SUBJECT: Project management information system

PROJECT MANAGEMENT INFORMATION SYSTEM

SESSION 1 TOPIC: Information Systems Concepts and Usages

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A **project management information system** (PMIS) is the coherent organization of the information required for an organization to execute projects successfully. A PMIS is typically one or more software applications and a methodical process for collecting and using project information. These electronic systems "help [to] plan, execute, and close project management goals."[1] PMIS systems differ in scope, design and features depending upon an organisation's operational requirements.

Contents

PMIS PMBOK 4th edition definition[

Project management information system (PMIS) [Tool]. The Project Management Information System (PMIS), part of the enterprise environmental factors, provides access to an automated tool, such as a scheduling software tool, a configuration management system, an information collection and distribution system, or web interfaces to other online automated systems used during the Direct and Manage Project Execution effort.

Project management information system software

At the center of any modern **PMIS** is software. **Project management information system** can vary from something as simple as a File system containing Microsoft Excel documents, to a full blown enterprise PMIS software.

Characteristics of a PMIS Software

The methodological process used to collect and organize project information can match normalized methodologies such as Project Management Professional or PRINCE2.

A PMIS Software supports all Project management knowledge areas such as : Integration Management, Project Scope Management, Project Time Management, Project Cost Management, Project Quality Management, Project Human Resource Management, Project Communications Management, Project Risk Management, Project Procurement Management, and Project Stakeholders Management.[2]

A PMIS Software is a multi-user application, and can be cloud based or hosted on-premise.

Relationship between a PMS and PMIS[

A project management system (PMS) could be a part of a PMIS or sometimes an external tool beside project management information system. What *a PMIS does is to manage all stakeholders in a project such as the project owner, client, contractors, sub-contractors, in-house staff, workers, managers etc.*.[1]

References[

1. ^ Jump up to: **a** **b** "Project Management Information System (PMIS)". Project-Management-Knowledge.com. Retrieved 13 November 2009.
2. **Jump up ^** A Guide to the Project Management Body of Knowledge
3. Project Management Information System (PMIS) are system tools and techniques used in project management to deliver information. Project managers use the techniques and tools to collect, combine and distribute information through electronic and manual means. Project Management Information System (PMIS) is used by upper and lower management to communicate with each other.
   Project Management Information System (PMIS) help plan, execute and close project management goals. During the planning process, project managers use PMIS for budget framework such as estimating costs. The Project Management Information System is also used to create a specific schedule and define the scope baseline. At the execution of the project management goals, the project management team collects information into one database. The PMIS is used to compare the baseline with the actual accomplishment of each activity, manage materials, collect financial data, and keep a record for reporting purposes. During the close of the project, the Project Management Information System is used to review the goals to check if the tasks were accomplished. Then, it is used to create a final report of the project close.
   To conclude, the project management information system (PMIS) is used to plan schedules, budget and execute work to be accomplished in project management.
4. This term is defined in the 3rd and the 4th edition of the PMBOK.

5. **Related Entries:**
6.
7. Difference between Project Management and Program Management There is confusion between the term project management and program management. Although, the words seem similar there are some differences....
8. Variance Variance is a measurable change from a known standard or baseline. In other words, variance is the difference between what...
9. Project Management (PM) The broad term of project management encompasses a number of aspects involved in meeting the goals necessary to complete a...
10. History and Current Development of Project Management Ever since there have been work endeavors that could be defined as "projects", people have been using management tools and...
11. Project Execution Outputs – Work Performance Information Project management really boils down to planning and execution. Work performance information plays a critical role in the latter....
12.
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17. Project Execution Outputs – Work Performance Information Project management really boils down to planning and execution. Work performance information plays a critical role in the latter....

Information system

An **information system** (**IS**) is a computerized database designed to accept, store, process, transform, make useful, and analyze data and to report results,

usually on a regular, ongoing basis.[1][2][3][4] It is often construed as a larger system including not only the database and the software and hardware (see information technology) used to manage it but also including the people using and benefiting from it and also including all necessary manual and machine procedures and communication systems.[5][6][7]

The term is however also used in the broader sense of "any means for communicating knowledge from one person to another, such as by simple verbal communication, punched-card systems, optical coincidence systems based on coordinate indexing, and completely computerized methods of storing, searching, and retrieving of information".[8] The term is also sometimes used in more restricted senses to refer to only the software used to run a computerized database or to refer to only a computer system.

