Your Careers, Your Client, Your Project and It’s Delivery

ISyE 6335
November 6, 2018
What I’ll Tell You

- Disclaimer
- Experience
- Logistics careers
- Project resources
- Understanding your client
- Compare two prospective clients
- Project solutions
- Project presentation
- Review
- Questions
Disclaimer

Do not try this at home.

Professional driver on a closed course.
Disclaimer

The opinions expressed in this presentation are those of the presenter and do not necessarily reflect those of management (that would be Dr. Bartholdi).

In case the presenter and the professor disagree, remember the golden rule…

He who grades your work, RULES!
Curriculum Vitae

• Dr. Bartholdi
  – Bachelor of Science, Mathematics
  – PhD, Operations Research

• Pete Viehweg
  – Bachelor of Arts, Mathematics
  – MBWA

  “Management by Walking Around”
Food for Thought

“You can observe a lot by just watching.”

- Yogi Berra
  Baseball player & Manager
  (1925 – 2015)
Curriculum Vitae, Pete Viehweg

- Maj, US Army retired (Co. Commander, Aviator)
- Production Supervisor
- Production Planning Coordinator
- Warehouse Manager
- Manufacturing Manager
- National Transportation Manager
- National Planning Manager
- Manager, Logistics & Planning
- Plant Manager
- Director of Logistics Systems
- Vice President, Operations
- Sr. Vice President, Logistics
Curriculum Vitae

I’m old
Food for Thought…

Whether you believe you can,

or you believe you can’t,

you’re right!
Logistics Careers

- **Staff resource (Industrial or Supply Chain Engineer)**
  - Collect data
  - Calculate
  - Analyze
  - Design
  - Recommend

- **Operations management**
  - Implement
  - Motivate
  - Improve

- **Consultant**

- **Academia**

- **In any case, you need an appreciation for the problems of human motivation in the supply chain (how do you get things done through others)**
Client Projects

Who?

- Organic personnel, if available

“Do more with less.”

“Do everything with nothing.”
Client Projects

Who?

- Organic personnel, if available
- New hires with appropriate skills
- Consultants
- Some combination of the above
Why Consultants?

• Team members doing other projects
• Varied experiences
• Complementary skills
• Different points of view
• Honest broker
• Tools
• Experience
• Track record
• Temporary headcount augmentation
Why Not Consultants?

- May not understand your business
- Expensive
- Not vested in the outcome
- Company personnel often not vested in the outcome
Your Project

• Somewhat academic exercise
  – Limited client contact
  – Limited presentation time
  – Limited data sets

• My Project:
  – Lots of presentation time
  – Not much data
  – Many slides
  – Project deliverables
    • Insight into a business person’s perspective
    • Have fun

• Keep students awake!
Food for Thought

“I have hardly ever known a mathematician who was capable of reasoning.”

- Plato, *The Republic*

Inventory & Distribution is about **APPLIED MATHEMATICS**!
Food for Thought

But engineering isn’t about perfect solutions; it’s about doing the best you can with limited resources.”

- Dr. Randy Pausch
Carnegie-Mellon Professor
“The Last Lecture”
(1960 – 2008)
Pop Quiz

Which storage policy results in the fewest restocks, equal space or equal time?

- Both result in the same amount of restocks

Which policy would order pickers prefer, and why?

Which SKUs are replenished?

- Equal time: All SKUs are replenished to the same time supply
- Equal space: The most popular SKUs are replenished with the greatest frequency (assuming no great disparity in size)

Equal space has the highest potential of stocking out of a popular SKU during order picking!
Understanding Your Client

• Thoroughly understand the company
  – Company’s competitive advantage
  – Capital investment requirements, etc.

• Know your sponsor
  – Goals for the project
  – Resources
  – Environment

• Understand how the company is managed
  – Decentralized, independent, distributed decision making?
  – Theory X or Theory Y? (Douglas McGregor)
Theory X assumes that the average person:

- Dislikes work and attempts to avoid it.
- Has no ambition, wants no responsibility, and would rather follow than lead.
- Is self-centered and therefore does not care about organizational goals.
- Resists change.
- Is gullible and not particularly intelligent.
Theory Y assumes that:

- Work can be as natural as play and rest.
- People will be self-directed to meet their work objectives if they are committed to them.
- People will be committed to their objectives if rewards are in place that address higher needs such as self-fulfillment.
- Under these conditions, people will seek responsibility.
- Most people can handle responsibility because creativity and ingenuity are common in the population.

