



Consulting as a Career



An Unexpected Journey

Roy Forsstrom, PMP, GISP



Agenda

- What is Consulting?
- Consulting Companies
- My Path to Consulting
- The Consulting Process
- Is Consulting for You?

Roy Forsstrom

- 45+ year career
- IEEE Member
 - 31 years
 - Senior & Life Member
 - Geoscience and Remote Sensing Society



Roy Forsstrom

- Retired 2019
- Nonprofit boards
- Various Instructor roles
- Fly Sailplanes (56 years)
- *Attending UMN*



Disclaimer

Consultant Speak

This presentation describes my experience and observations as a consultant for over 21 years. It is provided for your information and enjoyment. Your experience is different.

When it comes to any career or life experience, there are no hard and fast rules, only guidelines, and maybe some guardrails.

Part 1

What is a Consultant?

Five Consulting Misconceptions

1. Consultants Constantly Travel
2. Consulting is only for business majors
3. The work is mainly about giving advice
4. Consulting jobs are insecure
5. All consulting is the same

What is a consultant?

A consultant is a professional who provides expert advice in a particular area such as business, education, law, regulatory compliance, human resources, marketing, finance, health care, engineering, science, security (physical or cybersecurity), or any of many other specialized fields. Consultants are typically hired to solve specific problems or to enhance the efficiency or effectiveness of a process or organization. They bring specialized knowledge and experience that an organization might not possess internally, offering solutions and strategies that aim to optimize outcomes.

Consultants often work for consulting firms or operate as independent contractors. Their roles can vary significantly, including conducting research, compiling reports, presenting recommendations, and helping implement changes. Depending on the field, consultants might be involved in project management, advising on organizational development, facilitating training workshops, or even providing hands-on practical work in their area of expertise.

Source: Chat GPT

What is a consultant?

A consultant

works in most any field.

Consultants

can do whatever is required.

Examples of Consulting Companies

- IT Vendors

- Oracle
- IBM
- SAP
- Salesforce
- ESRI

- IT Services

- Accenture
- PWC
- Deloitte
- KPMG
- TATA

- Engineering Vendors

- Schneider
- Siemens
- GE

- Engineering Services

- Black and Veatch
- Burns and McDonnell
- POWER Engineers

- Management Consulting

- McKinsey
- Bain & Company
- Boston Consulting Group

Typical Consulting Roles

1. Provide Technical Solutions
2. Staff Augmentation
3. Advisory, Problem Solving
4. Project, Product or Services Planning
5. Project Management

Examples of Consulting Roles

- Management Consulting
 - Organizational
 - Mergers & Acquisitions
 - Process Improvement
 - Human Resources
- IT Consulting
 - Project Planning
 - Project Management
 - Software Installation
 - Software Upgrades
 - Software Development
- Engineering Consulting
 - Project Planning
 - Project Management
 - Construction Management
 - Smart Grid Planning
- Engineering Services
 - Transmission Line Routing
 - Substation Design
 - Substation Upgrades
 - Smart Grid Implementation

Consulting Career Progression

12/11 - Analyst

10 - Senior Analyst

9 - Consultant

8 - Senior Consultant / Junior Manager

7 - Manager

6 - Senior Manager / Senior Principal

5 - Principal Director

4/3 - Managing Director

2/1 - Senior Managing Director

Corporate Hierarchy

Executive Level

- Managing Directors/Partners
 - Leadership
 - Sales Quotas
 - Staff Development
 - Accountable
- Senior Managers
 - Technical Expertise
 - Leadership
 - Project Management
 - Sales Quotas
 - Staff Development
 - Accountable

Staff Level

- Consultants/Managers - Billable
- Support Staff - Non-Billable

Part 2

My Route to Consulting

How did I become a consultant?

- Education
 - Attended Villanova (engineering)
 - US Navy Nuclear Power School
 - AA, Geography, Computer Science, UWEC
 - BA, Geography, Southern Connecticut
 - Mini-MBA, University of St Thomas
 - MA, Geography, Columbia University
 - PhD candidate, Natural Resource Science, University of Minnesota

How did I become a consultant?

