Checklist for Software Testing Outsourcing

Draft 0.87. This is a pre-publication version that is incomplete.

This document is intended as an issues list for negotiating an outsourcing relationship. It is not intended as legal advice. The author makes no promise that this is suitable for your particular project or negotiation.

What's this document all about?

When lawyers negotiate a contract, they often find it handy to work from a checklist of key issues. Fewer things slip through the cracks, and the negotiator doesn't have to rethink the same issues in every contract. Further, the checklist grows and cumulates experience.

This checklist looks at legal and test management issues involved in outsourcing of software testing. It is written to familiarize technical managers with some of the legal issues and lawyers with some of the technical issues. The question that it asks is:

- ***Can we develop a good agreement for outsourcing the testing of a product or a family of products?***

This is very much a work in progress. Comments are very welcome. Please send them to kaner@kaner.com.

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Is it wise to outsource testing?

You don't have to outsource all of your testing function.

Consider an analogous group in your company: technical support. According to the Software Publishers Association's *1995 Technical Support Survey Report*, most companies who outsource their support functions provide some support in-house and outsource the rest. Quite often, only support for legacy applications (old applications that no one wants to deal with any more) is outsourced.

Each time you consider outsourcing a certain type of testing or the testing of a specific program, you should ask what the loss is to your Department. Will you be losing a valuable skill or a valuable source of knowledge?

Mylott (*Computer Outsourcing)* recommends that, when you do a full outsource of your IS functions, you should keep your applications personnel and analysts These are the people who know your users and know how to satisfy their software needs. Testers are part of this group. Can you afford to lose them? All of them?

A. **Your Objectives for Outsourcing**
    1. **Why do you want to outsource?**
        a. The project is well organized and easy to outsource.
            A. You're testing Release X.01 and you have a good test plan from X.00.
            B. You're testing an OEM release (custom release with minor changes to support a new operating system, printer, video card, or computer) after the base version is tested and shipping.
        b. You're running too many projects and need to focus.
            A. This can be an excellent reason to outsource, but don't forget that you still need to dedicate a staff member, part-time or full-time, as a supervising liaison.
        c. You want to farm out maintenance-oriented testing for an old-technology product that no one on your staff wants to work on any more.
            A. This is a tempting reason to outsource. But how will you ensure that the outsourcer does an adequate job of testing? If its work is inadequate, will you be able to get enough attention of management to deal with it?
        d. You believe that you can lower and control testing costs by outsourcing testing. Is this realistic?
            A. Check carefully into your quality-related expenditures.
                1. Which of these will be outsourced?
                2. Which will not be outsourced?
                3. What additional costs (such as communication and supervision of an outside party) are you taking on?
                4. Are you achieving savings simply by dropping certain types of tests (such as customer scenario tests)?
            B. No outsourcer will work for you at a loss for very long, so how are the savings achieved?
                1. If the outsourcer's staff are cheaper than yours, will they be as good?

2. If the outsourcer agrees to a fixed-price bid, it will find a way to add charges when the programming falls behind schedule or the feature set changes.
3. Is the outsourcer playing a game with you where you sign a long-term contract today at a low initial price but with higher costs later?

C. To achieve the same quality of testing as you do in-house, aren't you going to have to spend more on communication, and provide the outsourcer with better product documentation?
1. Who on your staff will develop the documentation?
2. Will you be able to get needed specifications from the programming staff?

D. You can lower costs if the outsourcer will be more efficient than you are. Have the outsourcer explain, specifically, in what ways it is unusually efficient. How will those efficiencies save time on your project?
1. You can lower hardware testing costs if this outsourcer has the equipment and has efficient lab procedures.
2. You can avoid spending money on equipment that will become almost immediately obsolete. The hot printer or computer today becomes boring in a few months. A large outsourcer can spread this expense across many projects, and might have more use of the printer for a longer time.
3. You can lower test creation costs if this outsourcer has a library of standardized test materials that apply directly to your application, and if people who know and use that library will work on your application.
4. You can lower test creation costs if the outsourcer has efficient processes for creating test cases, and if the people skilled in those processes will work on your project.
5. (Some) outsourcers have standardized automated testing frameworks, to generate test suites quickly.
6. (Some) outsourcers have well-trained staff who find bugs quickly.

e. You don't have enough staff and can't recruit.

A. Does this outsourcer have a pool of appropriately skilled staff? Will these people be assigned to your project?

f. You can't do the job fast enough.
    A. What circumstances allow this outsourcer to do this testing more quickly than you can? You need facts, not general reassurances.
g. You're missing needed expertise.
    A. Does the outsourcer have this specific expertise, and will those members of its staff who have it be assigned to your project?
h. You're missing needed equipment or software (such as hardware needed for configuration testing, or testing tools).
    A. Does this particular outsourcer have this equipment or software, and will someone experienced in using it be assigned to your project?
i. You want the outsourcer to train your staff (by example).
    A. Are you arranging for frequent seminars for your staff, for the outsourcer to provide training on how / why they're doing the testing the way they're doing it?
    B. Are you going to have your staff work side by side with the outsourcer's staff so that they can learn in detail?
    C. If you are trying to create the equivalent of apprenticeships to the outsourcer's senior staff, you have to budget their time and your staff's time to allow for the informal training.
    D. Have you built training requirements into the contract, so the outsourcer knows this is a priority to spend time on?
j. The outsourcer has specific skills with a specific tool and you'd like to try out this tool on one of your projects.
    A. Will the outsourcer's expert be assigned to your project?
    B. Are you arranging for training time, to transfer skills with this tool to your staff?
k. You need an independent advisor (to evaluate severity of some problems, or completeness of testing, etc.)
    A. Be clear in the contract that this is your requirement or you will get testing, not advice.
    B. Is this independent advisor competent to give you this advice? What does it know about your market? Will it recognize a productivity-killing usability error?
l. You want some type of certification that the outsourcer can provide, such as:
    A. ISO 9000 auditing.
    B. Certified compatible with some third party device.
    C. Certified as passing some third party test series.
m. You have a contractual obligation to outsource (independent testing).
    A. Is this late stage testing, to determine whether your own testing / fixing has been sufficient?

B. How will you manage the risk that this organization will declare that your product is not good enough?

n. Someone in management wants the independent judgment of an outsourcer because they believe that the outsourcer will be "more reasonable" (more willing to roll over on quality issues) than in-house testing staff.
   A. If this turns out to be the driving motive for selecting an outsourcer, you'll want to file a report to senior management at some point that documents the negative value provided by the outsourcer.
      1. Plan to document the outsourcer's stupidest recommendations.
      2. Plan to retest all bugs filed by the outsourcer (look for inadequate analysis and inadequate followup).
   B. Plan to conduct some sampling tests to see if areas are being skipped by the outsourcer.

o. Some yahoo in senior management "knows" that outsourcers do it faster, cheaper, better. ("Let's quit worrying about testing.")
   A. One of the motivations for outsourcing is to "avoid confronting the effects of bad management decisions regarding in-house information processing." (Halvey §16.02)
   B. If you are doing outsourcing as a pilot project, make sure that you capture all of the relevant in-house and outside costs. Additionally, do some late auditing of the quality of the outsourcer's work. Provide good data on the actual costs and benefits of the effort.