Theory X: Cost
Theory Y: Asset
Understanding Your Client

- Understand what they really want
Understanding Your Client
Understanding Your Client
Food for Thought

There were two times in your life when you were really smart…

• When you were 18
  – You knew all the answers
• When you were 2
  – You knew the question

• WHY ?

Joe Powell,
“The Heritage of the Uncommon Man”
Understanding Your Client

- Understand what they really want
- Clear understanding of deliverables up front
- Have the data
  - Important data depends upon the problem
  - Ignore some data?
- Have stakeholders involved, if possible
- Understand how people are compensated (WIIFM)
- Make stakeholders believe it’s their idea
  - Ask lots of leading questions
Food for Thought

“It is amazing what you can accomplish if you do not care who gets the credit.”

- Harry S. Truman
  33rd President of the U. S.
Comparing Two Clients, or...
“It was the best of times, it was the worst of times…”

A Tale of Two Cities

- Charles Dickens
A Tale of Two Warehouses
National Office Products Wholesalers

ESSENDANT™
BEYOND ESSENTIAL

$5.04 billion

S.P. RICHARDS CO.™

$2.0 billion

Source: 2017 Annual Reports
## Writing Instruments
- Gel Ink pens
- Ball Point Pens
- Marker Pens
- Fountain Pens
- Rolling Ball Pens
- Permanent Ink Ball Pens
- Permanent Markers
- Specialty Markers
- Highlighters
- Mechanical Pencils

### Pentopia Pens
- Chameleon Styli

### Namiki Pens
- Emperor Collection
- Yukari Collection
- Sterling Collection
- Falcon Collection
- Vanishing Point Collection
- Ageless Collection

### Refills
- Writing Instrument Refills
- Namiki Refills & Parts

### Precise Zing - Black - 2 Pk
- Price: $4.95
- Code: PIL BPZ72BLK
- Add to Cart

### Precise Zing - Blue - 2 Pk
- Price: $4.95
- Code: PIL BPZ72BLU
- Add to Cart

### Precise Grip - Bold Point - Green
- Price: $2.95
- Code: PIL PR1-GRN
- Add to Cart

### Precise Grip Bold Point in Purple
- Price: $2.95
- Code: PIL PR1-PUR
- Add to Cart

### Precise Grip Bold Point in Pink
- Price: $2.95
- Code: PIL PR1-PNK-BC
- Add to Cart

### Precise Grip Bold Point in Turquoise
- Price: $2.95
- Code: PIL PR1-TRQ-BC
- Add to Cart

### Precise Zing - Black - 4 Pk
- Price: $9.95
- Code: PIL PZ7C4BLK
- Add to Cart

### Precise Zing - Black - 2 Pk
- Price: $4.95
- Code: PIL BPZ72BLK
- Add to Cart

### Precise Zing - Black - 2 Pk
- Price: $4.95
- Code: PIL BPZ72BLU
- Add to Cart
• Very clean
• Bright
• Large capital investment
• Space to work
• No observed damage to product
• Small
• Seems very crowded
• Poor housekeeping
• Manual processes
• Poorly lit
• Limited capital investment
“So much of what we call management consists in making it difficult for people to work.”

- Peter Drucker
  Management consultant & author
Best Warehouse?

ESSENDANT™
BEYOND ESSENTIAL

S.P. Richards Co.
Best Warehouse?

Essendant order accuracy
• 99.7%

S. P. Richards order accuracy
• 99.83%
S. P. Richards vs. Essendant
Income from Operations as % of Sales (2017)
Best Warehouse?

ESSENDANT™
BEYOND ESSENTIAL

S.P. Richards Co.™
Homework:

Prove The P versus NP problem:
- A major unsolved problem in computer science.
- It asks whether every problem whose solution can be quickly verified by a computer can also be quickly solved by a computer.

Or….

Prove Viehweg’s First (and only) Theorem, which states that:

“Large corporations often make money in spite of themselves.”
Understanding Your Client

• Public Corporation or private company?
  – Public company:
    • Quarterly results for Wall Street
  – Private company:
    • Long-term viability
    • Legacy or eventual sale
    • Can have longer investment horizons
Project Solutions

IT DEPENDS!!!

• What you’re trying to achieve
  – Increase space utilization
  – Reduce labor

• Relative cost of space and labor

• Number of shifts per day/week
  – A labor hour is a labor hour
  – Capital costs (depreciation) are constant regardless of utilization

• Receiving and shipping simultaneously?
Food for Thought

“All politics is local.”

