

Custom Software Development Process

Explaining the Standards Behind the RFQ



We provide business-aligned technical consulting to ensure you make the right technology choices. Our niche is in developing and integrating unique software solutions and implementing clever techniques to improve business operations and boost your sales through technological efficiency. In projects that involve development of software products, we can provide three types of services:

1. **We act as or assist your IT group** to create a design specification that can be used as the backbone for a request for quotation. We can also then assist in locating, screening and helping select the best vendors to provide the development services.
2. **We act as or work with the project manager** during development of the product, holding vendors accountable for delivery, quality and cost targets.
3. Depending on the type of project (industry, technology platform and client type) **we develop the software** using our engineering staff.

We are very cautious with Type 3 because we only work with technology where we have extensive experience, the project is directionally aligned with our long term business goals and there is significant end user involvement during all phases of the project.

This paper is provided as a guideline for the minimum amount of documentation that must be provided before any type of quoting can be initiated. We are willing and able to quickly estimate at what something will cost, as long as we know these details.

Summary of the Minimum RFQ Requirements

The Process

What are you building, who is the audience, what is the objective?

Lines, Boxes and Walkthroughs

Overview of how things connect using simple graphics

Functional Spec

Nobody likes writing it, few read it, but it's still a requirement

Organizational Site Map

A wall of 3x5 index cards connected with colorful yarn

DB Structure

A basic data model with an ER diagram

Page/Report Mockups

Layout/module positions for what users will see (screen or on paper)

