How to Hire a Consultant And Get What you Paid For

Key Questions about Hiring Help

- Should I hire help?
- Who do I hire?
- How do I define the job?
- How do I make sure I get what I paid for?

The RIGHT way to get Technical Help

The topic seems to be in every paper and every trade magazine.

Outsourcing – Jobs Moving Overseas
Outsourcing Explosion in India
How to Manage Culture in Department Relocation

Everyone is discussing the movement of technical jobs to other countries.

But there is another type of outsourcing – one that is less painful, less disruptive, and can be immediately helpful, without the huge planning and management overhead. We are talking about finding immediate help for short term development problems, and getting that help in your own backyard! Instead of long term planning, this type of outsourcing can usually be arranged in a few weeks. To coin a common phrase, "finding the right partner can be priceless".

For first-timers, it is often intimidating to hire technical experts to solve product development issues. Many important decisions need to be made :

Should I hire help?
Who do I hire?
How do I define the job?
How do I make sure I get what I paid for?

This paper will investigate these and other important questions in the next few pages. By the end of this paper, you will be equipped to handle a new consulting relationship like a pro. Even if you have been down this path before, there may be invaluable tips that will make your next encounter with a consultants much more productive.

Is it the Right Time for Outside Consultants?

The first important question is "Is now the time to outsource my project" ? According to recent surveys, the top reasons a company chooses to hire an outside consulting firm, besides cost are:
1) Competitive pressures
2) Service/Product Quality Improvement
3) Access to appropriately skilled personnel
4) Speed to market
5) Become current on Technology
6) Reduce risk by going to experts

When is Outsourcing the Right Solution ?

When new product or features are required, sometimes they are outside the area of expertise for the core development team at a company. In this case, it can be more efficient and cost effective to seek outside talent. Consultants can often get products completed faster and more reliably than the internal staff. If done correctly, they can also bring the new knowledge into the group for future use.

The following examples outline how outside consultants can be the answer to common development issues faced with in development organizations every day.

Problem: The project has an extremely tight timeline. This product must beat the competition to market.
Solution: Engage immediate "Technology Experts" as resources to meet the market window.

Problem: A project is demanding a skill set that is outside the expertise of the in house team, or requires a new technology you need to learn about.
Solution: Hire an expert in emerging technologies, and have them train the staff throughout the project.

Problem: The development team is busy with projects that current customers need, but are not critical to your future development plan.
Solution: Offload engineering tasks, and keep core team focused on top priorities.

Problem: Engineering work load is uneven, and sudden multiple demands require spike in staff.
Solution: Dynamically allocate resources throughout the engineering cycle by adding expertise during heavy development times.

Problem: Head count is frozen, but additional projects are clamoring for attention.
Solution: Increase engineering bandwidth without increasing long term overhead.

When NOT to Outsource

At times outsourcing is NOT the right solutions. Do not bring in an outside development team until you can tell them what it is to work on. You will be wasting your money if there is no clear product plan or requirements.

It is also very important that you understand the goal of the product under development. Unless there is a clearly defined market opportunity, it will be difficult to justify the cost of the development resources. The ROI must be understood to balance the economic value of development expense.

Bad idea to outsource if:
- No clear product requirements
- No clear customer market
- Not sure what features customer wants
- No clear ROI – can't justify cost

"Do not bring in an outside development team until you can tell them what it is to work on. You will be wasting your money!"

How to Use Outsource Resources

If it looks like technical resources **can help**, the next decision is how they might best compliment the current development team. Many companies have their own engineering staff, full of capable and competent professionals. Then a project comes up that causes a panic because it just cannot be done in the time frame required. Or there is a particular skill that is needed immediately, but not currently available in house.

Technical consultants can work either on an entire sub-unit of a project, or as a small team with defined requirements of their own. There are situations when a consultant might work as an individual contributor, to complete specific tasks within the larger organization. Finally, they may take on the entire project development, and provide all services required, including project management. Looking at the current bandwidth of the inside team, as well as their skill sets will help determine where consultants can add the most value. If it is important to have shared knowledge transfer to the internal members of your team, make sure to pair up internal and external resources on some tasks. This will make training and transition easier at the end of the project.

How to Find and Evaluate Outsourcing Firms

Once the project is clearly defined, and it seems appropriate to find outside development assistance, the next question is "who is best suited to do the work" ? Before beginning the search for the perfect service provider, you will need to determine what will make a "perfect" match.

Beginning the Search

Here are some questions to consider before beginning your search for the ideal service firm:

1. What expertise is required?
2. What industry or platform knowledge would be useful?
3. What is most important for deliverables?
4. Is location important?

