

Applied informatics

Possibilities of using information systems at managerial work – The commander.

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Possibilities of using information systems at managerial work – The commander.

1. Fundamentals of use of IS
2. Information systems in management process
3. The benefits of IS
4. Assignments

Aims of the lecture



1. Clarify the categories and use of IS and analyze the context.
2. Outline the importance of IS in management process.
3. Explain the benefits of IS and their categorization.

System

- ❑ A defined set of elements and relationships between them, which exhibits certain characteristics as a whole.
- ❑ Element ► indivisible part of the whole.
- ❑ Binding ► direct connection between two elements or sets.
- ❑ An essential part is the **structure** ► composition or the way of arrangement of elements and relationships.
- ❑ It usually consists of a coherent components ► subsystems. [1]

System

- ❑ The system environment ► defined set of elements that are not considered part of the system, but have substantial binding to it.
- ❑ The relationship of the system and its environment is specifically characterized by its inputs and outputs.
- ❑ Input ► set of constraints or variables influencing system (or parts).
- ❑ output ► set of constraints or variables by which the system operates on its environment.

Information system

Definition: Set of people, methods and technical means enabling the collection, transfer, storage, processing, and presentation of data, the aim of which is to

Consists of:

- create, and providing information to the needs of their beneficiaries who are active in management systems.
- ☐ Technical equipment (hardware).
 - ☐ Software tools (software).
 - ☐ Organizational resources (ORGWARE) - Regulation and rules defining the operation and management of IS.
 - ☐ The human component (Peopleware) - adaptation and efficient functioning of a human environment in IS.
 - ☐ The real world context as IS - Information resources, legislation, standards...

Use and categories of IS

- ❑ Territorial scope
 - ❑ international, national, regional.
- ❑ Factual (thematic) range
 - ❑ polythematic, single issue.
- ❑ Targeted specialization
 - ❑ types of information sources, types
 - ❑ information, types of functions.
- ❑ Institutionally functional character
 - ❑ corporate, departmental, cultural institutions,
 - ❑ commercial, personal

Use and categories of IS

- ☐ Area determining outputs (services)
 - ☐ for economics and management science,
 - ☐ research and education.
- ☐ The method of obtaining information
 - ☐ directly, documenting, synthesizing.
- ☐ A method of processing and presentation of information
 - ☐ documentographic, factual, with analysis and logic elements.
- ☐ Second-generation information technology
 - ☐ offline, online;
 - ☐ isolated networks.

Using IS

- ☐ According to the organizational level
 - ☐ business (corporate)
 - ☐ group,
 - ☐ personal.
- ☐ By relation to the control system
 - ☐ transaction systems (TPS)
- ☐ Management Information Systems (MIS)
 - ☐ decision support systems (DSS)
 - ☐ information systems for top management (EIS).

Transaction Processing Systems

- ❑ Transaction processing systems - Immediately associated with a particular type of process within the organization.
- ❑ Subsystems supported:
 - ❑ workshop, storage and transport operations of manufacturing companies;
 - ❑ design and technological processes;
 - ❑ reservation systems, transportation, tourism, hotels;
 - ❑ operation at the banks, post offices, ...;
 - ❑ customer service in distribution.

Management Information Systems

- ☐ Support of the tactical and operational management
- ☐ Predominant accounting and analytical operations.
- ☐ The aim of the task is to ensure the continuous registration process, and resources
 - ☐ processing of documents required by the legislation and regulations, preparation of business, and other analyzes.

Critical success factors:

- ☐ The correct choice of application software, correct strategy and putting it into operation.
- ☐ The quality of the methods and tools of implementation.
- ☐ Typical features:
 - ☐ accounting,
 - ☐ sale and purchase,
 - ☐ personnel,
 - ☐ PaM.

Decision Support Systems

- ❑ They are primarily designed to support the management of secondary components.
- ❑ They have the ability to perform diverse data analysis.
- ❑ It is a computer support to the decision analysis methods.
- ❑ They help the management in calculations and manipulation of input data.

- ❑ Partial assumption:
 - ❑ user understands the nature of the method;
 - ❑ knows when and why to use it;
 - ❑ What input data must be provided.
- ❑ Allows you to perform:
 - ❑ detailed analysis,
 - ❑ the creation of plans of budgets and forecasts
 - ❑ comparing different variants of scenarios including the economic and operational factors, etc.
- ❑ They have the ability to present information through graphical outputs.

Executive Information Systems

- ❑ Comprehensive analysis data for decision making
- ❑ Generates structured outputs with high predictive value.
- ❑ Quick and easy creation of new perspectives on the data, the aggregation and sorting into new contexts.
- ❑ Analyses of trends and deviations, analysis of scenarios working with historical data, and predicting future developments, access to internal teenagers and external data.
- ❑ Easy to use, clear presentation.

