



Portfolio-Engineering
the right projects, done right

Work Breakdown Structure (WBS) Technique

Detailing What Needs to be Done

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Work Breakdown Structure (WBS) Technique

Prerequisites

Portfolio-Engineering recommends reviewing the following materials before considering Initiating Processes Overview:

- Scope Planning, Scope Definition
- Breakdown Structure Technique



Work Breakdown Structure (WBS) Technique

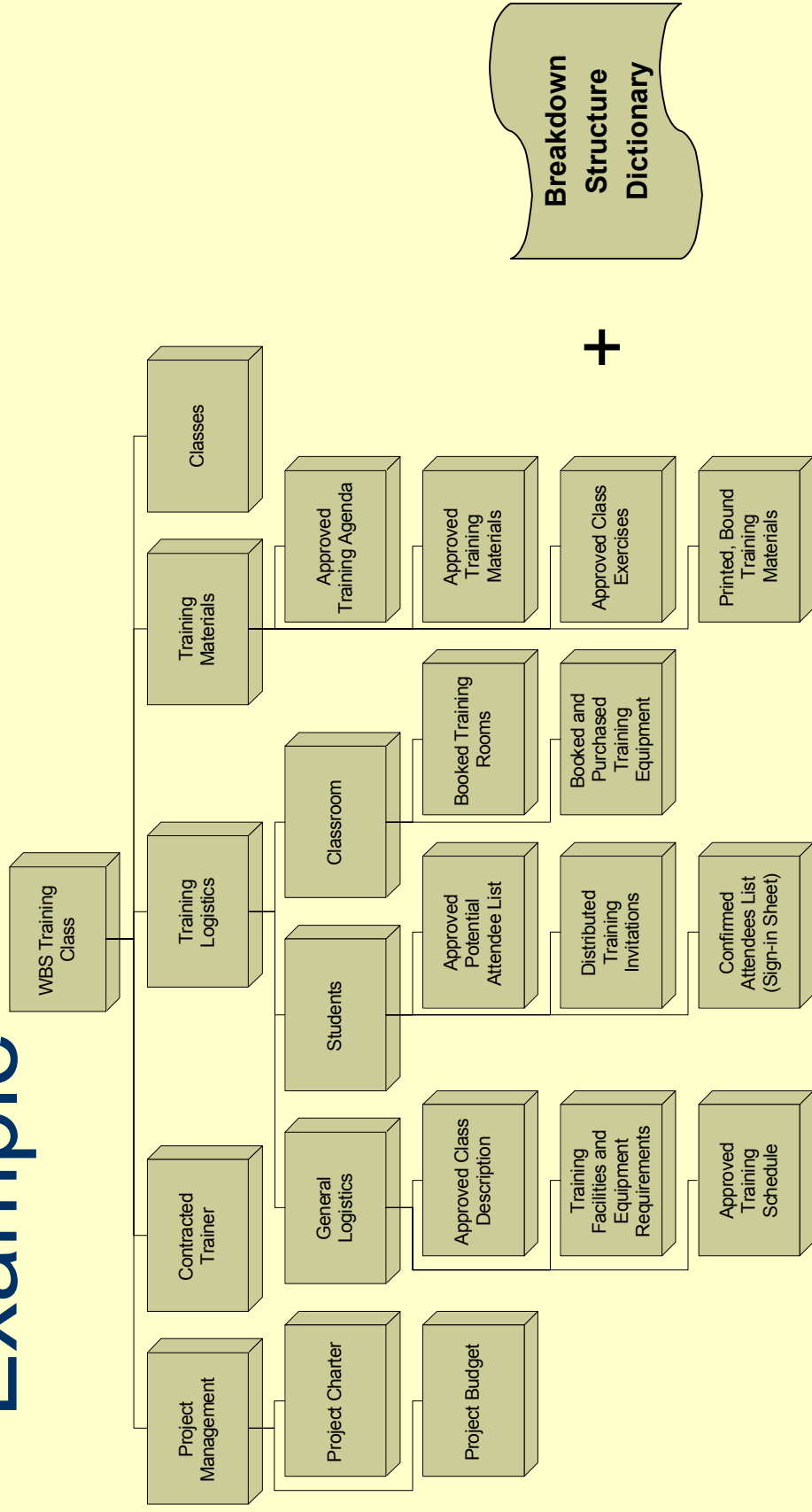
Work Breakdown Structure (WBS)

A deliverables-oriented graphical, hierarchical decomposition of the total project work allowing for clear and comprehensive grouping of the deliverables. WBS is used to plan in detail exactly what needs to be done by the project team through the defining and structuring of all of the deliverables needed to produce the project's end products or manage the project.



