Unit-2

Types of Information System - I

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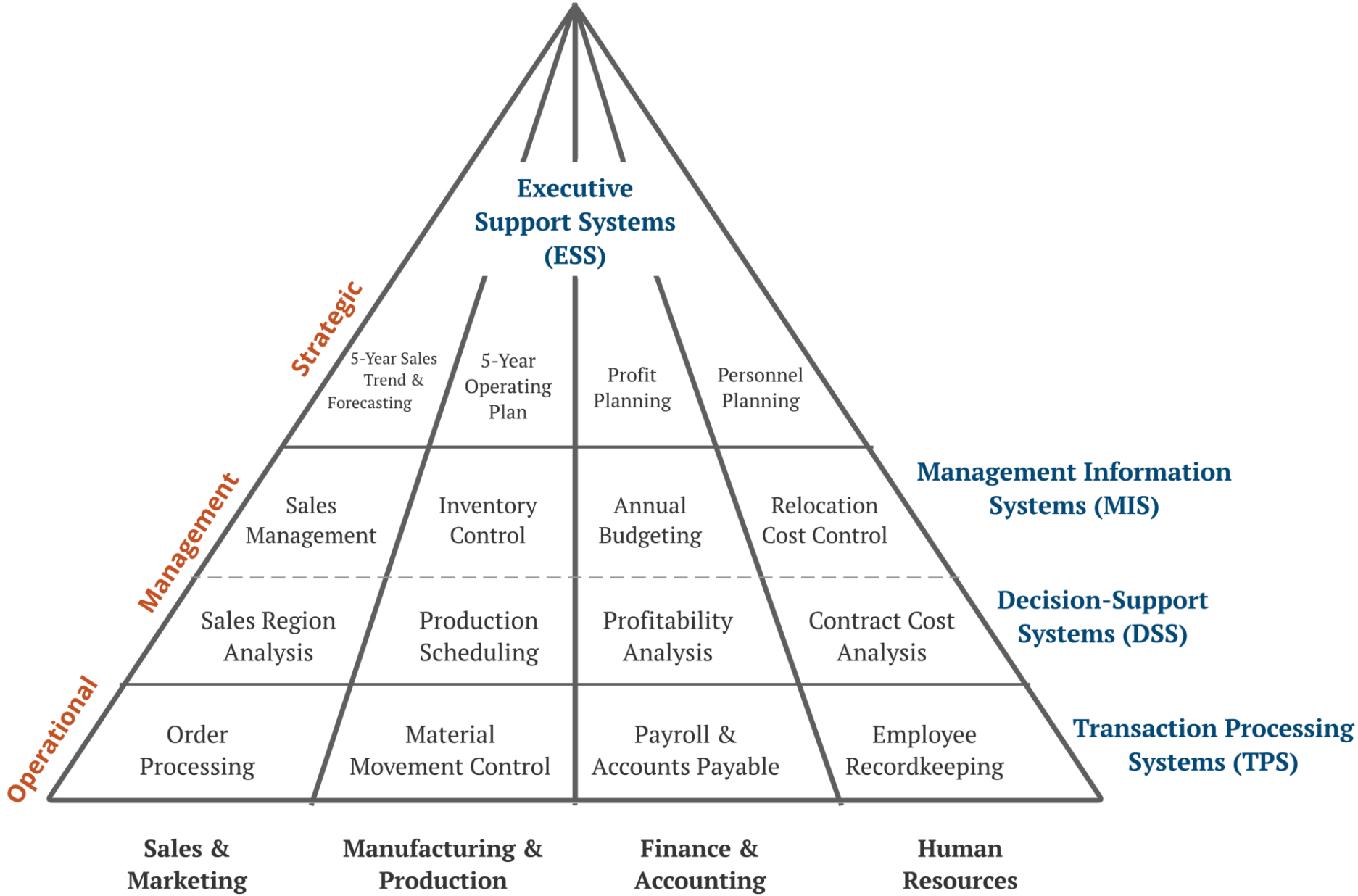
Topics

- Meaning, functions, and applications of Transaction Processing Systems
- Management Information Systems
- Decision Support Systems
- Executive Support / Information Systems
- Knowledge Management System
- Meaning, functions, and applications of Functional system: Financial, Human Resource, Marketing, Production and Operations.

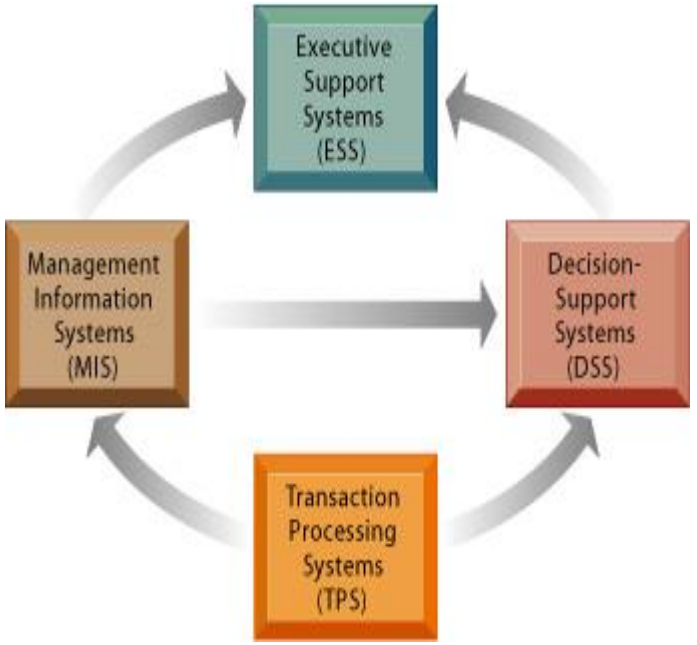
Transaction Processing System


Executive Support Systems (ESS)
Strategic
5-Year Sales Trend & Forecasting
5-Year Operating Plan
Profit Planning
Personnel Planning
Management
Sales Management
Inventory Control
Annual Budgeting
Relocation Cost Control
Management Information Systems (MIS)
Sales Region Analysis
Production Scheduling
Profitability Analysis
Contract Cost Analysis
Decision-Support Systems (DSS)
Operational
Order Processing
Material Movement Control
Payroll & Accounts Payable
Employee Recordkeeping
Transaction Processing Systems (TPS)
Sales & Marketing
Manufacturing & Production
Finance & Accounting
Human Resources
Functional Areas

Major types of systems in organizations

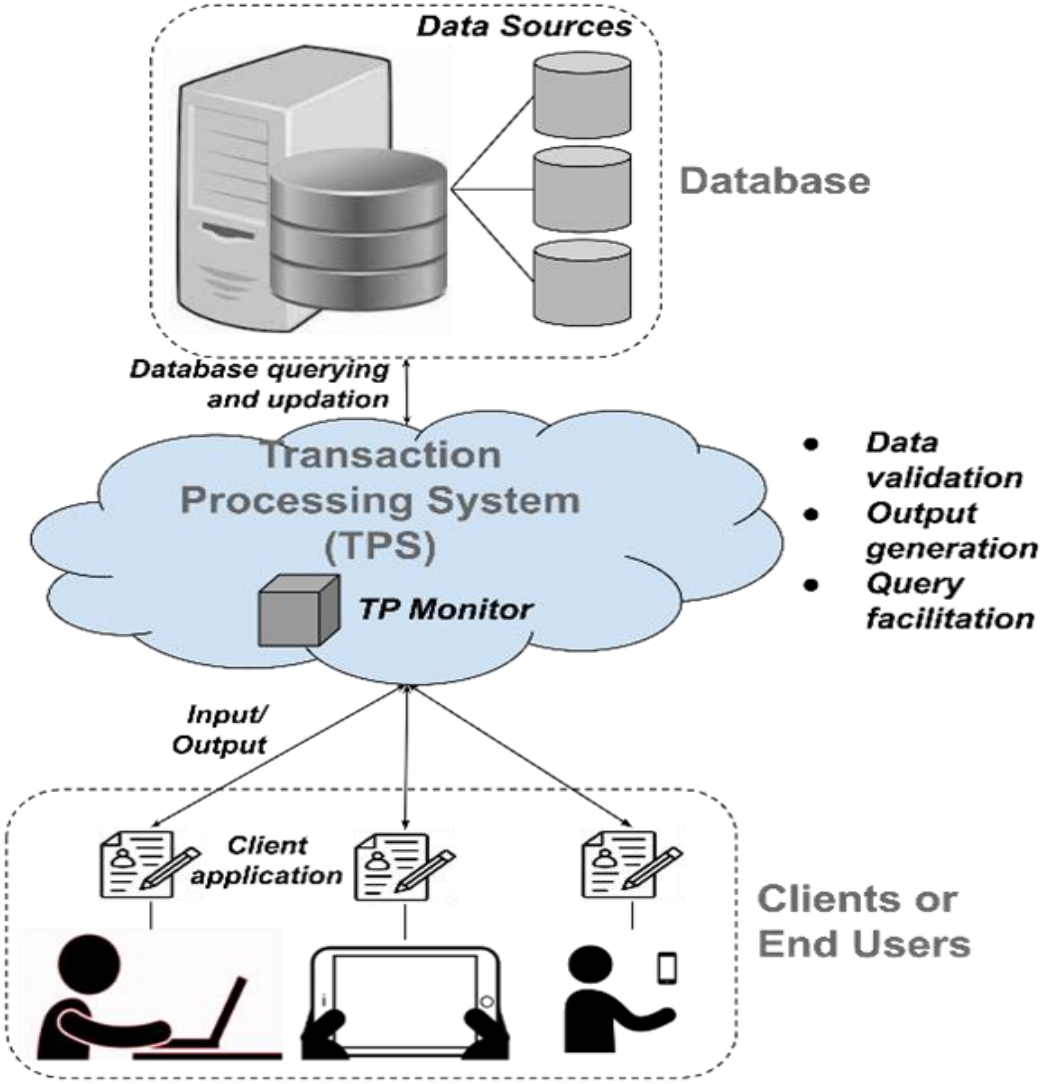
- A typical organization is divided into operational, middle, and upper level.
- The information requirements for users at each level differ.
- Towards that end, there are number of information systems that support each level in an organization.