2. **What is the scope of the work?**
   a. Entire testing department ("We give up on testing.")
      A. This might be a recipe for disaster.
   b. Entire platform ("We give up testing Macs.)
   c. Entire product line ("We give up testing word processors.")
   d. Entire product (Buggyword)
   e. Product release (Buggyword 5.0)
   f. Maintenance release (Buggyword 5.01)
   g. Entire language (All of our French-language products.)
   h. Additional testing to supplement the effort of your group. (See "What type of testing do you want done?")
   i. Required independent test. (Some extent of independent testing is required by contract.)
3. **What type of testing do you want done?**
   a. Function testing.
   b. Device (printer, video, etc.) compatibility testing.
   c. Usability testing.

d. Validate against government regulations.
e. Run the beta test.
f. Sanity check (look for obvious holes in your work).
g. Audit your work.
h. Performance benchmarking.
i. Feature benchmarking.
j. User scenario testing, i.e. create complex test cases from real-life uses of similar products.

4. **What else do you want beyond testing?**
    a. Buy a specific product.
        A. Give us a test plan.
        B. Give us an automated test suite.
    b. Buy training in a specific skill.
        A. See next section, "What do you want to learn from this?"
    c. Consulting
        A. Help us plan our automation strategy.
        B. Help us evaluate our processes.
        C. Help us develop or choose a bug tracking system.
    d. Other non-testing services.
        A. Build management.
        B. Bug management (act as a bug tracking service bureau).
        C. Evaluate deferred bugs (pre-shipment; independent appraisal of their importance.)
        D. Recruiting.
        E. Trade show support? (Test groups often provide this type of support because they know the program, and how to work around its problems. Do you need this from outsource staff?)
5. **What do you want to learn from this?**
    a. Testing techniques?
    b. Automation techniques?
    c. Test planning techniques?
    d. Show us how to create a test plan.
    e. Show us how to develop test suites.
    f. Standards?
    g. How to use a specific testing tool?
    h. How to test a product based in a specific technology (e.g. client/server, or web-based, etc.)?
    i. Obtain general-purpose test planning documents?
    j. Reports on device compatibility that your tech support staff can use?
    k. Reports on bugs/workarounds that your tech support staff can use?
    l. How will you assure that you get the knowledge transfer that you're paying for?
6. **What is your schedule?**

a. You want to ship it ***next Tuesday***?
    A. Genuine rush jobs cost lots of money and require an outsourcer who can ramp up immediately. Do you ***really*** need it next Tuesday?
    B. What contingencies if you don't finish by Tuesday. Will the outsourcer's staff and labs still be available to you? Will they work overtime? For how long?
b. Are you being told to use an outsourcer to make it "possible" to achieve a fantasy schedule that the rest of your company can't achieve? This distorts your cost structure:
    A. Rush charges to ramp up.
    B. Additional charges for going beyond the planned number of cycles of testing.
    C. Additional charges / penalties for tying up key staff of the outsourcer passed the agreed end date for the project.
    D. Additional ramp-up costs to bring in new staff. This problem can arise if key staff of the outsourcer were committed to another project. They were temporarily assigned to your for a short term, because you promised that it would be a short project, but now that you're running overtime, you can't keep these people.
    E. All the inefficiencies of a no-time-to-plan-just-do-it style of testing.
c. If the schedule is unreal, maybe you should use the outsourcer as a neutral expert who can scope out the project and explain the schedule difficulties to your management.

7. **What services are excluded from the agreement?**

B. Can this outsourcer meet your needs?

1. **Staff**
    a. Does the outsourcer have available staff who have the skills you need?
    b. If you have interviewed specific staff of the outsourcer, will these be the people who work on your project?
    c. Do you have control over which of the outsourcer's staff do or do not work on your project? Can you require the outsourcer to remove / replace one of its staff from your project?
    d. Professional performance clauses. Does it make sense to require that:
        A. The outsourcer's staff will perform all services in a professional manner and that all services will be performed by qualified and properly trained personnel.
        B. The outsourcer's staff will have computer science (or equivalent) degrees from accredited universities.
        C. The outsourcer's staff's services will meet the highest professional standards. (Watch out for this one. Are you

obligating the outsourcer to meet standards, such as various IEEE standards, that you might not be interested in following nor willing to pay for?)

2. **Lab facilities**
    a. Efficient facilities for configuration testing?
        A. How does the lab deal with standard operating environments? Can they quickly recreate clean systems configured with the right environments?
        B. Does the lab have facilities for fast setup and tear-down for printers, modems, video cards, sound cards, etc.? What do their workbenches look like?
        C. Do they have the equipment you need? Not "can they get" the equipment – do they actually *have* it, now?
        D. Do they have efficient processes for obtaining loaners from device manufacturers?
        E. If they have to borrow or rent the equipment, what access will you have to it? Will they be using this equipment for other companies' projects too? Will you be reimbursed for this use or are you paying for the full rental (as is, maybe, the other company?)
    b. Do they have the right tools and experience with the tools?
        A. Test automation tools
        B. Version control tools
        C. Diagnostic tools
        D. Test planning tools
3. **Experience with your type of application**
    a. Do they understand your market and your customers?
    b. Do they understand your application, and how people will use it?
    c. Do they understand the environment needed for this application (O/S, hardware, etc.?)
    d. Do they have a supply of already-made test cases that are useful for this type of application?
    e. Do they understand the regulatory requirements or issues for this application?
    f. Do they understand the key competitive issues for this application?
    g. Do they understand the key usability issues for this application?
    h. Do they understand the key compatibility issues for this application?
    i. Do they understand the key support issues for this application?
4. **Experience with localization**
    a. Does the outsourcer's staff speak the language to which you are translating the program?

b. Does the outsourcer have experience in testing localizations for this language or this class of languages? (Issue: someone who has worked with translations into French or German might not understand the problems involved into translations into Chinese, Japanese, or Arabic.)
c. Does the outsourcer know enough about the target market to recognize when clip art or text, legal in the US, will be offensive or illegal in the target market?