Work Breakdown Structure (WBS) Technique

Example



Work Breakdown Structure (WBS) Technique

Purpose of WBS

- The development of a WBS is an essential technique that is unique to project management. It is the technique to use when it is time to define the scope of the project.
- It is concerned with the what of the project, not the how, when, how much or who etc. Answers what is to be delivered?
- The resulting WBS is a simple, consistent way of graphically representing all of the work of the project in a single view.



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Purpose of WBS

- Well developed WBS forms the basis for all planning and will improve the accuracy of cost, duration and resource estimates.
- WBS defines a baseline for performance measurement and control.
- Used to verify that the objectives and requirements will be met by the planned deliverables.
- WBS is used to facilitate clear responsibility assignments.

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Without It

- Project costs run higher due to change and its disruption of the project rhythm
- Time is increased due to rework and lower productivity that come from working on an undetermined scope of work
- Morale is reduced because of change, rework and team members not being provided with the deliverables they require to do their job

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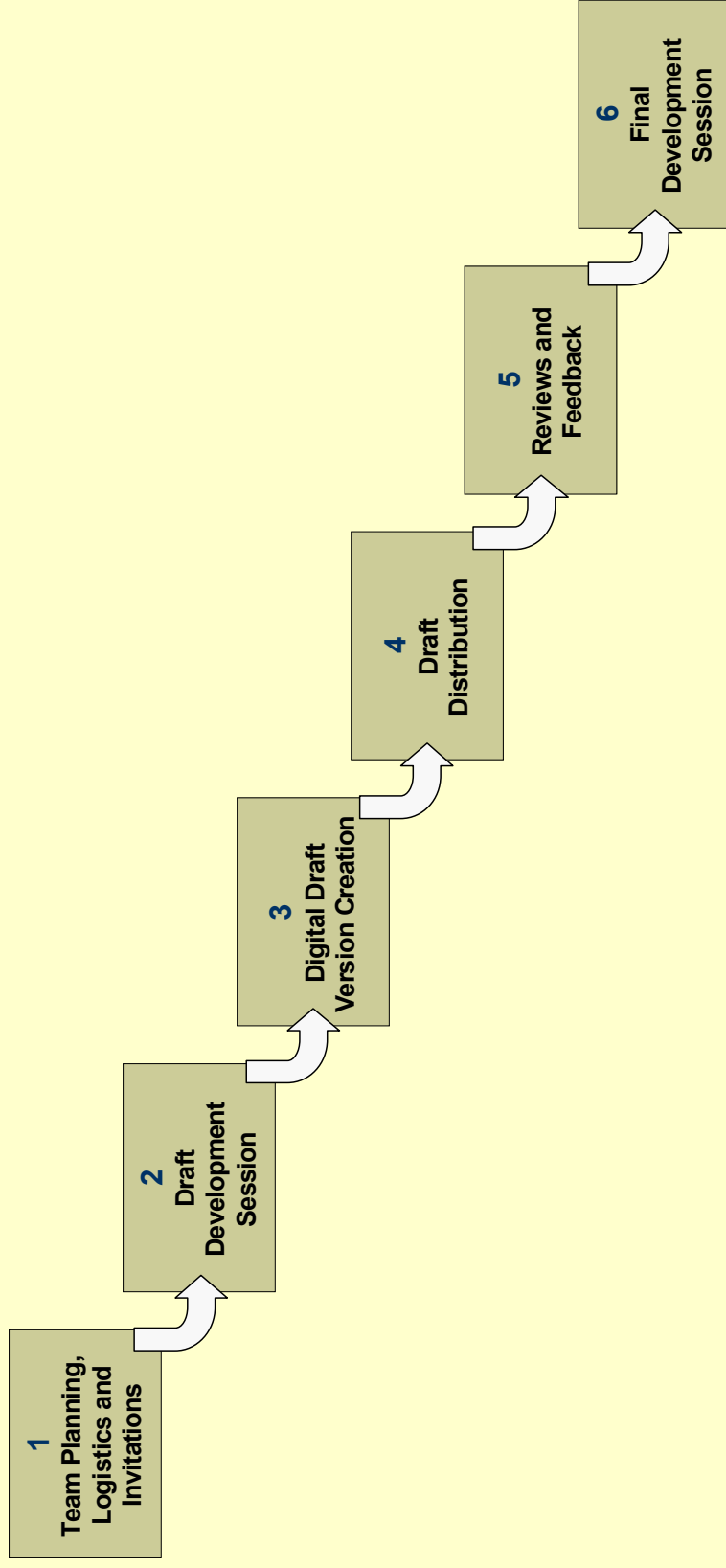
WBS Development

- Sets the team up for how they will work together through the detailed discussion of gets and gives.
- Encourages a rigorous discussion (and decision making) about exactly what work is included in and excluded from the project scope.



