What is the Joint Application Development (JAD) Process?

By Joy Matthews, Vice President, Pierson Requirements Group, Inc.
jmatthews@piersonrequirementsgroup.com

JAD is an Important Technique for Software Development Requirements

An important aspect of the Agile/Iterative Development approach is the Joint Application Development (JAD) process. JAD is used as a technique for developing business system requirements. The purpose of JAD is to bring together IT and the business community in a structured workshop setting; to extract consensus based system requirements. This is accomplished by using a trained JAD facilitator and customized, planned agendas to assist the participants in arriving at complete, high quality requirements. Experience has shown that the JAD process substantially reduces development time, costs and errors.

JAD is typically used in the early stages of a project life cycle. This article shows how a project can be supported through Joint Application Development (JAD) workshops.

Agile/iterative development methodology includes JAD techniques for determining user requirements. These requirements are reflected in a set of products that are produced using Object Oriented Analysis and Design.

JAD Roles and Responsibilities

In addition to the project team roles and responsibilities, the JAD workshop requires defined roles and responsibilities to provide effective requirements Workshops. The JAD roles involved are:

**JAD Facilitator**- The workshop facilitator is an impartial guide. The job of the JAD facilitator is to structure the workshop so participants can describe their business, guide them through the agenda, and ensure that all parties are heard. The facilitator’s role is to facilitate the decision-making process by asking questions, seeking out ideas from all of the participants, ensuring that the discussion is focused and capturing sufficient amounts of information for documentation and review. The goal is to make sure that the participants are satisfied that they have reached wise decisions and have consensus.

**Documentor**- During the JAD Workshops, the Documentor are impartial assistants to the JAD Facilitator. The job of the Documentor is to capture notes about the discussion and...
design. The Documentor use personal computers to capture this information in an orderly fashion. They document only what the group decides. When using development tools, consider using one Documentor for notes and updating the prototypes and another to drive the development tool.

**Business Experts & Stakeholders**- All user participants are responsible for describing their business, as it should be in the future. User participants are the key contributors in the workshop. They ensure success or failure. The appropriate business people can design a high-quality system. There is no rank in the workshop.

**Technical Support**- Technical support participants are responsible for the technical design of the system. In the workshop the MIS participants should make sure that all appropriate questions are asked and answered completely. They should present new technology and capabilities of systems.

**Project Manager**- The project manager is responsible for delivering the system design. In addition, the project manager may make suggestions to assist the users or provide alternatives if cost considerations arise.

**Business Sponsor**- The business sponsor is usually the manager of the business area for which the system is being designed. The Business sponsor is the person who has set the purpose, scope, objectives and constraints which bound the project. The Business sponsor usually has the final word when policy decisions are to be made.

**Observers**- Observers are those interested in the JAD process or in the specific project. IT Project Team members should try to observe a JAD Workshop before attending the JAD Training. Observers will listen and watch but will not participate in the discussion.

**JAD Workshops**

To ensure the success of a JAD Workshop, the Sponsor, Project Manager and JAD Facilitator must work as a team to plan and prepare for the workshop.

The JAD Facilitator and Project Manager should conduct Business Sponsor and participant interviews and orientations. During the preparation phase you will also need to identify the management perspective document, determine the workshop deliverables with the project team, identify the participants for the requirements Workshops and uncover any potential workshop or project issues.

It is the job of the Project Manager, with support of the Sponsor, to ensure appropriate participation in a JAD Workshop. A JAD workshop cannot be effective unless the right
people are selected and willing to participate. This is true for both application developers and user participants. Some qualities of a JAD participant:

- An understanding of the current and future business needs
- A good level of business knowledge
- A commitment to designing a quality system
- The ability and authority to make decisions
- The ability to describe their business processes, needs and problems
- The ability to communicate
- The ability to function without rank
- An understanding of the opportunities available through automation

It is important to get representation across departments, cross-functional business areas or companies and make sure political factors are represented. It has been found that user-to-developer ratio is roughly 3:1.

It is important to remember that the JAD Project Plan does not replace the Project Manager’s Project Plan. The JAD Project Plan concentrates solely on those project deliverables that will be developed throughout the JAD process.