Type of System	Information Inputs	Processing	Information Outputs	Users
ESS	Aggregate data; external, internal	Graphics; simulations; interactive	Projections; responses to queries	Senior managers
DSS	Low-volume data or massive databases optimized for data analysis; analytic models and data analysis tools	Interactive; simlulations; analysis	Special reports; decision analyses; responses to queries	Professionals; staff managers
MIS	Summary transaction data; high-volume data; simple models	Routine reports; simple models; low-level analysis	Summary and exception reports	Middle managers
TPS	Transactions; events	Sorting; listing; merging; updating	Detailed reports; lists; summaries	Operations personnel; supervisors



Transaction Processing System

- Transaction processing system meaning refers to an information processing system that **processes all transactions taking place within the business**.
- Such transactions include **modification, collection, and retrieval of transaction data.**
- A TPS is highly **consistent, efficient, and dependable.**
- It is the same **system that online businesses utilize** for e-commerce.



Transaction Processing System

- The main objective of a transaction processing system is to answer routine questions such as;
  - How printers were sold today?
  - How much inventory do we have at hand?
  - What is the outstanding due for John Doe?
- By recording the day-to-day business transactions, the TPS system provides answers to the above questions promptly.
  - The decisions made by operational managers are routine and highly structured.
  - The information produced from the transaction processing system is very detailed.

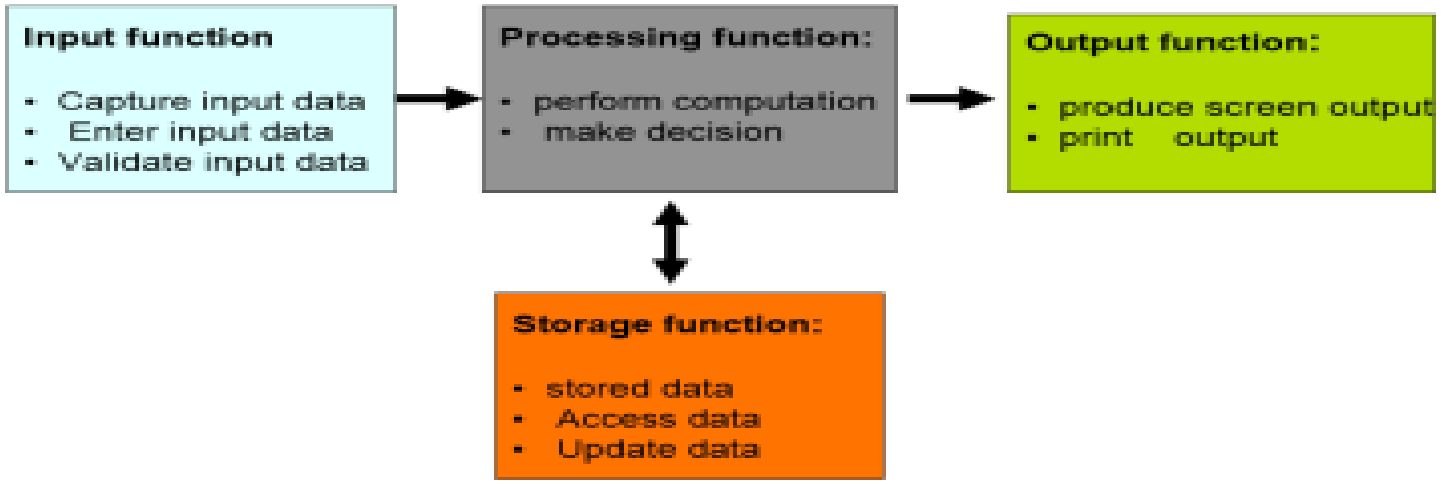
- **Point of Sale Systems** – records daily sales
- **Payroll systems** – processing employees salary, loans management, etc.
- **Stock Control systems** – keeping track of inventory levels
- **Airline booking systems** – flights booking management

Components of TPS

- **Input**: Typically, inputs include bills, coupons, custom orders, and **invoices**.
- **Output**: Outputs are the documents a TPS generates after it processes all inputs.
- e.g. The receipts stored by companies in their records.
- **Storage**: This component ensures the security, accessibility, and organization of all documents for late use.
- **Processing System**: The processing system goes through every input and establishes a useful output, for example, a receipt.

Functions of MIS

- Input functions include capturing data on a source document, entering the input data into the system, and checking input data for errors, a process called data validation
- Output functions include producing screen or paper reports, such as detail reports, summary reports, and exception reports.
- Storage functions include storing data in files and databases, accessing stored data, sorting stored data, and updating stored data.
- Processing functions involve the manipulation of data, including computation and decision-making.



Types of TPS

- **Batch Processing**
- A TPS interprets batches or sets of data by categorizing items by similarities via batch processing. This can cause delays as it involves reviewing various data sets simultaneously. However, the delay is acceptable as the TPS does not interpret the sets regularly.
- Businesses may customize the batches according to their requirement. For example, a company may want to process its workers' **wages** once every two weeks.

Types of TPS

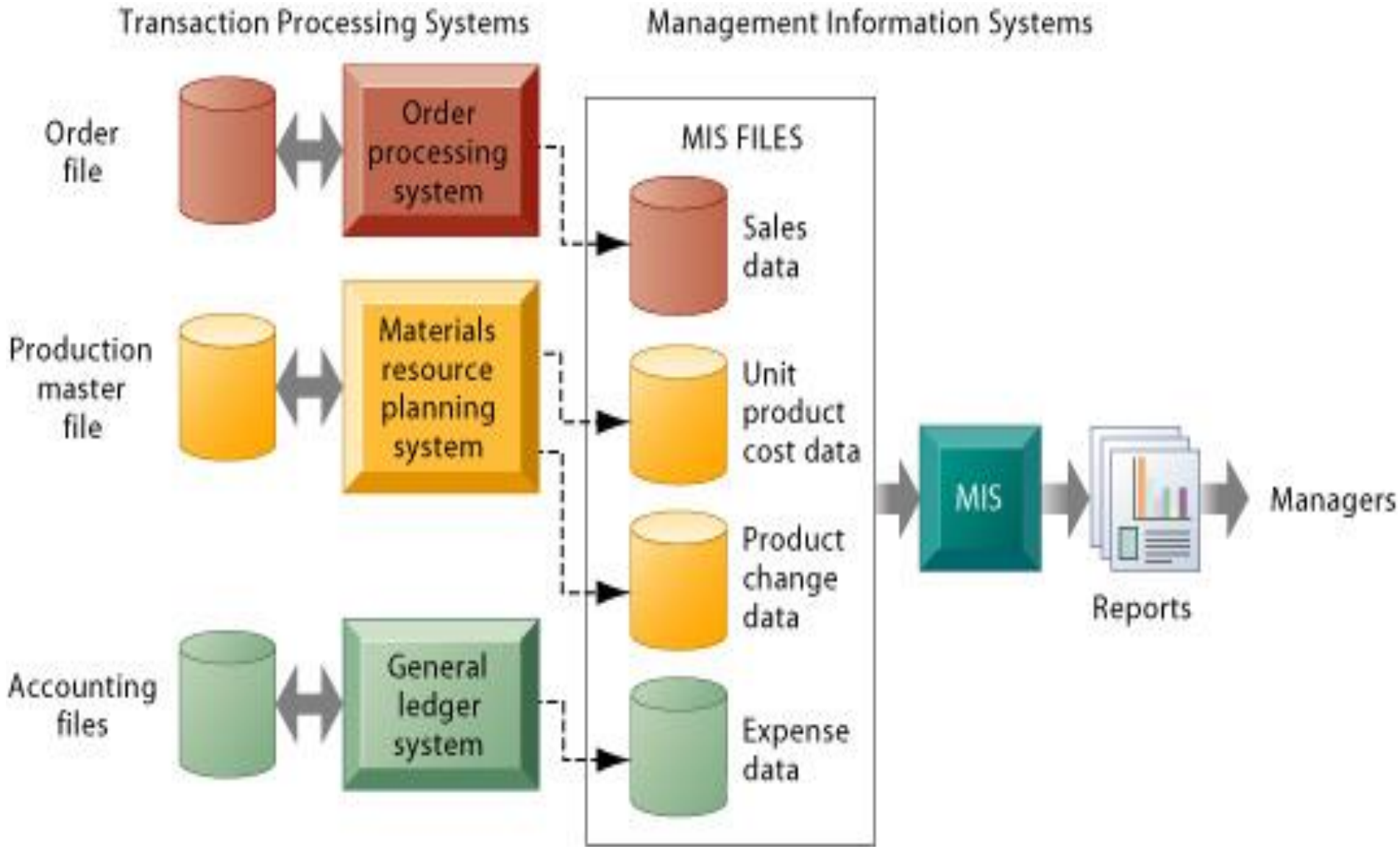
- **Real-Time Processing**
  - This type of TPS processes transactions with immediate effect, thus preventing delays. This is an ideal technique when businesses deal with singular transactions.
- **Example #1** Suppose David purchased a t-shirt from Amacon, an online apparel and clothing retailer. He used his credit card to pay for the item. The company's TPS collected the credit card details, communicated with its bank, and approved the purchase based on David's account balance.
- **Example #2** Let us say that John pays for a Chill TV subscription at the beginning of every month to watch the latest TV shows and movies. Chill TV's TPS processes all transactions as a set as they occur simultaneously. Since the system processes a set of transactions once every month, it requires high computing power. Hence, a delay in processing the transactions is acceptable in this case.