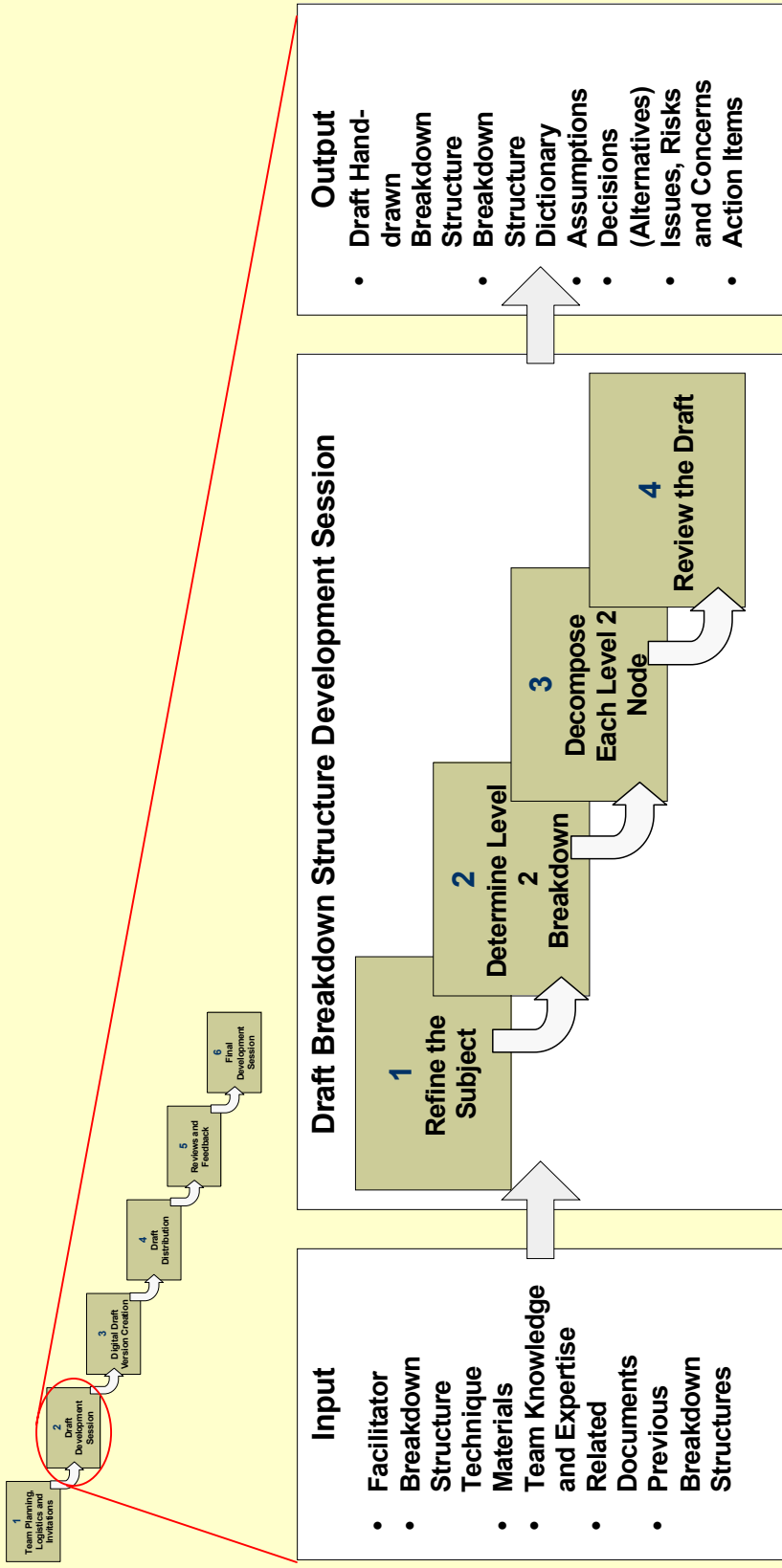
Work Breakdown Structure (WBS) Technique

WBS Development Process Overview



Work Breakdown Structure (WBS) Technique

Development Session Overview



Work Breakdown Structure (WBS) Technique

1 Refine the Subject

- For a WBS, there is only one root node.
- The root node is simply the project name.
- To prepare to create a WBS for the project, all meaningful project defining documents (such as the Charter, Statement of Work, Contact or Requirements) should have been distributed and reviewed prior to the session.