- Job Experience
 - Navy Nuclear Reactor Operator
 - Oilfield MWD Simulator Instructor
 - Instructor at St. Olaf College
 - GIS Manager City of Saint Paul
 - GIS Manager/SCADA PM Dakota Electric
 - GIS/Smart Grid Consultant 20+ years

How did I become a consultant?

- New GIS software from UK called Smallworld GIS (1992)
 - Unique and very capable mapping system for network management
 - Somewhat difficult to implement
 - Programming language based on Smalltalk
 - Everything is an object
- Became part of General Electric in 2000

How did I become a consultant?

- Dakota Electric was 5th North American customer (and far smaller)
 - Pacific Gas & Electric
 - Public Service of Colorado
 - Entergy
 - Centra Gas
- I was the GIS Project Manager with the help of consultants
- DEA also bought a new SCADA, I was the PM there, too

How did I become a consultant?

- Helped other utilities
 - Minnegasco
 - Bloomington Public Works
 - Eugene Water and Power
- Gave presentations on Smallworld at conferences
- Received call from a recruiter for a consulting position in San Antonio

My Consulting Roles

1. Director of Technical Services
2. Senior Project Manager
3. Director of Consulting Services
4. Senior Manager
5. Senior Principal

Consulting Company Staff Size

1. Smallest
 - a. 10
2. Largest
 - a. 450,000 (95,000 offshore)
3. Commonly
 - a. 150 - 300

Some of my Consulting Projects

1. Data Conversion
 - a. Modesto Irrigation District
2. Data Conversion and Inventory
 - a. St Paul Public Works, DC area electric coops
3. New GIS System and Data Acquisition
 - a. Transco - Philippines, Philadelphia Electric
4. Field Data Verification
 - a. Oklahoma Gas & Electric, Pasadena Water and Power
5. GIS Transition Plan
 - a. Ameren - St Louis

Interesting Stories

- Southern California NDAs
 - Pasadena, Burbank, Glendale
- Oklahoma City
 - Sheltered for tornados several times
- Philippines
 - Client brought 6 staff from Mindanao to Manila
- South Africa
 - A training class needed a translator

Interesting Stories

- Airline Travel
 - 100 to 150 flights a year for 10 years
 - Never had to stay overnight at an airport
 - No emergency landings
 - Two aborted takeoffs
 - Sat next to Flavor Flav on SWA flight from Burbank to Las Vegas
 - Sat next to an Idaho senator
 - Offered my seat to Richard Dreyfuss on SWA flight San Diego to Reno

- *An hour early is better than a minute late*

Part 3

Consulting Process Example

Do Consultants Need Insurance?

Absolutely - Insurance mitigates risks

- Professional Liability
 - Losses due to error and omissions
 - Experience, field and cost of contracts

Do Consultants Need Insurance?

Absolutely - Insurance mitigates risks

- Professional Liability
 - Losses due to error and omissions
 - Experience, field and cost of contracts
- Business Continuity
 - Cyber insurance
 - Life Insurance for partners/key staff
 - Health Insurance
 - Property Insurance

Do Consultants Need Insurance?

Absolutely - Insurance mitigates risks

- Professional Liability
 - Losses due to error and omissions
 - Experience, field and cost of contracts
- Business Continuity
 - Cyber insurance
 - Life Insurance for partners/key staff
 - Health Insurance
 - Property Insurance
- Completion Bonds
 - Often required by government agencies
 - Sometimes cost of bond is born by the client

What are Consequential Damages?

- Consequential damages
 - Indirect losses that occur as a secondary result of a primary event, like failing to meet a project deadline, which in turn causes the client to lose profits.
- Not Insurable
 - Inability to identify and calculate subsequent risk

Review Contracts Carefully

What are Consequential Damages?

- Protecting Against Claims for Consequential Damages:
 - Manage the risk
 - Contractual agreements, where limitations of liability can be specifically defined.
 - Clearly communicate the scope and limitations of services
 - manage client expectations and mitigate the risk of claims

Review Contracts Carefully

Finding Work (aka Sales)

- Building Relationships
 - POWER Engineers
 - Regular visits
- Cold Calls
 - Can work
 - Build relationships
- Appointments
 - Other opportunities at existing clients
 - Build relationships
- Networking
 - People in industry
 - Elevator pitch
 - Conference Presentations
 - Trade Show Booths
- Get on RFP distribution list
- Know when RFPs are coming
- Have a hand in developing RFP requirements
 - Philippines -> GISP

Consultant Speak (to Avoid)

Synergy

Leverage

Paradigm Shift

Low-Hanging Fruit

Think Outside the Box

Bandwidth

Pivot

Reach Out

Deep Dive

Move the Needle

Value Add

Circle Back

What keeps you up at night?