Management Information System

Management Information System

- Management Information Systems (MIS) are used by tactical managers to monitor the organization's current performance status.
- The output from a transaction processing system is used as input to a management information system.
- The MIS system analyzes the input with routine algorithms i.e. aggregate, compare and summarizes the results to produced reports that tactical managers use to monitor, control and predict future performance.
  - For example, input from a point of sale system can be used to analyze trends of products that are performing well and those that are not performing well.
  - This information can be used to make future inventory orders i.e. increasing orders for well-performing products and reduce the orders of products that are not performing well.

	TYPE OF TPS SYSTEM				
	Sales/ marketing systems	Manufacturing/ production systems	Finance/ accounting systems	Human resources systems	Other types (e.g., university)
Major functions of system	Customer service Sales management Promotion tracking Price changes Dealer communications	Scheduling Purchasing Shipping/receiving Operations	General ledger Billing Cost accounting	Personnel records Benefits Compensation Labor relations Training	Admissions Grade records Course records Alumni records
Major application systems	Sales order information system Sales commission system Sales support system	Machine control systems Purchase order systems Quality control systems	General ledger Payroll Accounts receivable/payable Funds management systems	Employee records Benefit systems Employee skills inventory	Registration system Student transcript system Curriculum class control systems Alumni benefactor system


Transaction Processing Systems
Management Information Systems
Order file
Order processing system
MIS FILES
Sales data
Production master file
Materials resource planning system
Unit product cost data
Product change data
Accounting files
General ledger system
Expense data
MIS
Reports
Managers

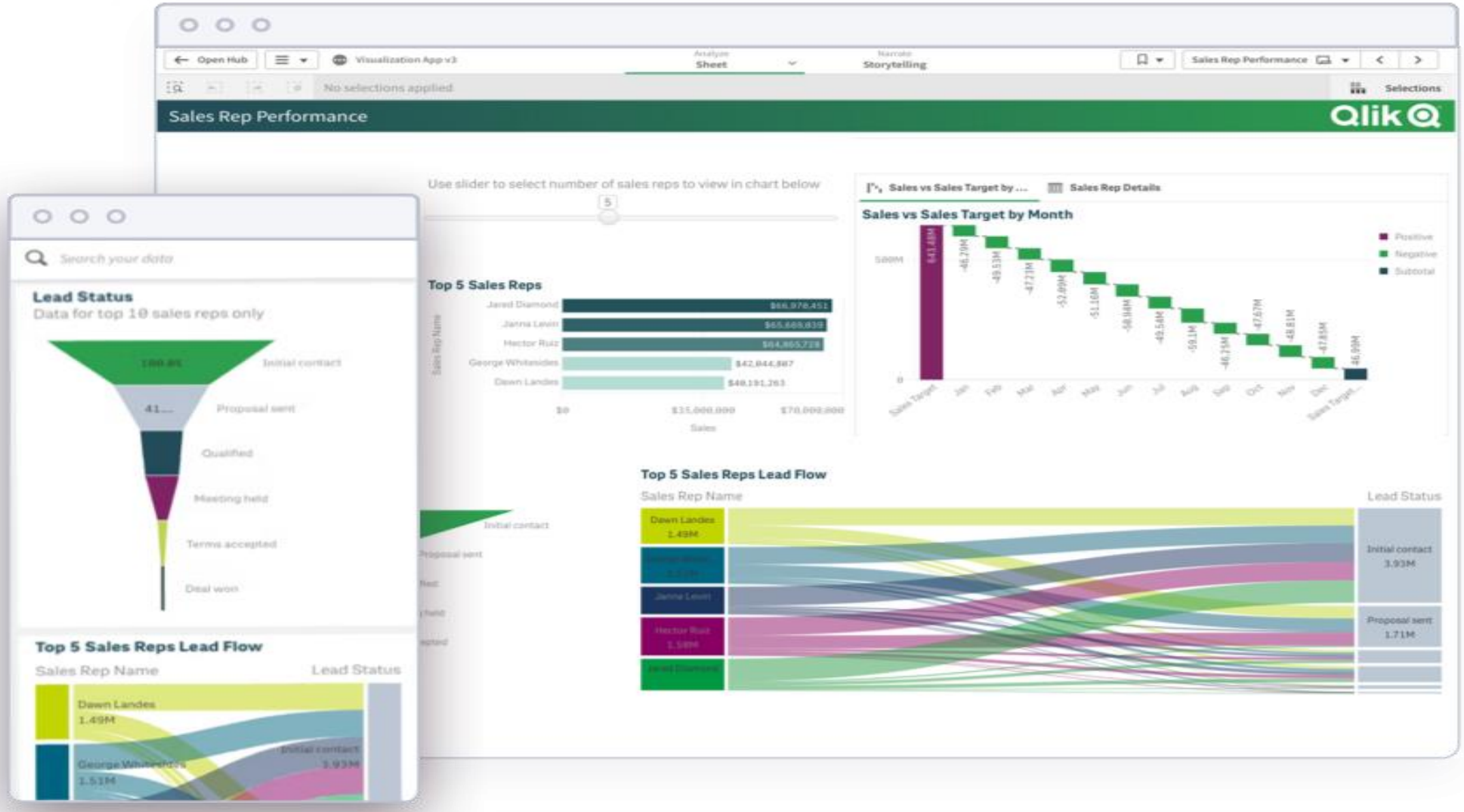
Management Information System

- Examples of management information systems include;
  - **Sales management systems** – they get input from the point of sale system
  - **Budgeting systems** – gives an overview of how much money is spent within the organization for the short and long terms.
  - **Human resource management system** – overall welfare of the employees, staff turnover, etc.
- Tactical managers are responsible for the semi-structured decision.
- MIS systems provide the information needed to make the structured decision and based on the experience of the tactical managers, they make judgement calls i.e. predict how much of goods or inventory should be ordered for the second quarter based on the sales of the first quarter.

Decision Support System

Decision Support System (DSS)

- Decision support systems are used by senior management to make non-routine decisions.
- Decision support systems use input from internal systems (transaction processing systems and management information systems) and external systems.
- The main objective of decision support systems is to provide solutions to problems that are unique and change frequently. Decision support systems answer questions such as;
  - What would be the impact of employees' performance if we double the production lot at the factory?
  - What would happen to our sales if a new competitor entered the market?
- Decision support systems use sophisticated mathematical models, and statistical techniques (probability, predictive modeling, etc.) to provide solutions, and they are very interactive.


Open Hub
Visualization App v3
Analysis
Sheet
Narrate
Storytelling
Sales Rep Performance
No selections applied
Selections
Sales Rep Performance
Use slider to select number of sales reps to view in chart below
5
Top 5 Sales Reps
Jared Diamond
Janna Levin
Hector Ruiz
George Whitesides
Dawn Landes
$66,970,452
$65,669,839
$64,865,728
$42,844,887
$40,191,263
Sales
Sales vs Sales Target by ...
Sales Rep Details
Sales vs Sales Target by Month
Positive
Negative
Subtotal
Top 5 Sales Reps Lead Flow
Sales Rep Name
Lead Status
Initial contact
3.93M
Proposal sent
1.71M
Search your data
Lead Status
Data for top 10 sales reps only
Initial contact
Proposal sent
Qualified
Meeting held
Terms accepted
Deal won
Top 5 Sales Reps Lead Flow
Sales Rep Name
Lead Status
Dawn Landes
1.49M
George Whitesides
1.51M
Initial contact
3.93M

