Business System Analysis Series

Performing Effective JAD (Joint Application Development) Sessions

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Effective Use of this Monograph

Recommended sections

This monograph is designed to help you. It is written with minimum reading time in mind. The following table points to the most effective use of your time.

Reader	Should read	To get
Manager	Sections 1 - 3, 8 - 12.	Quick overview
Facilitation team	Sections 1- 6, 9,12	How to do it information
Session participants	Sections 1 - 3 and session-specific pages of section 4	Details of JAD sessions and specifics on scheduling a session

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Overview

Purpose of this monograph

This monograph:

- defines JAD sessions that shorten delivery time for an information system
- illustrates suitable projects for JAD sessions
- identifies the benefits of accelerating system delivery
- describes an acceleration strategy for large projects
- suggests adaptations of JAD sessions for small projects
- offers recommendations for implementing acceleration techniques
- discusses the impact of acceleration on project management
- evaluates risks associated with acceleration and offers suggestions to mitigate those risks

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Audience

- anyone seeking to deliver high-quality information systems faster
- users of a methodology who wish to modify it to take full advantage of JAD sessions based on the original concepts of Joint Application Development (JAD) and Accelerated System Analysis Process (ASAP).

Prerequisite knowledge

Readers should understand the basic concepts of business system analysis, requirements definition, design and implementation.

Challenge

There are several challenges facing system developers:

- increasing cost
- less delivery time due to competition in the global marketplace
- competition for company resources
- project backlogs
- excessive maintenance costs
- ineffective communication between system developers and end users

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Promise

The effective use of JAD sessions directly addresses these challenges. By reducing the time to delivery of needed information systems *without sacrificing quality*, the Information Technology organization can:

- react to new business demands quickly
- avoid quick and dirty solutions
- reduce project backlogs
- reduce overall maintenance costs by delivering high-quality systems
- actively address the communication between system deliverers and end users
- improve the probability of a successful project regardless of development approach (structured, software engineering, iterative and incremental (aka: Agile), RUP, and others.

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1. Definition of terms

System delivery

System delivery encompasses all activities needed to develop, purchase, or modify an information system and enable its use by the business community.

Acceleration techniques

Acceleration techniques are a set of methods and tools for compressing the *duration* of system delivery, but not necessarily the *effort* required to get the job done.

JAD session

A JAD session is a scheduled, formal workshop to create deliverables to the desired level of completeness in the shortest reasonable time.

JAD session types and deliverables

Each JAD session has predefined deliverables, depending on the type of session being conducted. The deliverables are either working documents leading to a specified deliverable or the finished deliverable itself. The deliverables are the same ones created by the activities in a traditionally scheduled approach. The session generates working documents that stay part of the session documentation. Task lists and action items become part of the project for future use.

Session Type	Deliverables
Strategic information planning	High-level process and Entity/Relationship diagrams and matrices that identify duplication of function and data. The result can be used for planning, scoping and prioritizing IT projects using affinity analyses.
Rapid Initial Planning (RIP)	Rapid Initial Planning sessions are not in scope for this document. For specific information on RIP, request our monograph ***Rapid Initial Planning®, Accelerating Your Information Technology Projects.***
Data analysis	Detailed data models or Entity/Relationship (E/R) diagrams. E/R diagrams can span multiple applications and serve as detailed project scoping tools.
Business System Requirements (this is the most common session)	AS IS system process and data models with problem identification and analysis. The primary deliverable is a system-level requirements definition document.
System design	Alternative designs with detailed process and data models of the selected solution. The deliverables specify identified programs, procedures, and data structures.
System testing	Testing strategy, goals, tools, environment, plans, cases and scripts with conditions, input data, expected results and failure actions. These validate compliance with business requirements during development and after implementation system changes.

2. Benefits of accelerated system delivery

Overview

In today's fast-paced, global business climate, businesses need systems **now**. Accelerated system delivery produces higher quality systems and increases customer satisfaction in less time.

Benefits to the customer (end-user)

Effective acceleration allows the end-user the to:

- gain a true advantage over their competitors
- quickly determine the feasibility of a proposed solution
- make informed decisions on system implementation issues
- get the information systems they need in a shorter time
- understand the implications of decisions that the experts are asking them to make

Benefits to the Information Technology (IT) Organization

Workshops that accelerate system delivery will:

- reduce the amount of rework needed before the system goes into production
- deliver a higher quality product the first time (do it right vs. do it over)
- increase the overall productivity of the IT organization
- generate end-user and system documentation as a natural by-product of the work
- improve the relationship between IT and their customer community

3. The mechanics of JAD sessions

Overview

This section defines the basic session structure, critical success factors and participant roles and responsibilities.