Most words with -ize

Win the Work

- Receive Request for Proposal
- Identify in the RFP
 - Due date
 - Format
 - Project Requirements
 - Bonding Requirements
- Go/No Go
 - Resource availability
 - Other factors
 - Decide
 - Let client know and why

Proposal Writing

- A good proposal takes time and effort
- Describes your understanding of the project requirements
- Shows you have the capability (skills/resources)
- Has sufficient detail to explain your approach and plan
- Professional look and feel
- Delivered on time and in the manner requested

Setting a Fair Price

- What amount to charge?
 - High enough to pay your staff, expenses and some profit
 - Low enough to win the job
- What is the value of your services in the market?

Setting a Fair Price

- Back of the envelope calculations:
 - Hourly cost of staff
 - Number of hours for project
 - Fixed costs = overhead, benefits, non-billable hours, sales, proposals, etc
 - Staff Salary X #Hours X 3.2 multiplier (fixed costs est) = Billing rate
- Evaluating the result
 - Can you bill 500, 1000 or 1500 hours per year? Would that cover fixed costs?
 - What is the project cost when you add travel? Is it winnable?

$\$65 \text{ Hr Salary} \times 3.2 = \$208 \text{ Hr Billing Rate}$

Winning the Work (aka Closing the Sale)

- You
 - Ask clarification questions (often strategic)
 - Go/No Go for response
 - Write and Submit the Proposal (government agency may make proposal public)
 - Proposal Presentation
- Client
 - Award decision
- Both
 - Contract Negotiations (may not succeed)
 - Contract Signing

Subcontracting

- Skills not available on team
 - May need client approval
- Offshore
 - Often less expensive option
 - Communication is key to success
 - Corporate may require use of offshore assets

Co-opetition

- Join forces with a competitor to win project
- Often more efficient
- Creates Synergy
 - Principals may be former co-workers!
 - Don't burn your bridges!

Minority and DBE Subcontractors

- Many government contracts have set aside requirements of 10 to 20%
- Economically disadvantaged businesses
 - Woman-owned
 - Veteran or Disabled Veteran-owned
 - Minority-owned
 - Enterprise Hubs
- Extra work for you to find and qualify one for your proposal
 - Often attend RFP Info meetings and will hand you their card
- The intent is good, results are mixed (in my experience)

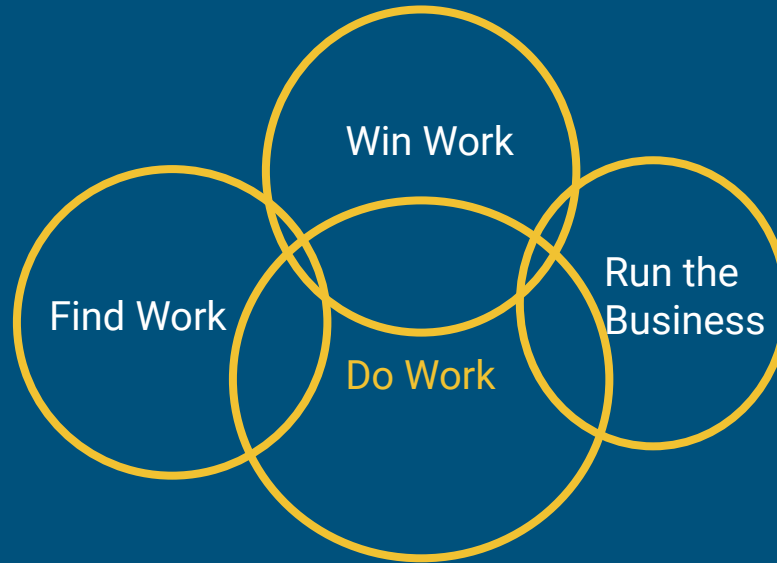
Consulting Contracts

- Scope of Services
- Duration of Contract
- Payment Terms
- Expenses
- Confidentiality Agreement
- Intellectual Property Rights
- Termination Conditions
- Dispute Resolution
- Liabilities and Indemnifications
- Reporting and Communication
- Subcontracting and Assignment
- Deliverables and Deadlines

How To Get Paid

- Milestone Payments Common
 - As listed in the contract
 - Requires progress reports and/or deliverables
 - 10 - 20% upfront
 - A % on each deliverable or phase
 - 10% reserve

Now That I have a Project...



