Application & Website Development Services
Workflow Analysis Introduction

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Description

This guide introduces and will answer your questions about an important part of the requirements definition process: workflow analysis. Up and Running's goal is to prepare you to perform your own workflow analysis, a process that will improve the quality and completeness of the software system you currently envision.

What's the Purpose of a Workflow Analysis?

A workflow explains how things are done by a particular user, and is a way of communicating requirements. Software projects are complex activities, and one reason for this is because it takes several expert groups to do the work: the experts that do the work and the experts that write the software. We each speak our own languages (in fact, experts within each group often have their own dialect); workflows act as a translation mechanism to ensure we're communicating the same vision before any development begins.

Why is the Workflow Analysis so Important?

You know what you know, and that information needs to be communicated in a structured manner so your software system will do what you want it to do. Your work during this phase of the project will impact all of the downstream software project activities: design, programming, testing, training, and deployment.

How is the Workflow Analysis approached?

Let's approach this question a couple of ways: a) How will workflows be used in the requirements definition phase of this software project and b) How will each workflow be created?

■ **How will workflows be used in the requirements definition phase?**

At the highest level, it is preferred to see two sets of workflows: one set for the current system and one set for the ideal, new system. You may end up mimicking current processes in the new software, but at least you'll have thought about ways you might improve your business processes. (IT projects are often the means by which an organization restructures the way it does business.) Efficiencies are thus gained at least two ways: 1) the software itself theoretically solves problems and/or creates opportunity & 2) people analyze their work to define the best way to do things, and are forced to change by the controls that exist within the software.

  a. Please note that current workflows tend to explain HOW something is done as well as WHAT is done within the system.
  b. For Future workflows, you need only write WHAT needs to be done. The "HOW" is not important at this point; the goal is to define your users' requirements (WHAT users should be able to do), not your design requirements (HOW those users do each task).

■ **How will each workflow be created?**

You'll identify the major areas of work the software project will encompass and who will be involved in each process. You will want to address the workflow from the standpoint of each user. In terms of the level of detail, the answer to this question is the same as the answer to the question, how long should a bridge be? In this case, you want to communicate that which is essential so your new system workflows can be created, and those new system workflows should cover every possible situation. Try to make sure the flow is as complete as it needs to be so your software developer can write the programming code accordingly. Try to think of the odd scenarios and the complex things your users do; these are things that your software developer will likely not know.

How can we make this process an easier one?

■ **Think with a clean slate:**

A common mistake is to develop new workflows based on current deficiencies. Use this process as an opportunity to fix as many problems as possible, not recreate them. Identify what you are trying to accomplish and think of the best way to do it.

■ **Move forward:**

It's easy to start overanalyzing workflows and not move forward. Make sure you have a good facilitator that helps people get to a reasonable decision or flags items as follow-ups so that the discussion can progress.

■ **Start with content experts and then include others:**

It's easier to work in smaller teams. We recommend you have one or a few people create the initial set of current and future workflows, and present this to whomever you need for their opinion. Starting blank with a larger group could lead to a severe time increase.

What Software Should We Use?

A) Microsoft Visio is nice, but expensive. There are many other similar software packages out there that will work.
B) Microsoft Word is a possible solution.
C) yEd Graph Editor is a piece of freeware Up and Running recently tested. Here is one site that hosts it: http://www.tucows.com/preview/411263

May I see an Example Workflow?

Figure 1 below depicts a future workflow for a full administrative user. There are some points about this workflow that are worth mentioning:
1. Note the numbering scheme; it's a good idea to logically structure your scheme.
2. Note the title; it's fairly descriptive and oriented around a single task.
3. This is made for an administrative user. If any other type of user were to do this flow, we'd want to create a new workflow to communicate differences.

