Elements of Enterprise Systems

Business Information Systems

Business information systems are sets of inter-related procedures using IT infrastructure in a business enterprise to generate and disseminate desired information.

Such systems are designed to support decision making by the people associated with the enterprise in the process of attainment of its objectives.

The business information system gets data and other resources of IT infrastructure as input from the environment and process them to satisfy the information needs of different entities associated with the business enterprise.

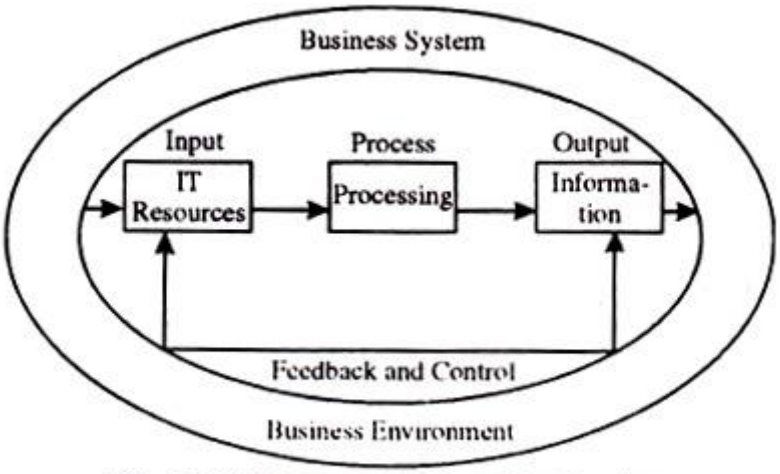

Fig. 13.7 Management Information System.

There are systems of control over the use of IT resources and the feedback system offers useful clues for increasing the benefits of information systems to business. The business information systems are sub-systems of business system and by themselves serve the function of feedback and control in business system.

Features of Business Information System:

Characteristics & features of business information system are:

1. The business information systems are subject to the dynamics of business environment and need to be flexible enough to absorb the inevitable changes in the information needs of business. They have to be efficient to satisfy the demanding and 'hard task masters,' the business managers. Thus, there is need to balance the conflicting objectives in the process of designing business information systems.

2. Business information systems need to be proactive. They should anticipate changes in information needs of users and accordingly adapt themselves to suit their needs. This has become important because of the fact that the managers get involved in the routine activities to the extent that the decision making becomes a matter of imitating what competitors are doing or planning to do, rather than making an informed choice.

3. The purpose of business information system is to cater to the information needs for decision making in business.

4. The business information systems have to be designed keeping in view the availability of financial and human resources to the business enterprise.

5. The cost effectiveness is a matter of prime concern in the development and maintenance of business information systems. Economic justification for investment in IT infrastructure for business information systems is a pre condition for its existence and sustenance.

Key Components of Business Information System:

Information systems can be described by four of their key components which are:

1. Decisions
2. Transactions and processing
3. Information and its flow
4. Individuals or functions involved.

It is difficult to observe the decision process through we can see and review the results of a decision. Transactions are usually more visible, though many current systems use computer programs, which are not easy to understand, to process transactions. In principle, an observer can see information and its flows. Individuals can be observed too, but it is not always easy to figure out the information processing functions they perform.

Decision Support Systems

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.

Decision support systems bring together data and knowledge from different areas and sources to provide users with information beyond the usual reports and summaries. This is intended to help people make informed decisions.

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

- comparative sales figures between 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. Informational applications provide users with relevant information based on a variety of data sources to support better-informed decision-making. Operational applications, by contrast, record the details of business transactions, including the data required for the decision-support needs of a business.

Decision support system components

A typical DSS consists of three different parts: knowledge database, software and user interface.

1. **Knowledge base.** A knowledge base is an integral part of a decision support system database, containing information from both internal and external sources. It is a library of information related to particular subjects and is the part of a DSS that stores information used by the system's reasoning engine to determine a course of action.

