Managing IT Function & Decision Support Systems

The IT department oversees the installation and maintenance of computer network systems within a company. This may only require a single IT employee, or in the case of larger organizations, a team. Its primary **function** is to ensure that the network runs smoothly.

Challenges of Information Technology Management

1.Cloud Computing

The ability to connect large numbers of computers on a single network, known as cloud computing, raises many challenges for IT professionals. One of the thorniest issues is who owns the data and how the provider is supposed to keep it -- which is an important concern in law enforcement and litigation-related requests, notes "Forbes" magazine. Debate also persists about whether companies are better off letting their IT staff manage the data or dealing with a cloud vendor who is specially certified in security protocols affecting the medium.

2.Cybersecurity

Developing new strategies against cybercrime remains an ongoing challenge for IT professionals. As in any illegal enterprise, trends change constantly. One example is the rise of botnet attacks that enable malicious software users to take over entire computer networks, reports "Security Management" magazine. Criminals need no special abilities to commit such crimes. However, the cost and complexity of cross-border investigations means IT protection teams can't wait for police agencies to solve their problems -- especially as cybercriminals keep finding new ways of breaching established security protocols.

3.Remote Management

Conventional offices seem less relevant when digital technologies, such as email, instant messaging and video conferencing, enable employees to work remotely. As a result, IT professionals will likely

face greater pressure to keep networks running at top capacity, suggests "CBS MoneyWatch" Columnist Kelly Dwyer. Accountability is an issue, since workers and supervisors are scattered across different nations or time zones. The absence of formal schedules also means less separation between life and work than ever, with IT managers increasingly expected to troubleshoot problems at unusual hours.

4.Talent Retention

The Bureau of Labor Statistics estimates that demand for IT jobs will grow approximately 15 percent between 2012 and 2022 -- faster than the 11 percent estimated average for all other occupations. Demand for specialized areas like cybersecurity sparks fierce bidding wars that favor the largest firms. For example, Google raised managers' salaries by 10 percent to prevent defections to rivals like Facebook, "Forbes" magazine reported in June 2011. This trend leaves smaller firms struggling to recruit talent and industry leaders like Google continually replacing top performers who often jump ship for better offers.

5.Budget

A lack of budget and resources is another major concern for both IT staff and decision-makers. The open-field sections of our IT Skills and Salary Survey are littered with criticisms about budget constraints. IT professionals want to train but their requests aren’t always approved by management. Budget is often the major roadblock impeding professional development and hiring. IT departments need to ensure they are communicating the right messages to organizational leadership to help them understand the value of ongoing training. Here’s a place to start: revenue growth, low employee turnover and new product development are signs of a skilled workforce.

The Importance of Information Technology Management

Simply put I.T. Management or Information Technology refers to the process of making your technology work better for you, either as a standalone process or as part of a wider network. Implementing these procedures can be a big step and affects many different aspects of your business, although most of the time it isn’t overly complicated. These range from basic management functions relating to staff and budgeting to planning and utilizing network systems.

What is IT Management?

Prioritizing all the varying technological needs that a business faces today can be an immense undertaking. Problem solving is a huge part of this, as is foreseeing any potential issues or roadblocks that may arise. Keeping electronic records is essential to any business nowadays and there are a wealth of programs and apps that help you manage this essential step. The Internet is a further tool that can help make your life easier. IT Management is all about using advancements in technology to simplify these processes and help make your business run more smoothly. Email, messengers, social platforms, and virtual assistants are all readily available and will all streamline your essential processes, making your work less stressful while keeping you more productive

Benefits of IT Management

One of the huge benefits of computers is that we are able to compress all that data we used to store in file cabinets or back rooms and keep safely stored on a tiny hard drive. This saves a lot of space, but you do need to remember to arrange your files and folders in a way that makes them easy to access. While space is one area where IT Management has clear benefits, another is speed. With so much information at the tips of our fingers we can access just about anything we need at the click of a button. Having a centralized place to find useful information, and, in turn, store it, makes our lives so much easier in a myriad of ways.

Putting IT to Work for You

How you manage all these moving parts is completely up to you. Given that IT has made everything easier to accomplish, one person can now do the same work that used to take an entire team. That doesn't mean you should opt to do everything yourself, though. If one modern person is better equipped than teams were in the past, it goes without saying that a properly equipped team can work absolute wonders. Many businesses now cater specifically to fine-tuning your business by applying these principles and are worth considering if you are at all unsure how best to proceed.

Less Stress, More Productivity

It must be said that IT Management is not about automating the workplace or allowing computers to do our hard work. While those same systems are still relevant, IT Management is less about how they

operate and more about how they are able to work together as part of a whole. With information technology becoming more and more useful with each passing day, it's about time you started to consider how you can incorporate it to help streamline your life and give you more time to focus on the more important aspects of your business.