Figure 1 – Example Workflow
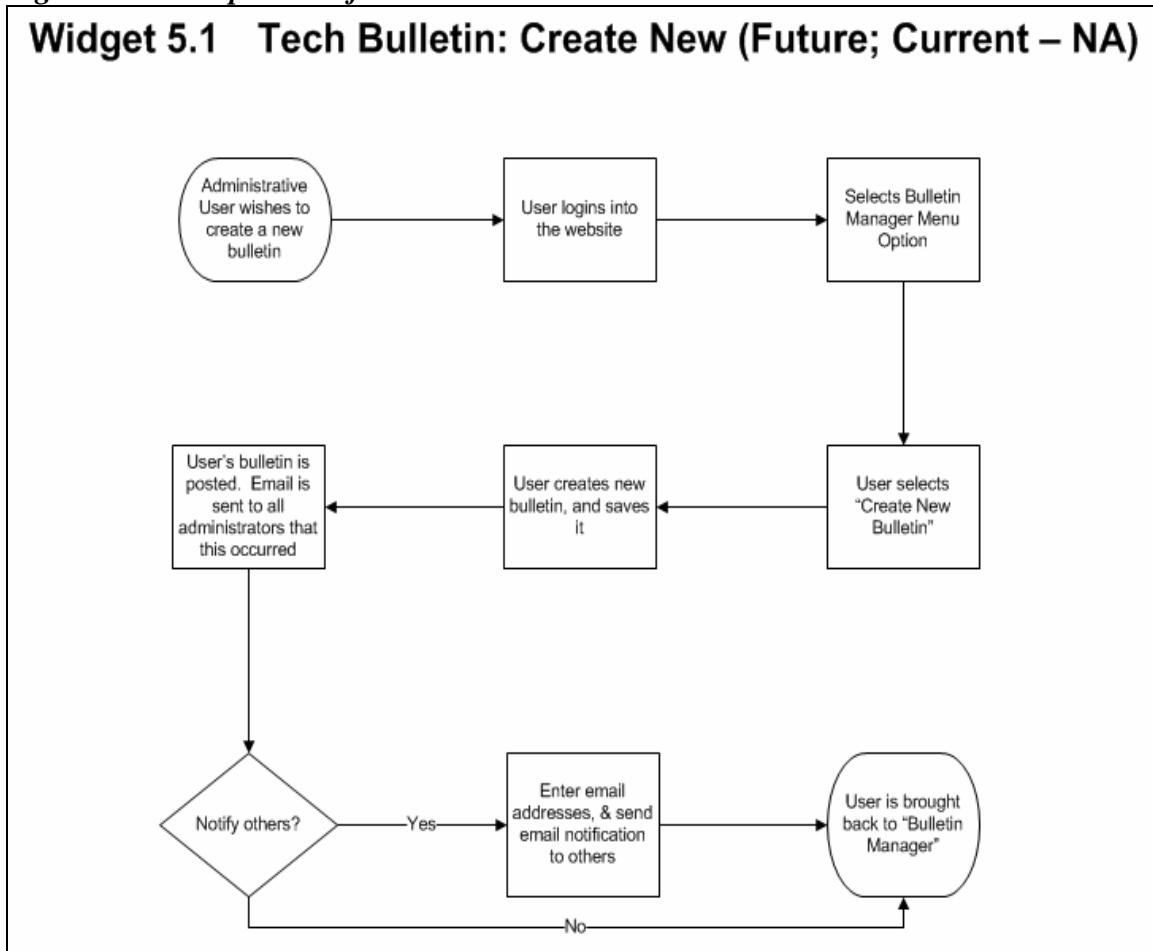
What Do the Shapes Signify?
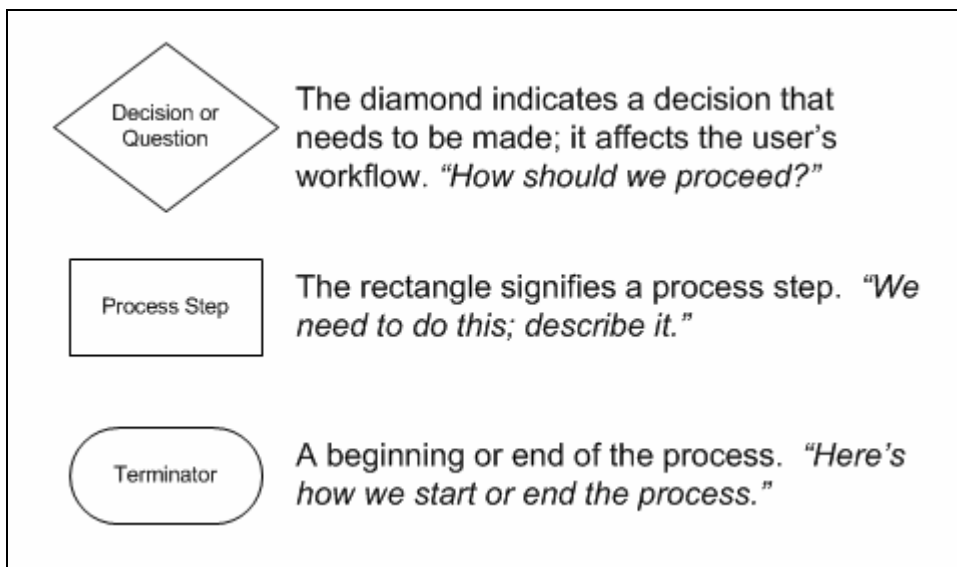
What Textual Information Should I Include?