The plural term ***information systems*** (construed as singular) is also used for the actual academic study of the field, in other words for the study of complementary networks of hardware and software that people and organizations use to collect, filter, process, create and distribute data.[9]

Any specific information system aims to support operations, management and decision making.[10] In a broad sense, the term is used to refer not only to the information and communication technology (ICT) that an organization uses, but also to the way in which people interact with this technology in support of business processes.[11]

Some authors make a clear distinction between information systems, computer systems, and business processes. Information systems typically include an ICT component but are not purely concerned with ICT, focusing instead on the end use of information technology. Information systems are also different from business processes. Information systems help to control the performance of business processes.[12]

Alter[13][14] argues for advantages of viewing an information system as a special type of work system. A work system is a system in which humans and/or machines perform work (processes and activities) using resources to produce specific products and/or services for customers. An information system is a work system whose activities are devoted to processing (capturing, transmitting, storing, retrieving, manipulating and displaying) information.[15]

As such, information systems inter-relate with data systems on the one hand and activity systems on the other. An information system is a form of communication system in which data represent and are processed as a form of social memory. An information system can also be considered a semi-formal language which supports human decision making and action.

Information systems are the primary focus of study for organizational informatics.[16]

Contents

History

Numerous legacy information systems still exist today that are continuously updated to promote ethnographic approaches, to ensure data integrity, and to improve the social effectiveness & efficiency of the whole process.[17] In general, information systems are focused upon processing information within organizations, especially within business enterprises, and sharing the benefits with modern society.[18]

Overview[

Silver et al. (1995) provided two views on IS that includes software, hardware, data, people, and procedures.[19] Zheng provided another system view of information system which also adds processes and essential system elements like environment, boundary, purpose, and interactions. The Association for Computing Machinery defines "Information systems specialists [as] focus[ing] on integrating information technology solutions and business processes to meet the information needs of businesses and other enterprises."[20]

There are various types of information systems, for example: transaction processing systems, decision support systems, knowledge management systems, learning management systems, database management systems, and office information systems. Critical to most information systems are information technologies, which are typically designed to enable humans to perform tasks for which the human brain is not well suited, such as: handling large amounts of information, performing complex calculations, and controlling many simultaneous processes.

Information technologies are a very important and malleable resource available to executives.[21] Many companies have created a position of Chief Information Officer (CIO) that sits on the executive board with the Chief Executive Officer (CEO), Chief Financial Officer (CFO), Chief Operating Officer (COO) and Chief Technical Officer (CTO). The CTO may also serve as CIO [Chief Information Officer], and vice versa. The Chief Information Security Officer (CISO) focuses on information security management. information systems operates as blibliography and networks they operates under the the ict industries and they fundamental is to offer information to other users . to grow knowledge & education and be benifital to all people ,

Components

The 5 components that must come together in order to produce a computer-based information system are:

1. Hardware: The term hardware refers to machinery.This category includes the computer itself, which is often referred to as the central processing unit (CPU), and all of its support equipments. Among the support equipments are input and output devices, storage devices and communications devices.

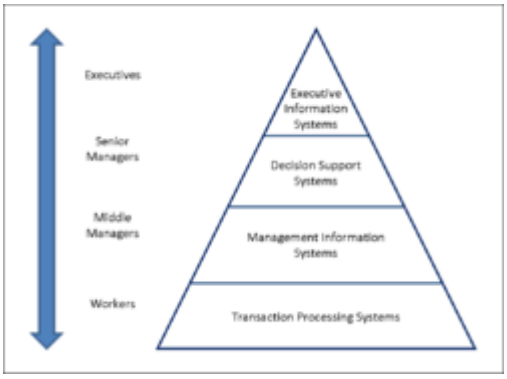
2. Software: The term software refers to computer programs and the manuals (if any) that support them. Computer programs are machine-readable instructions that direct the circuitry within the hardware parts of the system to function in ways that produce useful information from data. Programs are generally stored on some input / output medium,often a disk or tape.

3. Data: Data are facts that are used by programs to produce useful information.Like programs,data are generally stored in machine-readable form on disk or tape until the computer needs them.

4. Procedures: Procedures are the policies that govern the operation of a computer system. "Procedures are to people what software is to hardware" is a common analogy that is used to illustrate the role of procedures in a system.

5. People: Every system needs people if it is to be useful. Often the most over-looked element of the system are the people, probably the component that most influence the success or failure of information systems.

Types of information systems



A four level pyramid model of different types of information systems based on the different levels of hierarchy in an organization

The "classic" view of Information systems found in the textbooks[22] in the 1980s was of a pyramid of systems that reflected the hierarchy of the organization, usually transaction processing systems at the bottom of the pyramid, followed by management information systems, decision support systems, and ending with executive information systems at the top. Although the pyramid model remains useful, since it was first formulated a number of new technologies have been developed and new categories of information systems have emerged, some of which no longer fit easily into the original pyramid model.