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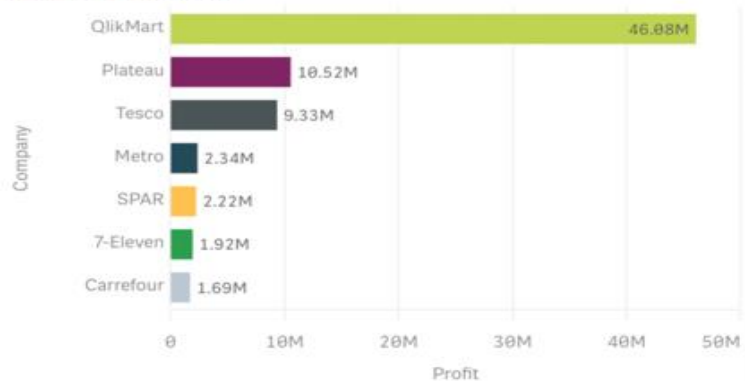
Open Hub | Visualization App v3 | Analyze: Sheet | Narrate: Storytelling | Dashboard

No selections applied | Selections

Dashboard

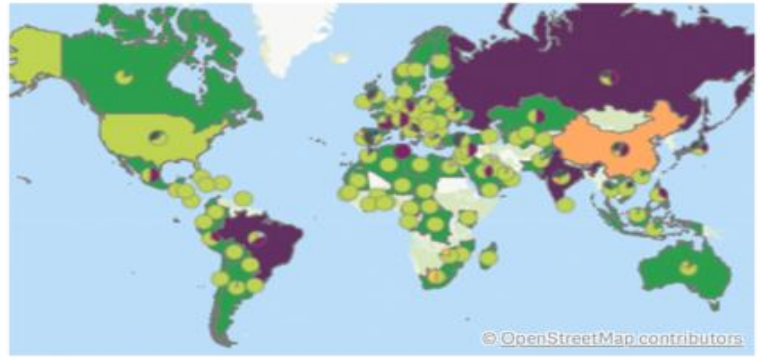
Sales	Profit	Margin %	Number of Stores	Avg Lead Time (days)
596.5M	74.09M	12.42%	474	4.65

Profit by Company



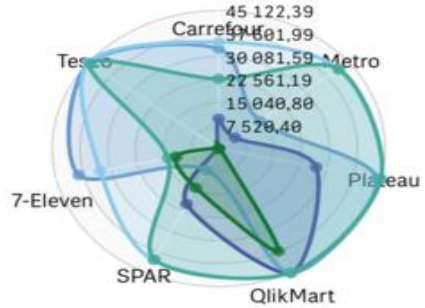
World Sales

Size of pie chart is based on profit

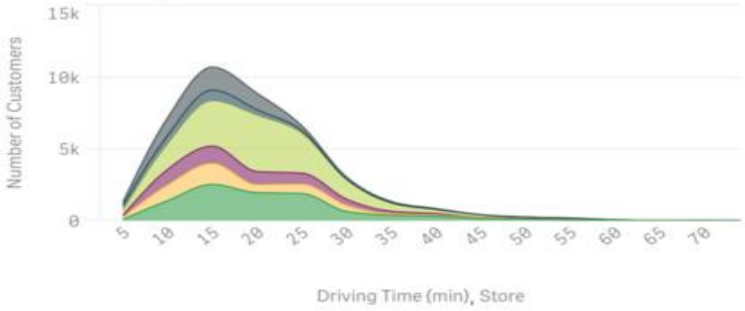


Days in Inventory by Region and Company

- Africa
- Americas
- Asia
- Europe
- Oceana

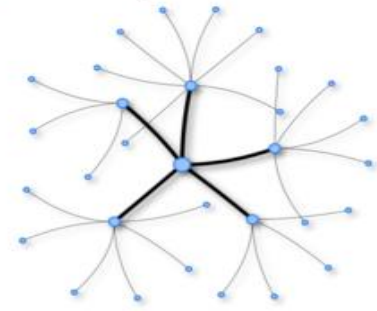


Customers by Drive Time and Store



Sales, Profit & Margin % Over Time

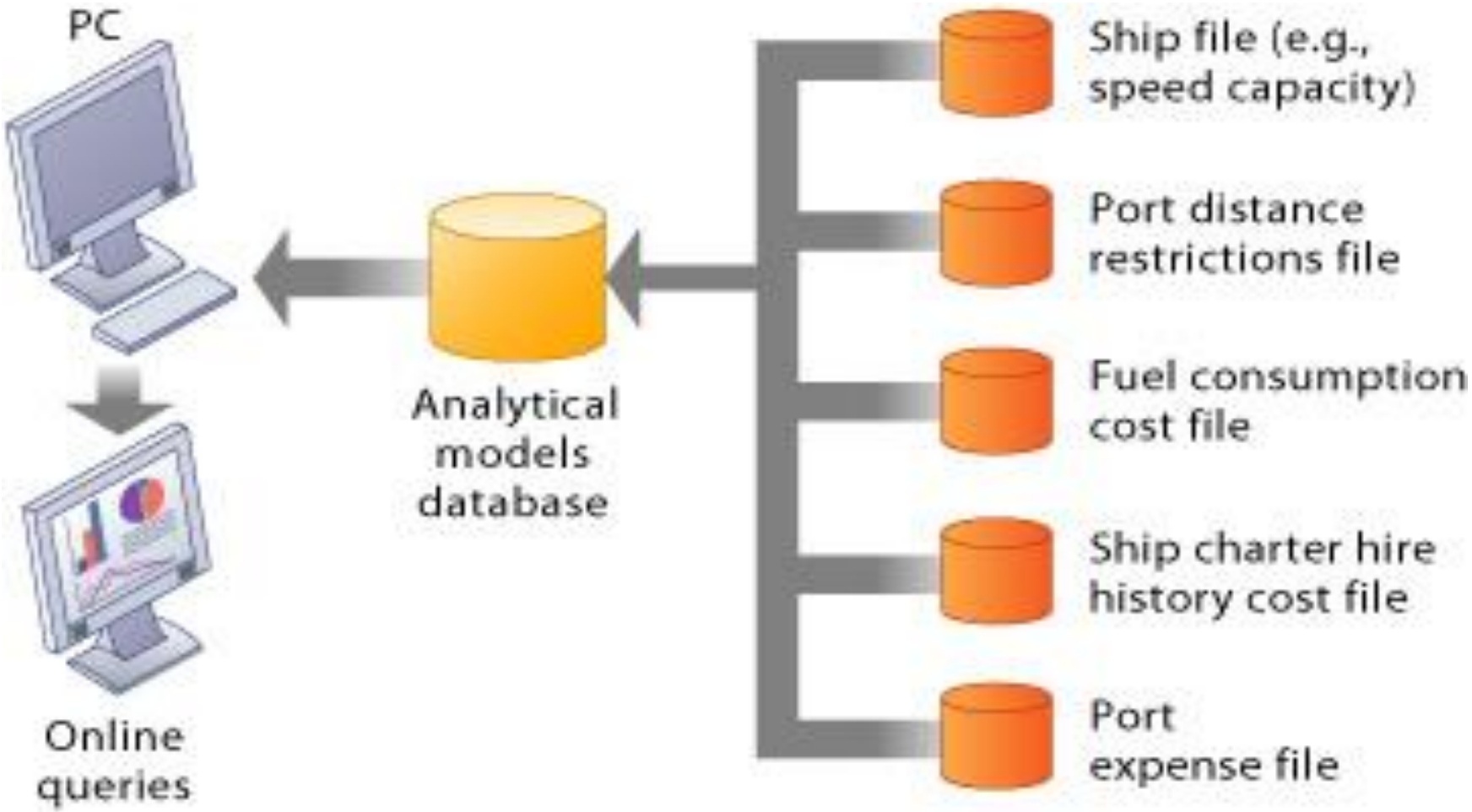
Store Employees Hierarchy



Decision Support System (DSS)

- Examples of decision support systems include;
  - **Financial planning systems** – it enables managers to evaluate alternative ways of achieving goals. The objective is to find the optimal way of achieving the goal. For example, the net profit for a business is calculated using the formula Total Sales less (Cost of Goods + Expenses).
  - A financial planning system will enable senior executives to ask what if questions and adjust the values for total sales, the cost of goods, etc. to see the effect of the decision and on the net profit and find the most optimal way.
  - **Bank loan management systems** – it is used to verify the credit of the loan applicant and predict the likelihood of the loan being recovered.

Decision Support System



Decision Support System (DSS)

- The **selection** of models that must be included in a decision support system **depends** on user **requirements** and the purposes of DSS.
- **Note that the DSS software contains the predefined models (or routines) using which new models can be built to support specific type of decisions.**
- **Statistical Models**
  - They contain a wide range of statistical functions, such as **mean, median, mode, deviations etc**.
  - These models are used to establish, **relationships** between the occurrences of an **event** and various **factors** related to that event.
  - It can, for example, relate sale of product to **differences** in **area, income, season, or other factors**. In addition to statistical functions, they contain software that can analyze series of data to project **future outcomes**.

Decision Support System (DSS)

Sensitivity Analysis Models

- These are used to provide answers to **what-if** situations occurring frequently in an organization.
- During the analysis, the value of **one variable is changed** repeatedly and **resulting** changes on other variables are **observed**.
- The sale of product, for example, is affected by different **factors** such as price, expenses on advertisements, number of sales staff, productions etc.