At the most abstract level, anything that you think is helpful and relevant. Here are some specific items and formats you might consider using for this:

■ **Workflow Description and Accompanying Information**

Capturing this information by workflow is extremely helpful and recommended. An example[1]:

Workflow ID:	Widget 5.1
Workflow Name:	Tech Bulletin: Create New (Future; Current – NA)
Created By:	John Aho
Date Created:	July 7th, 2005
Actors:	Administrator
Description:	Administrator will receive prompt to update the Tech Bulletin (new manual arrives, typo was noticed, product was updated, etc), and will use the Widget Online System to communicate this to the web audience. Administrators will automatically be notified of such a change, and Administrator performing updates has option to notify specific customers if desired.
Preconditions:	NA.
Postconditions:	Tech Bulletin has been updated and Administrators notified of addition
Normal Flow:	5.1 Tech Bulletin: Create New 1. Administrator receives notification that a Tech Bulletin should be updated. 2. System invokes Authenticate User's Identity workflow. 3. User navigates to administrative features, and selects the "Bulletin Manager" menu option. 4. User clicks "Create New Bulletin", and system presents text fields for Bulletin creation. 5. User enters information, and saves bulletin. 6. System posts the bulletin, and notifies Full Administrators of activity. 7. User is presented with option by system to notify others of bulletin creation. User may select customers from the database or enter emails into a text field. 8. If option to notify by email used and emails are correct, system sends emails. 9. User is returned to Bulletin Manager.

Created By: John Aho	Last Updated By: Roy Utti
Date Created: July 7th, 2005	Date Last Updated: July 10th, 2005

■ **Cross-Reference User Types by Workflow**

This correlation of user types to workflows is helpful for the design of the system as well system testing and documentation.

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[1] Adapted from a Karl E. Wiegers' Use Case Example.

User Type	Workflow
Full Administrator	1. Workflow 1 2. Workflow 2 3. Workflow 3 4. Workflow 4 5. Workflow 5
Customer	6. Workflow 2 7. Workflow 5
View Only Administrator	8. Workflow 1 (view only) 9. Workflow 2 (view only) 10. Workflow 5 (view only)

What are our Immediate Next Steps?

Here's one way to approach your workflow analysis:

1. Define what you want in a system. This should include defining your users, the high-level processes/modules, and the sources of information (users and software systems).
2. Identify experts to create the first wave of current/future workflows.
3. Ask for feedback and help whenever you need or want it.
4. Review with anyone you think would be helpful.

What's Next after the Workflows are Completed?

Here are the phases we'll go through during a typical software project:

1. User and Workflow Requirements Definition:
   a. The initial meetings, emails, and conversations will help us define a high-level description of what you want in a software system
   b. Workflow Analysis
2. Design Requirements Definition:
   a. Up and Running will analyze your workflows and descriptions, and create design specifications
   b. Once the design requirements are defined, they will be discussed to ensure accuracy
   c. User interface mock-ups will be developed and presented to users (preferably all user types are represented)
   d. Iterations of a-c will be done until interfaces and design requirements are complete. Workflows will be updated with new information accordingly
3. Development:
   a. Database Design
   b. Foundational Code

       c.   Modular Code
4. Test & QA:
       a.   Developer Review
       b.   Project Manager Review
       c.   Customer Review: User Testing
5. Training & Documentation:
       a.   User Documentation
       b.   User Training Materials
       c.   Administrator Training
6. Deployment:
7. Support

Conclusion

We hope this has helped you understand the importance and approach of a workflow analysis. If you have questions or help requests, we hope you'll please call or email us at anytime.

Sincerely,

Up and Running

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"There is nothing as useless as doing efficiently that which should not be done at all."
Peter Drucker