Centralization Versus Decentralization

BASIS FOR COMPARISON	CENTRALIZATION	DECENTRALIZATION
Meaning	The retention of powers and authority with respect to planning and decisions, with the top management, is known as Centralization.	The dissemination of authority, responsibility and accountability to the various management levels, is known as Decentralization.
Involves	Systematic and consistent reservation of authority.	Systematic dispersal of authority.
Communication Flow	Vertical	Open and Free
Decision Making	Slow	Comparatively faster
Advantage	Proper coordination and Leadership	Sharing of burden and responsibility
Power of decision making	Lies with the top management.	Multiple persons have the power of decision making.

BASIS FOR COMPARISON	CENTRALIZATION	DECENTRALIZATION
Implemented when	Inadequate control over the organization	Considerable control over the organization
Best suited for	Small sized organization	Large sized organization

Key Differences Between Centralization and Decentralization

The points given below are noteworthy, so far as the difference between centralization and decentralization is concerned:

1. The unification of powers and authorities, in the hands of high-level management, is known as Centralization. Decentralization means dispersal of powers and authorities by the top level to the functional level management.
2. Centralization is the systematic and consistent concentration of authority at central points. Unlike, decentralization is the systematic delegation of authority in an organization.
3. Centralization is best for a small sized organization, but the large sized organization should practice decentralization.
4. Formal communication exists in the centralized organization. Conversely, in decentralization, communication stretches in all directions.
5. In centralization due to the concentration of powers in the hands of a single person, the decision takes time. On the contrary, decentralization proves better regarding decision making as the decisions are taken much closer to the actions.
6. There are full leadership and coordination in Centralization. Decentralization shares the burden of the top-level managers.
7. When the organization has inadequate control over the management, then centralization is implemented, whereas when the organization has full control over its management, decentralization is implemented.

IT Security

As hackers get smarter, the need to protect your digital assets and network devices is even greater. While providing IT security can be expensive, a significant breach costs an organization far more. Large breaches can jeopardize the health of a small business. During or after an incident, IT security teams can follow an incident response plan as a risk management tool to gain control of the situation.

What is the difference between IT security and information security (InfoSec)?

Although IT security and information security sound similar, they do refer to different types of security. Information security refers to the processes and tools designed to protect sensitive business information from invasion, whereas IT security refers to securing digital data, through computer network security.

What are the threats to IT security?

Threats to IT security can come in different forms. A common threat is malware, or malicious software, which may come in different variations to infect network devices, including:

- Ransomware
- Spyware
- Viruses

These threats make it even more important to have reliable security practices in place. Learn more about malware to stay protected.

How do I benefit from IT security?

IT security prevents malicious threats and potential security breaches that can have a huge impact on your organization. When you enter your internal company network, IT security helps ensure only authorized users can access and make changes to sensitive information that resides there. IT security works to ensure the confidentiality of your organization’s data.

Types of IT security

Network security

Network security is used to prevent unauthorized or malicious users from getting inside your network. This ensures that usability, reliability, and integrity are uncompromised. This type of security is necessary to prevent a hacker from accessing data inside the network. It also prevents them from negatively affecting your users' ability to access or use the network.

Network security has become increasingly challenging as businesses increase the number of endpoints and migrate services to public cloud.

Internet security

Internet security involves the protection of information that is sent and received in browsers, as well as network security involving web-based applications. These protections are designed to monitor incoming internet traffic for malware as well as unwanted traffic. This protection may come in the form of firewalls, antimalware, and antispyware.

Endpoint security

Endpoint security provides protection at the device level. Devices that may be secured by endpoint security include cell phones, tablets, laptops, and desktop computers. Endpoint security will prevent your devices from accessing malicious networks that may be a threat to your organization. Advance malware protection and device management software are examples of endpoint security.

Cloud security

Applications, data, and identities are moving to the cloud, meaning users are connecting directly to the Internet and are not protected by the traditional security stack. Cloud security can help secure the usage of software-as-a-service (SaaS) applications and the public cloud. A cloud-access security broker (CASB), secure Internet gateway (SIG), and cloud-based unified threat management (UTM) can be used for cloud security.