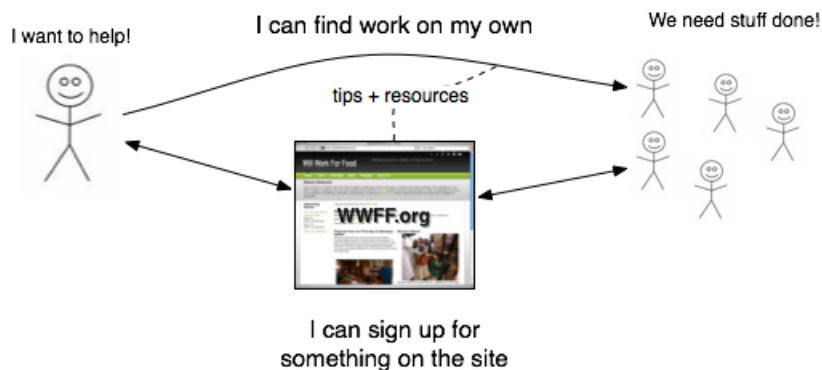
Technology Requirements

The Process

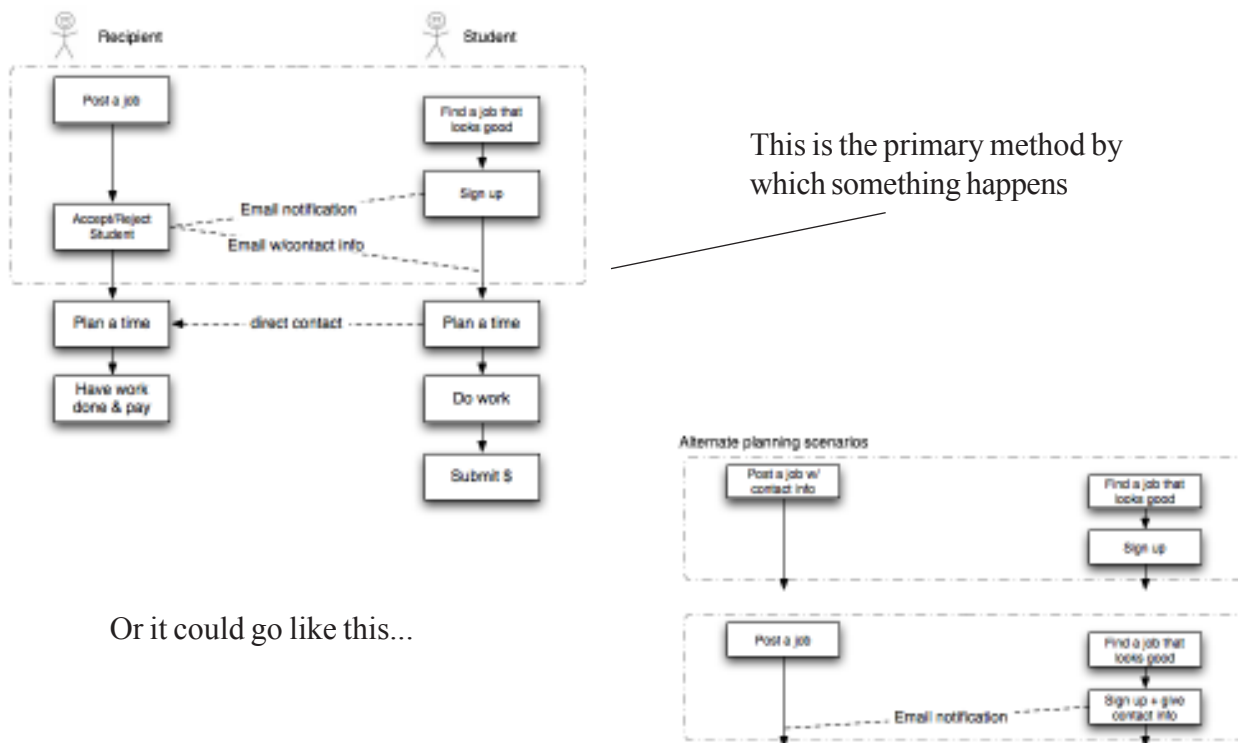
All software projects must begin with a manual process. What's the history, who are the users, what do the users look like, what they do now and how they will behave differently with the new software, and a description of what defines success. This is not a technical overview but rather something you might expect to get from the Marketing Group. Primary and secondary end user personas must be included.

Lines and Boxes

Simple sketches that people can visualize with few words. Think high level and try to convey each major section with only bullet points. Not rambling sentences, no paragraphs. Each section should tell the meaning in a glance. Here's an example:



If a function has two distinct parts to it, then put both of those on the same page so it's clear that the same topic can go in more than one direction:



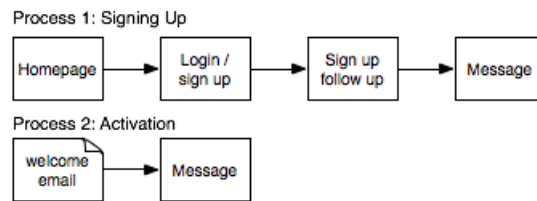
Or it could go like this...

Walkthroughs

Each user interaction needs to have a simple script showing the steps involved. e.g., If a user is expected to create an account, having one line that says “User logs into system” is not sufficient. Here is how you might document this instead:

Signing up and activating your account

The pages involved:



Keep in mind that each box must be connected to your site map and mockups, so in the above example, you could potentially need six screen shots. (so the more concise you are here, the less verbose you need to be later)

Functional Spec

Boring perhaps, not many will read it, but sorry, it must be done. We need to know Models, Controllers and Methods for the entire design. We suggest Ruby On Rails (rubyonrails.com) for this, but any development tool that generates something like the following is fine:

Models

- ▼ User
 - pending_participations
 - returns open jobs where user is a volunteer*
 - past_participations
 - return finished jobs where user is a volunteer*
 - pending_hostings
 - return open jobs where user is a host*
 - past_hostings
 - return finished jobs where user is a host*
 - favorite_locations
 - returns locations that user has used before*
 - networks
 - returns that user's networks*
 - organizations
 - returns all organizations user has dealt with before*
 - administrated_organizations
 - returns all organizations user has administrative access to*
 - can_administrate(organization_id)
 - returns true if user has access to that organization, false otherwise*
 - participation_with(job_id)
 - returns whether user is a participant, host, or sponsor of an event*
 - payments
 - returns all payments the user has made*
 - sponsorships