☐ Claims:

- ☐ Lower requirements for its operation (a small number of users), operational support data conversion, MIS, CIS database to EIS.
- ☐ Specific user support and support continuous modification applications.

☐ Support analytical work:

- ☐ financial management,
- ☐ sale
- ☐ purchase,
- ☐ marketing,
- ☐ personnel,
- ☐ production.

The benefits of information systems

Motto:

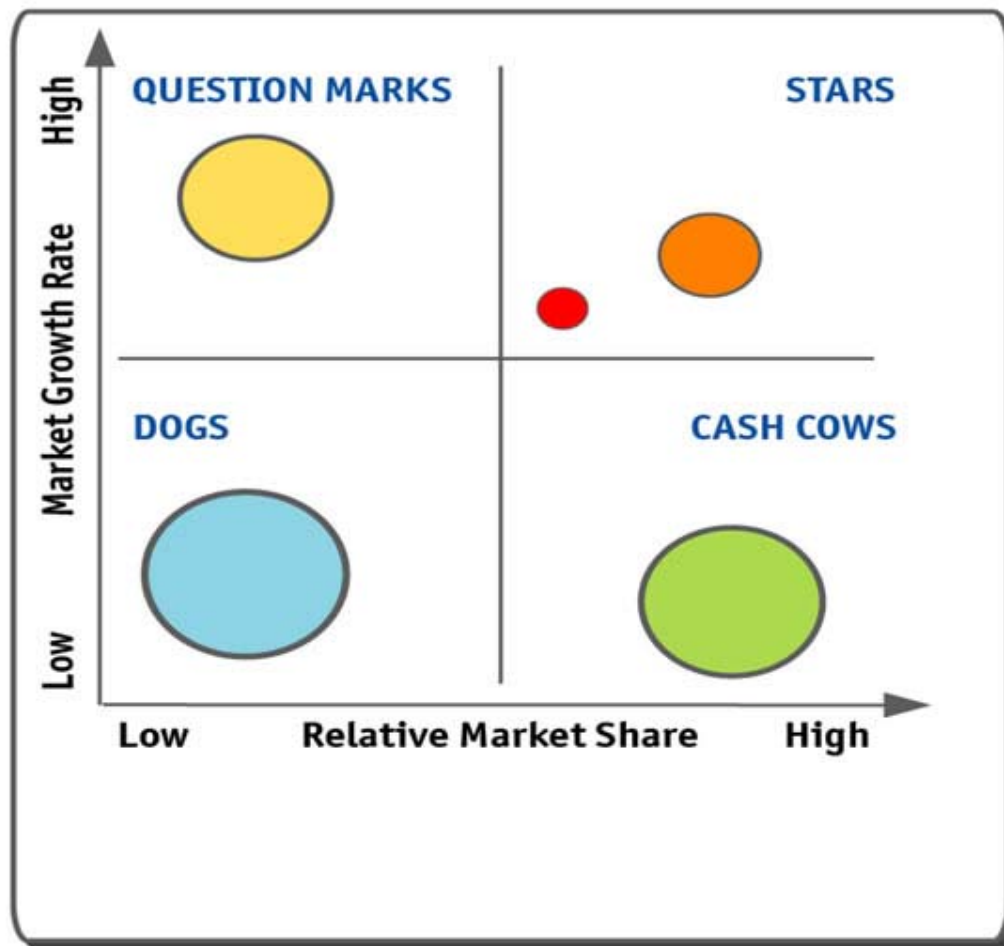
- ❑ If you do not speak about the benefits of the information system before starting the project, you can expect that at the end of the project you will rather enumerate loss after investing in the information technology.

Laddy Brand

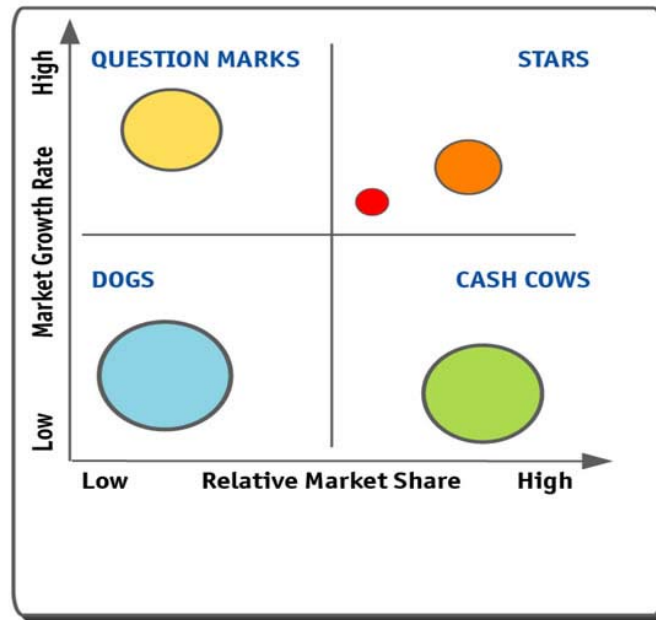
Benefits of ICT for IS

- ❑ Modern ICT applied as a trend - without benefit analysis.
- ❑ Determination of benefits is impossible without analysis of the workplace - companies.
- ❑ A tool for reflection may be the Boston matrix (BCG) [2]

