Universidad
Carlos III de Madrid

OO/UC3M/65- PROCESS ASSET LIBRARY BASED ON KNOWLEDGE MANAGEMENT TECHNIQUES

Software Engineering Lab is a research center at Carlos III University of Madrid (Spain) that is developing a Process Asset Library (PAL) including concepts about Knowledge Management in order to contribute to generate, acquire, share and distribute knowledge of processes defined in the organization for developing software projects. The technology minimizes the risk of losing essential knowledge to meet goals. It is searching technical collaboration for this project.

Description and special features

PAL is a knowledge repository and an interface for accessing the knowledge based on Web 2.0 technologies that allow:

- To storage information about the software process of an organization allowing gained experience can be used in future software projects.

  o The content of the PAL is made up of a lot of information about the software process denominated assets.

  o These process assets are in multiple formats and are used for different purposes in different areas of knowledge.

- To facilitate the search and reuse of prior knowledge of the processes that best adapt each project of the organization.

- To record the experience, lessons learned and tips on how to implement the processes of the organization, using software tools and implementing different types of projects.

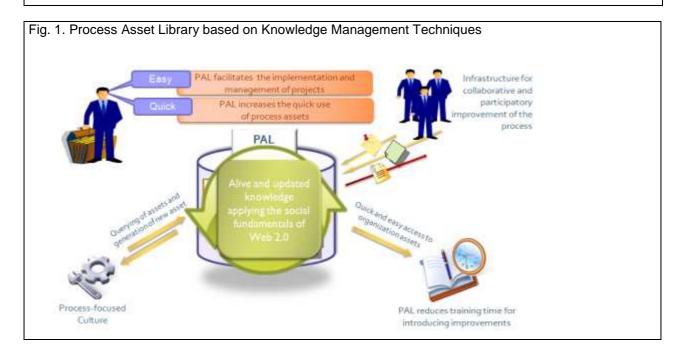- To facilitate the knowledge change management of the organization to adapt it to changing environment.

Among the main features of which supports the PAL proposed are:
1. Knowledge Management

- Integral support to the repository with processes of Knowledge Management (acquisition, refinement, organization, storage, publication, training and learning) on the software process assets.

- PAL supports collaboration and shared generation of process assets knowledge.

- Incorporating roles based on Knowledge Management.

2. Software Process Improvement

- In addition to be a repository of elements of the process, the library evolves through the collaborative work of its users evaluating and improving their items of knowledge by annotations, comments and feedback.

- Statistical analysis of using and content of the repository.

3. Repository Management

- Mechanisms of abstraction to extract information from concrete examples eliminating the context for an effective reuse.

- Incorporating an own methodology oriented to the management the life cycle of process assets (definition, modeling, relationships, use practices and criteria and procedures to add, delete and modify assets in the repository).

4. Examples & Standards

- Incorporation of templates and material that support to process, examples and instances of such elements.

- Applying standards to promote interoperability to help facilitate the efficient dissemination of content.

5. Help for Users

- Implementation of proactive agents who act immediately when is necessary, facilitating the work of users of the repository.

- Interface customized.

- Support according to user's experience level.

Fig. 1. Process Asset Library based on Knowledge Management Techniques

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Innovative aspects

Unlike with other technologies (Process electronic guides and management tools based on forms), the PAL favors the assets management process through:
- A knowledge management infrastructure to acquire, define and disseminate guides about processes.

- Facilitates implementation and management of projects and increases the quick use of assets using resources of the Web 2.0.

Incorporate more resources for searching and reusing of assets in projects.

Competitive advantages

The software development companies:
- Minimize the risk of losing knowledge: Applying individual and group knowledge management techniques to software process.

Competitive advantages

- Improve the effectiveness and efficiency: Supports the transfer of experiences, avoiding duplication of materials and reducing the training time.

Obtain process and product innovation: Motivating staff to create and use the process and increasing the quality of the products developed.

Technology Keywords

Software; Computer Science Technology; Information Technology / Computer Science; knowledge Management

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