solutions evolve via collaboration between self-organizing cross-functional teams.
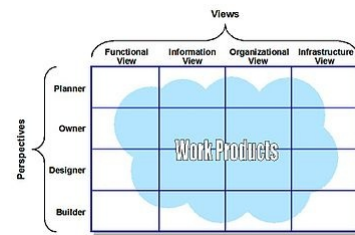
## Subtopics

### View model

A view model is framework which provides the viewpoints on the system and its environment, to be used in the software development process. It is a graphical representation of the underlying semantics of a view.



The purpose of viewpoints and views is to enable human engineers to comprehend very complex systems, and to organize the elements of the problem and the solution around domains of expertise. In the engineering of physically intensive systems, viewpoints often correspond to capabilities and responsibilities within the engineering organization.[8]

Most complex system specifications are so extensive that no one individual can fully comprehend all aspects of the specifications. Furthermore, we all have different interests in a given system and different reasons for examining the system's specifications. A business executive will ask different questions of a system make-up than would a system implementer. The concept of viewpoints framework, therefore, is to provide separate viewpoints into the specification of a given complex system. These

The TEAF Matrix of Views and Perspectives.

viewpoints each satisfy an audience with interest in some set of aspects of the system. Associated with each viewpoint is a viewpoint language that optimizes the vocabulary and presentation for the audience of that viewpoint.
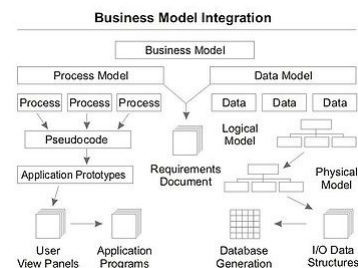
### Business process and data modelling

Graphical representation of the current state of information provides a very effective means for presenting information to both users and system developers.

- A business model illustrates the functions associated with the business process being modeled and the organizations that perform these functions. By depicting activities and information flows, a foundation is created to visualize, define, understand, and validate the nature of a process.



- A data model provides the details of information to be stored, and is of primary use when the final product is the generation of computer software code for an application or the preparation of a functional specification to aid a computer software make-or-buy decision. See the figure on the right for an example of the interaction between business process and data models.[9]

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Usually, a model is created after conducting an interview, referred to as business analysis. The interview consists of a facilitator asking a series of questions designed to extract required information that describes a process. The interviewer is called a facilitator to emphasize that it is the participants who provide the information. The facilitator should have some knowledge of the process of interest, but this is not as important as having a structured methodology by which the questions are asked of the process expert. The methodology is important because usually a team of facilitators is collecting information across the facility and the results of the information from all the interviewers must fit together once completed.[9]

The models are developed as defining either the current state of the process, in which case the final product is called the "as-is" snapshot model, or a collection of ideas of what the process should contain, resulting in a "what-can-be" model. Generation of process and data models can be used to determine if the existing processes and information systems are sound and only need minor modifications or enhancements, or if re-engineering is required as a corrective action. The creation of business models is more than a way to view or automate your information process. Analysis can be used to fundamentally reshape the way your business or organization conducts its operations.[9]

### Computer-aided software engineering

Computer-aided software engineering (CASE), in the field software engineering is the scientific application of a set of tools and methods to a software which results in high-quality, defect-free, and maintainable software products.[10] It also refers to methods for the development of information systems together with automated tools that can be used in the software development process.[11] The term "computer-aided software engineering" (CASE) can refer to the software used for the automated development of systems software, i.e., computer code. The CASE functions include analysis, design, and programming. CASE tools automate methods for designing, documenting, and producing structured computer code in the desired programming language.[12]

Two key ideas of Computer-aided Software System Engineering (CASE) are:[13]

- Foster computer assistance in software development and or software maintenance processes, and