JAD session structure

The basic structure of a JAD session is always the same. The activities fall into the following categories:

- Planning
- Arranging
- Performing
- Completing
- Evaluating

Planning	**Pre-session meeting: Determine feasibility and set session goals**	• 2 hours to one day duration
		• determine feasibility of conducting the session
		  o No; cancel the rest of the session. This is a positive result. There is no sense in conducting a session you know will fail; or in conducting a session for a project that should not happen.
		  o Yes;
		  ▪ identify potential participants and ask them to attend the rest of the meeting
		  ▪ educate everyone on the process
		  ▪ establish desired deliverables
		  ▪ set session dates
		  ▪ assign any pre-work

Arranging	**Interim I: Occurs between the pre-session and the session**	• arrange for session site • plan the session to the ½ day level • accumulate all pre-work • manage expectations of participants and management
Performing	**The working session**	• conduct the workshop • create and refine deliverables during the session • assign post session tasks
Completing	**Interim II:**	• distribute results quickly • evaluate concerns, suggestions and ideas • resolve open issues • monitor post-session tasks • update deliverables to reflect changes
Evaluating	**The post-session meeting**	• 2 hours to one day • 2 to 6 weeks after session • evaluate the accelerated process for effectiveness • modify the accelerated process for your environment

Continued on next page

3. The mechanics of JAD sessions, continued

Critical success factors

To be successful, JAD sessions must have the **right people** in the **right place** at the **right time**. Identify the right people prior to the working session. Understanding these critical components increases the probability of success with JAD sessions.

The right people

Information system projects require the interaction of individuals or groups who represent various domains of expertise. The facilitator ensures that people communicate effectively. The goal of the session is to use the correct people to obtain the desired result. Each participant has a specific role to play in this process.

Facilitator

The **session facilitator** is responsible for conducting a successful session. This individual:

- solicits the information required to create the deliverables from all participants
- ensures contribution from all participants based on their role
- coordinates the efforts of multiple groups in a session
- enforces the agenda and updates it as necessary
- maintains momentum throughout the session
- confirms the information captured by the session analyst
- applies appropriate methods and techniques to keep the participants moving forward without exhaustion
- manages side issues so they do not delay the session
- interacts with the session analyst

Session Analyst

The **session analyst** works behind the scenes and is responsible for the quality and accuracy of working and final deliverables. This person:

- interactively captures the session results in the appropriate automated tool
- evaluates the completeness and correctness of the deliverables
- notes any discrepancies, irregularities, omissions and errors for the facilitator
- prepares working copies of deliverables and distributes them in the session
- maintains rapid turn-around of the session deliverables
- assists the facilitator in any way necessary to ensure a successful session
- manages extra help in the support room if needed

Contributors

Contributors are people with specialized business knowledge, and the authority to make decisions. They are the customers of the process. They:

- deliver the business knowledge that the session is designed to capture
- explain what they are currently doing and what they need to do it better
- answer questions and validate assumptions concerning their needs
- reach consensus and *make decisions* based on options and possible solutions

continued on the next page

3. The mechanics of JAD sessions, continued

Experts

Experts are vendors, providers of services or technology to the contributors. They have technical expertise in the correct area. They are project leaders, business systems analysts, designers, developers, testers or *whatever the situation warrants.* This group:

- listens to the customers and ask questions designed to clarify what is said
- conveys information to help the customers understand technical information
- ensures that the produced deliverables form a solid, understandable basis from which they can continue to work after the session

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Advisors

Advisors have special knowledge, authority or interests that are not directly specific to the project being worked on, but important to projects that may have a relationship to this project. Prior to requesting an advisor, the group prepares a set of pertinent questions. Advisors:

- are usually part-time participants in a session on an as-needed basis
- are on-call with very short response time during the working session
- advise the group on topics specific to their area of expertise

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Observers

Observers may sit in on the session. It is possible to make up to 4 of these seats available. It is critical that the observers do not impact the work in progress. Observers:

- are there to listen only
- are interested in the acceleration process, not the project
- are potential candidates for leading or supporting JAD sessions

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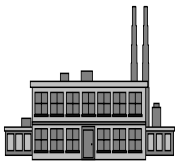
The right place



Appropriate facilities have a direct impact on the quality of the generated deliverables. .

The session room has to be available 24 hours a day and offer:

- a physical location away from the day-to-day workplace
- large working tables
- comfortable chairs
- walls for taping or pinning up results
- refreshments at all times
- windows
- no telephones in the room, cell phones off or silent
- standard presentation supplies and equipment
- a support room in close proximity with a suitable hardware and software configuration, 24 hour access and a high-speed copier.

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3. The mechanics of JAD sessions, continued

The right time

The key criteria in determining the right time are:

- tangible benefit for the early creation of required deliverables or early project completion
- management commitment and support for the project
- the right people can work exclusively on the project for the entire session.

These criteria can still be difficult to evaluate. These will help you identify the right time for a JAD session:

- you have a huge project and cannot get your hands around it all.
- you have to decide quickly which projects get resources
- you feel that you might have to skip important project activities or system functionalities to meet the deadline
- other projects depend on your project
- you can only meet the deadline if you compress the time for this project.
- you're having sleepless nights because you know there's no time to test--again.
- you can't start a new project until you're done revising the last one

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Guidelines for the working session

This process is time dependent, therefore:

- Be sure to initiate all deliverables. It is okay not to finish a deliverable, but critical that you start it.
- Manage group sessions to ensure topics are of concern to all participants. Use breakout sessions for topics specific to small groups of participants.
- Beware of overwhelming the session analyst (see Scheduling a JAD session, Section 9).
- Use Open Issues and Question Lists to hold issues and questions that cannot be resolved immediately in the session. Keep them on the wall in the session room to prevent non-productive discussions from reoccurring.