Some examples of such systems are:

- data warehouses
- enterprise resource planning
- enterprise systems
- expert systems
- search engines
- geographic information system
- global information system
- office automation.

A **computer(-based) information system** is essentially an IS using computer technology to carry out some or all of its planned tasks. The basic components of computer based information system are:

- *Hardware*- these are the devices like the monitor, processor, printer and keyboard, all of which work together to accept, process, show data and information.
- *Software*- are the programs that allow the hardware to process the data.
- *Databases*- are the gathering of associated files or tables containing related data.

- *Networks*- are a connecting system that allows diverse computers to distribute resources.
- *Procedures*- are the commands for combining the components above to process information and produce the preferred output.

The first four components (hardware, software, database, and network) make up what is known as the information technology platform. Information technology workers could then use these components to create information systems that watch over safety measures, risk and the management of data. These actions are known as information technology services.[23]

Certain information systems support parts of organizations, others support entire organizations, and still others, support groups of organizations. Recall that each department or functional area within an organization has its own collection of application programs, or information systems. These functional area information systems (FAIS) are supporting pillars for more general IS namely, business intelligence systems and dashboards As the name suggest, each FAIS support a particular function are within the organization, e.g.: accounting IS, finance IS, production/operation management (POM) IS, marketing IS, and human resources IS. In finance and accounting, managers use IT systems to forecast revenues and business activity, to determine the best sources and uses of funds, and to perform audits to ensure that the organization is fundamentally sound and that all financial reports and documents are accurate. Other types of organizational information systems are FAIS, Transaction processing systems, enterprise resource planning, office automation system, management information system, decision support system, expert system, executive dashboard, supply chain management system, and electronic commerce system. Dashboards are a special form of IS that support all managers of the organization. They provide rapid access to timely information and direct access to structured information in the form of reports. Expert systems attempt to duplicate the work of human experts by applying reasoning capabilities, knowledge, and expertise within a specific domain.

Information system development

Information technology departments in larger organizations tend to strongly influence the development, use, and application of information technology in the organizations. A series of methodologies and processes can be used to develop and use an information system. Many developers now use an engineering approach such as the system development life cycle (SDLC), which is a systematic procedure of developing an information system through stages that occur in sequence. An information system can be developed in house (within the organization) or outsourced. This can be accomplished by outsourcing certain components or the entire system.[24] A specific case is the

geographical distribution of the development team (offshoring, global information system).

A computer based information system, following a definition of Langefors,[25] is a technologically implemented medium for:

- recording, storing, and disseminating linguistic expressions,
- as well as for drawing conclusions from such expressions.

Geographic information systems, land information systems, and disaster information systems are examples of emerging information systems, but they can be broadly considered as spatial information systems. System development is done in stages which include:

- Problem recognition and specification
- Information gathering
- Requirements specification for the new system
- System design
- System construction
- System implementation
- Review and maintenance.[26]

The academic discipline

The field of study called *information systems* encompasses a variety of disciplines such as: the analysis and design of systems, computer networking, information security, database management and decision support systems. *Information management* deals with the practical and theoretical problems of collecting and analyzing information in a business function area including business productivity tools, applications programming and implementation, electronic commerce, digital media production, data mining, and decision support. *Communications and networking* deals with the telecommunication technologies. Information systems bridges business and computer science using the theoretical foundations of information and computation to study various business models and related algorithmic processes within a computer science discipline. **Computer information system(s)** (**CIS**) is a field studying computers and algorithmic processes, including their principles, their software and hardware designs, their applications, and their impact on society,[39][40][41] whereas IS emphasizes functionality over design.[

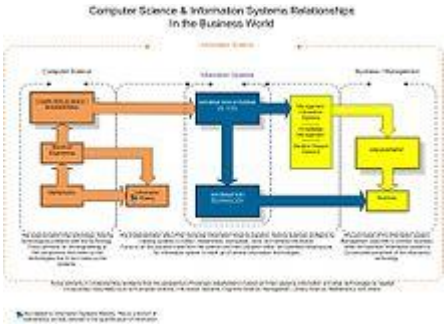
Several IS scholars have debated the nature and foundations of Information Systems which has its roots in other reference disciplines such as Computer Science, Engineering, Mathematics, Management Science, Cybernetics, and others.[43][44][45][46] Information systems also can be defined as a collection of

hardware, software, data, people and procedures that work together to produce quality information.

