

General Guide to Contracting/Consultation

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1 Purpose of this Document

This document explains how Dr. Tak understands contracting and expects his (potential) contracting clients to understand. This document, by no means, is intended as an advertisement for Dr. Tak's consulting service.

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2 What is Contracting/Consultation?

If you are reading this, you probably already know what contracting is. Contracting (consultation) is the act of establishing a contract between multiple (usually two) parties. The contract states what work should be done and what compensation is to be provided in what manner.

Although there are contracts between literally any two parties that are related, such as between a customer and a bank, contracting in this sense refer to the narrower scope of getting technical work done by an entity external to the organization that needs to have the work done. For the purpose of discussion, we refer to the organization that needs to get the work done the "client" and the entity to get the work done the "contractor".

3 Is Contracting Right for You and Your Project?

Contracting is a good option when there is a short-term project that is well defined and requires some expertise that need not be in-house. Any organization that has reasonable management to coordinate with contractors can utilize contractors.

Contracting is not suitable for everyone and every project. The following outlines some types of organizations and projects that should *not* use contracting/consulting services.

3.1 Long Term Projects

Contractors should be hired to perform technical work that needs to be done once in a long while, not work that needs to be done on a continuous basis. This has nothing to do with whether the contractor *can* do it or not, but rather whether it is economical and reasonable for the client.

For long term projects, since the client needs to contract out to a contractor continuously anyway, it makes more sense to hire in-house expertise instead. This has several benefits:

- the client has more control over its own employees (fire, hire, promote, demote and etc.)
- through the use of extensive documentation and presentations, knowledge about the project becomes a part of the "corporate memory"
- consultants and contractors are generally speaking more expensive than employees in the long run

Haven said all this, a client can still consider using a contractor to get a project started, but eventually transition to internal employees. This is because it typically needs more instant expertise to get a project started, and it may be difficult to find a potential employee with just the right stuff. Over time, however, employees can be brought up to speed and take over for the consultant.

It must be noted that the client *must* take active steps to phase out contractors and phase in in-house experts. This usually does not happen automatically. Many consultants do not mind working on long-term projects, and the people writing the checks are not owners of the client organization.

3.2 Backburner Projects

A client should never let a contractor work on “backburner” projects. This type of projects tend to be open-ended and the specifications, if any, tend to be fuzzy. Even if the contractor does not intentionally drag the project on, a backburner project can easily drag on indefinitely with no measureable result.

3.3 Organizations with no Management

Contracting is not suitable for client organizations that do not have reasonable management. Without the coordination of client management, contractors cannot work effectively and may end up wasting a lot of money and other resources. Of course, *some* contractors like this kind of environment because they can leech off the client organization easily.

What is *reasonable* management (from the perspective of contracting)? Here is a list of key factors:

- Technical competence. The management (point person) needs to be technically competent enough to understand what the contractor is doing and evaluate the contractor’s work. In most cases, this point person in the client organization also needs to provide pointers as to what should be done next.
- Responsibility. The point person must feel responsible for the well being of the client organization. In most cases, the point person for a contracting job is not the owner or stock holder of the client organization. Even so, this person must look after the best interest of the client organization.
- Dependability. The point person must be dependable from the perspective of the contractor. In other words, if the contractor asks for resources (tools, equipment and etc.), this point person must effectively respond. Note that the point person may not be in charge, but merely bring this up to higher management for approval and action.
- Leadership. Never let a contractor lead! The point person should lead the contractor. As mentioned above, this point person may not be in charge, but merely relay leadership from higher management in the client organization.
- Accessibility. Never make the mistake of “contract and forget it”. Although many contractors are competent and work independently, the client organization should always maintain contact with the contractor periodically. The point person should be available to the contractor during normal business hours.

4 Contracting Options (Just a Sampler)

This section discusses options that a client may consider when creating a contract with a contractor.

4.1 Project/Work Specification

This part deals with *what* the contractor is supposed to do. The time frame can be discussed later. This portion should be as specific as possible. Try to quantify or qualify.