Scheduling tips

Good scheduling can increase your chances of success. The following tips can help.

- Sequence the activities to give the participants a change of mental pace. This can allow the group to work longer than normal and still be effective.
- Offset the working hours for the session analyst by 1 - 2 hours. This enables same-day turn-around of many deliverables.
- Plan the sequence of session activities carefully to allow the session analyst sufficient time to prepare the results and return them to the group.
- Break when the group shows exhaustion.
- Assign each break a specific length in time.

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4. JAD Session Specifics

Purpose The following pages provide detailed information about specific types of JAD sessions

Modify You can take the agenda examples and modify them for your particular session.

Strategic information planning	See page 11
Data analysis	See page 13
Business system requirements	See page 15
System design	See page 17
System testing	See page 19

4. JAD Session Specifics, continued

Accelerated Strategic Information Planning

Purpose To develop and maintain an organization-wide information system strategy based on current and evolving business goals and strategies.

Focus To define immediate and mid-term approaches for information system projects to optimally support the business as it evolves.

You will need:

Inputs	Business plan Corporate vision or philosophy AS IS Information System Documentation
Contributors	Senior Client Representatives, Information Technology management
Experts	*Data administrators*; Lead systems analysts, Project planners
Advisors	Executive management
Techniques	Problem definition, Problem/symptom reduction, Enterprise modeling, Data modeling, Process modeling, System usage matrices, Affinity analysis, *CRUD matrices
Tools	Data and/or process modeling, Spreadsheets, Word processors

Agenda

The following example depicts the sequence of activities during a typical 5 day session.

Time	Participant activities
Day 1, a.m.	• Introductions and agenda presentation • Assess and revise business goals and strategies
Day 1, p.m.	• Create high-level process model of business • Define business problems and opportunities
Day 2, a.m.	• Determine benefits of solving business problems • Create high-level data model of major business entities
Day 2, p.m.	• Explode process model down 1 level • Evaluate the impact of emerging technologies on each business area
Day 3, a.m.	• Validate data model and identify key attributes • Overlay organization chart on process model
Day 3, p.m.	• Define data entity ownership • Develop CRUD (Create, Retrieve, Update, Delete) matrix
Day 4, a.m.	• Define strategic information system initiatives in break-out sessions • Validate CRUD matrix
Day 4, p.m.	• Present proposed initiatives for group discussion • Evaluate potential project scopes based on affinities
Day 5, a.m.	• Define first-cut project scopes and initial estimates • Prioritize strategic projects
Day 5, p.m.	• Revisit open issues and questions lists • Assign post-session tasks and schedule post-session meeting

**CRUD = create, read, update, delete*

4. JAD Session Specifics, continued

Accelerated Strategic Information Planning, continued

Tips and Tricks

This session should be a recurring event. Conduct it annually and/or within the year whenever major changes in the business world (i.e., corporate buy-out, new executive management, etc.) endanger or invalidate the existing deliverables.

Warning

Do not waste the effort required to create a strategic information plan by not maintaining the deliverables to reflect completed work as well as externally mandated changes. The cost of the on-going update may easily exceed the cost of initial development, but the payback in terms of visibility, objective evaluation criteria and proactive project planning will be tremendous.

Output description

The deliverables of this session set the tone for all major information technology projects for the immediate (1 - 2 year) and mid-term (3 - 5 year) future. These documents are an objective set of criteria for the evaluation, planning, scheduling and resource allocation of all major IT projects.

Problem/opportunity statements define what the organization has to address.

Critical success factors identify information needs and systems that are critical for organizational success.

Strategic systems visions select information systems within the organization that enable or enhance a competitive advantage.

Technology architectures assess current and emerging hardware and software technologies that may impact the organization and require an appropriate strategy.

High-level data models present major entities, potential key attributes and the business relationships between entities.

Business class diagrams present major classes, significant attributes, key methods, and the critical associations between classes.

High-level process models are functions performed by the business with organizational units responsible for each identified process.

Affinity matrices relate data entities to business function, business function to IT systems, business function to organization chart, etc.

IT project lists identify scope and prioritize information system projects with *forecasts* of required effort and cost.

4. JAD Session Specifics, continued

Accelerated Data Analysis Program

Purpose Identify data entities, relationships and attributes including the appropriate characteristics without regard for their application usage. Optionally, create a corporate or application-spanning entity/relationship model.

Focus Identify and define the data needed to support the business. This data **does not include** data needed "because the database software or organizational structure, or legal constraints, or software package requires it. This is not the time to worry about data elements specific to the physical implementation of a given solution.

