forced or controlled by the management.

Also, the standards of behaviour evolve from group norms and not predefined rules and norms. Lastly, as there are no defined structures or lines of communication, the interactions can be completely random and independent lines of communication tend to emerge in informal organisation.

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Basic principles designing an organization structure:
Organizational structure is the framework of a company through which individual work can be effectively coordinated and managed. A good organizational structure should be developed based on the following principles:

Strategy - oriented:
The ultimate goal of organization design is to achieve the strategic objectives. Therefore, the design should aim at serving to reach the goals. It should be designed with the optimal position arrangement that makes the most benefits for the final goals.

Position - oriented:
Make sure that you design the organizational structure around positions, not people. The organizational structure is composed of functional positions that contribute to the business aims. These positions are basic units of the organization -al structure. Find suitable people to fill the positions and make optimum effects. Although some people play important roles in the business, you could not organize your business around their needs, since it might overempha -size the function of people and make the company structure disorganized.

Stable and flexible:
First, the corporate structure must provide a solid and stable working environment for everyone. This is the prerequisite to run a

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company. Avoid frequent changes because it will bring chaos. second, the corporate structure must also be flexible enough to adapt to the internal and external environment changes.

Strengthen accountability :
A good organization design will promote accountability. It should make the supervisors assess their subordinates' performance easily, so as to conduct adequate guide and control. Every point person must be clearly identified per unit of the organization, so that there is less confusion as to whom should be responsible for which part, and on whom should be coordinating the efforts. Make sure the hierarchy is reasonable and smooth, and the information flows rapidly and clearly from the executive committee to business units, function and departments.

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Ques2: What are different levels of management? Explain role and functions of employees at different levels of management.

A management system is the way in which an organisation manages the interrelated parts of its business in order to achieve its objectives. These objectives can relate to a no. of different topics, including product or service quality, operational efficiency, environmental performance, health and safety in the workplace and many more.

The level of complexity of the system will depend on each organization's specific context. For some organizations, especially smaller ones, it may simply mean having strong leadership from the business owner, providing a clear difinition of what is expected from each individual employee and how they contribute to the organization's overall objectives, without the need for extensive documentation. More complex businesses operating, for example, in highly regulated sectors, may need extensive documentation and controls in order to fulfil their legal obligations and meet their organi-zational objectives.

Levels of Management:

The term "Levels of Management" refers to a line of demarcation between various managerial positions in an organization. The no. of levels in management increases when the size of the

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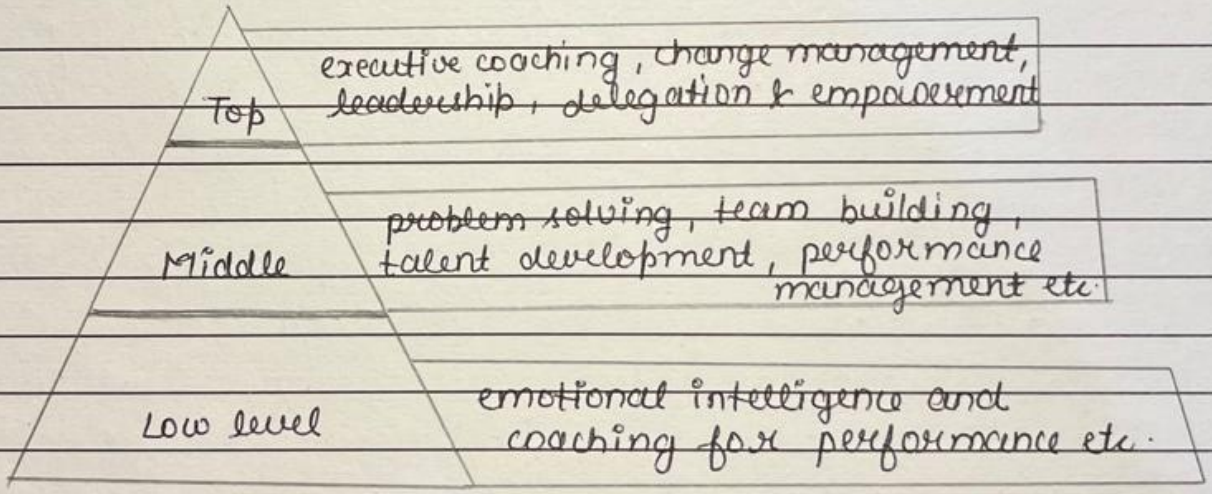
business and work force increases and vice versa. The level of management determines a chain of command, the amount of authority and status enjoyed by any managerial position. The levels of management can be classified in three broad categories :

1) Top level / Administrative level
2) Middle level / Executory
3) Low level / supervisory / Operative / First-line managers.