2. **Software system.** The software system is composed of model management systems. A model is a simulation of a real-world system with the goal of understanding how the system works and how it can be improved. Organizations use models to predict how outcomes will change with different adjustments to the system. For example, models can be helpful for understanding systems that are too complicated, too expensive or too dangerous to fully explore in real life. That's the idea behind computer simulations used for scientific research, engineering tests, weather forecasting and many other applications.

3. **User interface.** The user interface enables easy system navigation. The primary goal of the decision support system's user interface is to make it easy for the user to manipulate the data that is stored on it. Businesses can use the interface to evaluate the effectiveness of DSS transactions for the end users. DSS interfaces include simple windows, complex menu-driven interfaces and command-line interfaces.

Types of decision support systems

Decision support systems can be broken down into categories, each based on their primary sources of information.

Data-driven DSS

A data-driven DSS is a computer program that makes decisions based on data from internal databases or external databases. Typically, a data-driven DSS uses data mining techniques to discern trends and patterns, enabling it to predict future events. Businesses often use data-driven DSSes to help make decisions about inventory, sales and other business processes. Some are used to help make decisions in the public sector, such as predicting the likelihood of future criminal behavior.

Model-driven DSS

Built on an underlying decision model, model-driven decision support systems are customized according to a predefined set of user requirements to help analyze different scenarios that meet these requirements. For example, a model-driven DSS may assist with scheduling or developing financial statements.

Communication-driven and group DSS

A communication-driven and group decision support system uses a variety of communication tools -- such as email, instant messaging or voice chat -- to allow more than one person to

work on the same task. The goal behind this type of DSS is to increase collaboration between the users and the system and to improve the overall efficiency and effectiveness of the system.

Knowledge-driven DSS

In this type of decision support system, the data that drives the system resides in a knowledge base that is continuously updated and maintained by a knowledge management system. A knowledge-driven DSS provides information to users that is consistent with a company's business processes and knowledge.

Document-driven DSS

A document-driven DSS is a type of information management system that uses documents to retrieve data. Document-driven DSSes enable users to search webpages or databases, or find specific search terms. Examples of documents accessed by a document-driven DSS include policies and procedures, meeting minutes and corporate records.

Knowledge Management Systems

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.

Types of Knowledge Management Systems

There are three different types of knowledge to gather:

Explicit knowledge

This is the knowledge that needs to be documented and is usually easy to turn into an article. It is a description about, or a set of steps towards, achieving something. Examples include clothing measurements and fabric information or where to change your login information on a software application. Gather explicit knowledge through fact-finding with your subject matter experts.

Implicit knowledge

This is information customers need to infer from explicit knowledge. It requires customers to interpret existing pieces of explicit knowledge as described above, or general knowledge to create desired outcomes. For example, how to combine software features to achieve a business need or knowing a certain material is waterproof. Gather implicit knowledge by documenting your customers' use cases and then explain how to combine other knowledge to achieve them.

Tacit knowledge

This is knowledge coming from experience and typically requires a lot of context and practice to acquire. It could be something like knowing immediately what to do during an emergency or that a specific shoe brand doesn't give you enough arch support. Tacit

knowledge is hard to gather because it is often specific and requires individual testing. Start by getting specialists or senior members of your team together to disseminate complex ideas and use that to build larger training content.

Benefits of a knowledge management system

Whether you're a SaaS company supporting business customers, a consumer product shipping out retail items, or a helpdesk manager dealing with internal customers, a knowledge management portal will help you effectively deliver information to the people who need it. Not only is a knowledge management system great for business, but it's also great for your customers. Providing a thorough knowledge management system is key to helping customers help themselves and improving the overall customer experience.

1. Organizes and makes information accessible from a single source of truth

A Gartner study on the top priorities for customer service leaders in 2022 revealed that 74% of the leaders pointed to improving content and knowledge delivery to customers and employees as important in their support strategy. Organizing and presenting knowledge in easily-accessible formats from a centralized content repository breaks down information silos within organizations. With clear organization and effective search capabilities, visitors can locate exactly what they need and when they need it.