The impact on economic models

- Microeconomic theory model[
- Transaction cost theory[
- Agency theory[

Differentiating IS from related disciplines



Information Systems relationship to Information Technology, Computer Science, Information Science, and Business.

Similar to computer science, other disciplines can be seen as both related and foundation disciplines of IS. The domain of study of IS involves the study of theories and practices related to the social and technological phenomena, which determine the development, use, and effects of information systems in organization and society.[47] But, while there may be considerable overlap of the disciplines at the boundaries, the disciplines are still differentiated by the focus, purpose, and orientation of their activities.[48]

In a broad scope, the term *Information Systems* is a scientific field of study that addresses the range of strategic, managerial, and operational activities involved in the gathering, processing, storing, distributing, and use of information and its associated technologies in society and organizations.[48] The term information systems is also used to describe an organizational function that applies IS knowledge in industry, government agencies, and not-for-profit organizations.[48] *Information Systems* often refers to the interaction between algorithmic processes and technology. This interaction can occur within or across organizational boundaries. An information system is the technology an organization uses and also the way in which the organizations interact with the technology and the way in which the technology works with the organization's business processes. Information systems are distinct from information technology (IT) in that an information system has an information technology component that interacts with the processes' components.

One problem with that approach is that it prevents the IS field from being interested in non-organizational use of ICT, such as in social networking, computer gaming, mobile personal usage, etc. A different way of differentiating the IS field from its neighbours is to ask, "Which aspects of reality are most meaningful in the IS field and other fields?"[49] This approach, based on philosophy, helps to define not just the focus, purpose and orientation, but also the dignity, destiny and responsibility of the field among other fields. *International Journal of Information Management*, 30, 13-20.]

Information systems career pathways[

Information Systems have a number of different areas of work:

- IS strategy
- IS management
- IS development
- IS iteration
- IS organization

There is a wide variety of career paths in the information systems discipline. "Workers with specialized technical knowledge and strong communications skills will have the best prospects. Workers with management skills and an understanding of business practices and principles will have excellent opportunities, as companies are increasingly looking to technology to drive their revenue."[50]

Information technology is important to the operation of contemporary businesses, it offers many employment opportunities. The information systems field includes the people in organizations who design and build information systems, the people who use those systems, and the people responsible for managing those systems. The demand for traditional IT staff such as programmers, business analysts, systems analysts, and designer is significant. Many well-paid jobs exist in areas of Information technology. At the top of the list is the chief information officer (CIO).

The CIO is the executive who is in charge of the IS function. In most organizations, the CIO works with the chief executive officer (CEO), the chief financial officer (CFO), and other senior executives. Therefore, he or she actively participates in the organization's strategic planning process.

Information systems research

Information systems research is generally interdisciplinary concerned with the study of the effects of information systems on the behavior of individuals, groups,

and organizations.[51][52] Hevner et al. (2004)[53] categorized research in IS into two scientific paradigms including *behavioral science* which is to develop and verify theories that explain or predict human or organizational behavior and *design science* which extends the boundaries of human and organizational capabilities by creating new and innovative artifacts.

Salvatore March and Gerald Smith[54] proposed a framework for researching different aspects of Information Technology including outputs of the research (research outputs) and activities to carry out this research (research activities). They identified research outputs as follows:

1. *Constructs* which are concepts that form the vocabulary of a domain. They constitute a conceptualization used to describe problems within the domain and to specify their solutions.
2. A *model* which is a set of propositions or statements expressing relationships among constructs.
3. A *method* which is a set of steps (an algorithm or guideline) used to perform a task. Methods are based on a set of underlying constructs and a representation (model) of the solution space.
4. An *instantiation* is the realization of an artifact in its environment.

Also research activities including:

1. *Build* an artifact to perform a specific task.
2. *Evaluate* the artifact to determine if any progress has been achieved.
3. Given an artifact whose performance has been evaluated, it is important to determine why and how the artifact worked or did not work within its environment. Therefore *theorize* and *justify* theories about IT artifacts.

Although Information Systems as a discipline has been evolving for over 30 years now,[55] the core focus or identity of IS research is still subject to debate among scholars. There are two main views around this debate: a narrow view focusing on the IT artifact as the core subject matter of IS research, and a broad view that focuses on the interplay between social and technical aspects of IT that is embedded into a dynamic evolving context. A third view calls on IS scholars to pay balanced attention to both the IT artifact and its context.