5. **References**
   a. Has the outsourcer provided you with credible references?
   b. At least some references should be to companies whose products and/or market are as similar to yours as possible. Press this point. If the outsourcer is reluctant to give you directly comparable references, then it may have no experience in your niche or it may have had a problem with a company you know. You'll want to look into this.
   c. Have you checked them?
      A. Describe overall project – where was the work done, why, how many staff on the project, was this the first time the client had worked with the outsourcer, etc.
      B. Timeliness of the work?
      C. Quality of the staff?
      D. Reasonability of attitude?
      E. Got the right equipment on time at the agreed price?
      F. Met expectations?
      G. Helped get the right product ship on time?
      H. Examples of disagreements, how were they handled?
      I. Did the outsourcer assign the people to the project that were expected (e.g. the ones the client was introduced to?)
      J. How well did the outsourcer know the market? How much effort did the outsourcer spend learning the market?
      K. How much ramp-up time, and at whose expense?
      L. Were there traffic jams in the outsourcer's lab and how were they resolved?
      M. Skill at automation?
      N. Skill at transferring knowledge to client's staff?
      O. Quality / thoroughness of testing documentation?
      P. Status reporting? How done, how expensive, was client satisfied?
      Q. Would client re-hire?
   d. Have you spent any time with the products the outsourcer tested? Were they any good? To what extent did the outsourcer play a role in improving the quality of these products?

C. **How do you want to pay for this?**

1. **Basis for compensation**

a. The compensation issue is the most important issue in the contract. If you accept a fixed-price bid, the contract must be clearer about the scope of work paid for (because the outsourcer's incentive is to prove that everything is outside of the scope) and about the deliverables owed each way. The contract resolution procedure **must** also be clean because there will be conflicts about scope, pace, and deliverables.
b. Pay by the hour
    A. You control the quality of the job. If you need more work done, different work done, etc., then you pay for it and you get it.
    B. The outsourcer has an incentive to stretch out the job.
c. Flat fee
    A. You have a cap on the costs.
    B. The outsourcer has an incentive to take shortcuts. You should be more interested in getting warranties from the outsourcer, as a counter-balance.
    C. If the project definition changes, you will have to pay extra. With extra charges for "scope changes" and other changes, a "flat fee" can cost more than an hourly job for the same amount of work.
d. Flat fee with incentives and disincentives
    A. For example, you pay extra if the testing is done on time or early; you pay less for projects that get finished late.
e. Piece-work
    A. Pay by the bug? (Not a good idea.)
    B. Pay according to the number of function points or KLOC to be tested? (This is essentially the same as a flat fee situation.)
    C. Pay per configuration tested (e.g. $X for each printer tested). This is more sensible. It only covers this one aspect of the project. In your negotiations, plan for some retesting. Also, if you want compatibility reports for tech support, negotiate for them and expect to pay for them.
f. Pay by the milestone or on completion of tasks
    A. Your goal is to pay only for services that you actually receive.
    B. You want to pay for actual services rendered, not for tasks that are only more-or-less complete.
        1. Mylott (p. 150) "If you pay for poor service then you subsidize it. Your vendor will undoubtedly argue that you received some value even from inadequate service. So what? Why pay for poor service even if you did receive some value from it? . . . Don't be surprised if your

vendor rejects this type of approach." If it's not what you contracted for, and not what you would contract for today if you were doing the deal, then the outsourcer has provided you with negative value. You wanted to pay for better service and you got stuck with this.

C. But what if the delaying factor is the lateness of your software or the slowness of your review?

2. **Payment for incidentals**
    a. Who pays for special reports, binding, shipping, telephone, etc.
3. **Taxes**
    a. Who pays the taxes if taxes are levied on the software licenses or on the transfer of licenses or on the services provided by the outsourcer?
4. **Invoicing**
    a. What triggers an invoice
        A. Periodic bill? (Monthly? Weekly?)
        B. Milestone achieved? (Who signs off that it has been achieved?)
        C. Out-of-pocket money spent (invoice for reimbursement, as expenses are incurred)
    b. When is payment due?
        A. 10 days after invoice? 30 days? 45 days?
    c. What level of detail is required with the invoice?
        A. Hourly timesheets from outsourcer's staff?
        B. Task-based timesheets showing how many hours spent for what tasks?
        C. Summary record listing people and hours?
    d. Even less detail?
5. **Auditing**
    a. Do you have the right to audit the outsourcer's records to determine the accuracy of invoices submitted?
6. **Most favored nation clause**
    a. Assurance that you are being charged no more than any of the outsourcer's other customers.
7. **Changes in fees**
    a. When can the outsourcer's rates be renegotiated? (In a long-term contract, this is inevitable.)
    b. Is there a cap on the increase?

D. **Relationship and Communication**

1. **Who has final authority on testing priorities?**
    a. Who determines how extensive the test planning documents are?

b. Who decides which areas of the program must be tested next?
c. Who decides what features and issues are of the greatest importance to your customers? If this is the outsourcer's staff, where did they get that knowledge?
d. Who determines what equipment is used for the test?
e. Who determines what testing tools are used?
f. Are the priorities safer in the outsourcer's hands? (Do the politics of your company make it impossible for you to do thorough testing? Can the outsourcer take a hard-nosed position?)

2. **How independent is the outsourcer?**
   a. Is independence *required* by the contract? (The customer might require an "independent" test.)
   b. Even if the outsourcer is officially playing an "independent" role, there are several ways that companies pressure outsourcers to be lenient. For example, if your company has a continuing relationship (many projects) with the lab, then if the lab is too feisty, you will take your business elsewhere.
   c. You might closely manage the outsourcer. A test lab need not be "independent."
3. **How will you supervise the effort?**
   a. You must supervise the effort.
      A. Replicate all bugs reported by the outsourcer.
      B. Look for more serious consequences of these bugs.
      C. Audit the test plan. Find an organized method to test it for holes. Don't just "review" it.
      D. Read the programmers' responses to bug reports. Look for communication problems.
      E. Monitor progress against the project schedule.
      F. Monitor testing progress against the apparent maturity of the rest of the project. (Is testing going faster or slower than documentation, tech support, etc.)
      G. What status reports will you receive?
      H. If the outsourcer will give you an automated test suite as a delivery, how will you know whether your staff will have enough information to be able to reuse the suite next year?
   b. Liaison with the outsourcer?
      A. You must appoint a liaison.
         1. This person does the first-level dispute resolution with the outsourcer.
         2. Primary reviewer of the quality of the outsourcer's work.
         3. Identified person for your staff to bring problems to (e.g. if your programmers don't like the bug reports, they complain to the liaison.)

4. Identified person for the outsourcer to bring problems (their problems with you) to.
5. Most knowledgeable person about the outsourcer's business and technical practices. Can provide insight.