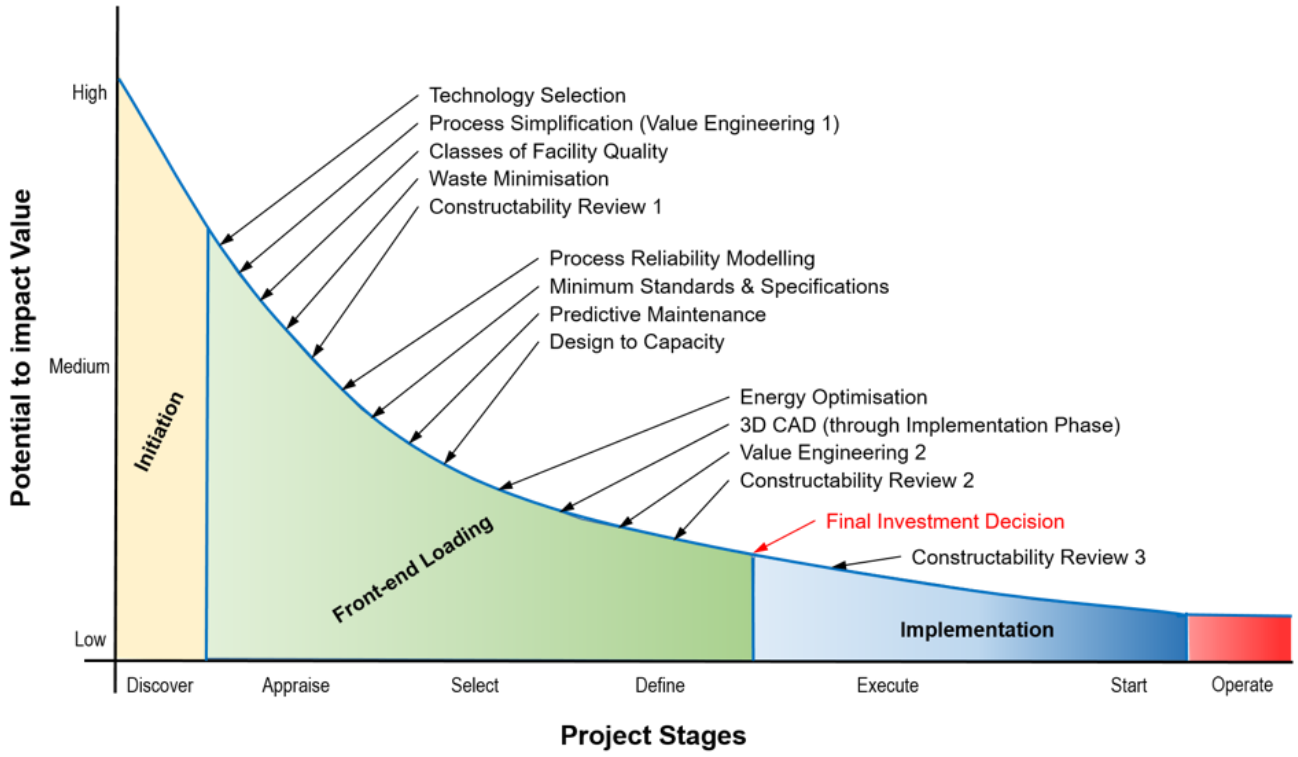
Application security

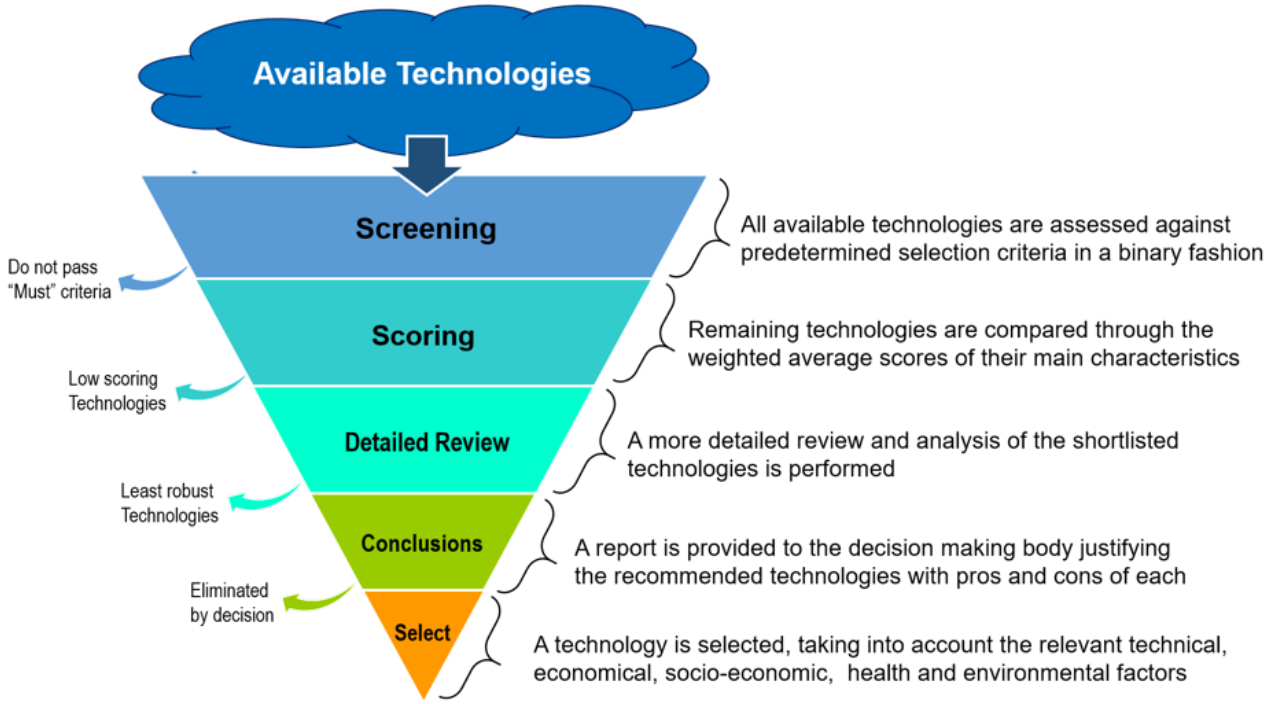
With application security, applications are specifically coded at the time of their creation to be as secure as possible, to help ensure they are not vulnerable to attacks. This added layer of security

