

# Method Engineering

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## Introduction

Method engineering within the "field of data systems is that the discipline to construct new methods from existing methods". It focuses on "the design, construction and evaluation of methods, techniques and support tools for information systems development". Furthermore, method engineering "wants to enhance the usefulness of systems development methods by creating an adaptation framework whereby methods are created to match specific organizational situations".

### Computer aided method engineering

The meta-process modeling process is usually supported through software tools, called computer aided method engineering (CAME) tools, or Metaxas tools (Meta level Computer Assisted Software Engineering tools). Often the instantiation technique "has been utilized to create the repository of Computer Aided Method Engineering environments". There are many tools for meta process modeling

### Method tailoring

In the literature, different terms ask the notion of method adaptation, including 'method tailoring', 'method fragment adaptation' and 'situational method engineering'. Method tailoring is defined as: A process or capability during which human agents through responsive changes in, and dynamic interplays between contexts, intentions, and method fragments determine a system development approach for a selected project situation

Situational method engineering Situational method engineering is that the construction of methods which are tuned to specific situations of development projects. It are often described because the creation of a replacement method by

- Selecting appropriate method components from a repository of reusable method components,
- Tailoring these method components as appropriate
- Integrating these tailored method components to make the new situation specific method.

### Method engineering process

The developers of the IDEF modeling languages, Richard J. Mayer et al. (1995), have developed an early approach to method engineering from studying common method engineering practice and knowledge in developing other analysis and style methods. According to this approach there are three basic strategies in method engineering:

- Reuse: one of the essential strategies of methods engineering is reuse. Whenever possible, existing methods are adopted.
- Tailor-made: find methods which will satisfy the identified needs with minor modification. This feature is a beautiful one if the modification doesn't

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require a fundamental change within the basic concepts or design goals of the tactic.

- New development: only neither of those options is viable should method designers seek to develop a replacement method.
- This basic strategies are often developed during a similar process of concept development.

### Knowledge engineering approach

Knowledge engineering approach is that the predominant mechanism for method enhancement and new method development. In other words, with only a few exceptions, method development involves isolating, documenting, and packaging existing practice for a given task during a form that promotes reliable success among practitioners. Method language design process.

The method language design process is very iterative and experimental in nature. Unlike procedure development, where a group of heuristics and techniques from existing practice are often identified, merged, and refined, language designers rarely encounter well developed graphical display or textual information capture mechanisms. When potentially reusable language structures are often found, they're often poorly defined or only partially suited to the requirements of the tactic. Graphical language design Graphical language design begins by identifying a preliminary set of schematics and therefore the purpose or goals of every in terms of where and the way they're going to support the tactic application process. The central item of focus is decided for every schematic.

### Method testing

Each candidate design is then tested by developing a good range of examples to explore the utility of the designs relative to the aim for every schematic. Initial attempts at method development, and therefore the development of supporting language structures especially, are usually complicated. With successive iterations on the planning, unnecessary and sophisticated language structures are eliminated.

Formalization and application techniques As the method language begins to approach maturity, mathematical formalization techniques are employed therefore the emerging language has clear syntax and semantics. the tactic formalization process often helps uncover ambiguities, identify awkward language structures, and streamline the language.

These general activities culminate during a language that helps focus user attention on the knowledge that must be discovered, analyzed, transformed, or communicated within the course of accomplishing the task that the tactic was designed. Both the procedure and language components of the tactic also help users develop the required skills and attunements required to realize consistently top quality results for the targeted task.

Once the tactic has been developed, application techniques are going to be designed to successfully apply the tactic in stand alone mode also as along side other methods. Application techniques constitute the "use" component of the tactic which continues to evolve and grow throughout the lifetime of the tactic. The tactic procedure, language constructs, and application techniques are reviewed and tested to iteratively refine the tactic.

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