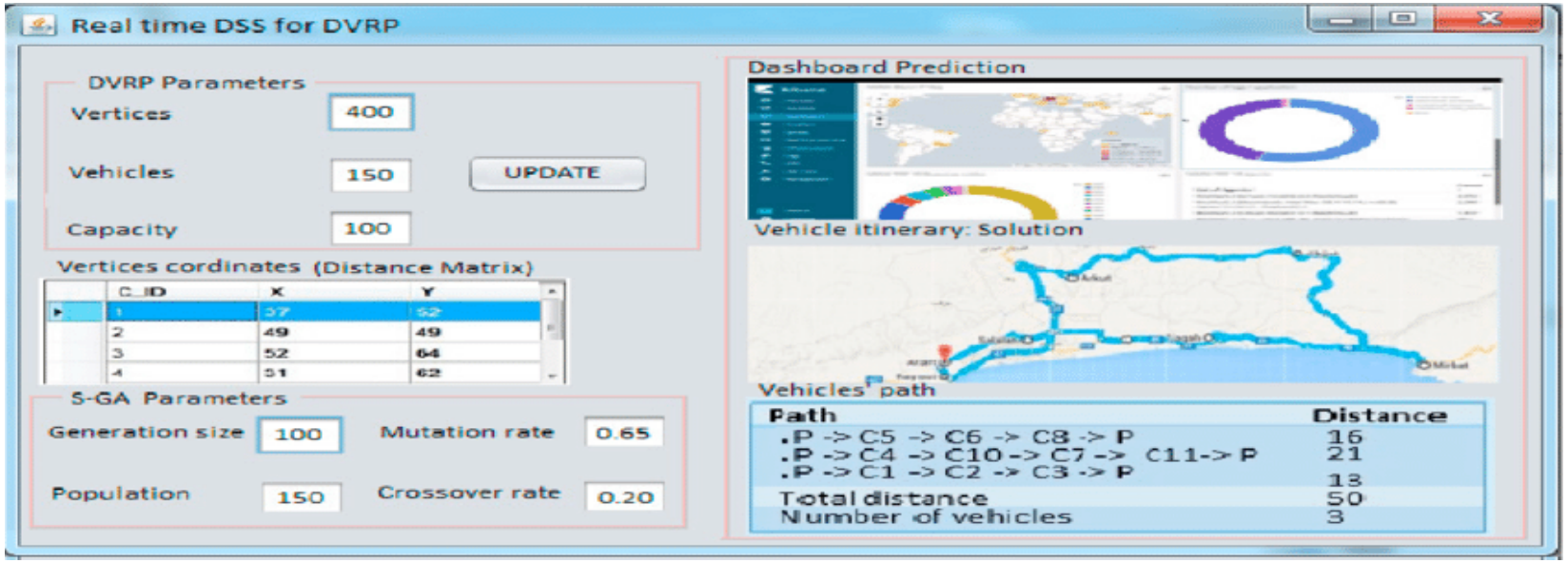
Forecasting Models

- They use various **forecasting** tools and techniques, including the regression models, time series analysis, and market research methods etc., to make statements about the **future or to predict** something in advance.
- They provide information that helps in **analyzing** the **business conditions** and making **future plans.**

Decision Support System (DSS)

DSS User Interface

- It is an interactive **graphical** interface which makes the interaction easier between the DSS and its users.
- It displays the results (output) of the analysis in various forms, such as **text, table, charts** or **graphics**. The user can select the appropriate option to view the output according to his requirement.



Executive Support System

Executive Support System

- An information system designed to cater the specific needs of executives is known as the Executive Information System (EIS). It is also known Executive Support System (ESS).
- Executive support systems are intended to be used by the senior managers directly to provide support to non-programmed decisions in strategic management.
- This information is often external, unstructured and even uncertain. Exact scope and context of such information are often not known beforehand.
- This information is intelligence based –
  - Market intelligence
  - Investment intelligence
  - Technology intelligence

Examples of Intelligent Information

- Following are some examples of intelligent information, which is often the source of an ESS –
  - External databases
  - Technology reports like patent records etc.
  - Technical reports from consultants
  - Market reports
  - Confidential information about competitors
  - Speculative information like market conditions
  - Government policies
  - Financial reports and information

Difference between ESS(EIS) and DSS

Dimension	Executive Information System	Decision Support Systems
Focus	Accessing of Status, drill down.	Analysis for decision support.
Typical Users	Senior administrators.	Professionals, Analysts, managers.
Application	Performance evaluation, environmental scanning, identification of problems and opportunities.	They are applicable in different areas where managerial decisions are made.
Decision Support	Supports indirectly high-level and unstructured decisions and policies.	Supports semi-structured and non-programmed decision-making, ad-hoc decisions etc.
Type of Information	News items. customers information, Information supporting particular situations, competitors, and the external environment: scheduled and demand reports on internal operations.	Information supporting particular situations.
Principal Use	EIS is used for tracking and controlling as well as identification of opportunity.	DSS are mainly used for planning, organising, staffing, and controlling.

Difference between ESS(EIS) and DSS

Dimension	Executive Information System	Decision Support Systems
Graphics	Graphics are necessarily used for EIS	It is the main part of many DSS.
User Friendliness	User-Friendliness is necessary for EIS.	If no intermediaries are used, then user-friendliness is must for DSS.
Processing of Information	Tracks critical data and information, filters and compresses information.	EIS generates questions and answers worked out by using the DSS and gives back to the EIS.
Supporting Detailed Information	Immediate access the supporting details of any summary.	This can be programmed into the DSS but generally not happens.
Model Base	Limited built-in functions.	Model base is core of the DSS.
Nature of Information	Shows the pre-generated information about the past and present, generates new information about the past, present, and future.	Generates new information about the past, present. and future.

Executive Information System (EIS) Advantages

- Trend Analysis
- Improvement of corporate performance in the marketplace
- Development of managerial leadership skills
- Improves decision-making
- Simple to use by senior executives
- Better reporting method
- Improved office efficiency

Executive Information System (EIS) Disadvantage

- Due to technical functions, not to easy to use by everyone
- Executives may encounter overload of information
- Difficult to manage database due to the large size of data
- Excessive costs for small business organizations

Knowledge Management System

Knowledge Management System

- A knowledge management system (KMS) is a tool used by companies to help organize documentation, frequently asked questions, and other information into easily accessible formats for both internal and external customers.
- Using knowledge management software can help keep documentation up to date, assist customers in finding their own answers, and manage knowledge access and permissions across user groups.
- It's a tool that's valuable to both small businesses that are just starting out and global enterprises that need to distribute knowledge to a wide variety of audiences.

Knowledge Management System

- Knowledge management is the process of identifying, gathering, storing, evaluating, and sharing all of the valuable information organizations create in their day-to-day operations.
- It involves capturing answers to frequently (and not so frequently) asked questions and documenting them in an easy-to-understand format across multiple file types, like step-by-step written articles, videos, or images.
- A KMS makes knowledge sharing a whole lot easier by having an answer ready and easily accessible to share.

Types of Knowledge to Include in Knowledge Management?

- **Explicit knowledge**
  - This is knowledge that is easily documented, shared, and deployed.
  - Examples might include company policy, contract entitlements, blogposts, how-to videos, user's guides, troubleshooting manuals, and industry regulations.
- **Tactical knowledge**
  - Tactical Knowledge is gained from personal traits and experience and could be more difficult to capture and disseminate. Per Gartner, it even includes intuition and judgment. Sophisticated Knowledge Management Systems that can leverage AI and reasoning fare better in their ability to do it.
- **Implicit knowledge**
  - Implicit knowledge is not consciously accessible.
  - Example, knowing how to ride a bicycle or swim. Another way is to look at Amnesia. When someone is affected by it, they forget explicit and even tacit knowledge in many instances, but not implicit.

Knowledge Management System: The Benefits

- **Reduce the cost of customer service**
  - By making it easier for contact center agents to find accurate information, a Knowledge Management System reduces their average handling time for resolving customer service issues. Faster resolution translates to happier customers and efficient and happier employees.
- **Help customers self-serve**
  - An AI-powered Knowledge Management System can help customers find answers to their questions, even outside of normal business hours and without having to wait for an agent.
- **Speed up employee training and onboarding**
  - By providing relevant knowledge on demand, knowledge management systems can reduce the need for training and protracted onboarding and speed up employee time to competency.

Benefits of Knowledge Management System:

- **Faster information findability and problem-solving**
  - Whether it's solving customer service issues and providing expert advice to customers in the case of contact centers, or answering employee questions in the case of HR, a Knowledge Management System offers fast, accurate, and consistent answers, and offers it proactively.It can also give detailed data on how (or if!) information is being used.
- **Easily share expert knowledge**
  - How do you get knowledge from a business leader or veteran customer service agent to others who need it? A Knowledge Management System provides the repository for that knowledge and the mechanism through which it can be authored and efficiently delivered across channels and touchpoints.
- **Capture expertise from the best agents**
  - The real-world experience of the best customer service agents is immeasurably valuable. A mature Knowledge Management System also includes good content management capabilities. It facilitates the capture and dissemination of expert knowledge and knowhow at the point of need, across channels and touchpoints.