B. Typical tasks of the liason
   1. Review all test plans.
   2. Reports on testing project progress to you and your management.
   3. Meets with outsourcer, conveys information about schedule, timing and content of upcoming deliveries, as well as raising problems and frustrations.
   4. Meets with the outsourcer, carries back information on the vendor's difficulties and frustrations.
   5. Gets clarity on what tasks the outsourcer is not going to do. (Including tasks that you would normally do but that the contract does not require the outsourcer to do.) Flags these in memos to management and recommends ways to get these tasks taken care of.
   6. Source of all material sent to the outsourcer.
   7. Archives all releases sent to the outsourcer.
   8. Receives all material from the outsourcer.
   9. Archives all materials received from the outsourcer.
   10. Replicate and extend each bug.
   11. Review all bug reports. Look for communications issues during the bugs' lifecycles. Follows up on unresolved queries regarding reproducibility, significance, etc.
   12. Monitor your staff's reasonability in handling and commenting on bug reports. (If people treat the outsourcer without respect, in ways that will waste the outsourcer's expensive time, this is an issue to be dealt with in-house.)
   13. Run independent tests to check effectiveness of testing.
   14. Audit test coverage.
       a. *Check whether the test plan would capture hypothetical bugs.*
       b. *Check whether coverage measurement is actually being done (if it should be).*
       c. *Use other techniques as appropriate to check the actual extent and depth of testing.*

15. Control point for all configuration testing: approves what configurations will be tested; approves reduction in config test plan.
16. Carries / manages tech support requests about the format of material that shows the results of config testing or of other types of tests that have tech support implications.

C. Skills of a good liaison.
    1. Extensive testing experience.
    2. Understands test management.
    3. Understands testing-related economics and overall project economics.
    4. Understands the risks of test automation.
    5. Understands the risks of excess project documentation / bureaucracy.
    6. Understands enough about software development to understand the technical debates involving the product.
    7. Diplomatic, but firm. Able to explain your company's needs and to articulate your company's disappointments.
    8. Level-headed. Calm in arguments. Able to deal with pressure and whining from all sides.
    9. Good listener.
    10. Knows your market (or willing, able to find out).
    11. Methodical and attentive to detail.
    12. Able to keep secrets.
    13. Loyal to your company. Ideally, has an attractive, long term career path in your company, so it is worth actively protecting your company's interests.

D. Your liaison needs sufficient time to do the job properly.
    1. Has to come up to speed on the program.
    2. Has to understand the market.
    3. Needs time to review / reproduce the bug reports.
    4. Needs time to review / audit the test planning materials.
    5. Needs time to review the progress reports.

E. Where should the liaison work?
    1. Their site
        a. *S/he sees what's going on.*
        b. *S/he can spot check the tests in progress.*
        c. *S/he builds personal relationships with outsourcer's staff and can coach them.*

d. *But s/he may come to identify with them, at your expense.*

2. Their liaison works at your site
    a. *S/he sees (and can more easily come to understand) your frustration with their work. S/he might come to empathize with your point of view.*
    b. *S/he can get technical information from your staff quickly.*
    c. *S/he can resolve many communication problems with your staff more quickly.*
    d. *S/he can dynamically readjust the testing staff's priorities, based on the actual project progress. The more information s/he has, the more efficiently the outsourcer can manage its schedule.*
    e. *But s/he sees your dirty laundry.*
    f. *But s/he knows where your company's pressure points are; might be too effective a negotiator against you in a dispute.*

c. Outsourcer's liason with you?
    A. Name the person, or the managerial level of the person
    B. Name the duties of the liason
    C. What is the negotiating authority of the liason? What can this person agree to without needing approval from more senior management?

d. Where does the outsourcer's staff work and who manages them?
    A. Fully independent group working at the outsourcer's lab?
    B. Working at the outsourcer's lab, but with a supervisor of yours at their site?
    C. Independent team working at your site?
    D. Team working at your site, under one of your supervisors?
    E. Team working at your site, as members of a larger test group working on the same project?

4. **What status reporting do you expect?**
    a. Administrative overhead costs money. How much are you willing to pay for status reporting?
        A. You might want more detail than you generate in-house because it's harder to <u>see</u> the progress and to learn about it in other informal ways.
        B. You might want more detail as a matter of good contract management.
        C. But every additional level of detail in status reporting costs more money.
    b. What items do you want reported periodically?

A. (What period? Weekly? Per cycle of testing?)
B. How many new bugs found.
C. Number of bugs closed as not-fixed (e.g. "Works as designed", "not a bug", "deferred", "not reproducible").
D. Totals of found / fixed / closed as not-fixed.
E. Number of new test cases created.
F. Number of new test cases executed.
G. Percent coverage (against what coverage criteria) achieved.
H. Detailed progress shown (maybe using a project manager) against a detailed task breakdown.

5. **Approvals**
    a. State in the contract, who approves which piece of work.
    b. What is the time frame for acceptance review of each piece of work.
    c. What is the process for inspecting each piece of work submitted.
6. **What is the bug reporting / resolution process?**
    a. Whose bug tracking system is used? Why?
    b. What is the bug lifecycle from open to closure?
    c. Does the bug lifecycle include as many checks and safeguards against shipping bad known bugs as your in-house systems?
    d. Who prioritizes bug fixes?
    e. Who decides whether a bug is acceptable in the field? If this is the outsourcer's decision, what if you disagree?
    f. When you find new bugs, do you report / copy them to the outsourcer?
7. **Notice**
    a. If you or the outsourcer must send legal documents to each other, does the contract specify the correct person to send the notices to?

E. **Testability**

1. **This section is largely redundant with the rest of the outline, but it raises related issues in one place. The problem is that if your software is hard to test, then you will either spend more on outsourced testing or you will get less testing.**
    a. The problem is worse for outsourced testing because their staff probably don't have as much access to your programmers as your staff does.
    b. Here are notes on some of the issues that are sometimes mentioned in discussions of testability.
    c. Many products and development processes will not provide for everything in this list.
2. **Background info for the tester**

a. Requirements, specifications, descriptions of development intentions.
b. Lists of all variables, all error messages, all reports produced by the software, all dialogs, etc. (Boundary conditions and descriptions of the relationships among the variables would be nice too; the more you give the outsourcer, the more efficiently they can test.)
c. Competitive products: issues in the marketplace involving features, reliability, usability, and compatibility with other key products or devices.
d. Externally imposed requirements, such as regulations and standards.
e. Hazards associated with products of this type. What kinds of risks do these products pose to customers or to their property?
f. Bugs typical of products of this type or typical of this platform. (If your product or platform is specialized, you will know more about this than the outsourcer.)
g. Copies of previous test plans and test cases.