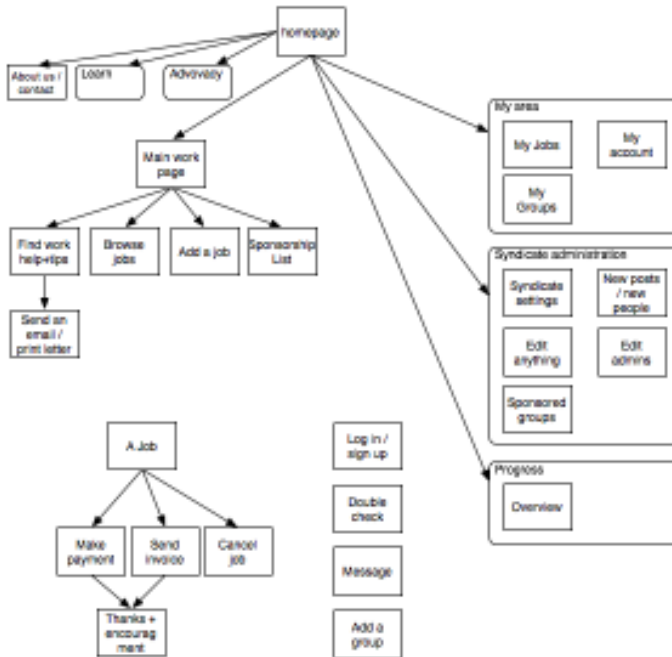
Controllers

- ▼ jobs
 - ▼ don't result in a view
 - add
 - makes a new job*
 - edit
 - edits the data, sends appropriate emails*
 - cancel
 - cancels the job, sends appropriate emails*
 - join
 - adds current user as a participant, emails host*
 - leave
 - removes current user as participant, emails host*
 - mark_as_done
 - marks job as done, sends appropriate emails*
 - invoice
 - sends the invoice email, updates last invoice date*
 - ▼ do result in a view
 - view (index)
 - displays the info page for a job*
 - list
 - the list for browsing open jobs*
 - tips
 - tips for finding work on your own*
 - invite
 - page to send an email or print letter asking someone to be a host*

The amount of time it takes to create a “decent” RFQ package, one sufficient enough on which vendors can accurately quote, takes a variable amount of time based on the size of the system. But, if you need to estimate, figure one hour for every \$1000 of budget, so a \$40K project would require ~40 hours of effort.

Organizational Site Map

This is what your site does, and what it contains. The best place to start this exercise is with a big empty wall with some 3x5 index cards, tape and some yarn. List all the content items you want your site to have. e.g., Home page, About Us, Contact Us, How to find us... Use one card for each page of your website.



Once you have your cards up there, attach the lines that connect them which indicate links. e.g., If you have five lines coming from the Home Page card, that means you'll have five links on that page.

When you're all done, grab a digital camera and take as many snaps as necessary to capture your creation for inclusion in the RFQ.

The next step is to build the data containers that will hold whatever information is expected to be stored or retrieved.