Boston Matrix



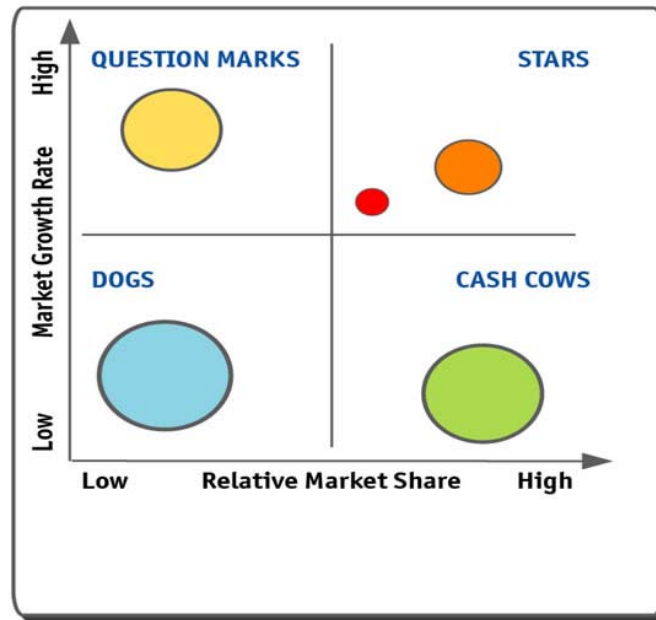
Boston matrix



Stars - high growth rates with relatively large market share. Expectations: they will become the main source of income.

[3]

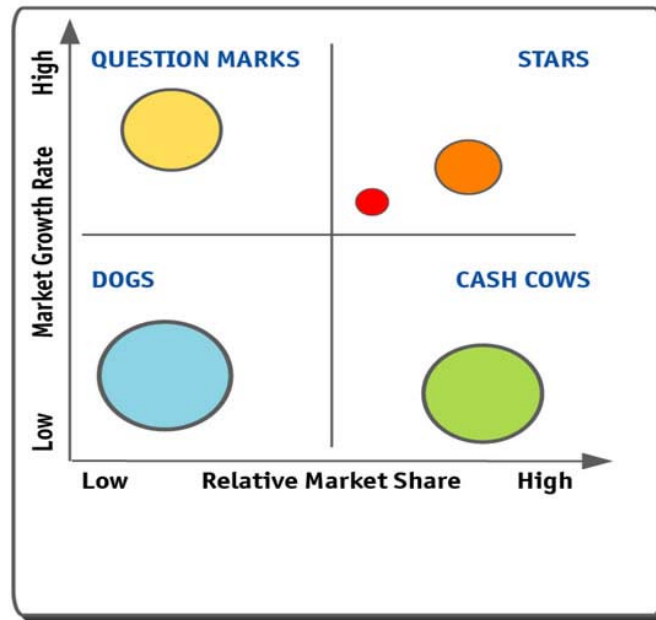
Boston matrix



Question marks – low share of the rapidly growing market. Unstable = can be profitable and unprofitable. Expectations: the choice of an appropriate marketing strategy.

[3]

Boston matrix

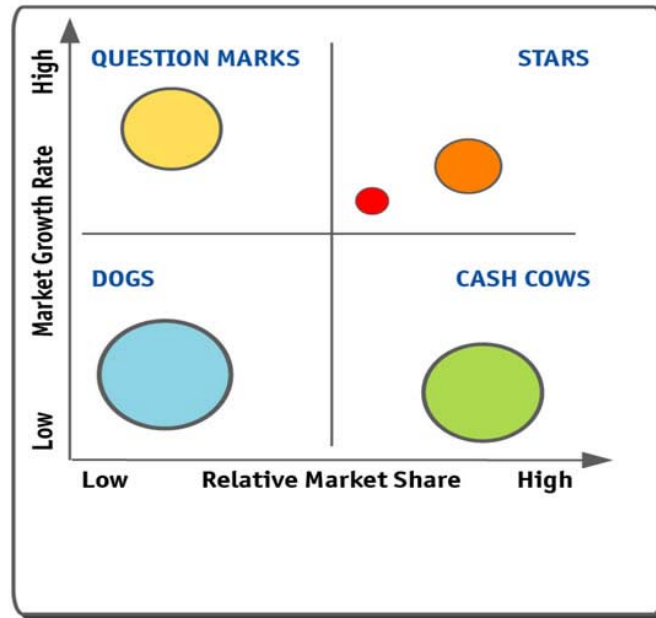


Cash cows - good market position and stable earnings for financing further development.