Managers at all these levels perform different functions. The role of managers at all the three levels is discussed below :



Levels of Management

1. Top Level of Management :

It consits of boards of directors, chief executive or managing director. The top management is the ultimate source of authority and it manages goals and policies for an enterprise. It devotes more time on planning and coordinating functions.

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The role of the top management can be summarized as follows -

a) Top management lays down the objectives and broad policies of the enterprise.

b) It issues necessary instructions for preparation of department budgets, procedures, schedules etc.

c) It prepares strategic plans and policies for the enterprise.

d) It appoints the executive for middle level i.e departmental managers.

e) It controls and coordinates the activities of all the departments.

f) It is also responsible for maintaining a contact with the outside world.

g) It provides guidance and direction.

h) The top management is also responsible towards the shareholders for the performance of the enterprise.

2. Middle level of Management:

The branch managers and departmental managers constitute middle level. They are responsible to the top management for the functioning of their department. They devote more time to organizational and directional functions.

Their role can be emphasized as -

a) They execute the plans of the organization in accordance with the policies and directives of the top management.

b) They make plans for the sub-units of the organization.

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c) They participate in employment and training of lower level management.
d) They interpret and explain policies from top level management to lower level.
e) They are responsible for coordinating the activities within the division or department.
f) They evaluate performance of junior managers.
g) They are also responsible for inspiring lower level managers towards better performance.

3. Lower level of Management :
Lower level is also known as supervisory / operative level of management. It consists of supervisors, foreman, section officers, superintendent etc. In other words, they are concerned with direction and controlling function of management. Their activities include—

a) Assigning of jobs and tasks to various workers.
b) They guide and instruct workers for day to day activities.
c) They are responsible for the quality as well as quantity of production.
d) They are also entrusted with the responsibility of maintaining good relation in the organization.
e) They communicate workers problems, suggestions, and recommendatory appeals etc to the higher level and higher level goals and objectives to the workers.
f) They help to solve the grievances of the workers.
g) They supervise and guide the sub-ordinates.

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h) They are responsible for providing training to the workers.
i) They arrange necessary materials, machines, tools etc for getting the things done.
j) They motivate workers.
k) They ensure discipline in the interprise.

Ques 3: What is Information system? Describe need of requirement analysis in designing information systems. List various tools used in requirement analysis of information system.

Information system, an integrated set of components for collecting, storing and processing data and for providing information, knowledge and digital products. Business firms and other organizations rely on information systems to carry out and mange their operations, interact with their customers and suppliers, and complete in the marketplace. Information systems are used to run interorganizational supply chains and electronic markets. Many major companies are built entirely around information systems. These include eBay, a largely auction marketplace, and google, a search engine company that derives most of its revenue from keyword advertising on Internet searches.

Govt. deploy information systems to provide services cost-effectively to citizens. Digital goods — such as electronic books, video products and software — and online services, such as gaming and social networking, are delivered

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with information systems.

Need of requirement analysis in designing information systems :

A requirement is a vital feature of a new system which may include processing or capturing of data, controlling the activities of buines, producing information and supporting the management.

Requirements determination involves studying the existing system and gathering details to find out what are the requirements, how it works and where improvements should be made.

Major Activities in requirement Determination.

Requirements Anticipation

- It predicts the characteristics of system based on previous experience which include certain problems or features and requirements for a new system.
- It can lead to analysis of areas that would otherwise go unnoticed by inexperienced analyst. But if shortcuts are taken and bias is introduced in conducting the investigation, then requirement Anticipation can be half-baked.

Requirements Investigation

- It is studying the current system and documenting its features for further analysis.
- It is at the heart of system analysis where analyst documenting and describing system

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features using fact-finding techniques, prototyping, and computer assisted tools.

Requirements specifications

- It includes the analysis of data which determine the requirement specification, description of features for new system, and specifying what information requirements will be provided.
- It includes analysis of factual data, identification of essential requirements and selection of Requirement-fulfillment strategies.

List various tools used in requirements analysis of information system:

1) Grid Charts:
Grid charts are used to represent the relationship b/w two sets of factors in a tabular method. A grid chart analysis is helpful in eradicating unnecessary reports or unnecessary data items from reports.

