

Work for yourself, work for the U

STAT8801
Statistical Consulting

School of Statistics
University of Minnesota

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It's not personal, it's business.

Michael Corleone.

Suppose you want to run your own consulting business.

You'll want it to be successful.

Here are a few tips, mostly from ASA Section on Statistical Consulting newsletters.

Should you do it?

- Can you handle it if a client doesn't pay you for a couple of months, or at all?
- Can you say no to those really awful jobs (you'll be happier)?
- Can you postpone dinner or a vacation to do last minute stuff?
- Are you a good writer?
- Can you negotiate contracts? How about changes or extensions?
- Do you despise air travel?
- Are you willing to say no? (You should be.)
- Can you meet deadlines?

Advantages

There are advantages to your own consulting business.

- Flexibility (your own boss).
- Earning potential.
- No red tape.
- Often more diverse work.

Disadvantages

There are also disadvantages.

- Great potential to fail.
- Little or no support.
- Communication is often more difficult (distance).
- You have to do a lot of non-statistics things.
- Isolation.

Setting up a business

You need a business plan!

Talk to Small Business Administration or www.score.org.

Think things through, consider all aspects, plan for contingencies.

Should you be Sole Proprietorship, or Partnership, or Corporation?

Do you have 6 months of money/work to get started?

Do you have enough experience that anyone will hire you to begin with?

Startup issues

- Legal costs.
- Accounting advice.

Costs to consider

- Rent.
- Taxes (FICA, payroll, etc).
- Insurance including medical (it's not cheap).
- Retirement savings.
- Secretarial support.
- Computing and software.
- Travel.
- Supplies.
- Continuing education.

Administration

Someone needs to do:

- Bookkeeping.
- Payroll.
- Taxes.
- Hiring?
- Employee evaluation?
- Web site design/maintenance.

Marketing

You need to do it, and keep it up, even during busy times.

How might you market?

- Publish papers.
- Make presentations at scientific meetings.
- Have exhibits at meetings.
- Contact current, former, potential clients.
- Distribute a newsletter.
- Professional organization listings.

Word of mouth is best, once it gets going.
Get it from high quality work, done on time.

Advertising may not paid off.

General advice

Most of these are “obvious”:

- Find a niche, probably based on something you know.
- Build and hold a client base in the niche.
- Manage cash flow; spend conservatively.
- Negotiate contracts wisely (look for the MAD person—money, authority, desire).
- Manage time wisely.

If you can:

- Avoid late involvement in projects.
- Avoid emergency clients.

How much should you earn?

Figure out how much you need to earn in a year.

You must pay for:

- Your salary.
- Taxes.
- Computing and similar necessities for business.

You should pay for:

- Insurance.
- Retirement savings.
- Continuing education.
- Administrative support?

How much do you work?

Remember, not everything is billable!

You'll work a lot more than you can bill.

Various suggestions:

- 500–1000 billable hours per year.
- 100 billable days per year.

How much should you charge?

$$\text{Hourly rate} = \frac{\text{Total needed in year}}{\text{number of billable hours}}$$

Billable hours is perhaps about 750.

If you want \$75,000 per year, multiply by about 1.4 or more to cover taxes. Add \$6,000 for health insurance and \$10,000 for retirement. That's \$121,000 total cost neglecting a lot of expenses.

Hourly is

$$\frac{\$121,000}{750\text{hours}} = \$160/\text{hour}$$

ASA Survey

Section on Statistical Consulting did a survey in 2006.

Rates had a median about \$130/hour, with quartiles at \$90 and \$190.

Seems a bit low to me.

PhDs charge about \$44/hour more than MS.

Consulting groups had the highest rate (with highest overheads?).
Self-employed fairly similar to university faculty rates.

Billing structure

Total time (hourly or daily) plus expenses versus fixed price for project (e.g., teaching a short course).

Rule of 3

Figure out how long you think it will take, then multiply by 3.

May want hourly for in town work, daily for out of town work.

Document every expense and list clearly on invoice.

Potential problems

Talk is cheap. May say they'd love to hire you, but they never do.

Negotiate contracts to allow "change orders", but extra cost for extra work.

For "cash flow" clients, release intermediate products only when paid.

Summary

- Decide whether you should run a business.
- Plan the business carefully.
- Charge an appropriate amount.

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Academic

Adjective.

- 1 Learned or scholarly but lacking in worldliness, common sense, or practicality.
- 2 Scholarly to the point of being unaware of the outside world. See pedantic.
- 3 Theoretical or speculative without a practical purpose or intention. See theoretical.

Resources

Where to look for guidance:

- **The IMS New Researchers' Survival Guide**, www.imstat.org/publications/books/NewResearchersGuide.pdf
- Trumbo, B (1989) "How to Get Your First Research Grant," *Statistical Science*.
- Speed, T. (2005) "How to do Statistical Research," *IMS Bulletin*, bulletin.imstat.org/archive/34/1
- Mentor.
- Institutional resources.

Pros and cons

Advantages:

- Flexibility of schedule.
- Chance to do research and follow interests.
- Security (eventually).
- Usually good benefits.
- Students.

Disadvantages:

- Long hours.
- Lower pay than industry.
- Must pass tenure hurdle.
- Students.

Teaching

Some really like teaching, others merely tolerate it.

If you really dislike teaching, don't go into academics.

If you really like teaching but don't care for research, don't go to a research-1 institution.

That seems obvious advice, but many have ignored it.

Job Search

Consider your strengths and likes, and narrow your list to 15 or so positions.

Emphasize research interests and relevant experience in cover letter.

Make it easy on your references (give them lists of names and addresses and background on positions).

Meet deadlines and requirements stated in ads. Ad wording is often precise; e.g. "Application review begins on Jan. 14, 2009. Position open until filled" is different from "Applications must be received by Jan. 14, 2009."

The Interview

Research departmental members before you go.

- Look at publications.
- See how you and they intersect.

Research the program before you go.

- What is taught.
- Who teaches what.

Try to figure out how you could fit in.

Interview continued

Ask about

- Teaching load and other duties.
- Research expectations.
- Grant/contract expectations.
- Consulting opportunities.
- Salary, fringe benefits.
- How department fits in with college/university.
- Computing.
- Flex time, day care, etc., and spousal issues.
- Sabbatical/leave opportunities.

Negotiating

- Speak freely, frankly, and fairly.
- Know your market value (see Amstat News surveys).
- Ask for course relief.
- Ask for start-up funding, travel money.
- Ask for moving expenses.
- Parking?
- Meet deadlines; **don't lead them on.**

Once you start

The first couple of years are really tough.

Find a mentor. Mentors can

- Show you the ropes.
- Offer advice.
- Introduce you to others; network.
- Give feedback and comments on research/writing.
- Write papers/grants with you.

Research

Publish or Perish.

Companies go out of business if they don't sell a product. Your product is research. In research-1, you've got to ship product!

- Immediately begin to mine papers from your dissertation.
- Resist temptation to explore new areas (yet).
- Consider joint work.
- Reserve some time for research; hide if necessary.
- Attend New Researchers Workshop.
- Submit grant applications.

Teaching

Teaching will consume an enormous amount of time and emotional energy.

- See what others have done; borrow what works.
- School may have teaching workshops.
- Prepare!
- Keep good notes (and reuse them).

Service

Don't seek service — it will find you.

Special risk for women and minorities.

But do your share.

Time management

- Maintain office hours.
- Try not to see students outside of office hours.
- Preserve time to work undisturbed.
- Work one hour per day on research nearest completion.
- Reserve time for partner/family.

Summary

- Choose an appropriate academic job.
- Survive first few years.
- Manage time wisely.