

## APPLIED INTELLIGENCE

# JAD Workshops Help Capture Design Specifications



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Joint applications design (JAD) workshops are at the heart of new development methodologies such as rapid applications development (RAD) and Du Pont's Timebox.

JAD techniques are used in the initial requirements-planning phase of the

RAD life cycle to identify high-level requirements and features of the proposed system. Additional JAD workshops are conducted in the subsequent user design phase to specify the detailed design of the system. The techniques used in JAD can be generalized and applied to a variety of workshop environments.

JAD attacks a common problem in applications development—the lack of effective communication between end users and information-systems (IS) professionals.

The traditional applications development process attempts to solve this communication problem through the preparation of a series of specification documents. Initial user requirements are translated into a feasibility document. As part of a structured analysis process, the feasibility document is expanded into a structured specification. After the user signs off the specification document, it is translated into a detailed design document. The detailed design document is then manually translated into program code.

## Doomed To Fail

It is hard to imagine a process that is more error-prone and more likely to fail to meet users' requirements at cutover. Errors and misunderstandings are introduced at each translation of the specifications from one language to another. End users are involved only at the beginning and end of the development process, and that process is often so long that business conditions have changed by the time it is finished, invalidating the initial functional requirements.

JAD provides an effective mechanism to solve these communication problems. It offers a structured environment in which small teams of end users and IS professionals can work together to hammer out the design specifications for a new application. JAD produces results faster than the traditional writing of specifications. More important, it results in a design that is much better from the users' point of view.

As shown in the figure, JAD workshops are conducted in a highly visual, structured environment. The rooms used are often specially configured, using overhead projectors, white boards, flip charts, copying facilities and a U-shaped configuration of tables. An important additional facility is an integrated computer-aided software engineering (I-CASE) tool and a large-screen monitor or television projection system.

I-CASE tools incorporate both front-

end diagramming facilities and a tightly integrated back-end code generator capable of generating 100 percent of the code for an application. Using an I-CASE tool, the design developed in a JAD workshop can be converted automatically into a running prototype application that can be demonstrated to end users.

The key players in JAD are the end users who want a system that implements a given set of functions. Selecting the best user participants is crucial. They should have the right mix of knowledge about the business and the authority to make decisions about the design, and they have to communicate

person is a specialist who prepares and directs the workshop sessions, encourages the players to participate and moves the session along toward its goals. Like an effective board chairman or program moderator, a session leader must be able to direct the human dialogue constructively and avoid squabbles.

The scribe is responsible for the documentation. He or she captures design specifications for the application using an I-CASE tool. Specifications that have been sketched on a white board and agreed upon by the users are entered into a design repository on the PC using the diagramming capability of the I-

ring. Participants may also examine or modify parts of the design on their personal computers.

The JAD leader takes the participants through a preplanned set of steps. The scribe records the results with the I-CASE tool and periodically interrupts when the tool detects inconsistencies or ambiguities.

The tool helps ensure that the results of the workshop are rigorous, consistent and complete.

When he or she has cleaned up the design, the scribe shows it to the participants using either a large-screen monitor, a television projection system or a computer-driven LCD mounted on a standard projector. This helps in the discussion of designs and prototypes.

Some JAD sessions employ an I-CASE tool without this large-screen projection facility; the scribe then builds the design in the tool as it evolves on the white boards and periodically prints parts of it.

Some primitive JAD workshops are conducted without automated tools. Experience has shown, however, that JAD produces far better designs when I-CASE and prototyping tools are used. The workshop should be linked tightly to the repository, using its information and building up design knowledge in it.

JAD techniques are particularly valuable for projects that span user organizations or for applications that affect multiple locations or disciplines. The workshops are useful for resolving operational, organizational or procedural differences: End users and managers in the workshop can confront each other under the guidance of a session leader trained in negotiating skills, and must agree to a design that both sides accept.

## The Benefits of JAD

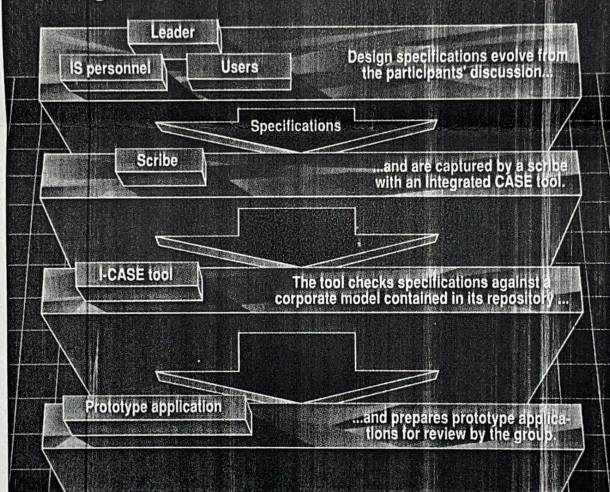
The design process can be much faster than the elapsed time with traditional IS analysis techniques. Any corporation organized to conduct JAD workshops can prepare for a workshop in about three weeks and complete the JAD in another two or three weeks.

JAD works because it harnesses the know-how of the users, cuts across organizational barriers and is an organized, controlled, structured process. Screen generators, report generators and rough prototypes make the design tangible, and designs in I-CASE tools are quickly implemented and easy to maintain. The I-CASE tools enforce rigor and ensure high quality, and the process directly addresses the strategic objectives of the organization.

Next week, I will discuss the critical functions performed by the JAD leader, an important new participant in the applications-development process. ■

## Sequence of Events In a Joint Application Design Workshop

*Integrated CASE Tools Boost Productivity of JAD*



John Avakian

## JAD attacks a common problem in applications development—the lack of effective communication between end users and information-systems professionals.

well. There are often one or more key people who are critical in creating the design and having it accepted. If these key players are not available, the workshop should not be run.

There should be at least one IS professional to build the prototype design using the I-CASE tool and to ensure that the design is technically sound. Part of this task is the building or extraction of the requisite normalized data model. Specialists in database design and other particular areas may attend the JAD sessions part-time to offer advice to the participants.

A critically important participant in the JAD process is the JAD leader. This

CASE tool. The scribe steadily adds detail to the design of the application as it emerges on the screen of the I-CASE tool, adding comments as needed. He or she should be skillful with the I-CASE tool used to build and edit the diagrams, create the design, extract repository information, build screen designs and reports and create prototypes.

The participants examine the screens that are painted, the sample reports generated, the screen dialogue and the structured design represented in decomposition diagrams, data-flow diagrams and action diagrams. Periodically, parts of the design are printed for the users to review or take with them in the eve-

The concepts embodied in RAD are described in a new volume in the James Martin Report Series. For more information on this volume, call (800) 242-1240. 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.