2) System Flow chart:
A system flowchart is a pictorial or diagrammatic representation of the logical flow of operations and information of an organization. A set of standard symbols are commonly used for the construction of system flow charts.

3) Decision Tree:
Some decisions involve a series of steps. The outcome of the first decision guides the second, the third decision depends on the

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outcome of the second, and so on.
Decision trees are the model to deal with such kind of problems. They are also very important in decision making in a probabilistic situation where various opinions can be drawn and the final outcomes can be understood.

4) Simulation :
The simulation model describes the operation of the system in terms of individual events, components of the system. In particular, the system is divided into elements whose behaviour is predicted in terms of probability distributions. The inter-relationships b/w the elements also are built into the model.

5) Decision Tables :
Decision tables are a graphical method of represen-ting a sequence of logical decisions. It is prepared in a tubular form. It lists all possible conditions and associated set of actions. A decision table consits of the four parts - condition stub, condition entries, action stub and action entries.

Ques4: What is DSS? How is it useful for any organization? Explain in detail.
A decision support system (DSS) is a computer program application used to improve a company's decision-making capabilities. It analyzes large amounts of data and presents an organization with the best possible options available.

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Typical information a decision support application might gather and present include the following :

- comparative sales figures b/w one week and the next
- projected revenue figures based on new product sales assumptions, and
- the consequences of different decisions.

A decision support system is an informational application as opposed to an operational application.

DSS useful for any organization :

DSS is getting a lot of attention from many businesses as a way to promote better projections, management and analysis within a company or business.

Typically, business planners will build a DSS system acc. to their needs and use it to evaluate specific operations, including

1) A large stock of inventory, where DSS applications can provide guidance on establishing supply chain movement that works for a business.
2) A sales process, where DSS software is a "crystal ball' that helps managers theorize how changes will affect results.
3) Other specialized processes related to a field or industry.

DSS can help manage inventory. DSS can aid sales optimization and sales projections.

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Decision support technology can also be a tool that analyzes sales data and make predictions, or monitors existing patterns. Whether it's big picture decision support tools, active or passive solutions, or any other kind of DSS tool, planners often tackle sales numbers using a variety of decision support resources.

Utilise DSS to optimize industry-specific systems.
Examples of DSS:
DSS operates on several levels and there are many examples of common day-to-day use for decision support systems. For instance, GPS is used to determine the best and quickest route b/w two points.
One of the easiest ways to understand how DSS works is to consider your computer use, every time you log on and use a search engine, you've used a DSS to organize a massive amount of information and transform it into images, videos and text files in order to choose the information that best suits your search. Other ways DDS is used may include:

- Farmers that use tools for crop-planning to help determine the best planting time, when to fertilize and when harvest.
- some states have used DSS to provide information about potential hazards, such as floods. The system includes real-time weather conditions and may include information about floodplain boundaries and county flood data.

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- Real estate companies often use DSS for information about properties, including current data such as neighbourhood comparison prices, acreage and future planning.
- Universities and colleges rely on DSS to know how many students are currently enrolled, which allows them to predict how many additional students are needed in particular courses or overall population to ensure there are enough students enrolled to meet the university costs.

Ques 5: What is Transaction Processing System (TPS)? Explain with example. Also write features of TPS.

A Transaction process system is an information processing system for business transactions involving the collection, modification and retrieval of all transaction data. Characteristics of a TPS include performance, reliability and consistency. TPS is also known as transaction processing or real-time processing.

A Transaction process system and transaction processing are often contrasted with a batch process system and batch processing where many requests are all executed at one time. During the delay time for batch processing, errors can occur. Although errors can occur in transaction processing, they are infrequent and tolerated, but do not warrant shutting down the entire system.

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Example :
There are several examples of transaction processing systems we use in day-to-day life. Some of these are :

1) Hotel reservation - It is extremely useful in reservations of all types wherein the customer needs an instant verification of the request.
2) Cheque clearance - Like in physical banks, all the cheques are collected in dropbox and processed together as a batch with a certain delay.
3) POS (Point of Sale) - IT reduces the work of sales executives as once the product is tagged and the related information is entered into the system, the executive only needs to scan the code and the complete information will be withdrawn from the database.

