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Chapter IX

Future Directions in CASE Repositories

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Today, components and Component Based Development (CBD) is seen as one of the important events in the evolution of information technology. Components and CBD offer the promise of a software marketplace where components may be built, bought, or sold in a manner similar to components in other industries. In the light of the ongoing developments, in the manner and art of developing software systems, it is important to consider how the Computer Aided Systems Engineering (CASE) environment that supports building these systems can be produced on a CBD approach.

In spite of the fact that CASE environments have been around since the '70s, there are still many problems with these environments. Among the problems of CASE environments are the lack of conceptual models to help understand the technology, the poor state of user requirements specification, inflexible method, support and complicated integration facilities, which contribute to the dissatisfaction in CASE users.

During the '90s there has been a growing need to provide a more formal basis to the art of software development and maintenance through standardized process and product models. The importance of CAME (Computer Aided Method Engineering) in CASE led to the development of CASE shells, MetaCASE tools, or customizable CASE environments that were intended to overcome the inflexibility of method support. The declining cost of computing technology and its increasing functionality, specifically in graphic user interfaces, has contributed to the present re-invention of CASE environments.

CASE research in the last decade has addressed issues such as method integration, multiple user support, multiple representation paradigms, method modifiability and evolution, and information retrieval and computation facilities. Considerable progress has been made by isolating particular issues and providing a comprehensive solution with certain trade-off on limited flexibility. The requirement of a fully Component Based architecture for CASE environments has been not examined properly. The combination of requirements of flexibility in terms of support for arbitrary modeling techniques, and evolution of the development environment to ever-changing functionality and applications never the less needs a flexible environment architectures.

Therefore, the theory formulation and development of a prototype for designing a next generation of CASE environments is addressed in this book. A CAME environment is considered as a component of a CASE environment. A comprehensive solution is sought to the environment problem by paying attention to a conceptual model of such an environment that has been designed to avoid the confusion around integration issues, and to meet the specification of user requirements concerning a component-based architecture.

A CAME environment provides a fully flexible environment for method specification and integration, and can be used for information systems design activities. A large part of this book reports how this theory leads to the designing of the architecture of such an environment. This final chapter contains a review of the theory and an assessment of the extent to which its applicability is upheld.

A REVIEW OF CAME THEORY AND ARCHITECTURE

The concept of CAME as the solution to the issue of supporting information systems analysis and design work by providing tailorable automated support according to the information systems modeling needs in a problem situation is addressed in this book. The automated support tools have become the primary means of support at the systems analysis and design stage, and also the automated support tools currently used by information systems engineers such as CASE, UpperCASE, MetaCASE, or IPSE do not meet the expectations of the information systems designers. This observation, stimulated to approach the issue of a modeling support environment, can be tailored according to arbitrary modeling techniques used for information systems analysis and design activities.

The overall objective was to find a way to integrate the conceptual model of the flexible information modeling environment, that represents the way of