You will need:

Inputs	Existing reports, forms, screens, data structures, etc. Existing corporate or related data models
Contributors	Customer representatives, Systems analysts, Business analysts
Experts	*Data administrator;* Data analysts
Advisors	Data base administration
Techniques	Interviewing techniques, Data modeling, Data normalization
Tools	Data or Object modeling, Data dictionary, Word processor

Agenda

The following example depicts the sequence of activities during a typical 5 day session.	
Time	Participant activities
Day 1, a.m.	• Introductions and agenda presentation • Identify first level data entities
Day 1, p.m.	• Create intuitive data model • Define key attributes for entities
Day 2, a.m.	• Expand key attribute metadata • Select base data elements in existing outputs
Day 2, p.m.	• Resolve derivable data elements • Create expanded attribute definitions
Day 3, a.m.	• Normalize data from existing outputs • Expand on attribute metadata
Day 3, p.m.	• Evaluate data attribute orphan list and assign to entities • Initiate data attribute ownership determination
Day 4, a.m.	• Combine intuitive and normalized data models • Resolve model discrepancies
Day 4, p.m.	• Collect additional attribute definitions and metadata • Finalize data attribute ownership assignments
Day 5, a.m.	• Finalize combined data model • Validate data attribute synonym definitions
Day 5, p.m.	• Revisit open issues and questions lists • Assign post-session tasks and schedule post-session meeting

4. JAD Session Specifics, continued

Accelerated Data Analysis Program, continued

Tips and Tricks

A business data model (or entity/relationship diagram,) is relatively stable. Changes reflect business decisions in the real world, which is what the data represents. Physical data structures may change often.. Keep your logical model clean.

A one-week session for the creation of a preliminary entity/relationship diagram (ERD) suffices for a very limited scope. As a rule-of-thumb, the delivered model contains somewhere between 50 and 100 entities with the associated attributes and relationships. Depending on the size and complexity of the business involved, an enterprise-wide ERD can easily require 4 - 8 one-week sessions. In this case, plan a final, "consensus-building" session to iron out discrepancies between individual session deliverables.

Output description

The main tangible deliverable of this session is a data model. A major intangible deliverable is recognition of the limits that the current data structures place on the business's ability to react to changing conditions.

Detailed Entity-Relationship Diagrams depict the objects (entities) that describe the business world, the relationships between objects and their *primary key attribute(s)*.

Attributes are the data elements that describe the objects and/or allow for unique identification of an object.

Attribute characteristics is data about data. A data dictionary is a repository for:

- **Primary name** is the official designator for the attribute.
- **Synonyms** describe what other names different organizational units call this attribute.
- **Definitions are a** single, simple English sentence expressing what information the attribute contains.
- **Data rules** constrain the structure of information stored in the attribute, e.g., numeric/alpha, number of characters, storage type, etc.
- **Validity rules** constrict the values stored in the attribute.
- **Default values** are assigned in the absence of an explicit value.

4. JAD Session Specifics, continued

Accelerated Business System Requirements Process

Purpose

Understand the AS IS system, identify current problems, analyze the causes, determine benefits and define the business requirements and rules. One of the major type of requirements is business rules. There is a powerful argument that getting the business rules right is the most important and often biggest payback. Thus, an Accelerated Business Rules JAD makes a lot of sense. Such a JAD would closely follow the JAD session specifics for an Accelerated Business System Requirements JAD as discussed in this section.

Focus

Early project activities are often neglected in an effort to "save time". Based on experience, the time saved by skipping these activities usually leads to expensive rework or customer rejection once the system is delivered. Information gathered during this session can eliminate wasted effort in later project phases. The focus on the early project activities enables IT to deliver a quality business solution upon completion of the project.

You will need:

Inputs	Preliminary lists of problems, preliminary project scope, AS IS system documentation
Contributors	User manager, end users
Experts	Project leader, System Analysts/Designers
Advisors	Data administration, Auditor, Security
Techniques	Problem definition and reduction, Process and Data modeling, Scoping techniques, Cost/Benefit Analysis, Requirements definition, decomposition and prioritization techniques, Business rules identification and validation
Tools	Object. Process and/or Data Modeling, Requirements management systems, Word processors, Spreadsheets, Rules engines

Agenda

The following example depicts the sequence of activities during a typical 5 day session.

Time	Participant activities
Day 1, a.m.	• Introductions and agenda presentation • Create high-level AS IS system process model and scope project
Day 1, p.m.	• Expand process model in break-out groups • Collect, analyze and document problem statements
Day 2, a.m.	• Determine problem causes based on process models • Define benefits of solving problems
Day 2, p.m.	• Define project objective • Generate new system requirements
Day 3, a.m.	• Validate that requirements will solve the identified problems • Evaluate AS IS system for "Quick Fixes"
Day 3, p.m.	• Decompose and prioritize new system requirements • Create function statements for identified processes
Day 4, a.m.	• Validate functional and informational requirements • Initiate preliminary new system process model

Day 4, p.m.	• Expand preliminary new system process models • Populate data stores with required data elements
Day 5, a.m.	• Validate returned new system process model • Create first-cut data model for proposed system
Day 5, p.m.	• Revisit open issues and questions lists • Assign post-session tasks and schedule post-session meeting

Tips and Tricks

The contributors need to understand that the requirements and rules are from a business perspective. The experts need to understand the restrictions that the requirements place on a solution. Enabling and verifying the effective communication that achieves both of these goals is the absolute make-or-break facilitator skills required for this type of session.

A successful session may not always deliver a requirements definition document for an automated system. There are two reasons for this.

- The best solution may require business process reengineering or improvement. Process models to evaluate an AS IS system serve as a great baseline for modifying both manual and automated processes.
- Secondly, it is often better to cancel the session and possibly even the project if unsolvable problems are identified.