Once these key items are defined, begin with a web search. Use the technologies required, and marry those terms with "consultant" or "engineer". Then refine to possibly add the location. Example search strings might include "embedded system programmer" or "device driver contractor". You might then narrow the search by industry or platform-specific terms. Once you locate some potential vendors, review their web site carefully.

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Reviewing Web Site

When reviewing a consultant web site, first look at the professionalism of the site. You are looking for a company that can convey expertise in an easy-to-read format. Then look for examples of their expertise. A well established company will have project examples and case studies that will demonstrate their previous work efforts.

After viewing the case studies on the web site, you may easily become comfortable that the industries and platforms experience matches your needs. In some instances, the company's engineers may have already written a similar device driver, worked with the same platform,

or created an equivalent application. If you find a project solving a similar problem, even if it is in a different industry, you can feel confident calling to set up an initial consultation.

A final item to consider is the style of the web site. You can often get a feeling for the work style and

ethics of a company by the way a web site is designed. When working with another firm, it is obviously easier to work with a company that is customer focused, open and inviting. You want someone easy to contact, responsive to your requests, informative, and helpful.

"First look at the professionalism of the site. Then look for examples of the company's expertise."

What to Expect
Making the First Contact

The next step is more difficult ; picking up the phone and contacting the prospective consulting company. Many are intimidated with this step because they don't know what to expect. People are not sure they have enough information to call, or if they will be able to evaluate clearly if there is a good match.

It helps to have an idea of what to expect during the initial call, and have planned goals of what to accomplish.

First, remember that YOU are on the interviewing side of the negotiation. YOU have to like what you hear. If there is no connection, move on to explore another company.

Second, be prepared with a brief description of your needs, technology required, resource needed, and time frames. This will lay out your requirements.

Third, prepare your list of questions to ask, which will help evaluate if the company can meet your needs.

Questions to Ask

The purpose of the initial call is to determine if the consulting company has the skills and the resources to help you in the current situation. You will not need to provide a full list of requirement at this point, but you should be able to summarize your situation and your needs in a few paragraphs.

Then you can start asking about similar experiences that may be useful. You can ask about specific similar projects you read about on the web site, or ask them to describe similar development activities. Other questions you may have handy to ask include:

Questions (Continued)

Skills Match and Availability
1. What makes your company the best fit for us to hire?
2. Tell me about other similar projects? How did they go?
3. When would you have resources to begin this project?
4. What are your deliverables?
5. What information will you need from me in order to create a proposal?

Reliability
1. What development methods do you use?
2. How do you keep on track through the project?
3. Would you keep me informed?
4. Do you have references I can call?
5. What kind of support do you provide after product delivery?

Request a Proposal

If the conversation is going well, you will not only feel comfortable with the skills of the company, you will also feel comfortable with the personal interaction. You may be ready to ask for a Proposal or Quote. By asking *"What information will you need from me to create a proposal?"*, you will know the level of detail and effort the company will put into giving you a customized solution. The last thing you want to hear is – "I'll send something out today". Getting a quick proposal that is not tailored to your particular needs is useless. In most situations, you will be asked to provide a **Requirements Document** or **Product Description** of some sort.

Three Types of Proposals

There are typically three ways that a proposal can be structured:
Project Bid, **Time-and-Materials**, and a **Hybrid Solution**.

A **Project Bid** is the most defined, and has the least risk of cost and deadline overruns because the consultant is taking on the guarantee of delivery. This type of proposal will only work if the project requirements are well defined from the beginning. The **Project Bid** proposal gives a fixed cost for the work. Typically, invoicing occurs with major milestone delivery. It sets the exact expectations for all parties from the start, thus benefiting everyone.

Time and Material is the least defined proposal type, but sometimes needed if the requirements are not concrete. It may be that experienced engineers are needed to research available hardware and define platform requirements. Or the feature list is longer than the budget allows, so the first effort is to estimate and prune the list.
If the project needs are expected to be open-ended, and the project definition is likely to be in flux for the duration, then a **Time and Material** arrangement is the only way to go. The consultant will agree to an hourly price, with weekly accountability. They will work on given tasks for as long as you need assistance, and you can pay for services as you go.

The **Hybrid Solution** is a combination of a **Project Bid** and **Time and Materials**. This model works well if the requirements are in flux, or some research is required to finalize a few items, but the answers will lock in future development. Eventually, the architecture will be signed off and everyone will follow a well-defined set of require-ments. If this sounds like your situation, the consulting team will help with the first steps,(the Architecture and Project Plan) on an hourly basis. When all the details are worked out (usually a few weeks), they can put together a fixed-price project plan for the implementation, testing and release.