Functional Information System

Meaning of Functional Information System

- FIS is based on the various business functions such as Production , Marketing , Finance and HR etc. These departments or functions are known as functional areas of business.
- Each functional area requires applications to perform all information processing related to the function.
- The popular functional areas of the business organization are:
  - Financial Information System
  - Marketing Information System
  - Production/Marketing Information System
  - Human Resource Information System

Marketing Information System

- Marketing activities are directed toward planning, promoting, and selling goods and services to satisfy the needs of customers and the objectives of the organization.
  - ↪ Marketing information systems support decision making regarding the marketing mix. These include: Product, Price, Place, Promotion
- Every marketing operation **works in unison with the conditions prevailing both inside and outside the organization**, and, therefore, there are several sources (viz. Internal, Marketing Intelligence, Marketing Research) through which the relevant information about the market can be obtained.

Components of Marketing Information System

Internal Records

- The Company can collect information through its internal records comprising of….
- Cash flows
- Inventories
- Marketing personnel costs
- Payables
- Product costs
- Receivables
- Sales records
- Stocks

Components of Marketing Information System

Marketing Intelligence System

- The marketing intelligence system provides the data about the happenings in the market, i.e. data related to the marketing environment which is external to the organization.
- It includes information about the changing market trends, competitor's pricing strategy, changes in the customer's tastes and preferences, new products launched in the market, promotion strategy of the competitor, etc.

Components of Marketing Information System

Marketing Research

- The Marketing Research is the systematic collection, organization, analysis and interpretation of the primary or the secondary data to find out the solutions to the marketing problems.
- Several Companies conduct marketing research to analyze the marketing environment comprising of changes in the customer's tastes and preferences, competitor's strategies, the scope of new product launch, etc. by applying several statistical tools.

Components of Marketing Information System

Marketing Decision Support System

- It includes several software programs that can be used by the marketers to analyze the data, collected so far, to take better marketing decisions.
- With the use of computers, the marking managers can save the huge data in a tabular form and can apply statistical programs to analyze the data and make the decisions in line with the findings.

Financial Information System

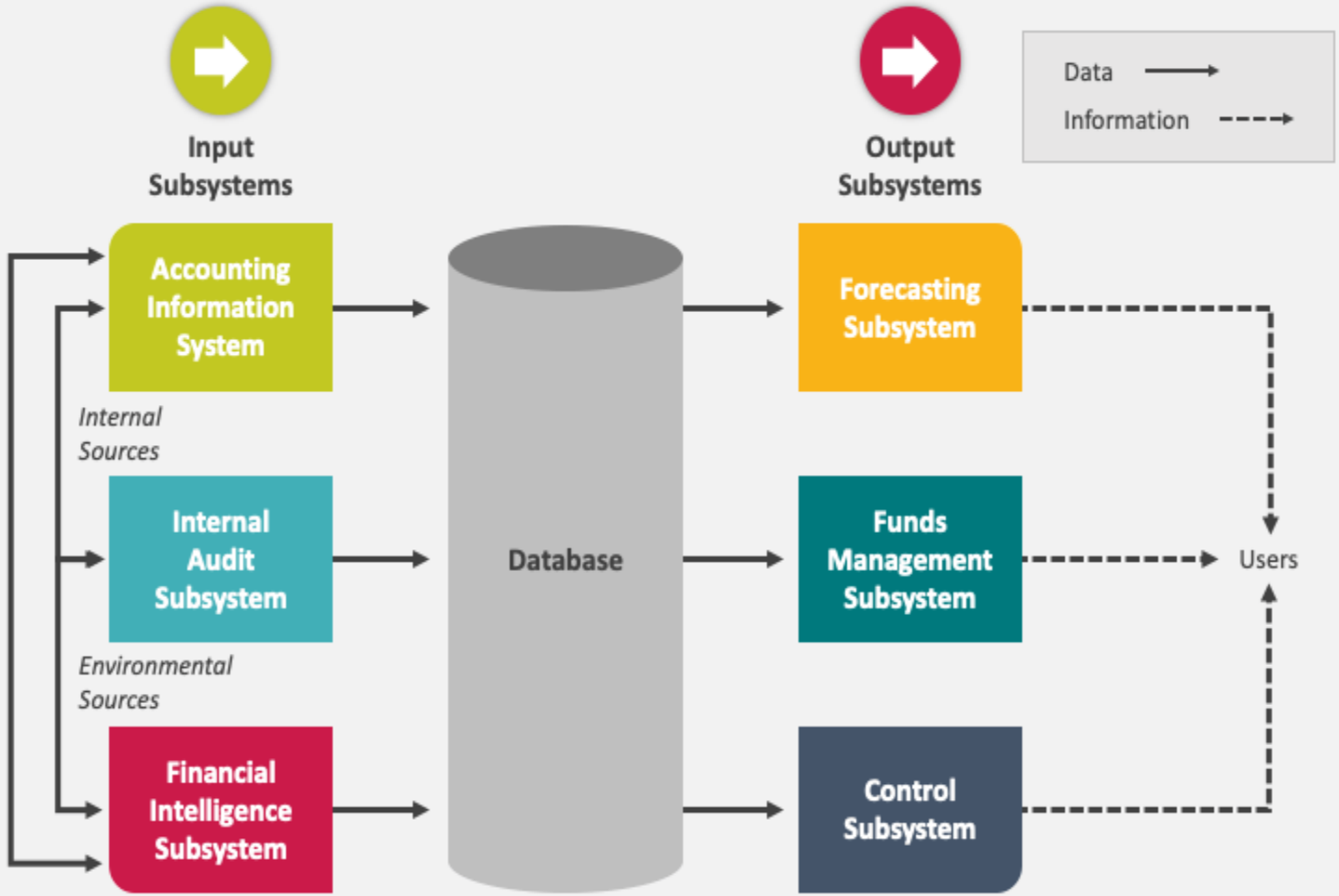
- A Financial Information System (FIS) is a software system that helps manage the finances and business aspects of a company.
- These systems store, process, and analyze financial data, enabling companies to track income, expenses, assets, liabilities, and other financial details in real time.
- **Workday Adaptive Planning** is a **financial planning and analysis** solution used by some of the world's largest brands.
- **Xero** is an accounting software solution that provides **an easy-to-use platform for all of your business accounting needs**. You can pay bills, claim expenses, accept payments, track projects, and connect with all of your banks with Xero.
- **ZOHO Finance Plus is an integrated finance suite for businesses that offers a unified platform for all of your back-office needs.** ZOHO Finance Plus is for small to mid-market businesses.

Components of Financial Information System

Financial Accounting	Financial accounting records all the financial transactions in accounts. It records all assets, liabilities , revenue and expenditure. Financial accounting is useful for the maintenance of the statements.
Fund Management	Under the financial information system, fund management plays an active role in the organization. It is a crucial aspect of financial management, the main aim of fund management is to maximize the profits from its investment.
Controlling	Controlling component is useful for the maintenance of whole activities in the organization. It records the revenue and expenditure of all the departments and lead desirable change by controlling the activities.

FINANCIAL INFORMATION SYSTEM

A Model of a Financial Information System



Example of Financial Information Systems

Accounting

- WidgetCo uses the FIS for its basic accounting operations. The system automatically records every sales transaction, updates the general ledger, and maintains up-to-date balances for accounts receivable and payable. Payroll is also managed through the FIS, ensuring employees are paid accurately and on time.

Financial Reporting

- At the end of each quarter, WidgetCo's finance team uses the FIS to generate financial reports. These reports include the income statement, balance sheet, and statement of cash flows. They give a detailed picture of WidgetCo's financial health and are essential for regulatory reporting and for informing decisions by company management.

Budgeting and Forecasting

- Each year, WidgetCo's finance team uses the FIS to help create the company's budget. The system allows the team to analyze past revenue and expenses in detail, helping them forecast future financial trends. As the year progresses, they can compare actual results with the budgeted figures and adjust plans as necessary.

Example of Financial Information Systems

Risk Management

- The FIS helps WidgetCo manage financial risks. It provides real-time visibility into the company's financial status, highlighting potential issues such as cash flow shortages or high levels of debt. The system can also generate alerts when key financial metrics fall outside of predefined ranges.