3. **Visibility and control**
   a. One-to-one correspondence between problems detected by the code and error messages. Different problems don't result in the same message.
   b. APIs or other mechanisms that allow testers write test code that bypasses the user interface.
   c. Error/event log mechanism to give tester visibility into internal error detection and handling. Or, tester can query internal states and variables.
   d. Ability to force values into calculated variables, in order to check error handling.
   e. All factors affecting output are visible.
   f. The program (or an appropriate, connected tool) can generate a log file that shows the execution history.
   g. The program will automatically detect and report internal errors.
4. **Configuration management and change control**
   a. Unique version numbering for every version of the software sent to the outsourcer.
   b. Source control and archiving to make it easy to recreate any version sent to the oursourcer.
   c. Specific but tester-comprehensible notes that document changes made to the code since the last version sent to the outsourcer.
   d. To what extent will changes made to the software cause rework of the outsourcer's test suites and test documentation?

A. (Obviously, life would be easier for the outsourcer if you delivered absolutely final product and made no changes, or none to any visible function. Beware of wasting the outsourcer's time, but be wary of temptations to let the outsourcer tail wag the developer dog.)

5. **Comparable equipment**
    a. Can you recreate the test setup in the outsourcer's lab? Often not. (That's why you hired the outsourcer–they have this big lab . . .) How are you going to manage the problem that they can recreate a bug in their lab that you can't recreate in yours? For example, what diagnostic tools will you provide with the software?
6. **Bugginess**
    a. The more buggy the software, the more time the outsourcer will spend reporting and working around bugs.
        A. Software developers that are contractually or legally obliged to send software to an independent software test agency will often hold their software, not releasing it to the outsourcer until it is quite stable.
    b. Bugs that block testing must be fixed quickly.
        A. Someone on your staff must take ownership of this problem.
7. **Automation support**
    a. In a Windows product, is your company using custom controls? How do these interact with the automation tools that you use?
8. **Support for early testing**
    a. In a collaborative relationship with the outsourcer, there's much to be gained by beginning testing as early as possible. You have fewer problems when you test incrementally, as the code is written, instead of waiting for a big bang (all code delivered at once, none of it works, kaboom—everything crashes together, no one can figure out what particular bug led to these particular symptoms.)

F. **Deliverables**

1. **Shipping and handling and packing and marking instructions**
    a. This causes more disputes than you'd expect. Where should documents and hardware go? (Same place, different places?) What special rules are there for packing equipment (Such as, ship hardware in its original packing?)
2. **What deliverables are you supposed to provide?**
    a. The software, and updates (how often?).
    b. Overall project schedule (software / doc / etc. delivery milestones and dates).
    c. Ongoing progress reporting against the schedule.
    d. Product documentation?

        A. User docs.
        B. Requirements.
        C. Specifications.
        D. Regulations that dictate features or other requirements of the finished product.
    e. Hardware for testing? (Keep a list of anything you lend the outsourcer.)
    f. Tools? (Keep a list of anything you lend the outsourcer.)
    g. Other software, for compatibility testing or for benchmark testing? (Keep a list of anything you lend the outsourcer.)
    h. Test cases?
    i. Test data?
    j. Bug reports (whenever you find bugs that they missed?)
    k. Standard compatibility / compliance test suites?
    l. Copies of relevant regulations?
    m. Market profile information?
    n. History of customer complaints with this product or its competitors?
    o. People?
    p. Office space or lab space for the outsourcer's staff?
    q. At the end of the project, what do you have to give to the outsourcer?
        A. Hardware that the outsourcer loaned you / put in your lab?
        B. Tools?
        C. Other software
        D. (You want to have a written list of everything that comes to you, to avoid disputes at end of project.)
        E. End of project evaluation?
3. **What deliverables is the outsourcer to provide?**
    a. Bug reports.
    b. Project or product metrics?
    c. End-of-project appraisal of the software?
    d. Project post-release review?
    e. Overall testing project plan and schedule.
    f. Detailed test plan.
        A. Will you use a standard, such as IEEE 829, as a shopping list to explain what should and should not be in the test plan?
        B. Do you expect this 100% done up front or 10% done up-front with 90% evolution while testing, or something in between?
        C. How detailed?
        D. Should some aspects be more detailed than others?
    g. Reusable test cases?
    h. Automated test cases?
        A. Documentation?

1. Of individual cases?
2. Of expected results?
3. Of coverage achieved by the test suite?
4. Will this be maintainable by your staff next year?

B. Test harness?
C. Training in their use?

i. Hardware for testing? (Did you contract with them because they have a big printer lab? OK, do they have the printers you need tested?)
j. Market data?
k. Benchmark data from competitive products?
l. Customer complaint information for this class of product?
m. People?
n. Equipment and software compatibility reports in a form suitable for use by your support staff?
o. Office and lab space for these people?
p. Standard test data (such as 3rd party-published compatibility test suites?)
q. At the end of the project, what does the outsourcer have to give to you?
   A. Hardware that you loaned the outsourcer.
   B. All copies of your software, manuals, etc. (To preserve confidentiality, how much of your in-development material should the outsourcer be allowed to keep?)
   C. Tools.
   D. Other software.
   E. (You want to have a written, signed off, list of everything that you have loaned the outsourcer to avoid disputes at end of project. You should also have ID tags on all of your equipment, software, books, tools, and anything else that you want back from the outsourcer. It's not that the outsourcer is dishonest. The problem is that they handle volumes of this stuff and it's too easy for your stuff to get mixed in with somebody else's stuff.)
   F. Any software that the outsourcer wrote to enable testing of your product.
   G. Final archived set of test cases and results.
   H. Full list of all configurations tested.
   I. All test files, test plans, test scripts, with documentation to help you figure out what is and is not covered in these tests, and to help you maintain the test suites in the future.
   J. End of project evaluation.

4. **What stuff is coming from 3rd parties?**
   a. Hardware on loan?
   b. Software on loan?

c. Specifications or requirements?
d. 3rd party auditors or other staff?
e. Training, course material, coaching on specific technical issues.
f. Who will manage the list of 3rd party material?
    A. Making initial arrangements for loaners or other materials.
    B. Returning what needs to go back.
    C. Nagging / begging for items that haven't been received.
g. Who is responsible to the 3rd party to get their equipment, material back to them?
    A. If the outsourcer is responsible, but fails to return the equipment, can the 3rd party come back at you?

5. **Change Control**
    a. If you provide new versions of the software, what are your responsibilities to document changes?
    b. What are your responsibilities to limit changes?
    c. Your responsibilities might be more different, and more seriously enforced, in a fixed-price bid. The outsourcer doesn't want to agree to $X for program Y and then be given program Z to test. Or a slow, expensive (unexpected by the outsourcer) transition from Y to Z.
    d. To achieve change control, what level of access do you have to give the outsourcer to your corporate decision making process (do outsourcer representatives sit on your change control committee?)
    e. What degree of access do you have to give the outsourcer to your internal data systems (e.g. source control system)?
    f. How much extra documentation will you generate (if any) to achieve the change control requirements, and who will do this work (will your programmers agree to it?) How much will this cost?