Features : A transaction processing system has the following features :

1) Reliability : One of the biggest advantages of using a transaction processing system is that it is a highly reliable system that manages and handles the important transactions of an organization. Since the revenue system is completely dependent on the TPS, it is crucial to the seamless working of an organization.
2) Fast Response :
The biggest differentiating factor b/w a real-time processing system and a batch processing system is its speed and accuracy.

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3) Similar Structure and Integrity:
There are certain features of the TPS that need to stay intact to work the way it is supposed to. In order to ensure that the processing system works exactly the same way for every organization every single time, the structure must stay intact.

4) Authorised Control -
A good and ideal TPS allows only the authorized personnel to conduct the processing activities anytime. With the recent advancements, the newer versions even allow authorized personnel to gain access from a remote location as well but with high and stringent security checks.

5) User-friendliness -
A good TPS must be easy to use and user-friendly in order to promote increased usage of it. An easily operable TPS would also ensure there are minimal errors in the inputting data and conducting the processing activities.

Ques 6: a) What is discounted cash flow (DCF)? Explain with example.
DCF is a model or method of valuation in which future cash flows are discounted back to a presented value using the time-value of money. An investment's worth is equal to the present value of all projected future cash flows.
It's a way of evaluating a potential investment by estimating future income streams

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and determining the present worth of all of those cash flows in order to compare the cost of the investment to its return.
When a business is trying to determine how to spend capital, it is important to determine whether or not investments will result in a positive return. The DCF method allows management to determine the value of the future projected revenues in today's dollars. Management can subtract the amount spent on the investment from the present value of future cash flows to calculate the net present value of the investment.

Example :
Tom is the CFO of a mid-sized company in Atlanta. company leadership is trying to determine whether or not to invest in a new piece of machinery to make their manufacturing process more efficient. This machine would cost the organization $1,000,000 and its life is 5 yrs. What is the net present value of this investment using the discounted cash flows method?
The CFO determined the discount rate to be 10%. With this information, he calculated the following future cash flows :

- Year 1 = $130,000
- Year 2 = $150,000
- Year 3 = $200,000
- Year 4 = $210,000
- Year 5 = $200,000

The total of these cash flows is $890,000. The net present value of this investment is

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$890,000 - $1,000,000 which is equal to $110,000. The company should not make this investment because the cost is greater than the value of the future income creating a negative return over the time period.
Using this calculation, investors should only make an investment if the NPV is greater than 1.

Ques 6-b) Describe total cost of ownership (TCO) :
Total cost of Ownership : The TCO is the purchase price of an asset plus the costs of operation. Assessing the total cost of ownership represents taking a bigger picture look at what the product is and what its value is over time. When choosing among alternatives in a purchasing decision, buyers should look not just at an item's short-term price, known as its purchase price, but also at its long-term price, which is its total cost of ownership.
The total cost of ownership is considered by companies and individuals when they are looking to buy assets and make investments in capital projects. Although these costs are often itemized separately on a company's financial statements, a comprehensive analysis of the cost of ownership is a common practice for business dealings.
While the direct expenses can be easily reported, companies most often seek to analyze all potential indirect expenses that can be of significant influence in deciding whether to complete a purchase.

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Example of Total Cost of Ownership (TCO):
An example of a business investment that requires a thorough analysis of the total cost of ownership is an investment in a new computer system. The computer system has an initial purchase price.
Additional costs often include new software, installation, transition costs, employee training, security costs, disaster recovery planning, ongoing support, and future upgrades. Using these costs as a guide, the company compares the advantages and disadvantages of purchasing the computer system as well as its overall benefit to the company for the long term.
On a smaller scale, individuals also use the total cost of ownership when making purchasing decisions. While the total cost of ownership can be overlooked, its analysis is essential in preventing unnecessary future losses that can arise from focusing only on the immediate direct costs of a purchase.

Ques 7: a) What is portfolio management? Write steps for portfolio management implementation.
Portfolio management is the art and science of selecting and overseeing in a group of investments that meet the long term financial objectives and risk tolerance of a client, a company or an institution.
Professional licensed portfolio managers work on behalf of clients, while individuals may

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choose to build and manage their own portfolios. Portfolio management requires the ability to weigh strengths and weaknesses, opportunities and threats across the full spectrum of investments. The choices involve trade-offs, from debt versus equity to domestic versus international and growth versus safety.

Steps for portfolio management implementation:

Portfolio management involves complex process which the following steps to be followed carefully.