involves evaluating the code of an app and identifying the vulnerabilities that may exist within the software.

Technology Selection

One of the basic accountabilities of the owner/operator in the realisation of a capital project, is to ensure that the right projects are selected. This includes ensuring a good fit with the company's business strategy, understanding the future trends in product markets and selecting the best (and most cost effective) technology for the particular project.





Technology selection steps

Vendor Management

Definition of Vendor Management

Vendor management is the process that empowers an organization to take appropriate measures for controlling cost, reducing potential risks related to vendors, ensuring excellent service deliverability and deriving value from vendors in the long-run. This includes researching about the best suitable vendors, sourcing and obtaining pricing information, gauging the quality of work, managing relationships in case of multiple vendors, evaluating performance by setting organizational standards, and ensuring that the payments are always made on time.

So, that's where the vendor management system or VMS comes in place.

A vendor management system is an online web-based tool that acts as a single node to manage all vendor related activities in any organization or business while ensuring improved efficiency and long-term growth in a cost-effective manner.

Benefits of Vendor Management

By having proper vendor management in place, an organization can experience the following benefits:

(1) Better Selection

By implementing appropriate vendor management in place, your organization can benefit from a larger selection of vendors, resulting in more choices and ultimately better costs.

Your organization can benefit from a bidding war between vendors while ensuring that you get your money's worth.

(2) Better Contract Management

In a multi-vendor scenario, lack of vendor management system elevates the issue of managing contracts, documentation and other vital information in your organization.

By implementing a proper VMS in place, your organization can benefit from a centralized view of the current status of all contracts and other useful information which will enable your organization to achieve better decision-making capabilities and save valuable time.

(3) Better Performance Management

An integrated view of the performance of all the vendors can be achieved through the implementation of a vendor management system.

This can give your organization a clear understanding of what is working and what is not! This ultimately leads to improved efficiency, which in turns improves the overall performance of the organization.

(4) Better Vendor Relationship

It is never easy to manage multiple vendors at the same time. While some vendors may prove really fruitful, others may not. But managing relationship among the vendors is the key to successful project completion.

By getting all vendor related information in a single place, you benefit from getting all required information at once and it can influence your decision-making process, thereby simplifying it!

(5) Better Value

Ultimately the goal of a vendor management system is to get the most value for your buck. So, implementation of a vendor management system, when done properly can result in long-term savings as well as improved earnings over a period of time.

Challenges in Vendor Management

Although there are many benefits, some challenges need to be overcome to ensure the smooth functioning of the organization.

There are many challenges that an organization may face if vendor management is not implemented correctly. They are as follows:

(1) Vendor Compliance Risk

Setting standards before dealing with vendors can save you loads of time and money spent. Not all vendors may perform as per your standards. It is important to choose the right vendor from multiple vendors, who meet your organizational standards and criteria while promising excellent performance.

(2) Vendor Reputation Risk

Dealing with multiple vendors is not an easy task. Also, the quality of work has to be gauged upfront before getting into a contract, which makes the process more complicated.

While some vendors may get your task done really well, others can put up with some poor performance and throw all your deadlines in a tizzy. Hence, background checks are a must

before any selection is made. This may provide you with some insights into vital points that you may have missed in the first place.

(3) Lack of Visibility

While it is really important to have a centralized data storage solution for managing vendor data, it also benefits the organization from a centralized view and improved visibility, which can lead to better resource allocation and improved efficiency.

(4) Vendor Data Storage

As your organization grows, it becomes essential to have a vendor data storage solution in place. In the absence of a vendor management system, storing and retrieving data might prove to be really tough, considering the fact that you may be dealing with multiple vendors for multiple projects at the same time.