G. **Risk Management**

1. **How will you resolve disputes?**
    a. Why this is so important:
        A. A good process lets you work with less tightly defined deals.
        B. Typical formal dispute resolution processes (lawsuits, arbitrations) are unsatisfactory. They come too late and all they provide is compensation (money). They don't help move the project forward to completion.
    b. Ideas on resolution
        A. Resolve problems as early as possible.
        B. Meet and confer at the liaison level.
        C. Gradual, planned escalation through management levels.
            1. This sounds better than it works. Go up a few management levels and neither side might

understand the issues or the technology. The result can be a deadlock in negotiations that is resolved in an unsatisfactory way.

D. Mid-project mediation.
E. Mid-project mini-arbitration by an independent arbitrator / expert that you both trust.
    1. This is a session lasting 4-8 hours, in which both sides present the dispute to the expert, who issues a ruling within a week. The goal is to get a clear decision on the issue right away, and move forward. Even if the arbitrator makes the wrong decision, it is often better to move forward than to drag down the project by prolonged fighting over an issue that won't go away.
F. Mid-project fact-finding by an independent expert that you both trust.
    1. The third party makes no decisions. She meets with you and the outsourcer, looks at documents, and writes a report that explains the controversy between you and the outsourcer, and that recommends a course of action.
G. Agree in advance (in the contract) on the extent to which a mid-project arbitration will be binding. For relatively small disputes, the arbitration should always be binding. For very large disputes, different lawyers have different views on whether binding arbitration is a great idea or not.
H. If arbitration is non-binding, can the results be used / mentioned in a later court proceeding? Similarly for the mediator and for the fact-finding – should this be guaranteed to be confidential, in furtherance of open disclosure during these negotiations?

c. Third-party helpers
    A. Agree up front about which people you will use as third-party helpers.
    B. List a few alternatives, just in case your first choice isn't available.
    C. Keep them out of all other aspects of your contract, to avoid conflicts of interest.
    D. Require them to list their history with both sides and any conflicts of interest involving the project.
    E. Use people who are credible on the technical level and who have reasonable business judgment.

F. For very large disputes (involving large sums of money), you might prefer a three-arbitrator panel instead of a single arbitrator.
G. Mediators don't have to be experts in the technical matters because they don't make the decisions. But they must be literate in the technology.

2. **What if the outsourcer completely screws up?**
    a. Are you setting yourself up to be totally dependent on the outsourcer?
    b. If you are convinced that this project will fail, are you trying to push everything to the outsourcer so that you can scapegoat the outsourcer when the failure occurs? In your company, will this tactic work?
3. **How will you manage the outsourcer's weaknesses?**
    a. You can't safely assume that the outsourcer has no weaknesses. How will you discover and compensate for the weaknesses that it has?
        A. Do they know your market?
        B. Do they understand your application?
        C. Do they understand your customers?
        D. Do they understand usability issues?
        E. Do they understand your environment (O/S, hardware, etc.)?
        F. Do they have a sufficiently stocked and organized equipment lab?
        G. How junior are their staff?
        H. How difficult is it for them to recruit new, experienced staff?
        I. Who will do your glass box testing? (If the outsourcer can't do it, will you still be doing it in-house?)
        J. Can the outsourcer measure its coverage?
        K. How thoroughly does (can) the outsourcer investigate bugs before sending them to you?
    b. Break out the tasks and work with the outsourcer to appraise where they are strong and where they are weak. Plan to provide support for important issues in which they are weak.
4. **How will you deal with "unexpected" contingencies?**
    a. What if the outsourcer ignores important issues, or just doesn't think they're important?
    b. What if the outsourcer is testing too slowly? You seem to be getting much less of the lab's attention than you expected. You can fire an employee in this case. What can you do with the outsourcer?
    c. What if the outsourcer fails to provide detailed test results? You get bug reports and verbal assurances, but not

extensive test cases with a trail showing what cases were executed and what the results were?

d. What about the unexpected (if inevitable) last-minute shuffling of the feature set?
e. What if (some or all of) the software is too unstable to be tested?
    A. For how long?
    B. What does the outsourcer's staff do in the interim?
    C. Do you get back the same staff if there is a one-month dead time between testable versions?
f. What about staff turnover?
g. If the project runs far over schedule, what if the outsourcer has to transfer staff to a different project?
h. What if the project cancels before the planned completion? What do you owe the outsourcer?

5. **Backups**
    a. Will the outsourcer make backups of its test plans, automation suites, bug reports, etc.? How often? What procedures will be used?
6. **Disaster recovery**
    a. What plans exist if outsourcer has a disaster?
        A. Earthquakes, floods, etc. can cause the outsourcer to lose all of its data. Is there a remote backup site?
        B. Are you getting reports and documents from the outsourcer so often that there is no need for a remote backup?
7. **Force Majeure Clause**
    a. Is the outsourcer's failure to perform excused by a disaster (earthquake, etc.)?
    b. What are your responsibilities to each other in this case?
    c. Can you retain another outsourcer to fill in while this outsourcer recovers?

H. **Measurement of Performance**

1. **What performance standards are there for quality of work or product?**
    a. Verbal assurances of expertise and other verbal promises are meaningless, because there will be an integration clause in the contract that says that anything not directly promised in the contract is not part of the deal.
    b. Should the contract include a "best efforts" clause that obligates the lab to use its best efforts to meet the schedule, to automate the tests fully or to achieve some other goal(s).
    c. Will you use a standardless review as the requirement for your signoff? (Such as a simple reading-based review of the test plan?) (What if you and the outsourcer disagree about whether the test plan is up to par?)

d. Will you use a standardless independent audit of the test planning and testing?
e. Will you measure for conformance to industry or internal standards?
f. Will you use a coverage criterion?
g. Will you create specific performance measures? Beware what you measure, because that's what the project will be optimized for.
    A. Testers expected to report 5 bugs per day? (I don't recommend bug-count standards.)
    B. Not more than X% bugs irreproducible.
    C. Not more than X% bugs come back with queries for more info about the bug.
    D. Response time to clarify or supplement a bug report is within Y days.
    E. Time needed between receipt of a new version of the software and completion of the acceptance-into-testing (smoke) tests.
    F. Availability of the outsourcer's testing staff to answer questions, meet with your staff, etc.
    G. How many test cases are coded per day?
        1. Can you subdivide this in terms of complexity, power of the test cases? How do you avoid getting 1000 trivial test cases because all you're measuring is the absolute number, independent of quality?
    H. How many devices are tested per week?
    I. How many environments (O/S plus system hardware config) are tested per week?

2. **Can you create a bonus system for high quality work?**
    a. For example, bonus based on how many not-discovered-in-testing bugs were found in the field? (Fewer is better.)
        A. Should bugs that the outsourcer wrote up as minor in the database be treated as equivalent to non-discovered if they turn out ot be serious in the field?
    b. As another example, should you give a bonus for passing a tough audit?