2 Determine Level 2 Breakdown

- Consider various logical ways to break the project into groups of deliverables
- Use previous WBS diagrams as a guide
- Use documents such as:
 - Development methodology
 - Organizational processes, procedures and policies (quality management, regulatory, financial controls, personnel administration etc.)
 - Requirements documents
 - Project charters
 - Contracts



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Common WBS Level 2 Approaches

- Project Phases, Delivery or Lifecycle (Time Based)
 - e.g. Phase One, Phase Two, Phase Three
- Project Management Phases (PMBOK, Time Based)
 - e.g. Initiating, Planning, Executing, Controlling, Closure
- Product Functions, Functional Breakdown
 - e.g. Website Splash Page, Customer Login Page, Product Catalog Page etc.
- Project Team Disciplines
 - e.g. Land Acquisition, Architecture, Permits, Construction etc.
- Project Development Lifecycle Phases (Time Based)
 - e.g. Requirements, Design, Construction, Testing

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3 Decompose Each Level 2 Node

- Where possible, use nouns for node names to describe deliverables or processes that must be created or executed by the project team.
- Avoid verbs as you are not yet planning how the work will be done, just what the deliverables, interim deliverables and work processes will be.
- Add qualitative and quantitative language to your node names. For instance, examples of descriptive node names include “Reviewed and Approved Requirements Document” and “200 Page Catalogue” .
- Add any required supporting details to the WBS Dictionary as you go



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WBS Nodes

- Do not include resource references
- Do not make references to time
- Are not sequenced in any particular order
(including time)



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4 Review the Draft

- Is every deliverable necessary and sufficient?
- Is there something that we have forgotten?
- Is the breakdown logical? Does it present the project complexity in an understandable and manageable form?
- Do the collective nodes of each level represent 100% of the project work?
- Have we been consistent to use nouns for all node labels?
- Are the deliverable names clear and meaningful?



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4 Review the Draft

- Will the deliverables meet the project:
 - Objective
 - Requirements
 - Charter
 - Contract
- Does the level of detail allow you to effectively manage the project?



Exercise

- As an exercise to practice WBS development, imagine that you have been asked to prepare for the wedding of John Smith and Joanne Jones. Create a WBS for the work of preparing for their wedding.
- Start your WBS by creating the level one root node with a label such as “Smith/Jones Wedding” .
- Consider a few approaches to your level 2 breakdown and add in the level 2 nodes for each approach.
- Take one or two of the level 2 nodes and decompose them further into level 3 deliverables.



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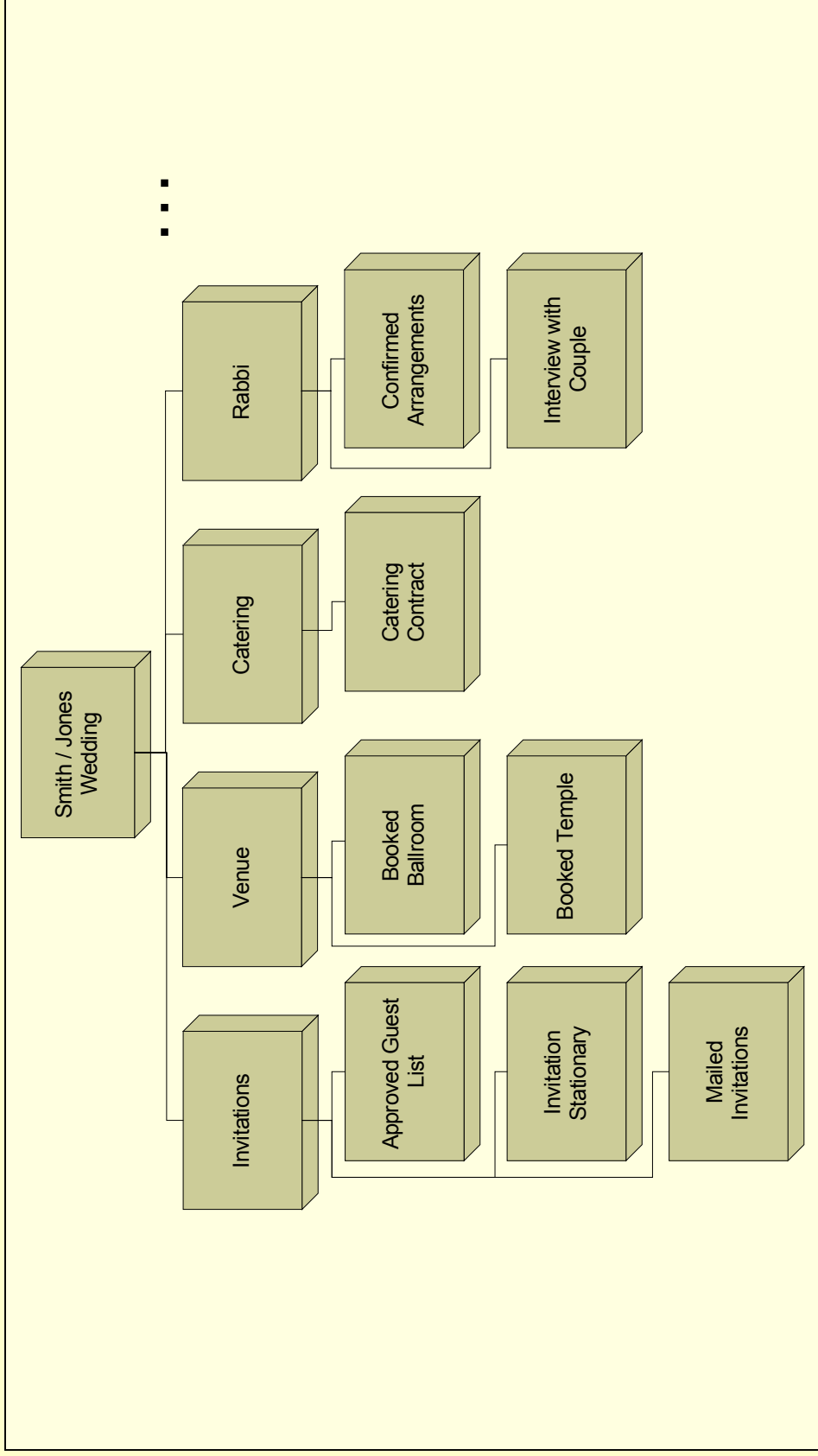
Exercise

