

Management of Information Systems

Models

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SPIDER Model

SPIDER stands for Standardization, Planning, Integration, Delivery, Experience, and Resources.

Standardization is of key importance for IT organizations because by developing common practices and procedures costs can be lowered and reliability can be increased. By standardizing desktop computers companies can streamline software applications to fit multiple users, or use commercial software. Another example of standardization is a consolidated help desk, where FAQs can be answered readily. It is good to note that standardization does not hurt innovation.

Planning involves both users and management and incorporates a strategic project within a business unit. These plans determine cost-effectiveness in relation to the budget. They can include a plan for obsolescence, regular operations, can find issues that may affect the business and responses to those issues, and can build relationships among employees by involving everyone from top management to end users.

Integration involves getting IT involved in the operation of the business. If the IT personnel gain experience in the practices of the company they are more valuable in aligning the IT objectives with the company's overall strategy. They are involved in the entire plant operations and can shape the projects to fit the user's needs. Implementation is performed by experienced IT professionals and representatives from respective business units in an attempt to integrate all data in a form that increases users' productivity.

Delivery includes all phases of developing systems to put out to the company, including development and implementation. This often includes User Centered Development in which the user is involved in the development process. These solutions use structured processes and procedures and are delivered within schedule and cost, according to formal project management methods. This way IT is guided by the business needs and is involved throughout the process.

Experience combines IT professionals with personnel experienced in the business. In this way solutions that are most applicable for users and company alignment are brought together.

Resources must be adequate to operate the IT organization. This includes allocation of resources during the planning phases to allow IT to use proven technology and methods. It also ensures IT support throughout the development, implementation, and post-implementation processes.

DeLone and McLean Revised IS Success Model

The DeLone and Mclean Revised IS Success Model depicts the importance of the use of information in an IS system. Only when IS systems are used can they be beneficial to organizational objectives. Therefore, design of the system should include quality, usability, and user convenience.

These are referred to in this model as three aspects of quality leading to (interactive) use leading to (interactive) benefits.

System quality has captured organizational memory and made it available for the user to manipulate through databases, reports, and applications that further increase the store of knowledge. The mnemonic system, dealing with matters of the mind, has to be able to adapt to us.

Information quality makes up-to-date, accurate information available to the right user at the right time, with the least amount of human data entering.

The system is supported throughout the company by management, user groups, and IS. This service quality ensures that users can easily use the system.

This leads to the intention to use the system. This happens when the user has a choice and doesn't have to use the system. Actual use is a success measure.

User satisfaction happens when users must use your system and are happy with it. The effectiveness of its use depends on users being satisfied with the system. This is the interaction shown in the model.

The net benefits of this model, which can include increased cost-effectiveness and productivity, are the summation of individual benefits, which can include doing work easier with greater accomplishment (and perhaps rewards). Since use affects each person's performance, each performance will have an effect on the whole organization. Once benefitted, the users are likely to continue to use this system, which is also interactive in this model.

SECI Graphic

Since knowledge is accrued by employees over time, and after much experience, there is often a huge repository of tacit knowledge existing in a company. The more static a company is, meaning little staff turnover, the more the company relies on knowledge contained in long-time employees heads. The SECI model shows how knowledge is transferred into usable information. It stands for Socialization, Externalization, Combination, and Internalization.

When an expert in the field socializes with a worker he can pass tacit knowledge by sharing his experiences, demonstrating skills, and explaining concepts in the form of mental models. This tacit knowledge can then be obtained by the worker, who can readily understand and apply this knowledge that the expert has only in his head, by observation, imitation, and practice.

The knowledge is externalized when it is refined into articulated concepts. The worker is made familiar with the concepts by metaphors, analogies, or models. This “know-how” is made clear and understandable.

Combined with types of explicit knowledge, transferred through written document or verbal communication, these concepts can be structured into a knowledge base. The worker can obtain technical instructions, or complex models, through computer-generated media such as hard copies. New Knowledge can be created this way.

When the worker takes this knowledge and applies it to his job, this explicit knowledge begins to become internalized. That is, the worker is gaining experience, often through trial and error, with the help of the expert’s knowledge. He can then apply this to new problems.

Web Site Usability Assessment Model

Usability means to accomplish a specific task accurately in a timely fashion. Usability is very task oriented. The lack of web site usability led to failures of B2C web sites and dot com companies; therefore it is an important consideration in the design and development of e-commerce.

One risk of rushing into the electronic marketplace is that customers may be alienated by unsuccessful web site design. This model makes clear the important factors that lead to usability.

The major focus of the strategic goals is to generate revenue or cost-savings. The system, web site, can build market share. By creating customer profiles the web site can be tailored to the customer's wants, to make it look personalized. The process is simplified because it is application focused, a simple electronic interface for business procedures that can include accounting and inventory. It also reduces cost by cutting out the middleman.

The most important user profile issues to consider are: gender (within a culture), skills (some people are more apt), education, and cultural differences. One thing to note is that the highest cost in preparing a web site for localization is language translation, which must be done by an expert instead of a machine as idioms can vary.

Hardware must be taken into account for issues such as modem speed that affects the performance of the web site, screen size that the web site is designed for, and browser compatibility.

What users look for is understandability, ease of use, and simplicity. The design layout must be intuitive and obvious, the design consistency should be standardized, and the navigation should follow the "3-click rule", where the customer can purchase something in three clicks.

Customer service should be available. The telecommunications system needs to be reliable without limited communications, the web site design must be reliable and attractive, and payment methods must be both reliable and secure.

The performance of the web site means it must load quickly, optimally within 2-3 seconds, and have no breakage in the links. Sufficient information such as price, availability, and product descriptions should exist and be easily updated, if not done automatically.

This all leads to a successful usability assessment, and is accomplished by following a design strategy, whether it is common design, customization, or mixed.