I. **Liability for quality of the work**

1. **Basic Liability of the Outsourcer to You**
    a. Can you sue the outsourcer for bad work?
        A. How do you distinguish between bad software and bad testing?
        B. Did you give the outsourcer enough time to do the job properly? (If you're working the outsourcer on an hourly basis, it's up to you to give the outsourcer enough time (though it's up to the outsourcer to ask for it? On the other

hand, if you are working on a fixed-priced bid, then it is the outsourcer's responsibility to allocate sufficient time.)

C. What is your definition of "bad work?" Negligence? Gross negligence?
D. To what degree did you set the objectives, standards, and practices in use by the outsourcer?

b. Can your customer sue the outsourcer for bad work?
   A. What does your contract say? Does the outsourcer promise to advise you of the reliability or safety of the product? Is it clear in the contract that you will ship the product in reliance on the advice of the outsourcer?
   B. What does the outsourcer say to the public? Will customers buy the product in reliance on the reputation of the outsourcer?
   C. Did the outsourcer certify the product (perhaps for a government agency) as having been appropriately and sufficiently tested?

2. **Your liability to the outsourcer**
   a. What happens if you ask outsourcer to work on code in a way that exceeds your rights under the license? If the licensor sues the outsourcer, what is your liability?
3. **Warranties**
   a. Expect to see disclaimers of implied warranties of merchantability, fitness, and any other implied warranties. These warranties are unusual in service contracts.
   b. What warranties will the outsourcer make?
      A. Intellectual property.
      B. Promises that it has actually made regarding services, products, personnel, effort.
4. **Indemnity clauses.**
   a. See my paper on Contracting for Testing Services.
   b. Indemnification that is not quality-related:
      A. Liability for torts committed by outsourcer's staff on your premises.
      B. Liability for tax-related problems caused or triggered by the outsourcer.
      C. Liability for outsourcer's unauthorized use of 3rd party intellectual property.
      D. Liability for your unauthorized use of 3rd party intellectual property, given to you (without warning and without identification as 3rd party material) by the outsourcer.
5. **Liability insurance.**
   a. Errors & Omissions / Professional liability
   b. General Commercial Liability (probably doesn't include coverage for bugs, inadequate testing and general bad workmanship.)

c. Automobile liability
d. Workers' compensation
e. Employee dishonesty
f. Key employee

J. **Publicity**

1. **What the outsourcer can say about the contract**
    a. You might wish to limit the outsourcer's right to use your name in connection with its advertising or marketing.
2. **What you can say about the contract**
    a. The outsourcer might wish to limit your right to use its name in connection with your advertising or marketing. (For example, it might feel this is necessary to limit its potential liability to your customers.)

K. **Other liability clauses**

1. **damage limitation clauses – subject matter**
    a. for breach of contract (services not performed or warranties not met)
    b. for trade secret leaks
    c. for intellectual property infringement
    d. for negligence unrelated to the quality of the work (such as accidents on your premises or harassment of your or the outsourcer's staff)
2. **Damage limitations**
    a. Consequential damages
    b. Consequential damages for only certain specified types of losses.
    c. Incidental expenses
    d. Limited to all or some percentage of the amount you paid.

L. **Term and termination**

1. **Agreed term of the contract**
    a. This one project?
    b. All projects for X amount of time?
    c. The period of work (at your site) of listed individuals?
    d. Open-ended agreement for continuing services, probably with a cap on the total amount of money to be spent?
    e. Will you give the outsourcer a guaranteed minimum amount of business?
2. **Your ability to terminate before the end of the term**
    a. Terminate at will on reasonable notice
        A. Notice period?
        B. No statement of cause required?
        C. Is there an early-termination fee?
    b. Terminate for cause
        A. Immediate termination
        B. What is sufficient cause?

1. Laggardly work / missed deadlines?
2. Continuing (despite protests) inadequacy in status reporting?
3. Failure to provide agreed deliverables?
4. Agreed staff members not working (or not working full time) on the project?
5. Theft
6. Intellectual property problems
    a. *Trade secret leaks*
    b. *Unauthorized use of software, could expose you to liability*
    c. *Unauthorized copying or distribution of your software*
7. Non-competition
    a. *In violation of agreement*
    b. *Even though there is no agreement, the lab just took on a project with your competitor that directly competes with this product.*
8. Harassment or other torts against your staff or property

3. **Outsourcer's ability to terminate before the end of term**
    a. Terminate at will on reasonable notice
        A. Notice period?
        B. No statement of cause required?
        C. Is there an early-termination fee?
    b. Terminate for cause
        A. What if your project drags on way longer than the agreed term? Is this a termination for cause? Does termination require notice?
        B. What is sufficient cause?
            1. Non-payment
            2. Intermittent delivery of new versions, causing excessive ramp-up and slow-down times, wreaks havoc with outsourcer's staffing schedules?
            3. Continuing (despite protests) inadequacy in status reporting (by you to outsourcer, e.g. what has changed in the software)?
            4. Failure to provide agreed deliverables?
            5. Agreed staff members not working (or not working full time) on the project?
            6. Theft
            7. Intellectual property problems
                a. *Trade secret leaks*
                b. *Unauthorized use of software, could expose outsourcer to liability.*

        c. *Unauthorized copying or distribution of outsourcer's software or materials.*
    8. Non-competition
        a. *In violation of agreement*
    9. Harrassment or other torts against outsourcer's staff or property.
4. **Notification of termination**
    a. Who is authorized to terminate the contract?
    b. Who does the authorized party have to notify? (Who do you send the letter to, who does the outsourcer send the letter to?)
    c. Notification must be in writing? E-mail OK? Telephone? Certified mail?
5. **Termination Support**
    a. Should the contract obligate the outsourcer to provide termination and transition support. (This additional support will usually be at your expense.)?:
        A. Outsourcer accepts a duty to cooperate with the next outsourcer and to do all reasonable things necessary to make the transition as easy and inexpensive for you as possible. This includes transferring documents, test plans, source code for all test suites, test cases and sample data, bug reports, etc.
        B. Outsourcer agrees to prepare additional documentation to provide to you or to its successor (additional test planning material, documentation of test suites, etc.)
        C. Outsourcer agrees to make its staff available to you or to the next outsourcer for purposes of explaining its materials and its approach to testing your software, writing automated scripts, etc.
        D. Outsourcer agrees to provide maintenance for its automated test suites or to train your staff (next outsourcer's staff) in the information needed for maintenance.
        E. If the bug tracking is done on the outsourcer's database, outsourcer agrees to help port this data to a file format that you or the next outsourcer can use.
    b. This type of agreement is particularly desirable if the outsourcer is going to take over all of your testing. It also gives you some reassurance / help if the outsourcer can terminate mid-project, or if the outsourcer is testing a base version of a product that might be updated or modified, with future testing to be done by you or by a different outsourcer.
    c. Should contract provide for best efforts or reasonable efforts? Probably depends on the extent of your reliance on the outsourcer?
6. **Access to source code**

a. If the outsourcer is developing automated tests, will you have access to the source code in the event of a dispute or of termination?
b. Is the outsourcer required to archive the source code with a third party (escrow)?
    A. If there is escrow, what measures is the escrow agent to take to ensure that the archived code is the actual code in use.