Three typical types of proposals are :

- *Project Bid*
- *Time-and-Materials*
- *Hybrid Solution*

How to Evaluate a Proposal

Make sure that the proposal includes these basic elements:
1. All Deliverables included
    a. Architecture and Design Documents
    b. Source Code with Comments
    c. Test Plans with Results
    d. Project Schedule for Tracking status
2. List of assumptions
3. Milestones and timelines
4. Cost breakdown for deliverables
5. Payment schedule
6. Support and Warranty Information
7. Responsibilities of both parties for deliverables
8. Transition and Training
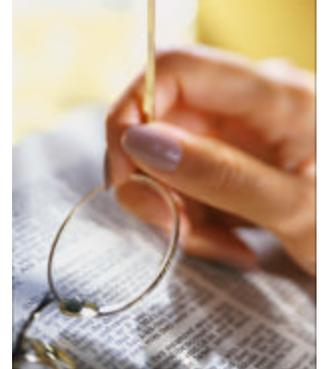
Risk Factors

According to a survey of large corporations who outsource development, here are the key risk factors they worry about:
1. Service Quality
2. Cultural Fit
3. Loss of Control
4. Security and Support

When evaluating the Consulting Company and its proposal, keep these items in mind. A well structured proposal can help alleviate the most common project risks.

Service Quality – Make sure that there are points where your staff is reviewing deliverables ensuring the project is on the right track. These reviews should be early and often.

Cultural Fit – Make sure to ask about the engineering resources that will be on the project, and try to talk to people outside of the sales organization. Ultimately, you will be dealing with developers. Ask to meet and talk with them before signing any proposal.
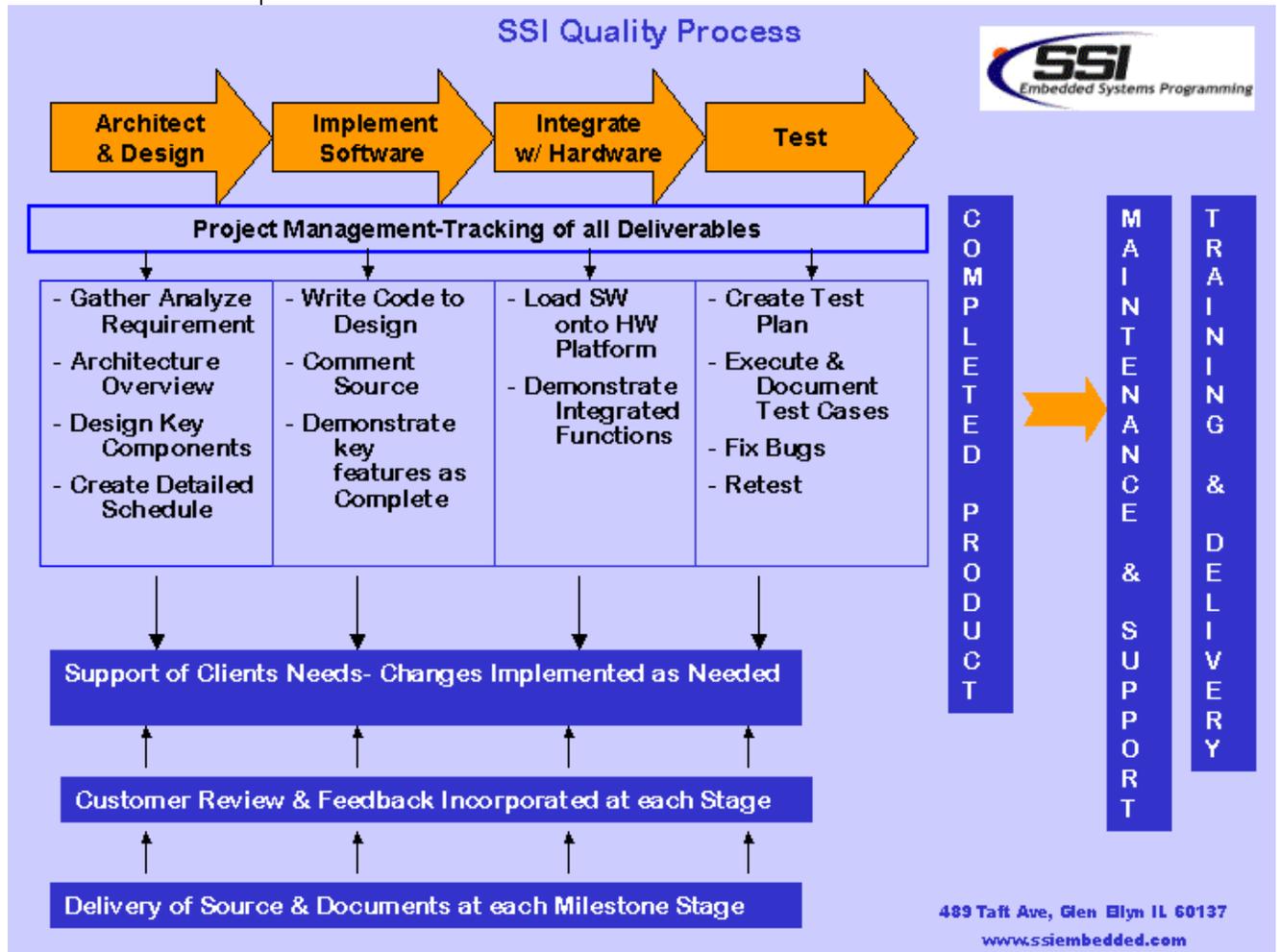
Loss of Control – Make sure you are given at least bi-weekly status updates. This should include both a project schedule and a verbal conversation to discuss any questions or issues. Ask for the schedule to include frequent demonstrations.