Since the study of information systems is an applied field, industry practitioners expect information systems research to generate findings that are immediately applicable in practice. This is not always the case however, as information systems researchers often explore behavioral issues in much more depth than practitioners would expect them to do. This may render information systems research results difficult to understand, and has led to criticism

Study all 41 terms Study 0 □termterms only

□□□

Project management

Refers to the application of knowledge, skills, tools and techniques to achieve specific targets within specified budget and time constraints.

□□□

Project management activities

Planning the work,
Assessing the risk,
Estimating the resource required to accomplish the work,
Organizing the work,
Acquiring human and material resource,
assigning tasks,
directing activities,
controlling project executions,
reporting progress, and
Analyzing the results.

□□□

Project management for information system must deal with five variables:

Scope, time, cost, quality and risk.

□□□

Scope

Defines what work is and is not included in the project.

□□□

Time

The amount of time required to complete the project.

□□□

Cost

It is based on the time to complete the project multiplied by the cost of human resource required to complete the project.

□□□

Quality

Indicates how well the end results of a project. satisfies the objective as specified by management.

□□□

Information systems plan

A road map indicating the direction of system development: the rationale, the current situation, the management strategy, the implementation plan, and the budget.

□□□

Information systems plan

In order to identify information system projects that will deliver the most business value, organizations need to develop a:

□□□

Information systems plan

Supports overall business plan and in which strategic systems are incorporated with top-level planning.

□□□

Information systems plan

It contains a statement of corporate goals and specifies how information technology will support the attainment of those goals.

□□□

Critical success factors(CSFs)

A small number of easily identifiable operational goals shaped by the industry, manager, the firm and the broader environments. That are believed to assure the success of the organization.

□□□

Porfolio analysis

It can be used to evaluate alternative system projects once strategic analysis have determined the overall direction of system development.

□□□

Portfolio analysis

Inventories all of the organization's system projects and assets.

□□□

Scoring model

It is useful for selecting projects where many criteria must be considered.

□□□

Scoring model

It assigns weights to various feature of the system and the calculates the weighted total.

□□□

Tangible benefits

Can be quantified and assigned a momentary value.

□□□

intangible benefits

Cannot be immediately quantified but can lead to quantifiable benefits in a long run.

□□□

Intangible benefits

More efficient customer service and enhanced decision can be benefits of?

□□□

Capital Budgeting models

Are one of the several techniques used to measure the value of investing in a long-term capital investment.

□□□

Capital Budgeting methods

Methods that rely on measures of cash flows into and out of the firm; capital projects generate those flaws.

□□□

Real options pricing models (ROPMs)

Model for evaluating information technology investments with uncertain returns by using techniques for valuing financial options.

□□□

Change management

Managing the impact of organizational change associated with innovation, such as new information system.

□□□

Change management

Successful system building requirement.

□□□

Implemantation

Refers to all the organizational activities working towards the adoption, management, and routinization of innovation, such as a new information system.

□□□

Change agent

In the context of implementation, the individual acting as a catalyst during the change process to ensure successful organizational adaptation to a new system or innovation.

□□□

Change agent

Refers to the system analyst in the implementation stage.

□□□

User-designer communication gap

The difference in backgrounds, interests, and priorities that impede communication and problem solving among users and information system specialists.

□□□

Internal integration tools

Project manage management technique that ensure that the implementation team operate as a cohesive unit.

□□□

Internal integration tools

It benefits projects with challenging and complex technology for users to master.

□□□

Formal control tools

Project management tools that helps monitor the progress towards the completion of a task and fulfillment of goals.

□□□

Formal planning tools

Project management technique that structure and sequences tasks, budgeting time, money and technical resources required to complete the tasks.

□□□

Formal planning tools and formal control tools

Tools that benefits large projects for documenting and managing project plans.

□□□

Gantt chart and PERT charts

The two most commonly used methods for documenting projects.

□□□

A Gantt chart

Method for documenting projects plans that lists project activities and their corresponding start.

□□□

PERT (Program Evaluation and Review Technique) cahrt

Method for documenting projects plans that graphically depicts projects tasks and their interrelationships.

□□□

External Intergration

Consists of ways to link the work of implementation team to users at all organizational level.

□□□

Counterimplementation

A deliberate strategy that thwart(prevents) the implementation of information system and innovation in an organization.

□□□

Ergonomics

Refers to the interaction of people and machines in the work environment.

□□□

Organizational impact analysis

Explains how a proposed system will affect organizational structure, attitudes, decision making and operations.

□□□

Socitechnical design

Design to produce information system that blend technical efficiency with sensitivity to organizational and human needs.