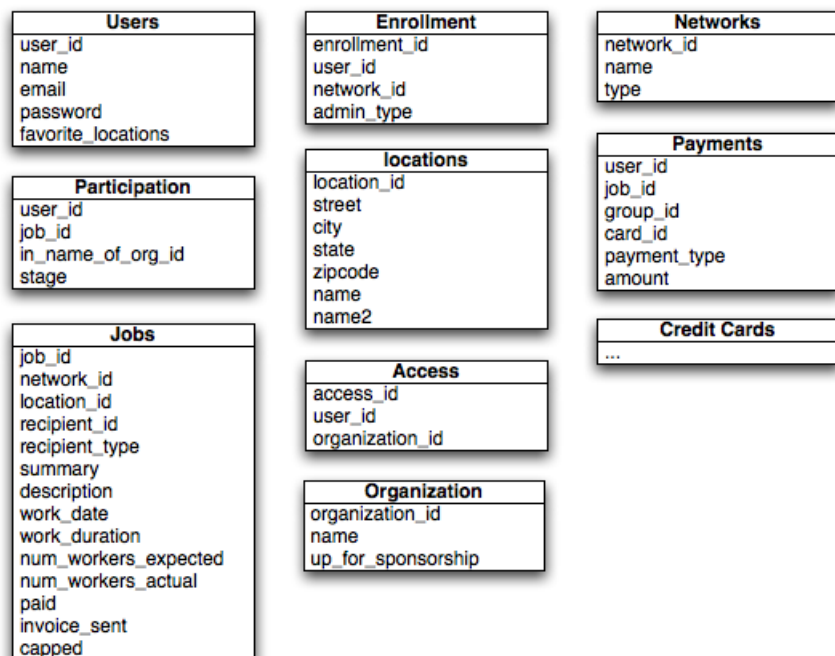
Database Structure

If you don't have a development tool for this, you can use the same exercise as indicated above. Find another empty wall, get some bigger index cards and list each of the major data items that need to be stored. After you've listed each, then record what they contain.

Does not need to show relationships or keys. Just make sure that you have listed everything that needs to be captured for each of the primary elements in your design.

e.g., If you are collecting information about a location, include street, city, zip. Don't just put a box that says Customer Location.

If you can supply an ER diagram, that's helpful too. Anything close is fine. Does not need to be a detailed ERD.



Page/Report Mockups





This is where you show us your GUI layout and connect it to your site map. This should not be something done by a marketing/graphic designer as that puts the cart on the wrong end of the horse. Function always comes before form, so here all we need is the basic arrangement of data, not color, not font, not feel. This is not about branding or creating an image; it's about function.

Navigation Menu

Work menu

- Find work yourself
 - Tips on how to do it
 - How to ask
- Browse posted opportunities

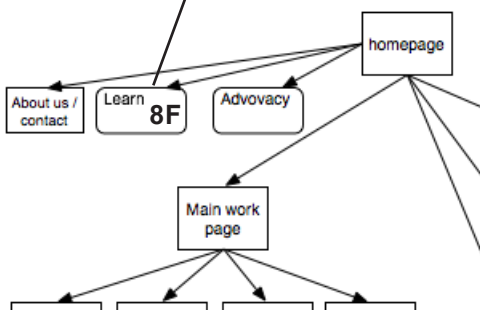
Did you do some work?
Let us know about it!

- 1. Find someone you know**
 [Some ideas on who to ask](#)
We have a template for an [email you can send](#), or a [paper letter](#) you can print out for them.
- 2. Schedule a time to work**
 [Review our work and safety tips.](#)
- 3. Do the work!**
 You can either collect the money then, or wait.
- 4. Report the work to us**
 If you collected the money, [submit it](#). Otherwise you can [send an invoice](#) and let them visit the site to pay.

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If you feel the need to use some clipart, that's fine, but this is about as fancy as it needs to be.

Identify each scene, so we can connect it back to your wall of 3x5 cards



If you like to sketch, doing mockups with pencil and paper is fine. Some of the best systems have been mocked-up on cocktail napkins during happy hour.

Technology Requirements

If you have an IT group and they have requirements that will govern any aspect of this, it's important to list those else you could end up with something horribly unacceptable. Servers, firewalls, types of PCs that will be used. We remember one project where an entire system was created but nobody realized that half of the users were running Macs -- and this was before browsers mitigated the platform issues.

If we have sufficiently confused you, that's fine as it may compel you to contact us, which is one of our objectives here. If not, then perhaps we have provided some help in getting your project off to a good start.