2. Keeps information up to date

A knowledge management system helps you identify out-of-date articles and update them with new information. This provides a big advantage over a file folder of documents. Where folders can become unwieldy and messy, a KMS will keep your valuable information organized. Out-of-date information can mislead customers and lose your company business, so it's important to get that taken care of quickly.

3. Makes self-service functionalities more effective and deflects support tickets

78% of US leaders are investing more in self-service, offering customers self-help portals and AI-powered chatbots to help themselves. Self-service, or customers helping themselves through documentation, is the most cost-effective way of supporting your customers. You may be extending self-service through an exhaustive knowledge base, chatbots, or community forums. Each of these self-help options works by retrieving relevant solution articles and FAQs from a centralized, updated knowledge management system, deflecting tickets away from our customer support team.

4. Allows agents to share and reuse knowledge and learnings

Do your customer support agents spend a lot of time writing out thorough and detailed support emails to customers? If you're using a modern KMS, you can capture that knowledge by converting the support email into a knowledge base article. A knowledge management system democratizes valuable information and promotes knowledge sharing so that everyone in the company can access it.

5. Empowers customers to help themselves and improves customer satisfaction

About 39% of customers prefer self-service options rather than speaking to agents. A knowledge management software provides 24/7 support to customers, so they can find what they need quickly and don't have to wait in a phone queue. With many of your customers being able to find their own answers effortlessly, you'll see your customer satisfaction (CSAT) scores rise. Continually improving the way you deliver information to your customers via an online help center will reduce churn and improve customer loyalty. Grouping your FAQs on a branded, easy-to-read page can also help win business and prevent support issues from cropping up later.

6. Provides more detailed help to customers

There's only so much you can communicate over email or the phone. Knowledge management systems allow you to pull together multiple types of media together to provide extremely thorough help. All customers have their own preferred way of learning, whether it's through text, videos, or images. Providing all of these options in your help center will make sure none of your customers are left without help, no matter how they prefer to consume online material.

Financial Systems

A financial system is a set of institutions, such as banks, insurance companies, and stock exchanges, that permit the exchange of funds. Financial systems exist on firm, regional, and global levels.

Components

The financial system is composed of many components depending on the level. From a company's perspective, its financial system includes procedures that follow its financial activities. It would include aspects such as finances, accounting, revenue, expenses, wages, and more.

From a regional standpoint, the financial system, as mentioned above, facilitates the exchange of funds between borrowers and lenders. Players on a regional level would include banks and other financial institutions such as clearinghouses.

On a global scale, the financial system includes the interactions between financial institutions, investors, central banks, government authorities, the World Bank, and more.

Human Resource Systems

An HRMS, or human resources management system, is a suite of software applications used to manage human resources and related processes throughout the employee lifecycle. An HRMS enables a company to fully understand its workforce while staying compliant with changing tax laws and labor regulations.

Functions of an HRMS

When considering which HRMS is right for your company, it's helpful to think in terms of functional components. Generally, modern systems cover seven areas, with varying levels of focus.

Candidate management:

Relates to employment offers to candidates and how you promote your brand to both the outside world and current employees who may wish to apply for internal jobs or make referrals. Critical for companies for which the candidate experience is a primary concern—from applying to resume management to interview scheduling to making offers, all the way through onboarding.

Employee engagement:

People who are more engaged tend to produce higher-quality work and more fully adopt the company's values and execute its vision, so how an employee connects with leadership and colleagues is important. Often, the HRMS is the route to complete a training course, acquire a new skill, develop a career path, gain recognition or become a mentor.

Employee management:
There's a reason this function is often referred to as "core HR." Delivers a central portal to support analysis, reporting and compliance processes. It's where you structure your workforce into organizational units, like departments or locations; define reporting relationships between managers and employees; and align payroll to accounting cost centers. It's here where personal information is recorded and maintained, and this function is the cornerstone of efforts to offer employee self-service, maximize reporting and improve HR service delivery.