Investment and Portfolio Management

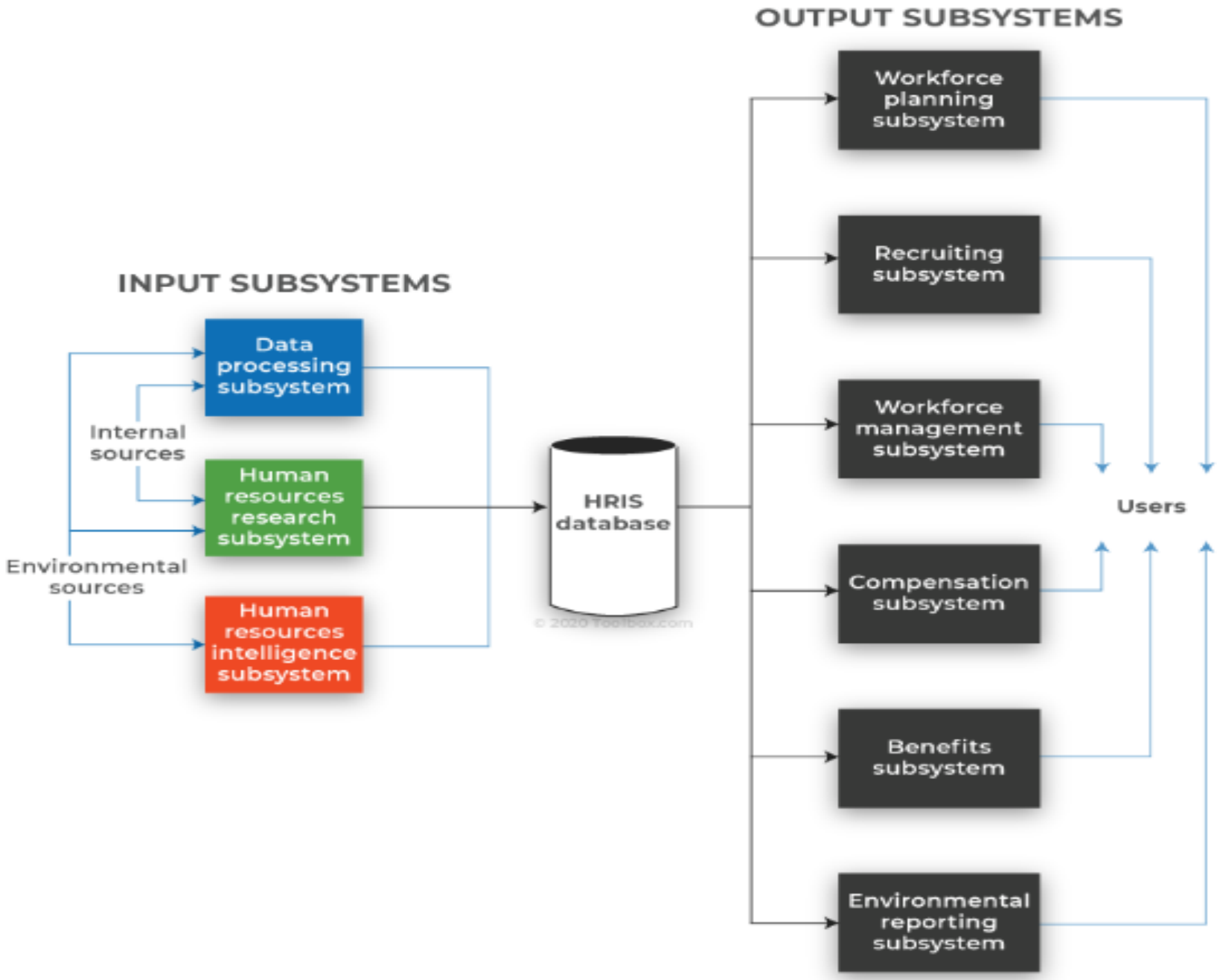
- WidgetCo uses the FIS to manage its investment portfolio. The system provides detailed information on the performance of each investment, enabling the finance team to make informed decisions about buying or selling assets.

Billing and Invoicing

- The FIS manages WidgetCo's billing and invoicing. It automatically generates invoices for each sale and tracks when payment is received. If a customer is late with a payment, the system can automatically send reminders.

Human resource information system

- A human resource information system (HRIS) is software that provides a centralized repository of employee master data that the human resource management (HRM) group needs for completing core human resource (core HR) processes.
- An HRIS can help HR and organizations become more efficient through the use of technology.
- An HRIS stores, processes and manages employee data, such as names, addresses, national IDs or Social Security numbers, visa or work permit information, and information about dependents.
- It typically also provides HR functions such as recruiting, applicant tracking, time and attendance management, performance appraisals and benefits administration.


OUTPUT SUBSYSTEMS
Workforce planning subsystem
Recruiting subsystem
Workforce management subsystem
Compensation subsystem
Benefits subsystem
Environmental reporting subsystem
Users
INPUT SUBSYSTEMS
Data processing subsystem
Human resources research subsystem
Human resources intelligence subsystem
Internal sources
Environmental sources
HRIS database
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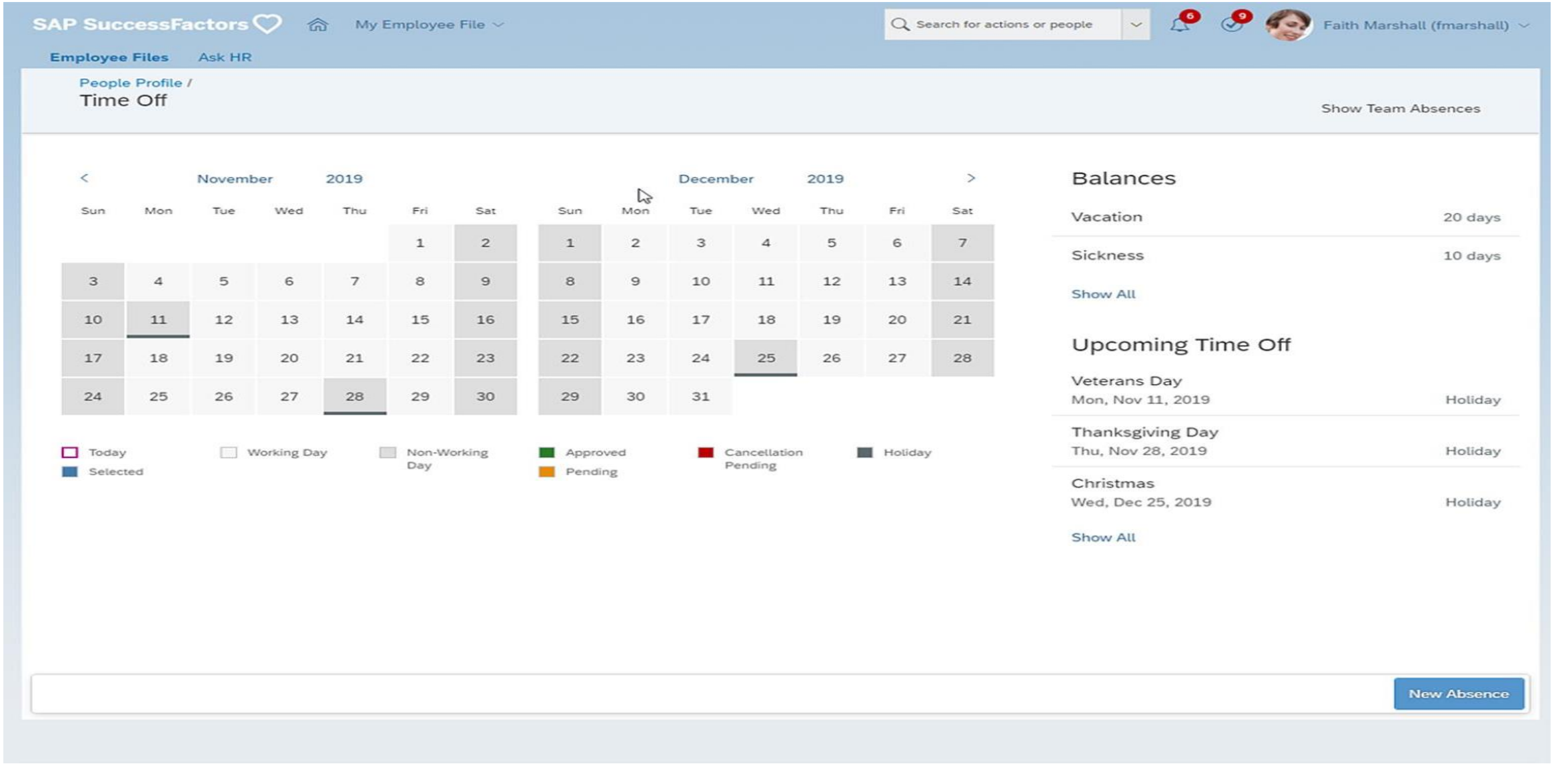


Visit Website: SAP SuccessFactors
https://www.sap.com/india/products/hcm.html

BestRun

Org Chart

Search for actions or people

26

22

Tessa Walker (twalker)

Org Chart | Position Org Chart | Company Structure Overview | Directory | Resources | Ask HR

Search Org Chart

Mya Cooper
VP Operations
5/42

Armando Lopez
Facilities Manager
5/5

Contingent Worker

Debra Petersen
Research and Development Director

Geoff Hill
Production Director
8/28

Gordon Elliston
Supply Chain Director

Russell Goddard
Quality Assurance Manager
4/4

Lauren Robbins
Executive Assistant
+1 Direct Manager

Insights

Staffing Rate - Contingent Workers

Staffing Rate - Contingent Workers

0.0994

0.105

0.085

Succession Positions without a Read...