For example, instead of saying “contractor is to complete project TSP (top-secret product)”, try to use more quantifiable or qualifiable terms. The following are some examples:

- upon completion, TSP will conform to specification spec.2.3.1.43 (then make sure spec.2.3.1.43 is specific)
- spec.2.3.1.43 should be specific:
 - minimum top speed is 4.25 ms^{-1}

- minimum max. load is 50 kg
 - a dead-man-switch is used for safety purposes
 - operate from 32F to 110F
 - operate from 0% RH to 95% RH
 - maintenance period is at least 20,000 cycles
- contractor is to produce 200 units of TSP, all must pass the QC standard as specified in QC document 4.2.12

4.2 Compensation

There are many options here. All contractors prefer getting paid up front with cash, but that may not be the best option for a client.

Hourly Charge As We Go. This means the contractor charges by the hour and the client pays as often as the contractor bills (typically biweekly or monthly). This form of compensation is the most common as far as Dr. Tak knows.

The positive side of this form of compensation is that the contractor makes money as the project progresses so his/her family will not starve. At the same time, the client does not need to have a huge chunk of cash available up front.

The down side of this arrangement is that it is open ended. A contractor who just wants to leech off a client can keep a project in zombie state and continuously charge for work that may or may not have been done. Unless the contractor is working on site (has tax and insurance implications, clients should check with tax and insurance experts first), it is difficult to verify whether the work is actually done. This is especially the case with design work.

Lump Sum Up Front. This arrangement requires that the contractor and the client agree on a fixed amount of compensation before the project starts. Then, the client pays the sum up front.

Obviously, this is a risky way to contract. What if the contractor cashes the check and takes off? Surely, the contract is a legal document and the client can legally hold the contractor accountable. Nonetheless, it is a lot work to track down people and bring them to court.

Some Now, Some Later. This arrangement is a modified version of “Lump Sum Up Front”. The client pays a portion up front to the contractor. This may be required because materials, tools or equipment have to be purchased.

As the project reaches milestones previous agreed on and documented in the contract, the client pays the contractor according to the contract. Compared to the previous approach, this approach is safer. Although a contractor can still run off with the initial amount, the amount is at least smaller. This approach also gives the contractor more incentive to work harder so the project is done earlier.

With this approach, it is important to establish a schedule roadmap for the project before it begins. The milestones should be specified with quantifiable and qualifiable statements. It may be a good idea to leave some flexibilities in the contract to reevaluate the project at some point.

Our Success is Your Success. For clients with little cash, this is one option. This arrangement requires the contractor work on the project first. As the project completes and the client starts to make money from the product, a portion of the revenue goes to the contractor.

Let me tell you this, most consultant don't like this type of arrangement.

The reason is simple. There are many factors that determine whether a product will be successful or not, many of which is completely out of the control of the contractor. What if one of these external factors lead to poor sales of the product? The contractor does not make much money, then.

Combo. It makes sense to mix all these compensation plans in a contract. For example, a client with little cash can pay a lower hourly rate and agree on a royalty form of payment as the product sells. This may be enough to convince an otherwise unwilling contractor to work on a project.

It also makes sense to mix a lowered hourly charge with phased payment. This way, in case a phase unexpectedly takes longer, the contractor still gets compensated for the extra time. At the same time, since the phased payment is more significant than the hourly rate, the contractor still has enough motivation to try to get the project done as early as possible.

4.3 Project Schedule

It is a good idea to establish a project schedule, but it is not always possible to make the initial project schedule practical. Why? This can be due to many reasons. For example, the client may decide to change the product specifications. If the

project involves any kind of software or electronics design, the debugging process is often unpredictable. A bug may take a few minutes or a few days to analyze and eliminate.

What should we do with project scheduling, then? There are some options.

Weekly Action Items. The client and contractor should meet periodically (once a week if possible) so they can exchange information. More specifically, they can use the meeting to establish what is done, and what needs to be done next. A week is a relatively short amount of time, a contractor can usually estimate how much can be done in one week.