(5) Vendor Payment Risk

Some vendors may have different payment terms, while some may adhere to industry standard terms. Figuring out the terms and ensuring that the payment is always made on time is one of the major issues, especially while dealing with multiple vendors at the same time.

Vendor Management Process

At this point, we can infer that having effective vendor management is crucial. An organization has to plan and execute a process to guide how they will engage with their vendors at every step.

While it is not possible to have one specific vendor management process that encompasses all enterprises and vendors, we can bring together the basic steps that underlie an organization's start-to-finish engagement with its vendors:

(1) Identification and Establishment of Business Goals

Before the vendor management process starts, it is crucial to identify and establish business goals that necessitate vendor involvement. This helps in understanding the requirements of every business unit and prevents duplication of efforts and wastage of resources in terms selecting and contracting with vendors. It also helps in the later stages of measuring and evaluating vendor performance as these goals establish appropriate metrics.

(2) Establishment of a Vendor Management Team

After the business goals are recognized, the next step should be the foundation of a dedicated vendor management team. This centralized team should be skilled in identifying business goals and KPIs for vendor management, selecting relevant vendors, negotiating the contracting process, periodically assessing the performance of the vendors and tracking all transactions activities.

This team is crucial as they will act as an intermediary between the business units and the vendors and ensure collaboration between the two.

It will also prevent the engagement of too many stakeholders – When vendor management is decentralized to the business units, it results in a large number of contracts with the same vendor or disparate transactions with multiple vendors. This impedes tracking and evaluation of vendor performance and exposes the organization to vendor risk.

(3) Creation of a Database for all Vendor-related Information

After the business goals are clear and the vendor management team is up and running, the next step should be to build an updated and categorized database of all relevant vendors and vendor-related information.

The benefits of this are manifold –

(i) it will match the needs of the business units to the right vendor. For example, the administration can identify the relevant vendors for office supplies, computer equipment, etc.

(ii) after the categorization of vendors based on their type, cross-vendor comparison will become easier for evaluation

(iii) it will streamline information – scattered, disparate vendor information will be stored in a single location and provide insights into the current stage of the vendors, for example, vendors with contract in place, vendors that require renewals, etc. and

(iv) it will enable effective budgeting – you can easily recognize the long-term, critical vendors and the short-term, tactical vendors and assess the budget assignment accordingly.

(4) Identification of the Selection Criteria for Vendors

Once all vendor-related information is streamlined, updated and categorized, you have to select the criteria based on which all relevant vendors will be chosen.

While cost has been the primary selection criterion for choosing vendors, businesses are increasingly looking at other criteria to determine which vendor would best serve their requirements – after all, lowest cost doesn't guarantee the highest value. A CIO article1 has recognized non-cost factors that need to be considered to select vendors – financial stability, previous experience in the field of work as the business, industrial recognitions, the procedures followed by the vendor, economies of scale and

their legal/regulatory records. It is important to consider all of the aforementioned criteria to have a holistic assessment of the vendors.

For purchases of high value, companies also engage in bidding procedures that involve RFQs, RFIs, and RFPs before choosing the vendor.

(5) Evaluation and Selection of Vendors

At this stage, the vendors need to be evaluated based on the selection criteria and, if applicable, the bidding process.

The submitted proposals need to be thoroughly assessed to understand the pricing structure, scope of work and how the requirements will be met, the terms and conditions, expiry and renewal dates, etc. This will ensure that your organization is deriving the maximum value from the vendor. Look out for hidden savings opportunities!

Assess the internal strengths and weaknesses of the vendors and study how the external opportunities and threats can affect your transaction as well as the vendor management process.

Once you have ensured a complete start-to-finish evaluation process, it's time to choose your vendor.

(6) Developing Contracts and Finalizing Vendors

Well, now you have the chosen one. It's time to complete the contracting process and get your vendor(s) onboard.

Typically, the contracting stage is assigned to the legal and finance team and the senior management involved with the vendors. The rest of the business units receive the contract and engage with the vendors after the finalization process. This tends to be sub-optimal in the long run – the business units are the ones finally collaborating with the vendors on a day-to-day basis and have valuable insights on how to maximize the vendors' operational performance. Hence, all the relevant stakeholders need to be involved, at least in the decision-making process.

Vendor Selection

The purchasing department takes responsibility for the vendor selection which is an integral part of the procurement management process. The vendor selection is a subsidiary process that allows clearly stating, defining and approving those vendors which meet requirements of the procurement process. The buying department is responsible for creating a list of potential suppliers and submitting that list to the project manager in order to decide on the vendors in conference. However, the ultimate decisions on the vendors cannot be made without vendor selection criteria, so the purchase department in cooperation with the project manager needs to develop and use such criteria.

