

OR CONSULTING: THERE  
IS NO TEMPLATE

Dr. Douglas A Popken, Systems View  
2010 Isolated Practitioner Workshop

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## What kind of background do you need for OR consulting?

One that will provide you with some credentialing/legitimacy and a variety of experiences that you can draw upon. Other than that I think it is completely open.

# Doug Popken Background

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- OR/IE studies at Cornell (BS and MEngr)
- Defense Logistics Agency
- IEOR studies at Berkeley (MS and PhD)
- Scientific Analyst, Program Manager, Logistics Research Officer at Air Force Research Laboratory
- Program Manager (Civilian) at Sumaria Systems
- Assistant Professor, University of Dayton
- Algorithm Developer, Heuristec
- Owner/President, Systems View (1997 - current )

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## 1) Should I be a specialist or a generalist?

Yes, that is, both. You need some areas with deep knowledge and experience, but be fluent in many.

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## 2) Can an isolated practitioner make an impact?

Yes, but especially if you assemble the right collaborators.

# Systems View Specializations

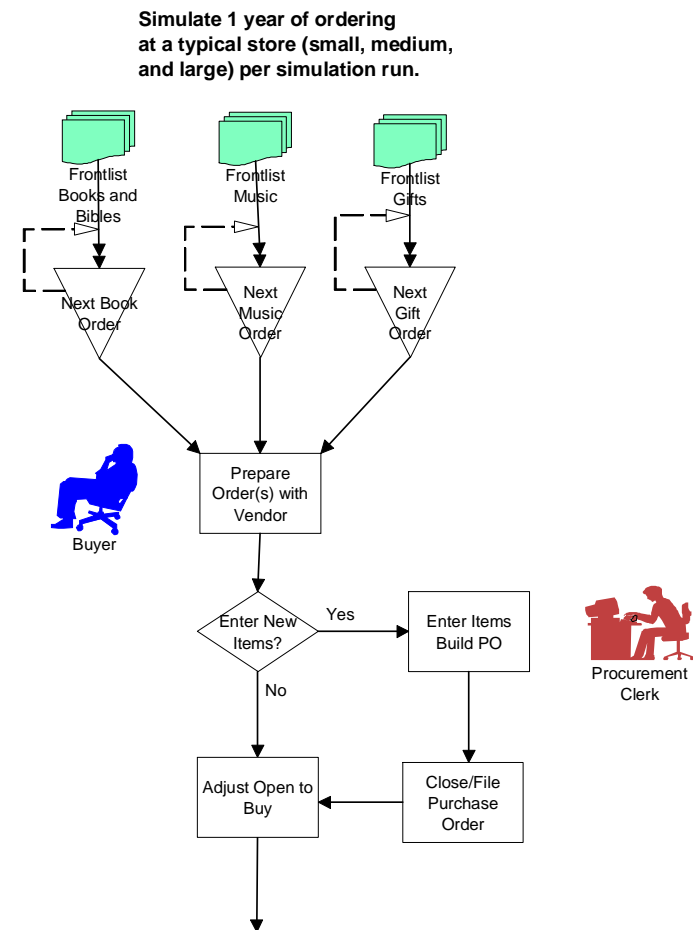
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- Business process modeling and analysis
- Health risk analysis
- Truck routing
- DoD related simulation/optimization

# Business Process Modeling and Analysis

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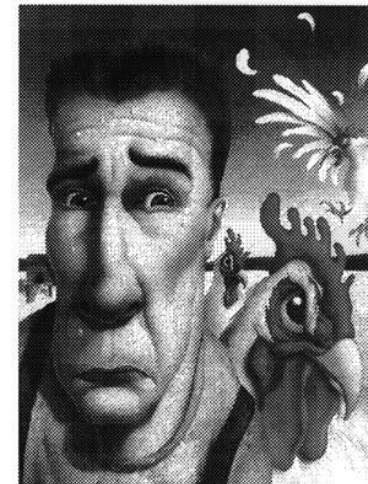
- Telecom services
  - ▣ Simulated repair-call handling, high speed order processing, and appointment scheduling for major telecom.
- Retail back-room processes
  - ▣ Simulated the "back room" processes of book stores to find ways to improve ordering, receiving, and returns.
- Missile launch logistics
  - ▣ Simulated launch process flow and resource usage under different operating scenarios. The results helped to identify an efficient low-cost design.



# Health Risk Analysis

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- Projects for multiple drug industry clients in partnership with Cox Associates
- “Franchise” on animal/bug/drug specific risk modeling, for example
  - Chickens/Vancomycin Resistant E. Faecium (VREF)/Streptogramins
  - Chickens/Campylobacter/Fluoroquinolones
  - Swine/MRSA/Tetracycline
- Techniques
  - Statistical: Logistic regression, Bayesian Model Averaging, Bayesian Networks, Classification Trees
  - Discrete-event simulation
  - Farm-to-fork and hospital-to-farm probability chains
- Impact
  - Publications
  - Strong influence on FDA policy making process
  - [Edelman](#) finalists (with Animal Health Institute)
  - Less fear?



**Alektorophobia:** fear of chickens

# Truck Routing

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- Enterprise level dynamic routing system for an auto shipping industry client
- Techniques
  - ▣ Route Optimization (dormant)
  - ▣ Software Development, Project Management
- Impacts
  - ▣ Mission-critical software used to assign hundreds of new orders daily
- ***Route Factory Spreadsheet™***
  - ▣ “Packaged” lower-priced version
  - ▣ Impact largely still TBD



# DoD Related Simulation/Optimization

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- Ongoing work with a major DoD contractor to model and optimize a parts and maintenance support system.
- Techniques:
  - ▣ Forecasting
  - ▣ Discrete-event simulation
  - ▣ Simulation optimization
- Impact
  - ▣ Creation of a capability to link performance metrics to resource levels (enables Performance Based Logistics)
  - ▣ Generating efficiencies in ongoing combat operations
  - ▣ Created demand for follow-on and related OR projects

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## What kind of business/marketing strategies do you recommend?

It depends a lot on your interests and personality type. But some are universal.

# Systems View Business Strategies

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- Diversification
- Collaboration
- Stay Lean
- Marketing
  - ▣ Speaking and writing
  - ▣ Networking
  - ▣ Website
  - ▣ Research
- Work habits

# Final Tips

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- Acquire/develop software development skills
- Become fluent with a suite of problem-solving tools (simulation, forecasting, statistical analysis, mathematical programming, etc).
- Seek out potential partners with complementary skill sets
- Determine a marketing style compatible with your interpersonal and communication skills
- Develop niches, but don't get stuck in a rut
- Have a wife with a full time job