Output description

The primary output of an Accelerated Business System Requirements Process is a requirements definition document. Typical components are defined below.

A **synopsis** contains a short overview of the results of the entire session for management review.

The **objective** of the project relates this project to strategic organizational goals.

Problem statements define problems to be solved and the benefits of solving them.

Cross-references relate problems to symptoms and the validated requirements.

Current system process , use case and data models are overlaid with problem statements and project scope.

Quick Fixes are recommended short term, stopgap solutions based on the evaluation of the AS IS system.

B**usiness requirements** are validated, prioritized and broken down into functional, performance, constraining, informational and subjective requirements.

Business rules are identified, written using correct syntax and grammar, organized, and validated by the business

Open issues are unanswered questions and issues that must be resolved before continuing with the project.

A task list assigns tasks to be performed after the session to people with the authority to do them.

New System preliminary process and data models depict the new system (usually done in a separate Accelerated System Design Session).

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4. JAD Session Specifics, continued

Accelerated System Design Session

Purpose Finalize the logical design, identify physical constraints and trade-off factors, evaluate alternative solutions, select the best option and create detailed solution specifications.

Focus The decisions made during the design are generally made by experts based on their technical knowledge and the strategic technical direction of the organization. The impact that these technical decisions have on the business customers is not always visible. Customer satisfaction, especially over time, can only be achieved if they can understand how each technical decision constrains their future business decisions.

You will need

Inputs	Requirements definition document, design standards, existing data structures, strategic technical direction of the organization
Contributors	User manager, end users, systems analysts, project leader
Experts	Business analysts, system designers, developers, data base analysts
Advisors	Corporate security, auditors, data administration, IS operations, hardware and software experts(vendors)
Techniques	Business Process Engineering, Process modeling, Data design, Program Design and Specification, Work flow optimization
Tools	Process and Data Modeling, Physical Database, Programming, Spreadsheets, Word Processors

Agenda The following example depicts the sequence of activities during a typical 5 day session.

Time	Participant activities
Day 1, a.m.	• Introductions and agenda presentation • Walk-through logical design documentation
Day 1, p.m.	• Define physical design constraints • Identify discretionary design factors
Day 2, a.m.	• Expand new system process model to include functional controls • Define functional control data
Day 2, p.m.	• Finalize new system business data model • Balance new system process and data models
Day 3, a.m.	• Collect metadata for new attributes • Evaluate organizational standards and guidelines
Day 3, p.m.	• Correlate physical design constraints to logical models • Identify range of trade-off design decisions
Day 4, a.m.	• Evaluate impact of trade-off decisions on implementation • Select final physical design alternative
Day 4, p.m.	• Define functional and data components of selected design • Identify system-level control functions and data
Day 5, a.m.	• Initiate program/procedure detailed specifications • Define physical data structures (tables/records/files, etc.)
Day 5, p.m.	• Revisit open issues and questions lists • Assign post-session tasks and schedule post-session meeting

4. JAD Session Specifics, continued

Accelerated System Design Session, continued

Tips and tricks

The highly technical nature of some segments of a design session require several break-out sessions. During the break-out sessions, the experts can express themselves without burdening other non-technical participants. Bring the results of the break-out work back into the sessions and present it in a clean, concise manner.

Output description

The specific output will depend on the system being designed, but common deliverables include the following.

The new system physical data model is an entity/relationship diagram (ERD) combining logical and physical stored attributes of objects.

Module descriptions specify all required algorithms and control logic for each module of the system.

Procedure definitions specify procedures for use of the automated system.

A **new system physical process model** of the entire proposed system incorporates all manual and automated pieces. It includes the flow of information required for each system component to function correctly.

Physical data structures detail database records, tables, files, screens, reports and/or other physical data representations.

Physical data attributes capture the characteristics (data about data, see Accelerated Data Analysis Program for examples) for attributes required by physical design decisions.

4. JAD Session Specifics, continued

Accelerated Test Scripting Techniques

Purpose Define all testing components needed to assure that the delivered system functions in accordance with specifications and will meet customer needs.

Focus Testing is often sacrificed in order to "meet the deadline". The deliverables of this session enable:

- end-users to validate that the delivered solution is the *right system*
- developers to verify that the *system works right* (according to specifications)

You will need

Inputs	Requirements definition document, System design diagrams, Program specifications
Contributors	End-users, Project leader, Systems developers
Experts	*System testers*; Quality Assurance, Independent Verification and Validation (IV&V) team
Advisors	Auditors, Legal department
Techniques	Requirements validation, Equivalency grouping, Boundary value analysis, Error guessing, Black and White box testing, and Test data engineering Techniques
Tools	Word processors, spreadsheets, Process and Data Modeling, appropriate configuration-specific testing tools

Agenda The following example depicts the sequence of activities during a typical 5 day session.