The JAD Facilitator will work with the Project Manager and Development Team to develop the JAD Project Plan for each project that requires more than one workshop. The purpose of this document is to provide a cohesive picture of how JAD will be used to reach the stated objectives. The important steps involved in preparing a JAD Project Plan are:

- Identification of the project deliverables and required checkpoints
- Organization of project deliverables by checkpoint
- Identification of key participants
- Definition of the workshops; scope, approach and length
- Determination of any required pre-JAD education or kick-off meetings
- Reviewing the flow of information to be produced and ordering the workshops appropriately
- Determination of the required preparation time
- Scheduling dates and location for the proposed workshops

Although dates are estimated for every JAD workshop at the time the JAD Project Plan is developed, each JAD Workshop date should be confirmed. This ensures project continuity, and gives all participants an idea of exactly how much time will be available for preparation.
Requirements Analysis JAD Workshops

The definition of an application’s business requirements is a repetitive process. The main purpose of the JAD Workshops is to describe what the business system should do and have the developers and the customers agree on what it should do. It documents the business activities and interfaces performed by the business using use cases.

Requirements Analysis JAD Workshops Activity Steps:

Build the High Level Activity Diagram

Develop the use case requirements for each use case:

- Define the purpose or description of each use case model.
- Describe the workflow steps and interaction of each use case model.

Using the Use Cases, identify the business objects and their relationships. (high level Domain Object Model) Identify the object relationships for each use case.

- Identify the “real world” objects.
- Identify the associations to the other objects.
- Identify the cardinality.
- List the attributes associated with each object (if necessary or unclear).

Build a glossary of definitions- actors, use cases and objects.

Detailed Requirements Focus Groups Activity Steps:

Agile/iterative development requires that further analysis be done on user requirements to support each incremental release. This requirement is addressed by having JAD like Workshops (Focus Groups) that build on the results of the Requirements Workshop. The purpose of these Focus Groups is to drill down the requirements into a technical design and document that design. These Focus Groups are made up of the Technical Project Team and the Client Rep.

Provide a detailed definition of the Use Case Models, create a narrative of the use cases, and document the design. Refine the prototypes as needed. Build the State Diagram or State Transition Diagrams for workflow that are more complicated and entity object life cycles (as needed).
Author Profile

Joy E. Matthews is the cofounder and Vice President of Training and Consulting Services for Pierson Requirements Group, Inc., which was founded in 1990. She is an Information Systems Specialist with expertise in implementing Agile/iterative Development and Joint Application Development using many development tools. She is accomplished in business modeling and facilitation techniques. She has participated in all phases of Information Engineering systems development and Total Quality Management projects. She has successfully completed Business Process Re-engineering, Information Strategy Planning, Business Area Analysis, Functional Area Analysis and Business System Design projects for a number of organizations and is a certified facilitator.

Joy trains the latest in UML and the use case methodology using JAD. She is an expert in JAD and UML best practices and industry standards. She is the co-author of Pierson’s repeatable development Methodology for Multi-Tier Architecture projects using Object-Oriented methods and JAD. Joy is the author of the JAD Facilitation Training and the Business Analyst Boot Camp. She is accomplished in Object-Oriented Requirements Analysis, Analysis and Detailed Design. She has facilitated and managed projects for all phases of the system development life cycle.


Additional Accomplishments-

- Member of the IIBA BABOK Review Board v2
- Speaker for Symposiums and Workshops at 2007-2010 - Project Summit – Business Analyst World Conferences in Washington, DC, Boston and Chicago. Topics include; Data Modeling for the BA, Facilitation Skills For Effective Group Dynamics, Evolution of Groups and Facilitation Styles.
- Past President of the Facilitator’s Roundtable in Boston, Massachusetts
- Published articles in PC Week and Computer World
- Interviewed by Computer World magazine on JAD
• Author of Pierson’s methodology and project life cycle which is currently utilized at the U.S. Department of Energy, M & T Bank, Staples, Hallmark and others
• Member of the IIBA, IAF, Agile Alliance and Data Management Group Hartford
• Interviewed and spoke on a corporate General Electric video with Jack Welsh. The purpose of the video was to communicate GE corporate strategies and visions.
• Speaker at General Electric Corporate IT Forum on Requirements Gathering Strategies