What if your project goes haywire?

Project Management Triad

1. Scope
2. Schedule
3. Budget

Change Orders

- Official change to the contracted project
 - Contract may limit type and amount of change orders
- Addresses unexpected issues
 - Force majeure
 - Client initiated changes
 - Improved or new methods
 - Reduced scope
- Be careful to document all requested changes by all parties
- Be careful not to get reputation for low balling price and making up for it with change orders

International Projects

- Always a great experience!
- Canada
 - Client must certify a Canadian company is unable to provide services
 - “Software Engineer” is not a valid title
- Philippines
 - Extensive verification of company and staff
- South Africa
 - Good experience
- Columbia
 - Extensive verification of company and staff
- UK
 - Tax Issues = profitless project

Part 4

Is Consulting For You?

Consulting Job Opportunities

- Internal
 - At your existing company
- Consulting Firms
 - Large
 - Small
- Start Your Own
 - Incorporate
 - Work with SCORE, SBA

Your product is your knowledge, skills and experience.

Providing New Consulting Services

- Train existing staff
 - You already have good staff
- Hire skilled staff
 - Get in on the ground floor
- Buy a company
 - Jump start the process

A Consultant's Traits

- Leader
- Self-starter
- Problem solver
- Communicates well
- Level-headed
- Resilient

Professional Certifications?

- Professional Engineer
 - Depending on project and location
- PMP - Project Management Professional
 - IT environments
 - Experience, skills, testing
 - Scope, Schedule, Budget, Resources
- GISP - Geographic Information Systems Professional
 - Computer Mapping Systems
 - Experience, skills, testing

Ethics in Consulting

- Integrity
- Fair Treatment
- Professional Competence
- Responsibility to Society

State and Local Tax Issues

- Working in another state
 - On-site vrs. Remote
 - May owe State and Local tax for on-site work days
- Some states require income tax returns
- Some states do not have reciprocity
 - Double payment
- Your company may reimburse non-resident income taxes
 - Which is also taxed, reimbursed and then taxed again (recursive)
 - About 50% additional

The Consulting Life, Part 1

- New Adventures!
 - New Projects
 - New People
 - New Locations
- Learn new skills
- Potential for Lots of frequent flyer, hotel and car points
 - Delta Million Miler
 - Marriott Lifetime Titanium
- Stay over weekends
 - Bring family along
- Expense accounts and per diem!!

The Consulting Life, Part 2

- Often very stressful
- On-Site Work
 - Significant travel
 - Weekend travel
 - Every week
 - Time zone changes
 - Hotel or rent apartment?
 - Time away from family
 - Long days - 10 to 14 hours
- Client demands
- Company demands
 - Company culture and support are keys to your success

The Consulting Life, Part 3

- Not for everyone
- You must be in tune with family life
 - Understand any impact on your family
 - Take advantage of support services
- Talk to you boss as needed
 - Adjustments are possible
- Keep your hobbies and outside interests

The Consulting Life, Part 4

A Typical Week, for me

- Sunday evening
 - Prep for week ahead
 - Pack appropriate clothes (carry on)
- Monday Morning
 - 7am pre-check line, bkfst at Delta lounge
 - 8:20 am flight to Philadelphia
 - 1pm arrive at PECO office
- Monday - Wednesday
 - 10 - 12 hour work days
 - Work on proposals in evening
- Thursday
 - 3pm head to airport
 - 6pm flight - ~60 min delay
 - ~10:30 home in Twin Cities
- Friday
 - Relaxed schedule
 - Work at home
 - Work on proposals
 - Online meetings
 - Conference calls

Summary

Consulting can be a rewarding career
Just like any profession, it's not for everyone

Thank you for taking the time this evening to attend.

Question?

Presenter: Roy Forsstrom