



Computers in Industry

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Special issue on Computer Supported Innovation Pipelines: Current Research and Trends

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Computer-aided innovation is a challenging new area. One of the central questions in industrial innovation is related to the management of an innovation pipeline: a series of innovative products brought to the market in an orchestrated manner. The methods and tools related to pipeline management are the central theme in the special issue announced here.

On the one hand, pipeline management can be considered as an extension of product development program management, showing a roadmap of innovations in future products to be released. Managing such product development programs with planned innovations is already a major challenge with a focus on version management. On the other hand, however, pipeline management is concerned with product innovations developed in research and pre-development programs, which have to be merged with on-going product development projects. Such mergers lead to large engineering changes in running projects. New solutions for support of engineering change management for multiple running projects is needed for proper pipeline management.

In the context of R&D evolution, significant attention needs to be given to the synthesis of new methods and tools to solve the above issues. The emerging methods need to harmonise their role with established industrial practices such as approaches based on the quality paradigm. New tools with e.g. focus on 'optimisation oriented' methods also need to be integrated in industrial practice.

In recent years, the Computer Aided Innovation (CAI) community has aimed to offer a framework for companies addressing innovation's organization. Any paradigm shift in enterprises at the level of engineering must be accompanied by a robust formalism. Examples of such formalisms are known in quality procedures but remain absent from the way innovation is defined and brought into processes in enterprises. This formalism should be theoretically grounded and generate relevant processes operated by computer assistance as through the years CAD, CAE, CAM and PLM have gained legitimacy across our industries.

Therefore, Computer Aided Innovation community finds a significant amount of interdisciplinary research problems to be addressed by a novel category of tools and assisted by computerized procedures and interfaces to better serve Innovation pipelines' organization.

This special issue is an attempt to highlight current research trends in this field. The guest editors are soliciting papers dealing with computer-supported innovation pipeline management. Papers should address the above management issues and demonstrate the way in which these issues are supported by methods and tools. Theoretical background of these methods and tools are welcomed, and can be rooted in (but not limited to) scientific fields such as Knowledge Management, Artificial Intelligence, Computer Aided Design, Engineering Design Theories & Methodologies, Data & Text mining, Virtual Reality, New Product & Systems Development Processes. However, such theoretical background should not be the principal contribution of the paper.

The submitted paper must be original in nature and primarily contain unpublished material. The paper must clearly indicate the newness and novelty in their approach and explicitly demonstrate the benefits of their approach/methodology. The subject matter should be tackled rigorously and any application related material must be accompanied by Case Studies.

For submitting a paper, logon at www.computeraidedinnovation.net

Important dates:

- Full Paper submission January 31st 2010
- Notification of paper selection April 30th 2010
- Final paper submission June 30th 2010
- Publication (to be further indicated)