Security and Support – Make sure that the proposal is clear on the transition issues. Also make sure you will receive full documentation and source code delivery. How are you going to get support after delivery? What kind of training can you expect?

"A well structured proposal can help alleviate the most common project risks."

What to Expect—Implementation

All contract firms are different; they each have a customized style and process for approaching a new development project. Quality development standards suggest there are certain elements that should always be included to ensure quality deliverables. Below is a diagram of development steps followed at *SSI Embedded Systems Programming*. Our experience with the quality processes of our clients such as Lucent and Motorola have instilled in our team a focus on hi-quality deliverables.

SSI Quality Process

Architect & Design	Implement Software	Integrate w/ Hardware	Test

Project Management-Tracking of all Deliverables

- Gather Analyze Requirement - Architecture Overview - Design Key Components - Create Detailed Schedule	- Write Code to Design - Comment Source - Demonstrate key features as Complete	- Load SW onto HW Platform - Demonstrate Integrated Functions	- Create Test Plan - Execute & Document Test Cases - Fix Bugs - Retest

COMPLETED PRODUCT → MAINTENANCE & SUPPORT TRAINING & DELIVERY

Support of Clients Needs- Changes Implemented as Needed

Customer Review & Feedback Incorporated at each Stage

Delivery of Source & Documents at each Milestone Stage

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The SSI quality process demonstrates our focus on the customer with every step of development. By providing constant project status through our milestone tracking, the customer knows where the project stands at each step. Also, all projects have built in demonstration milestones. Where the customer can see work completed at each stage. This allows for near continual feedback to ensure that things are on the right track. Finally, code and documents produced at each stage are delivered to the client so they may always have a copy of the most recent work.

Product Delivery and Support

The final stage is Delivery and Support. The product is complete. Because of the quality process and constant feedback loops, the results are exactly what were expected. You are anxious to show the results to your customers. But, what if something breaks? Or your customer wants a modification or enhancement? Or you determine there are issues after prolonged use? What are the options now?

Common warranty clauses will include some period of on going support services. This support should include questions and bug fixes. If a longer support period is needed, ask about extended support.
Most consulting companies will include a section in the proposal to cover warranty parameters. Pay close attention before signing to ensure that it meets your specific needs.

How to Keep In Control of the Process

In order to ensure that the project is proceeding according to plan, it is important to have one contact person within the client company who is responsible for overseeing the development effort. This person should review all project schedules. They should request and review a schedule update every 2-3 weeks to make sure items are on track. The schedule should include frequent milestones that are definite demonstrate-able deliverables. Everyone can then view what has been completed so far. The company should also have a sign-off process. When something is demonstrated, everyone is clear that it matches the requirements. Finally, if things are not clear, do not be afraid to ask questions.

Keep Project On Track
- Have detailed schedule
- Get status updates every 2-3 weeks
- Have defined milestones
- Have people verifying milestones match requirements
- Ask questions if things are not clear

SSI Embedded Systems Programming has been assisting Chicago area hi-tech companies in getting their products to market since 1992. Our team's years of experience in developing hardware-based real-time products, rapid prototypes and platform porting in a variety of industries including automotive, communications, consumer electronics, machine to machine systems, sensors and appliances. SSI has aided customers in getting hundreds of products to market in a timely and cost effective manner. Our staff is friendly and easy to talk to. Just give us a call to see if we have the skills you need. We can even assist you with a free proposal.