Optimization:
Gleaning information from the HRMS to develop a vision for the future workforce is a primary selling point. It's also the least-utilized function of a typical HRMS. The real value of this function usually comes to the fore with a merger or acquisition, sharp economic swings in either direction or when executives exit. Companies that take a proactive approach to optimizing the workforce are more resilient to change, have higher retention of top talent and better employee engagement.

Payroll:
This is also a primary function of the HRMS—calculating earnings from gross to net or net to gross and withholding individual deductions and issuing payments can be made just as routine as paying the rent. Payroll functions comprise benefit elections and both employee and employer costs. Full-service payroll solutions also automate tax filing and deposits. Self-service functions allow employees to make changes to elective deductions, direct deposit accounts and tax withholdings and retrieve copies of earning statements without HR assistance.

Workforce management:
This is where HR teams track employee development, manager evaluations and disciplinary actions; record time and attendance; and ensure the company is providing a healthy and safe work environment. This is also where compensation planning, performance management, learning and incident recording functions reside. HR can develop timesheet structures, overtime rules, time-off policies and approval chains in way that maximizes automation, control and efficiency. The employee performance review process, complete with goal management, is set up in this function as well.

Contingent workforce management:
Related to primary workforce management and critical for companies where not every employee is full-time. Contractors, consultants, interns and temporary employees provide specialized skills, support local community initiatives or university programs and handle spikes in demand for labor. The HRMS does not wholly manage these relationships because these employees are not always on the payroll and are usually not eligible for benefits; but the work they do contributes to company success, and it's important to track how many contingent employees are on board at any given time and the total costs.

Once you have a clear understanding of which functions are most important, it's time to dig into specific features.

HRMS Features

Benefits administration:
Helps HR professionals develop plans, configure eligibility rules and make payments or deposits to benefits providers. Also offers self-service open enrollment and integrates benefit costs with accounting.

Centralized employee records:
Provides a single repository where all employee records are stored, updated and maintained. Allows for better reporting and lowers the costs of compliance and preparing for audits.

Learning management:
These features are designed to help employees acquire or develop skills through course administration, course and curriculum development, testing and certifications. Also enables companies to roll out and track required compliance training.

Reporting and analytics:
Delivers the ability to run operational reports to track HR information, complete compliance reporting, develop key performance indicators (KPIs) to measure HR process performance and embed HR metrics into financial dashboards for company-wide analysis, planning and decision-making. Also look for the ability to create ad-hoc reports.

Rewards:
Calculate salaries, hourly wages, variable payments for bonuses, overtime, sales commissions, shift differentials and merit increases while withholding regulatory and elective deductions, resulting in accurate net payments to employees at regular intervals. Benefits, like matching retirement fund contributions or mobile phone reimbursements, are sometimes included in this feature set.

Talent acquisition:
Recruiters are able to build career pages on the company website and intranet, create job requisitions and descriptions, manage positions, integrate open positions with job boards, manage resumes, track applicants through the recruiting process, extend job offers, perform background checks, administer pre-employment screenings and create job application forms, before handing new hires off to a generalist or the hiring manager to begin onboarding.

Talent management:
Enables HR professionals to develop and evaluate employees via performance reviews, goal management, and competency and skills test administration.

Time and attendance:
Delivers the ability to process time-off requests and manage time-off balances, employee scheduling and absence management and enables timecards to be integrated with payroll and projects.

User interface:
Because an HRMS can be opened to the entire workforce, a user-friendly interface is critical. Today's systems feature employee and manager self-service, mobile apps, localization, personalized dashboards, workflow automation, role-based access controls and notifications to keep employees engaged and inquiries into the HR or IT departments to a minimum.

Workforce planning:
Provides the ability to plan and budget for workforce costs and measure against actual outlays for both current and future scenarios. May also be used to identify skill gaps, create succession plans and prioritize recruitment efforts.