Time	Participant activities
Day 1, a.m.	• Introductions and agenda presentation • Adapt test script template for project specifics
Day 1, p.m.	• Evaluate impact of failure to meet requirements • Identify and specify needed test cases
Day 2, a.m.	• Create requirements test case matrix • Determine acceptable module coverage levels
Day 2, p.m.	• Create program specification test case matrix • Define additional test cases
Day 3, a.m.	• Define equivalencies and probable errors in break-out sessions • Define criteria for test tools
Day 3, p.m.	• Document expected results in break-out sessions • Evaluate in-house expertise and availability of test tools
Day 4, a.m.	• Create preliminary project test plan • Optimize test case groupings for test runs
Day 4, p.m.	• Walk-through test scripts during break-out sessions • Determine resources needed for test execution
Day 5, a.m.	• Define test execution roles and responsibilities • Finalize working project test plan
Day 5, p.m.	• Revisit open issues and questions lists • Assign post-session tasks and schedule post-session meeting

4. JAD Session Specifics, continued

Accelerated Test Scripting Techniques, continued

Tips and Tricks

Once the new system is in production, the deliverables of this session expedite error finding and enable regression testing.

Keep the test environment in synch with any changes made in the production environment.

The cost of creating and maintaining a reliable test environment may be prohibitive for some systems. During the pre-session, compare the cost of system failure with the cost of sufficient testing and act accordingly.

Output description

The deliverables define all testing activities required to validate that the system works according to specifications and that the *business requirements* are met.

A **testing strategy** identifies testing goals, tools, and environment.

Risk analysis evaluates system components with categorization into components whose failure results in:

- external system influence
- system data corruption
- system failure without external impact
- and functional failure within the system

This categorization enables the establishment of required levels of statement and path coverage at the decision or condition level per component.

A **requirements validation matrix** cross-references identified test cases to functional, performance, constraints and informational requirements. Subjective requirements must be clarified to enable test case development.

The **system component impact matrix** identifies the modules exercised in each defined test case and helps to reduce the number of test cases required to achieve desired coverage levels

Unit, integration and system test plans identify milestones, test schedules, resource usage, dependencies and contingency plans.

Test runs optimize the sequence of test jobs. Typical groups are valid data, exception data, invalid data and missing data categories to isolate specific problem domains.

Test cases depict prerequisite test bed conditions, input data, expected results and failure actions. Specific input data is based on equivalency groupings and boundary values to minimize the number of test cases required. Test cases are defined for unit, integration, system and/or customer acceptance testing.

5. Project Evaluation Criteria

Decision guidelines

JAD sessions will make almost any project deliver sooner. The question is, "is it worthwhile?" Project indicators need to be evaluated to determine the suitability of accelerating the delivery process.

Evaluation criteria

Not every project is a good candidate for JAD sessions. Weigh the following factors seriously before committing time and energy to the wrong project.

Project indicators	Ideal Conditions
Benefits of acceleration	Benefits of acceleration can be quantified and the ROI is positive and achieved in an acceptable time period.
Commitment to project	Whoever has final make-or-break decision authority on the project is committed to completion. Ideally, this project is their highest priority.
Customers representation	Knowledgeable customers have time for the project. Few (i.e., less than 5) customer representatives have to reach consensus before a decision can be made
Deadline	A tight deadline is usually the major reason for considering acceleration. A JAD session can save enough time to make meeting the deadline possible.
Tools and techniques	Both the facilitation team and the people who would continue the project after a session are experienced users of all tools and techniques needed to deliver a solution.
Facilitation team	A people-oriented facilitator and task-oriented session analyst with a proven track record of successful sessions are available.
Willingness to work as a team	All parties involved in the project are or can become team players to the greater good of the project.

Disclaimer

Even a project that does not meet all of these criteria may effectively use JAD sessions. Such a project is higher risk and the risk management skills of the facilitator become more critical.

6. Selecting the Right JAD Session

Selection guidelines

Nearly every JAD session is more or less structured to meet the needs of a specific project. There are, however, usually dominant characteristics of the system to be delivered. These characteristics indicate a starting point for customizing the session that will be most effective.

System Criteria

The following table indicates the most likely JAD session based on dominant system characteristics.

Basic Session Type	For systems with these characteristic
Accelerated Data Analysis Program	• Decision support with ad hoc retrieval and analysis • Large, complex data base, many data elements
Accelerated Busines Systems Requirements Process	• Definable requirements • Embedded system with interfaces • Process oriented • Complex algorithms or extensive procedural logic • Business Process improvement
Accelerated System Design Session	• Strategic System • Isolated system
Accelerated Test Scripting Techniques	• Mission critical system • High cost of system failure
Accelerated Strategic Information Planning followed by additional, specific JAD sessions.	• Large project with possible components of all of the above

Multiple sessions

The preceding system characteristics may indicate more than one basic JAD session for a system. You have two approaches:

- all recommended sessions can be conducted at the appropriate points in time, if the project warrants it

  OR

- it is possible to combine activities out of the various session types into a single session if the scope of the project is sufficiently small.

7. Managing Projects That Use JAD Sessions

The management issue

Now that you know how to accelerate a project, the next issue is how to *manage* it. This section describes the special considerations involved in managing a project that uses JAD sessions.