Often vendor selection criteria vary between organizations; however, they need to be identified and included as a component of the inventory management plan. The criteria for vendor selection include the following:

- **Delivery** – an ability of the contractor to procure all required items within desired delivery dates
- **Quality of the procurement services** – an ability of the contractor to provide products with the expected quality
- **Cost of the procurement services** – a comparison of prices provided by several contractors
- **Past performance** – records on the contractor's procurement activities undertaken in the past

Vendor Contracts and Service Levels

Understanding Vendor Contracts

A contract is an agreement between two parties creating a legal obligation for your organization and vendor to perform specific acts. Each of the parties to the contract are legally bound to perform the specified duties outlined within the contract.

From a regulatory perspective, organizations must have a formal contract with vendors that provide products or services. The contract must clearly address the duties and responsibilities of all parties involved. In the past, some organizations may have had informal expectations for vendors that were not committed to writing or not adequately reviewed and, therefore, this created issues with

enforceability, vendor risk management and overall risk management. So, it's a regulatory requirement and best practice to have a contract in place with all of your vendors.

What Should Be Included in a Vendor Contract

Along with generally accepted legal terms and provisions, contracts should outline the rights and responsibilities of both the vendor and the organization and include the following 14 elements:

1. Scope of:
    - Support, maintenance, customer service
    - Time frames
    - Compliance with applicable laws, regulations and regulatory guidance
    - Training
    - Ability to subcontract services
    - Distribution of required statements or disclosures to customers
    - Terms governing the use of the organization's property, equipment and staff
2. Cost and compensation
3. Performance measures and standards
4. Reporting
5. Right to Audit
6. Compliance
7. Ownership and license
8. Confidentiality and security
9. Indemnification, insurance & liability
10. Dispute resolution
11. Default and termination
12. Customer complaints
13. Subcontracting
14. Business resumption and contingency plans

Understanding the Service Level Agreement (SLA)

A service level agreement (SLA) focuses on the performance measuring and service quality agreed to by your organization and the vendor and may be used as a measurement tool as part of the contract or as a stand-alone document. The main purpose of an SLA is to spell out the level of service that will be provided.

The SLA defines the level of service expected by your organization from a vendor, it establishes how the service is to be measured and the remedies or penalties, if any, for non-compliance with the agreed service levels. It should clearly state metrics, responsibilities, expectations and timing and frequency so that, in the event of issues, there's an objective measure that can be used to gauge compliance with the terms of the contract. It ensures all parties have the same understanding of requirements.

Service level agreements provide your organization an opportunity to accomplish the following 8 items:

- Outline expectations to the vendor during service level development
- Clearly set remedy and penalty targets for non-compliance with service levels
- Create a culture of high-quality service and accountability both internally and at the vendor
- Formalize duties and rights of each party
- Set benchmarks that each party expects the other to achieve
- Encourage vendor delivery and consistency of service
- Allow your organization to compare similar services across multiple vendors within your environment
- Bring uniformity and consistency to vendor performance reporting

Most SLAs will start out with standard service levels provided by and favoring the vendor. These should be viewed as a good starting point for negotiation and should not be taken as non-negotiable, no matter what the vendor initially states. Keep in mind that requests for service levels that are outside the vendors normal service level metrics may result in additional costs or fees. This is typically the case with vendors that provide a standardized service to multiple customers, like cloud-based service providers.

Service level metrics should include *both service and management components*.

What Should Be Included in a Service Level Agreement

The 6 Service Elements of Service Levels

Six service elements include**:**

1. Specifics of services provided
2. Conditions of service availability
3. Calculations of availability or uptime
4. Standards such as time windows for each level of service
5. Responsibilities of each party
6. Escalation procedures

The 9 Management Elements of Service Levels

Nine management elements should include:

1. Definitions of key terms
2. Reporting process
3. Remedies/penalties
4. Report contents and frequency
5. Dispute resolution
6. Indemnification provision
7. Change management
8. Termination provisions for repeated SLA failures
9. Both the organization and vendor's key contacts/responsible parties

It's crucial to remember that although the exact metrics for each service level vary depending on the vendor, the areas covered are uniform, specific and measurable related to volume and quality of work, speed, responsiveness and efficiency. In covering these areas, **the SLA aims to establish a mutual understanding of services, areas prioritized, responsibilities, guarantees and warranties provided by the vendor.**

Whether your organization has implemented a contract or a service level agreement with a vendor, both must be managed and reviewed periodically. Neither should be viewed as a static document as they will change. Both must be actively monitored, managed and include a defined framework for change management and monitoring during the term of the vendor relationship.