1) Identification of objectives and constraints.
2) Selection of the asset mix.
3) Formulation of portfolio strategy.
4) Security Analysis
5) Portfolio execution
6) Portfolio revision
7) Portfolio evaluation

1) Identification of objectives and constraints

The primary step in the portfolio management process is to identify the limitations and objectives. The portfolio management should focus on the objectives and constraints of an investor in first place. The relative importance of these objectives should be clearly defined.

2) Selection of the asset mix

The next major step in portfolio management process is identifying diff. assets that can be included in portfolio in order to spread risk and minimize loss.

Portfolio may contain the mix of Preference shares, equality shares, bonds etc.

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3) Formulation of portfolio strategy
After certain asset mix is chosen, the next step in the portfolio management process is formulation of an appropriate portfolio strategy. There are two choices for the formulation of portfolio strategy, namely
1. an active portfolio strategy
2. a passive portfolio strategy

4) Security Analysis
In this step, an investor actively involves himself in selecting securities.
Security analysis requires the sources of information on the basis of which analysis is made.
Security Analysis involves both micro analysis and macro analysis. For eg: analyzing one script is micro analysis. On the other hand, macro analysis is the analysis of market of securities.

5) Portfolio execution
When selection of securities for investment is complete the execution of portfolio plan takes the next stage in a portfolio management process. Portfolio execution is related to buying and selling of specified securities in given amounts.

6) Portfolio revision
Portfolio revision is one of the most important step in portfolio management. A portfolio manager has to constantly monitor and review scripts acc. to the market condition.

7) Performation evaluation
Evaluating the performance of portfolio is another imp. step in portfolio management. Portfolio

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manager has to access the performance of portfolio over a selected period of time.
The quantitative measurement of actual return realized and the risk borne by the portfolio over the period of investment is called for while evaluating risk and return criteria.

Ques 7: b) Describe use of intelligent systems in e-business. Also, explain different roles of business intelligence tools in different management levels.

Intelligent system in e-business combine data gathering, data storage, and knowledge management with data analysis to evaluate and transform complex data into meaningful, actionable inform-ation, which can be used to support more effective strategic, tactical, and operational insights and decision-making.

Different roles of business intelligence tools in different management levels:

Modern business intelligence systems prioritize self-service analysis, empowering businesses to gain insight into their market and improve performance with comprehensive data discovery tools, methods, processes, and platforms. Such business intelligence solutions include:

- Ad hoc analytics: an analysis process designed to answer specific questions on the spot.
- Online analytical processing: (OLAP) a computing method that enables multi-dimensional analytical queries
- Mobile BI: software that optimizes desktop business intelligence for mobile devices.

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- Real time BI: a data analytics approach that delievers real-time info. to users by feeding business transactions into a real time data ware-house.
- Software-as-a-service BI (SaaS BI): a cloud-hosted, subscription based delivery model for business intelligence software solutions.
- Open source BI (OSBI): business intelligence software solutions that do not require purchasing a software license.
- Location intelligence (LI): software that is designed to relate geographic contexts to business data.

Ques 8: What is ERP? Explain need of ERP. Also, briefly explain practicalities in an ERP implementation.

ERP stands for enterprise resource planning, but what does ERP mean? The simplest way to define ERP is to think about all the core processes needed to run a company: finance, manufacturing, HR, supply chain, services, procurement, and others. At its most basic level, ERP integrates these processes into a single system.

ERP is a kind of software system that helps you run your entire business, including processes in finance, manufacturing, supply chain, services, procurement and more.

Need of ERP:

As any business grows, the workload of its administrators also grows exponentially.