Succession Positions without a Ready Candidate

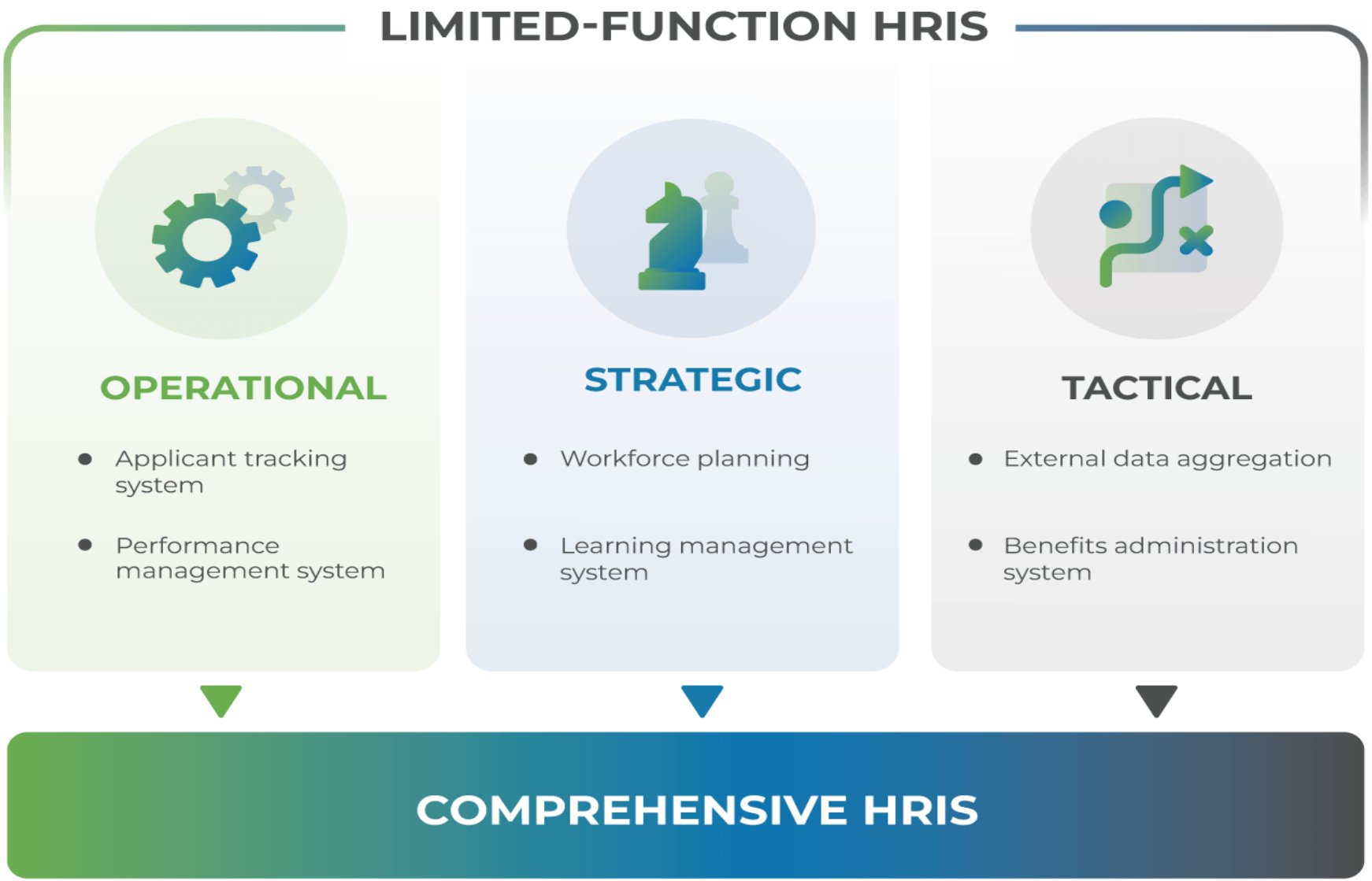
576

600

520

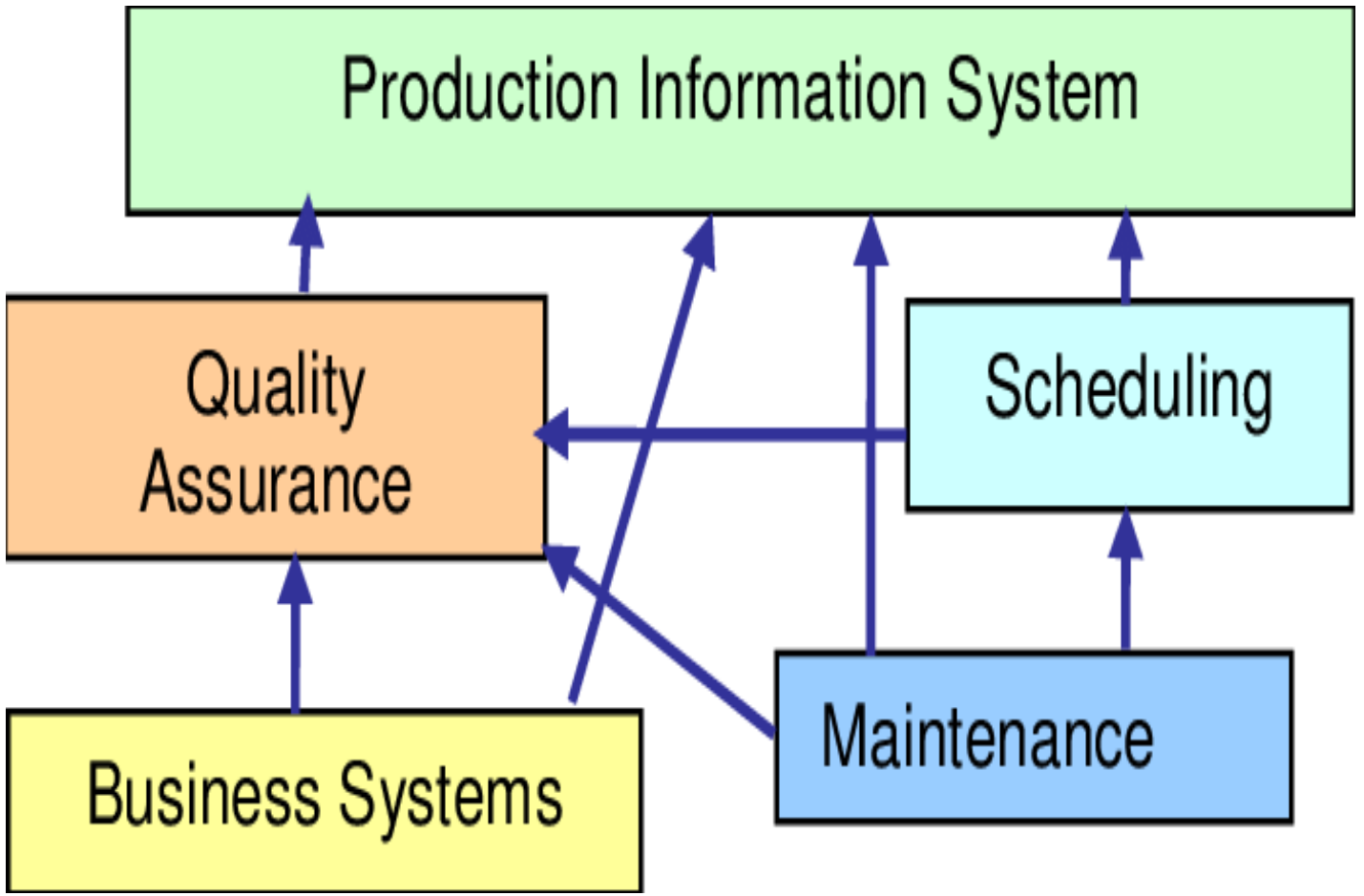
Support

Types of Human Resource Information System



Production and Operation Information System

- **Production and Operation Information Systems** provides real-time visibility into the manufacturing process, allowing managers to make informed decisions about resource allocation, production planning, quality control, and other aspects.
- By providing accurate and timely information, MIS helps reduce lead times, optimize inventory levels, and improve product quality.
- This helps manufacturing organizations improve operational efficiency, reduce costs, and improve the quality of their products by providing real-time visibility and control over their manufacturing processes.
- **Best Manufacturing Management Information Systems**
  - SAP Manufacturing Execution
  - Viindoo
  - Rockwell Automation FactoryTalk


Production Information System
Quality Assurance
Scheduling
Business Systems
Maintenance

Benefits of implementing Production/Manufacturing Information system

- **Real-time visibility:** MIS provides real-time visibility into the manufacturing process, allowing managers to monitor and control production in real time.
- **Increase efficiency:** MIS can automate many manual tasks, reducing the time and effort required to manage production.
- **Improve the quality:** MIS can help improve product quality by providing real-time monitoring of critical quality parameters and enabling quick response to quality issues. Cut the cost: By increasing efficiency, improving quality and enabling better decision making, MIS can help reduce costs in the manufacturing process.
- **Compliance:** MIS can help manufacturing companies comply with regulatory requirements and quality standards.
- **Ability of extension:** MIS can be customized to meet the specific needs of the manufacturing organization and can be scaled up or down as needed.

Limitation of implementing Production/Manufacturing Information system

- **High cost:** MIS implementation can be expensive, both in terms of initial investment as well as ongoing maintenance and support costs.
- **Complexity:** MIS systems can be complex, requiring significant planning, configuration, and customization. This can be difficult to deploy and use, especially for smaller organizations with limited IT resources.
- **Depends on technology:** An MIS system relies heavily on technology, which can be detrimental if there are technical problems, system failures, or network attacks. This can cause downtime, lost productivity, and potential security risks.
- **Resistance to change:** Implementing an MIS system may require changes to established business processes, which may face resistance from employees who are comfortable with the current way of working.
- **Data overload:** An MIS system can generate large amounts of data, which can be overwhelming for users.

Thank You