The assumption – protection is necessary.

[3]

Boston matrix



Dogs – low profit, unpromising.

Prerequisite - innovate or stop activities.

[3]

Benefits of IS

- ☐ There is a big difference between thousands of different insects that are circling around the head and the same thousands of species of insects arranged neatly under the relevant taxonomic system.
- ☐ It is necessary to know the different views on the benefits of IS.
- ☐ It is not possible to evaluate the benefits without their taxonomy - classification.

Approaches to IS

- ❑ A substantial portion of executives identifies the concept benefits to the concept of savings.
- ❑ The possibility of access to the benefits of IS are wider.
- ❑ Savings are characterized by reduced costs in the period before and after the introduction of an information system. Savings can not be greater than the costs incurred.

[4]

Approaches to IS

- ❑ Advantages - the use of advanced information technology allows to obtain a competitive advantage over other companies.
- ❑ Opportunities - in the current market economy, it is imperative that entrepreneurs are able to quickly take advantage of opportunities that arise in the market with the help of IS.
- ❑ Important is the role of personal information systems (PIS) and their interaction with IS.

Benefits of IS

- ☐ The benefits must be individually qualified and dedicated, and quantified with knowledge of the current state!
- ☐ There must be accountability for achieving them, the deadline and the method of evaluation!
- ☐ The benefits should be measured objectively!

[4]

Benefits of IS

- ☐ If we cannot do an objective evaluation then we should not use such a benefit evaluation to assess the usefulness of the information system.
- ☐ It is necessary provide for the registration and reporting benefits. Many benefits are ignored simply because their presence was not being followed.
- ☐ Evidence and monitoring requires the expenditure of a certain amount of time and effort - this activity induces resistance = Doing more options for recording IS!

[4]

The benefits

- ❑ The benefits of planned and actual - Structure Plan benefits and reporting real benefits they bind to each other directly.
- ❑ Benefits positively and negatively conceived - increase revenues or reduce losses.
- ❑ The benefits expected and unexpected - planned and unexpected influence of external and internal factors.
- ❑ The benefits of the proven and estimated - some benefits can be demonstrated only by incurring high costs, or their demonstration takes a long time and would be associated with other problems. Therefore, in addition to the proven benefits we can make for some expert estimate of the amount.

[4]

The benefits

one-time and recurring benefits - Single benefits appear only once at a given time, some benefits are repeated.

Benefits quantifiable and difficult to quantify - benefits that can or cannot be quantified (financially) are sometimes referred to as qualitative. For example, the scale of stress.

Similar cases can be solved in two ways:

listing of these benefits in a separate category, i.e. putting them explicitly but without quantification,

try to quantify the contribution of some mediated way - via another pointer.

Benefits of direct and indirect - direct benefits relate directly to the area where the information system functions. Indirect may occur, for example, the company's reputation.

[4]

The benefits

- ❑ The benefits of financial and in-kind - in a market economy - the expression of the benefits in financial terms. Sometimes in other units, which is of relevance for a particular case (the amount of important raw materials). Important natural unit is the time! 'Time is a critical factor for success today!'
- ❑ Benefits unaddressed and addressed direct - address assigned to a specific site, a specific process, specifically carry out the activity. On the other hand - the company's profit will increase by 2% without giving any reason. Sometimes it is customary to speak of general and specific benefits.
- ❑ The benefits are broken down by specific resources - material benefits, in terms of quality, in the field of indirect materials, use of space, increase productivity, etc. They are important to justify upgrading the IS.

[4]

Assignments



Browse the categories and use of IS and analyze context.



Explain the importance of IS management process.



Indicate the benefits of IS and examples from practice.

Resources:

1. HRONEK, Jiří. Informační systémy [online]. 2007 [cit. 2013-11-9]. Dostupné z: <http://phoenix.inf.upol.cz/esf/ucebni/infoSys.pdf>
2. BCG Matice. [Http://cs.wikipedia.org](http://cs.wikipedia.org) [online]. 2007 [cit. 2013-11-10]. Dostupné z: http://cs.wikipedia.org/wiki/BCG_matice
3. ČEVELOVÁ, Magdalena. Bostonská matice. [Http://www.cevelova.cz](http://www.cevelova.cz) [online]. 2010 [cit. 2013-11-10]. Dostupné z: <http://www.cevelova.cz/bostonska-matice/>
4. LACKO, Branislav. Přínosy informačních systémů. [Http://www.systemonline.cz](http://www.systemonline.cz) [online]. 2000 [cit. 2013-11-11]. Dostupné z: <http://www.systemonline.cz/clanky/prinosy-informacnich-systemu.htm>