DSS

A decision support system (DSS) is an interactive computer-based information system that, like MIS also serves at the management level of an organization. However, in contrast to MIS (that processes data), it processes information to support the decision-making process of managers. It provides middle managers with the information that enables them to make intelligent decisions. A DSS in bank, for example, can enable a manger to analyse the changing trends in deposits and loans in order to ascertain the yearly targets.

DSS's are designed for every manager to execute a specific managerial task or problem. Generally, they help managers to make semi-structured decisions, the solution to which can be arrived at logically. However, sometimes, they can also help in taking complex decisions.

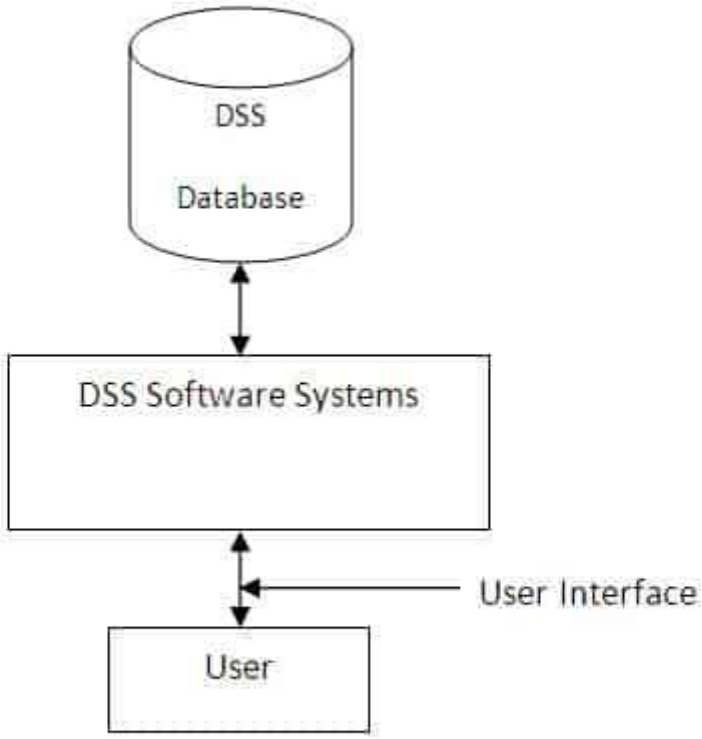
Components of Decision Support Systems (DSS)

A decision support systems consists of three main components, namely database, software system and user interface.

1. **DSS Database:** It contains data from various sources, including internal data from the organization, the data generated by different applications, and the external data mined form the Internet, etc. The decision support systems database can be a small database or a standalone system or a huge data warehouse supporting the information needs of an organization. To avoid the interference of decision support system with the working of operational systems, the DSS database usually contains a copy of the production database.

2. **DSS Software System:** It consists of various mathematical and analytical models that are used to analyse the complex data, thereby producing the required information. A model predicts the output in the basis of different inputs or different conditions, or finds out the combination of conditions and input that is required to produce the desired output. A decision support system may compromise different models where each model performs a specific function. The selection of models that must be included in a decision support system family 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.
3. **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.



MIS

What is Management Information Systems (MIS)?

A management information system (MIS) is a computer system consisting of hardware and software that serves as the backbone of an organization's operations. An MIS gathers data from multiple online systems, analyzes the information, and reports data to aid in management decision-making.

MIS is also the study of how such systems work.

Improved Decision-Making

The purpose of an MIS is improved decision-making, by providing up-to-date, accurate data on a variety of organizational assets, including:

- Financials
- Inventory
- Personnel
- Project timelines
- Manufacturing
- Real estate
- Marketing
- Raw materials
- R&D

The MIS collects the data, stores it, and makes it accessible to managers who want to analyze the data by running reports.