The 5 categories of activities of JAD sessions were described in Section 3. The actual pre- and post-session meetings are the facilitator's job. There are, however, critical management tasks to consider during the following time frames:

- prior to Planning (pre-session meeting)
- during Arranging (between the pre-session and the session)
- during Performing (the main session)
- during Completing (between the main session and the post-session)
- after Evaluating (post-session meeting)

Prior to the Planning (pre-session meeting)

Identify an experienced session facilitator. Work closely with this individual to:

- evaluate the feasibility of a JAD session
- identify the key players for the pre-session (an org chart is a valuable tool here)
- schedule the pre-session
- communicate the purpose and goal of the pre-session to all involved parties

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During Arranging (between the pre-session and the session)

Like the calm before the storm, this phase is one of expectancy and growing anticipation. Be sure to:

- follow up on any assigned pre-work
- maintain realistic expectations concerning the results of the working session
- acquire access to the needed facilities and equipment

During Performer (the main session)

Let the facilitator run the session. Your role in the process is to:

- meet with the facilitation team at the end of each day to discuss progress, resolve any concerns and evaluate the next day's agenda
- stay in touch with the mood of the participants and pass any important observations on to the facilitator
- reevaluate your assumptions about the project daily

During Completing (between the main session and the post-session meeting)

Beware of the post-session letdown. Be sure to:

- re-estimate the project based on your new knowledge and modified assumptions
- track progress of unresolved issues and other assigned tasks
- monitor the timely distribution of the session deliverables to appropriate non-participants
- maintain the enthusiasm and momentum generated by the session
- schedule quality assurance reviews with non-participants
- keep all involved parties abreast of on-going developments

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7. Managing Projects That Use JAD Sessions, continued

After Evaluating (the post-session meeting)

It not over until it's over. There is still some unfinished business:

- evaluate the overall impact of the session on the project
- give the facilitation team any feedback that will help them improve
- prepare a management debriefing on the results
- determine whether any other activities on your project could benefit from accelerated techniques

8. Estimating the Impact of JAD Sessions

Overview

Accelerating the delivery of a system does not **directly** impact the *effort* required to deliver a quality product. It will reduce the *duration* of the project and increase the accuracy of the estimates. The difference can be impressive, but estimating is still a challenge.

Indirect impact on project effort

The activities of JAD sessions are essentially no different than those performed on a conventional project. There are, however, 2 ways in which the *amount of work* is indirectly reduced.

- The compression of many activities into a short time frame reduces the stop-and-go time loss that occurs in the conventional approach.
- Improved communication early in the process eliminates much of the wasteful rework required during later phases.

Estimating accuracy

Estimates made after a JAD session are more accurate (and usually larger) because these estimates are made with more information. Re-estimate the effort and duration for your project after the session and modify your project plan to reflect any changes.

Acceleration factor

Although, there is no universal constant that describes how much the duration of a project can be shortened, use of all the appropriate acceleration techniques can reduce project duration by up to 40%.

High impact

Projects which will experience a major reduction in the duration are projects that take too long because:

- people have to work on multiple projects concurrently
- coordinating schedules among all involved parties extends the duration
- there is insufficient definition of the expected results before the work is started
- communication within and between projects is not effective or nonexistent

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Low impact

Projects which will experience a less dramatic time savings with JAD sessions are those for which much time is consumed:

- getting budget and deliverables approved
- by constantly changing project priorities
- making changes due to a high turn-over of decision-makers
- reinventing the wheel for every project because there is no common approach

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8. Estimating the Impact of JAD Sessions, continued

Acceleration factor by system delivery phase

The type of JAD session dictates the phase within the system project where the impact will be experienced.

Session Type	System Delivery Phases					
	Define	**Design**	**Develop or Procure**	**Test**	**Install**	**Support**
Accelerated Strategic Information Planning	Moderate	Moderate				
Accelerated Data Analysis	Major	Major				
Accelerated Business System Requirements	Major	Major	Moderate	Moderate	Moderate	Moderate
Accelerated System Design		Major	Major	Moderate	Moderate	Major
Accelerated System Testing				Major	Moderate	Major

Span of impact by session type

The type of JAD session determines the span of the impact on your estimates. This table depicts which projects will be affected by each different session type.

Session type	Impacted projects
Accelerated Strategic Information Planning	All projects identified, scoped and prioritized during the session
Accelerated Data Analysis	All projects that interact with the defined data model
Accelerated Business System Requirements	A specific project
Accelerated System Design	A specific project
Accelerated System Testing	A specific project

9. Scheduling a JAD Session

Overview

Your system delivery life cycle indicates which type of session is appropriate. Refer to Section 4 of this paper for details on the deliverables of example sessions to select the appropriate type. Whatever type of a session you are scheduling, be sure to consider the following factors :

- are all key players available?
- will you have all pre-requisite deliverables in time?
- will a higher priority project interfere with participants during the session?
- how will acceleration of this project's deliverables impact related projects?
- can the project team carry the momentum of the JAD session onward to completion of the project?

Scheduling thoughts

The typical working session lasts between 2 and 10 days. For a session up to 5 days, ideally, there should be no interruptions. If the session takes longer, schedule 1 day for facilitation team regrouping work for each 3 - 4 workshop days. A timeline for a JAD session including recommended duration per stage is:

2hrs – 1 day	1 – 2 weeks	3 – 10 days	2 - 6 weeks	2 hrs – 1 day
Planning (Pre-session meeting)	Arranging	Performing	Completing	Evaluated

Many other scheduling arrangements are possible based on availability of team members.