- If you define any deliverables that may be vague (i.e. does “Invitation Selection” include placing the order?) add some supporting detail in your **WBS Dictionary**.
- You will have to make some assumptions about the wedding (i.e. you may assume that they wish to be wed in a synagogue). Record these in your **Assumptions Log**.
- You may have to analyze some alternatives and make some decisions. Record your decisions (and the alternatives that you considered) in your **Decisions Log**.
- If you uncover any issues, risks or concerns, make a note of these in your **Issues, Risks and Concerns Log**.
- You may need additional information in order to complete your WBS. Record these required actions in your **Action Item Log**.



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Possible Exercise Approaches



Possible Exercise Approaches

- **WBS Dictionary (snippet)**
 - Approved Guest List
 - Includes the preparation of a list of the wedding party, John's family and friends and Joanne's family and friends . Includes a formal sign-off from John, Joanne and their parents to ensure that nobody has been missed.
 - Invitation Stationary
 - Includes the stationary selection, ordering and receipt.

Possible Exercise Approaches

- **Assumptions Log (snippet)**
 - John and Joanne wish to be married by a rabbi in the synagogue close to their home.
 - John's divorce will be final by spring of this year.
 - The approved guest list will not include more than 500 names.
 - Invoices should be presented to John and Joanne for payment.



Possible Exercise Approaches

- **Decisions Log (snippet)**
 - A kosher seafood buffet has been selected for the wedding dinner. This was based on the bride and groom's preference and was verified to be acceptable to the budget and within the specialty of the facilities.
 - Chicken was considered by rejected by the bride as being too common.
 - A vegetarian feast was an option presented by the caterer but rejected by Joanne's mother – a meat lover.



Possible Exercise Approaches

- **Issues, Risks and Concerns Log (snippet)**
 - Issue: While a fall wedding has been requested, the synagogue is not yet accepting requests for the fall.
 - Risk: Early counts suggest that the approved guest list may come in over 500. The budget and facilities may not support a larger amount.
 - Concern: No particular color scheme has been established for the wedding.



Possible Exercise Approaches

- **Action Item Log (snippet)**
 - Secure a booking at the synagogue. Assigned to: Earl Johnson (wedding planner). Due: ASAP.
 - Choose a color scheme for the wedding. Assigned to: Joanne Jones. Due: Tuesday of next week.
 - Pay the wedding planners down payment. Assigned to: Mr. Jones. Due: Past due already.



Automating your WBS

- Once complete, your WBS is a rich and easy to refer to source of information about your project scope. Take the time to consider:
 - How to automate the WBS for easy printing, distribution, access and maintenance
 - How to include WBS information in your project schedule
 - How to keep the WBS up-to-date
 - How to use the WBS as a management and status reporting tool
- Some of these subjects are discussed in the Work Breakdown Structure Tools training deck.



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