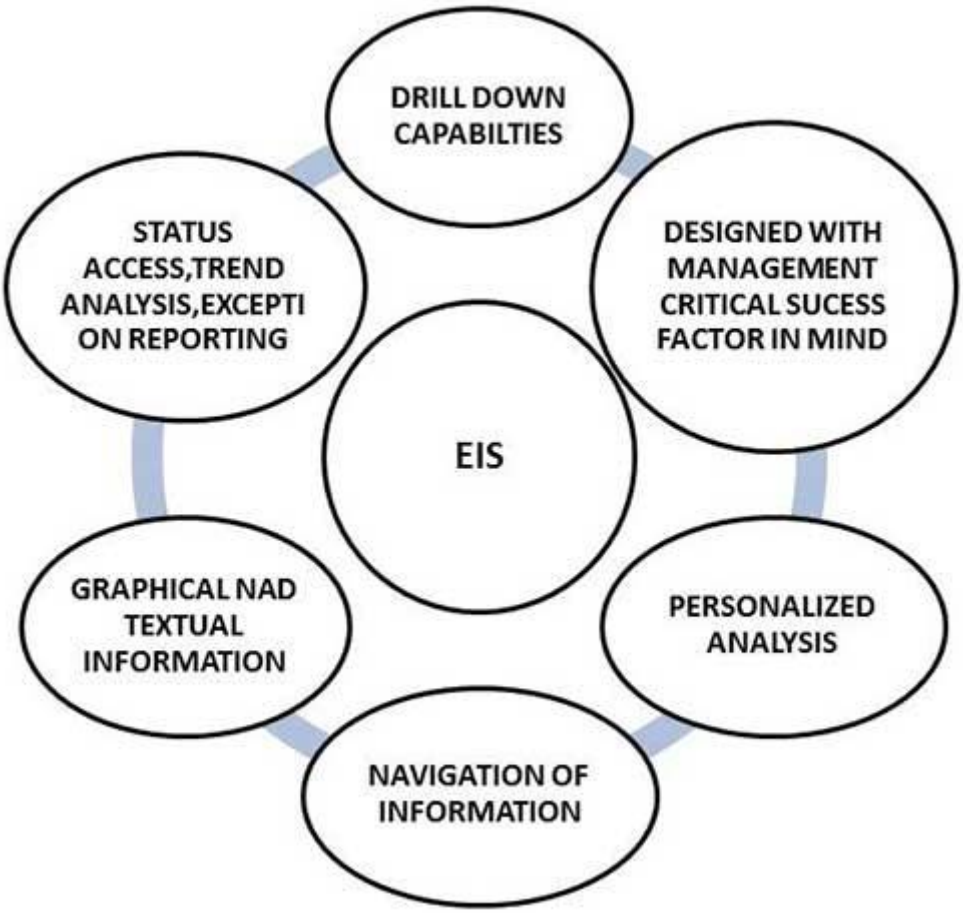
Central Information System

The goal of an MIS is to be able to correlate multiple data points in order to strategize ways to improve operations. For example, being able to compare sales this month to sales a year ago by looking at staffing levels may point to ways to boost revenue. Or being able to compare marketing expenditures by geographic location and link them to sales can also improve decision-making. But the only way this level of analysis is possible is due to data that is compiled through an MIS.

Running reports that pull together disparate data points is an MIS' key contribution. That feature, however, comes with a significant cost. MIS implementation is an expensive investment that includes the hardware and software purchases, as well as the integration with existing systems and training of all employees.

ESS

An Executive information system (EIS), also known as an Executive support system (**ESS**), is a type of management support system that facilitates and supports senior executive information and decision-making needs. It provides easy access to internal and external information relevant to organizational goals.



Analytics Techniques

Analytical techniques: Analytical techniques are procedures or a method how to analyse some problem, status or some fact. An analytical technique (analytical method) is a procedure or a method for the analysis of some problem, status or a fact.

Business Intelligence System

The term 'Business Intelligence' has evolved from the decision support systems and gained strength with the technology and applications like data warehouses, Executive Information Systems and Online Analytical Processing (OLAP).

Business Intelligence System is basically a system used for finding patterns from existing data from operations.

Characteristics of BIS

- It is created by procuring data and information for use in decision-making.
- It is a combination of skills, processes, technologies, applications and practices.
- It contains background data along with the reporting tools.
- It is a combination of a set of concepts and methods strengthened by fact-based support systems.
- It is an extension of Executive Support System or Executive Information System.
- It collects, integrates, stores, analyzes, and provides access to business information
- It is an environment in which business users get reliable, secure, consistent, comprehensible, easily manipulated and timely information.
- It provides business insights that lead to better, faster, more relevant decisions.

Benefits of BIS

- Improved Management Processes.
- Planning, controlling, measuring and/or applying changes that results in increased revenues and reduced costs.
- Improved business operations.
- Fraud detection, order processing, purchasing that results in increased revenues and reduced costs.

- Intelligent prediction of future.

Approaches of BIS

For most companies, it is not possible to implement a proactive business intelligence system at one go. The following techniques and methodologies could be taken as approaches to BIS −

- Improving reporting and analytical capabilities
- Using scorecards and dashboards
- Enterprise Reporting
- On-line Analytical Processing (OLAP) Analysis
- Advanced and Predictive Analysis
- Alerts and Proactive Notification
- Automated generation of reports with user subscriptions and "alerts" to problems and/or opportunities.

Capabilities of BIS

- Data Storage and Management −
    - Data ware house
    - Ad hoc analysis
    - Data quality
    - Data mining
- Information Delivery
    - Dashboard
    - Collaboration /search
    - Managed reporting
    - Visualization
    - Scorecard
- Query, Reporting and Analysis

- Ad hoc Analysis
- Production reporting
- OLAP analysis