# Integrated CASE Tools To Shine in IS Metamorphosis

**JAMES MARTIN**

As the applications-development landscape evolves, it is no longer economically practical for information-systems (IS) departments to hand-code large, strategic systems with third-generation languages such as COBOL and C.

IS is undergoing a retooling process in which it is embracing more powerful technologies, including new architectures—among them, IBM's Systems Application Architecture (SAA) and Digital Equipment Corp.'s Network Application Support (NAS)—and new types of development tools, such as integrated computer-aided software engineering (I-CASE) programs.

I-CASE tools will play a significant role in the metamorphosis of IS because of several advantages. These tools support all phases of development and can generate source code for an entire application from a single repository of design specifications.

The components of I-CASE tools are illustrated in the figure. Front-end design facilities typically include planning, analysis and design workbenches. The planning workbench handles strategic planning, enterprise modeling and high-level data modeling; the analysis workbench supports business-area analyses and detailed data modeling; and the design workbench's chief domain is the creation of prototype applications.

Prototype development includes the specification of screens, reports, dialogues, procedural logic and database access. Prototype applications help the organization verify that the evolving application meets its business needs.

Until recently, PC-based I-CASE tools, such as Information Engineering Workbench and Application Development Workbench from KnowledgeWare Inc., Information Engineering Facility (IEF) from Texas Instruments Inc., PACBase from CGI Systems Inc. and APS Development Center from Sage Software Inc.,

still required back-end code-, database- and documentation-generation mainframe components. The mainframe code- and database-generation portions typically cost $200,000 to $300,000, severely limiting their applicability.

Within the past year, however, I-CASE tools have rapidly matured, particularly in the area of desktop code

generation. As shown in the figure, the code-generation components of major I-CASE tools are moving onto the PC, so users can now buy comparable PC products for less than $10,000.

KnowledgeWare, with the delivery of its Construction Workbench module, became the first I-CASE tool vendor to offer a PC solution that generates complete application code. Later this year, Texas Instruments will introduce an OS/2 version of IEF that can be used to generate entire applications on the desktop in either COBOL or C.

The offerings of these firms demonstrate where the I-CASE tool market is headed. Managers should expect to see
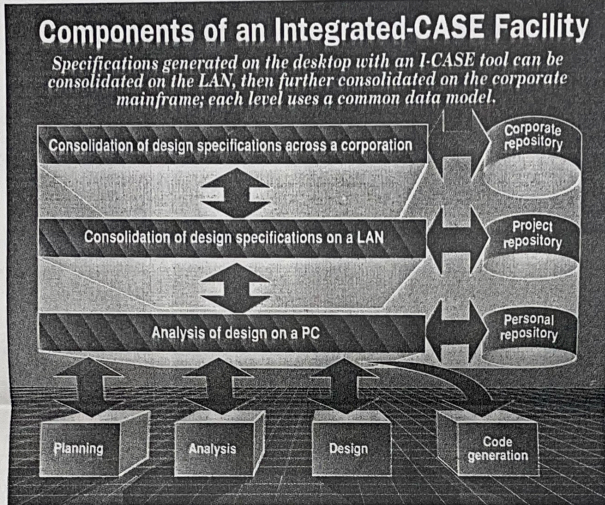
desktop I-CASE tools that support the entire life-cycle process and generate CO-BOL or C source code for applications in both IBM and Unix environments. These tools will support rapid prototyping on the desktop and will deliver database access via the industry-standard Structured Query Language (SQL).

It is important to look for I-CASE tools that are capable of generating SAA applications that use a common user, programming and communication interface, and are compliant with IBM's AD/Cycle repository CASE standard.

I-CASE products will rapidly evolve into "industrial-strength" CASE facilities that can be harnessed to create applications of varying complexity. Their ability to produce complete application code on the desktop in close concert with end users—coupled with new methodologies such as rapid applications development—will add to this growing phenomenon.

Another major change on the horizon is the consolidation of design specifications on a LAN. Until recently, a mainframe was required to consolidate specifications from multiple analysts. Within a year, the major I-CASE vendors will support this function on a LAN using a file server, as shown in the figure. Ideally, support should be provided on high-speed file servers such as Compaq Computer Corp.'s Systempro or IBM's RISC System/6000.

Next week, I will discuss the central role of the CASE tool repository. ∎



## Components of an Integrated-CASE Facility

*Specifications generated on the desktop with an I-CASE tool can be consolidated on the LAN, then further consolidated on the corporate mainframe; each level uses a common data model.*

Consolidation of design specifications across a corporation — Corporate repository

Consolidation of design specifications on a LAN — Project repository

Analysis of design on a PC — Personal repository

Planning · Analysis · Design · Code generation

John Avakian

*The concepts embodied in this article are described in the CASE volume in The James Martin Report Series. For more information on this volume, call (617) 639-1958. For information on seminars, contact (in the United States and Canada) Technology Transfer Institute, 741 10th St., Santa Monica, Calif. 90402 (213) 394-8305. In Europe, contact Savant, 2 New St., Carnforth, Lancs., LA5 9BX United Kingdom (0524) 734 505.*

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