7. **Termination during a dispute**
    a. Should the contract obligate the outsourcer to provide you data and cooperate in your transition during a dispute (especially a dispute in which you are not paying the outsourcer's fee)?

M. **Intellectual property**

1. **Who owns the results of the testing?**
    a. The test lab wants to be able to reuse the technology that it develops.
    b. You have to be able to reuse materials and technology that the test lab has developed for your product.
    c. You want to be able to reuse materials that were developed for one product, when you test another product.
    d. If there is no agreement, your rights of use are limited and the test lab owns the copyright on the test plan and its other work product.
2. **Licensing issues**
    a. If you will provide 3rd party software to the outsourcer, do you have the right to transfer or lend that software?
    b. If the outsourcer will use 3rd party software on your product, does it have the right to use that software for that purpose?
    c. If the outsourcer will use 3rd party software to test your product, what happens when you want to repeat some of its tests later? Can you retrieve test cases from archives and use them without the 3rd party tool? If not, does the outsourcer have the right to transfer a copy of this software to you?

N. **Confidentiality.**

1. **Define confidential information**
2. **How will each of you identify what information is confidential and what information is not?**
3. **The lab's responsibility to you**
    a. They sign nondisclosures on your products.
    b. They sign nondisclosures on 3rd party products that you have, that you let them use (if you can let them use them at all).

c. They have effective security measures at their site, to protect your secrets.
    A. The outsourcer might have a special locking room that they can reserve just for your project. You will pay extra for services like this.
    B. The outsourcer's staff have all signed nondisclosure agreements that bind them to respect nondisclosures that the outsourcer's management has signed with you.
    C. The facility is locked, with secure locks, and ex-employees have no access.
    D. People (non-employees) can't just walk in or out during working hours.
    E. Network facilities are secure. Hackers on the net can't just break in electronically and gain access to your documents.
d. If their staff are assigned to other projects as well as yours, can you avoid accidental disclosure of your secrets?
e. If your product is being tested in a shared lab facility (owned by the outsourcer, but shared across projects), will people from other project teams see proprietary material of yours while they work in the lab? If so, what confidentiality rules govern them?
f. Can any of the outsourcer's staff write reviews of products tested by the outsourcer without your approval?
g. They don't reveal other peoples' secrets to you.

4. **Your responsibility to the lab**
    a. Should you be restricted from showing other labs/outsourcers who work with you the test planning materials or test cases that you got from this outsourcer?
5. **Survival**
    a. Your duty to protect each other's secrets survives the termination of the contract, and is independent of the reason for termination of the contract.
6. **Electronic communication**
    a. Will your electronic communications be encrypted?
    b. If you are sharing data at a web site or at a "private" BBS or a private forum on an online service provider's system, what arrangements guarantee the security of the site?

O. **Noncompetition clauses.**

1. **They promise not to provide services to your competitors for X months.**
    a. This is a dangerous clause for the outsourcer. Except under very special circumstances, they will not (or should not) sign it.
    b. Do you have a right to place further projects at their site, even if this will make them too busy to take on other clients?
2. **You promise not to work with other outsourcers.**

a. This is a dangerous clause for you. What are its benefits?
b. Does the outsourcer have a right of first refusal on your next projects?

3. **Employment issues.**
    a. Non-recruitment clauses
        A. You promise not to recruit their staff for X months and they promise not to recruit yours.
    b. They act as an employment agency
        A. You promise to pay them for staff of theirs that you recruit. Does the amount depend on the number of months that their staff member has worked on your projects? (Some companies charge much less if you recruit staff who've already been working on your premises for several months.)
    c. They take over some of your staff
        A. Your agreement may anticipate that you will terminate employment of some of your staff and that the outsourcer will hire these people. This is a complex situation, that must be worked out with care and specificity.

P. **Conflict**

1. **No conflicting contractual obligations**
    a. This agreement and the transactions contemplated herein do not conflict in any material manner with any other agreements or transactions to which either party is a party or by which either party may be bound.
2. **No conflicting resource obligations**
    a. The outsourcer has or can get enough staff and facilities to do the job properly. No one else who might compete with you for resources has a higher priority call on the outsourcer's staff and facilities.
3. **No unknown conflict of interest**
    a. Is the outsourcer a shareholder in your competitor?
    b. Is the outsourcer subject to a long-term contract with your competitor, which makes the outsourcer loyal to the competitor?

Q. **Assignment**

1. **Can the outsourcer assign the contract (have another outsourcer take over the contract?)**
    a. If you sell the product to another company, or contract with another company to finish its development, is the outsourcer obliged to work with that company?

R. **Integration Clause**

1. **This clause says that the written agreement is the entire agreement and that no other understandings exist outside of this agreement.**

a. Courts enforce these clauses. If the outsourcer's salesperson made you a bunch of promises, but didn't put them in the contract, they aren't going to be enforceable against the outsourcer.
b. It's not good enough to get a promise in writing. You have to get the promise in writing in a way that makes it clear that it is part of the final contract.

S. **Choice of Law and Forum**
   1. **Governing Law**
      a. Should the contract contain a clause that specifies which state's or country's law will govern this contract and the performance of the services
   2. **Choice of Forum**
      a. Should the contract contain a clause that specifies which state's or country's law will govern this contract and the performance of the services? Why would you ever agree to a clause that sets the forum far from your own state?
      b. Is the forum selection permissive (you agree that you CAN be sued in Washington) or exclusive (you agree that you can ONLY be sued in Washington)?

T. **Relationship of the parties**
   1. **The parties are independent contractors**
      a. No agency relationship.
      b. Not a joint venture or a partnership.
      c. Neither party can bind the other to any agreement.
      d. No tax withholding.

U. **International legal issues.**
   1. **Barriers to using an out-of-country outsourcer**
      a. Is there any problem with trans-border data flow? (There might be, for example, if you are sending customer data out of Europe.)
      b. Is there a problem with sending software across the border (e.g. encryption routines, licenses of 3rd party software, etc.) (Are there tools that you used to test the English version in the US that you can't let your outsourcer use to test the French version in France?)

V. **Other miscellaneous issues**
   1. **Severability**
      a. If part of the contract is determined to be unenforceable, the rest of the contract is to be enforced as if these clauses had never been in it.

W. **Useful references**

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