JIT and JIC scheduling techniques

The process of delivering an information system can be viewed as a manufacturing process. There are 2 complimentary scheduling concepts that have proven themselves in the manufacturing industry and are very useful tools for IT projects.

- A JIT (Just In Time) approach recommends completion of any process as late in the cycle as possible to avoid tying up scarce resources needlessly and to limit the number of changes that will have to be made to the deliverable.
- JIC (Just In Case) scheduling mandates the start of a process early enough to assure completion without risking the deadline.

10. Tracking Progress Against Plan

Track by stages

The target of progress tracking will change during the stages of a JAD session.

- During the first interim, track the progress of assigned pre-work to assure completion prior to the working session.
- The agenda is the plan during the working session, so tracking consists of measuring timely completion of agenda points and revising the agenda based on on-going information and activities.
- During the second interim, track the completion of assigned post-session tasks, especially the resolution of open issues and questions.

Re-evaluate

The working session is a major project activity. Since it requires several scheduling and coordinating decisions, be especially sensitive to late completion of pre-work during the first interim. A single participant not completing their assignment can greatly deteriorate the potential for a successful session. Consider the impact on the session and prepare for contingencies to cover this scenario.

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11. Implementing JAD Sessions in an Organization

Implementation steps

A good facilitation team is essential to successfully implement JAD sessions within any organization. The following steps will get an in-house facilitation team up to speed quickly and set the stage for using JAD sessions. The steps are expanded after the table.

Step	Action
1	Build a facilitation team
2	Plan the first JAD session carefully
3	Monitor the session closely
4	Develop an on-going improvement program

Step 1: Build a facilitation team

A facilitation team needs experience, but they aren't born with it. The quickest way for candidates to get up to speed is to:

- observe one or more sessions facilitated by experts
- identify personal weaknesses and address them through training or survey instruments available from us
- conduct a first session together with an experienced facilitation team
- solicit and evaluate constructive criticism from all participants of the session

Step 2: Plan the first JAD session carefully

Plan the first session carefully. Choose a project that has high visibility. Use everything at your disposal to make sure this first session is a success. Communicate the desired results of the session and state upfront what will make this session a success. Use the "Risk and Remedies" section of this paper to evaluate what might possibly go wrong. Plan a course of action for each scenario. Manage any other risks you can identify. Use a team facilitation approach.

Step 3: Monitor the session critically

Have an experienced facilitator monitor the first session. If needed, the monitor can suggest a course of action to the facilitation team. Record everything in the session that can be improved upon. If the facilitation team is open to it, these can be discussed daily.

Step 4: Prepare an on-going improvement program

If your organization intends to use JAD sessions as a routine part of systems delivery, you may need several facilitation teams. Each team will need training and opportunity to perform a session. Build one good team first, and give them time to develop experience. They can then develop and mentor additional teams.

12. Acceleration Risks and Remedies

Overview

Acceleration is not without risks. Some of these risks are inherent to systems delivery, but increase with acceleration. This section describes these risks and their causes and offers remedies--management methods for reducing or eliminating them. A word of warning: *one unproductive session can spoil the usefulness of JAD sessions within an entire organization.*

Risks and remedies

Risk	Cause	Recommended actions
Sessions are non-productive meetings or debates.	Lack of technical expertise or people skills on the part of the facilitator	Get help from an internal or external consultant. If none are available, stop the session and rethink the approach.
Deliverables not available in time	Inadequate support equipment	Rent the necessary equipment, it's cheaper than a failed session.
	Inexperienced session analyst	Bring in an experienced session analyst immediately.
	Too much information produced	Plan over-time, schedule a facilitation team day or consider assigning 2 support people (with the necessary equipment).
Wrong decision-maker(s)	The person needed has conflicting priorities	Reschedule the session when the right decision-maker is available.
Group-think	Reaching consensus without considering all factors	Challenge any agreement reached without dissenting opinions. Evaluate the impact of the decisions on extreme situations or from a negative perspective. Play the devil's advocate.
Deliverables rejected by non-participants	Wrong people at session	Improve your participant selection process and ensure that validation of deliverables by non-participants is part of the Quality Assurance process.
	No communication between session participants and their peers	Present the deliverables of a JAD session in a formal presentation as opposed to simply distributing it through normal channels.
Deliverables are invalid or outdated	No follow-up, no finalization, and/or no on-going updates to the deliverables of a JAD session.	Schedule or repeat a post-session meeting with all participants. Re-evaluate the overall accelerated process, identify where problems occurred and how to avoid them in the future.

12. Acceleration Risks and Remedies, continued

Good news

We list these risks because we have, within our experience, met and resolved each of them. These are not all possible risks, but with over 300 successful sessions under our collective belt, we think these are the major threats.

Quality project and process management will enable your organization to take advantage of JAD sessions very quickly. Above all, the best selling point for JAD sessions in an organization is a high-profile, professional, productive first session.

Accelerated Business Requirements Gathering is one of a series of white papers published by the Requirements Solutions Group, LLC. This white paper is intended to complement our training in business system analysis and delivery. For more information concerning this training, our methodology, or our consulting services, contact:

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