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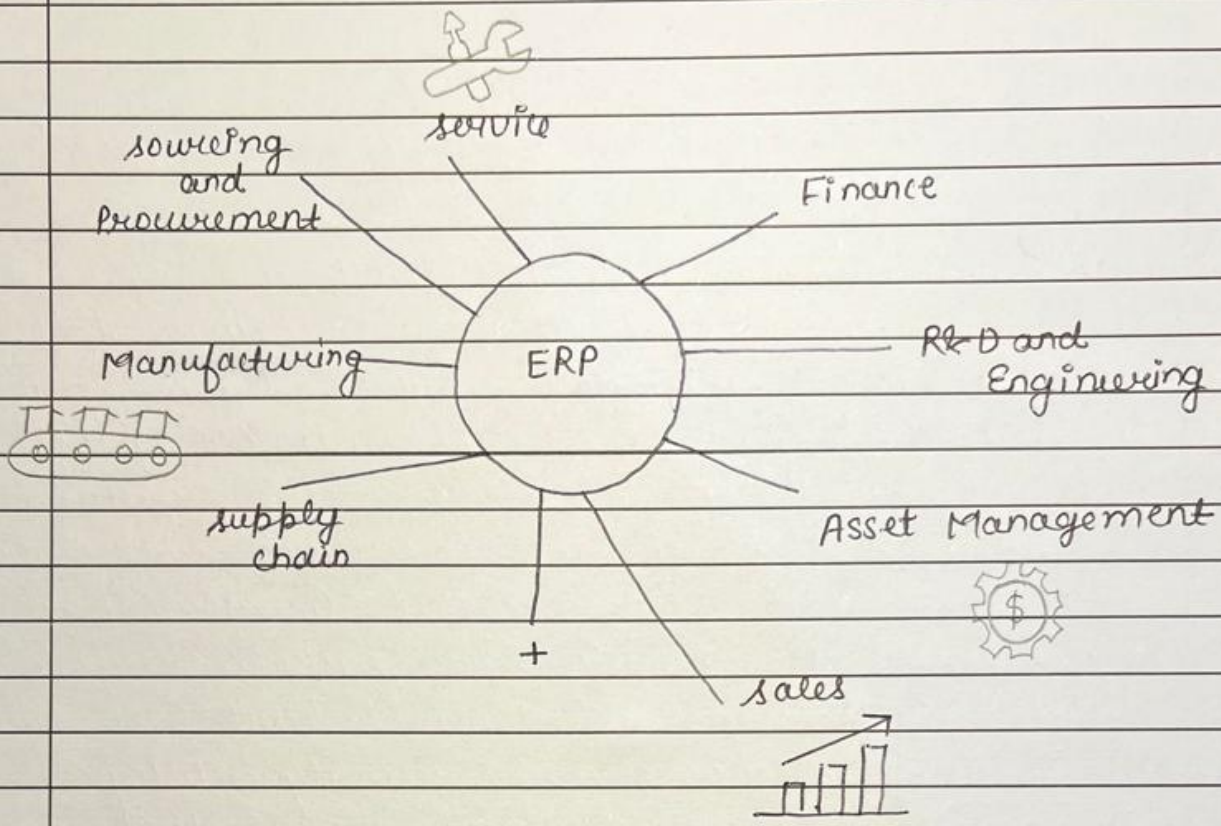

Initially companies will make do with spreadsheets and e-mail, eventually the tediousness of manual logistics will take its toll. Being unable to keep up with customer demand could derail any business during a key growth phase. Here are 5 major reasons to invest in Enterprise Resource Planning software:

1) Standardization of software: With an unmanaged system, various business processes within an organization utilize disparate applications to manage similar operations. This makes it easy for users to access data with a centralized dashboard and features like access control and Used data security.

2) Better Accounting and Financial Reporting: Keeping track of your financials is a critical

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factor in determining your success through a growth phase, but as your company grows the complexity of transactions may seem overwhelming without an efficient centralized system.

3) Faster Response Times: As you start gaining traction in the market and your reputation rises, your ability to improve your service delivery could act as a key differentiator from your competition. To deliver better customer service, your front-line executives and sales team need maximum access to all information across all departments, the systems need to be integrated into one centralized unit.

4) Regulatory compliance and security: Integrated ERP software can help you ensure that back-office operations are in sync with the regulatory rules of the manufacturing industry.

5) Mobilities and Flexibility:
Through ERP software, data from various departments of an organisation is streamlined into a unified platform. ERP solutions today can process multiple functions by leveraging a centralized database to provide accurate info. to any user, anywhere in the world, on any device.

Practicalities in an ERP implementation:
An ERP implementation involves installing the software, moving your financial data over to the new system, configuring your users and

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processes, and training your users on the software.

Before we look at the implementation process in detail, your initial focus should be on selecting the right ERP system software provider for your business.

At Acumatica, we recognize that there are three implementation project types:

- Express: Implementation is functional out-of-the-box (OOB), the customer is a single entity without complex processes and no add on solutions are required.
- Standard: Implementation is for single or Multiple entities that require minimal customizations and add-on solutions, and are single currency and language.
- Advanced: Implementation is for single or multiple entities with various locations, multiple currencies, and languages.

A complex roll-out is involved with multiple phases (Template or Pilot roll-out).