- Tip O’Neill
Massachusetts Congressman

“All warehouse issues are economic.”

- Pete
Project Solutions

• ALWAYS look at no ( or low ) cost solutions first!
  – Process simplification
  – Work methods
  – Simple layout changes

• Capital investment baseline
  – Current process ?
  – Improved process ?

• Make sure your solution fits your client

• Offer alternatives and/or phased implementations
Conclusion

Recommendation → 3 Levels

1. Implementation of Bucket Brigades
   - Bays linked in groups of 2 for scanning
   - Workers travel with 3 boxes
   - 17% Improved Pick Rate*

2. Implementation of First/Last Labeling
   - No SKU Reorganization
   - 23% Improved Pick Rate*

3. Implementation of Power Conveyor
   - Concentrated Slotting
   - High Capital Investment
   - 62% Improved Pick Rate*

* Compared to Current Zone-Picking System
**Project Solutions**

- ALWAYS look at no (or low) cost solutions first!
  - Process simplification
  - Work methods
  - Simple layout changes
- Capital investment baseline
  - Current process?
  - Improved process?
- Make sure your solution fits your client
- Offer alternatives and/or phased implementations
- Simple solutions are elegant
Food for Thought

“There is nothing so useless as doing efficiently that which should not be done at all.”

- Peter Drucker
“In theory, there’s no difference between theory and practice. In practice, there is.”

- Yogi Berra
HIT THIS QUESTION OUT OF THE PARK

“Tell me about yourself” is the softball you should be able to hit out of the park. This is your headline. It’s your chance to review the elements of your résumé that connect your skills, experience, education, and passion to the requirements of the job. Your answer should clearly state why you are at the table. And it’s the most dangerous question, because interviews are like a cocktail party in that judgments are finalized in five minutes or less.

In discussing the headline principle in his book, Pitch Perfect (HarperBusiness, 2014), Bill McGowan reminds his readers to “get attention by starting with your best material.” Start with a concise and compelling career summary that makes the listener think, “I want to know more.” Remember, the first 30 seconds of a conversation or presentation are like the last two minutes of a football game. Execute the perfect play by telling a compelling story and be enthusiastic without being effusive, and the audience will remember you long after the conversation concludes.
Job Interview: The crucial first 5 minutes

- First impressions count
- Studies reveal that the first 5 minutes are crucial for any interview
- It is in these 5 minutes that the decision of hiring or not hiring you is made by the interviewer
- How, then do you ensure that the impression that you create is a favorable one?
  - Project a professional and enthusiastic image. Your aim is to convince the interviewer that you would be an asset to the company and not a liability
  - Stand straight, move confidently …

Source: timesjobs.com
Presentation of the Results

• Demonstrate subject matter mastery quickly
  – Company goals
  – Project goals
  – Attention grabber
• Believe in the solution
• Sell the solution
Presentation of the Results

- Wear proper attire
- Be early
- Get set up, make sure everything works
- Don’t read your slides
- Face the audience, not the screen
- Be able to highlight key points
- Act naturally
Remember…

The only person who likes change is a baby with a wet diaper.
Presentation of the Results

• Be respectful of your client’s time
  – Understand how much time is available
  – Deliver the highlights
  – Be ready to answer questions for more detail

• Don’t tell the client what you did, tell her your recommendations and benefits

• Plan appropriately
  – Number of slides
  – Number of speakers
  – Make sure presentation fits your personal style
    • Graphs
    • Tabular data
### Presentation of the Results

<table>
<thead>
<tr>
<th>SKU</th>
<th>picks-p(i)</th>
<th>Flow (cub. Ft.)</th>
<th>Labor Efficiency</th>
<th>Allocation</th>
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<tr>
<td>SUNGLASS-92</td>
<td>9204</td>
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<td>CATALOG GOLF</td>
<td>1</td>
<td>0.13175</td>
<td>2.755</td>
<td>0.299</td>
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</table>
Presentation of the Results

Determination of the TQM time

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<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</tr>
</tbody>
</table>

$T_{TQM} = TQM \text{ time} \times \text{TQM factor}$

$0.66 \times [1.000, 1.525, 2.057, 3.930, 5.055, 6.212, 7.133, 8.231, 8.994, 10.701, 11.415, 12.379, 13.415, 14.506, 16.072]$
# Warehouse Expansion in Yard Area

<table>
<thead>
<tr>
<th></th>
<th>New Locations</th>
<th>Cost of Racks</th>
<th>Cost of Expansion</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LRK</strong></td>
<td>8208</td>
<td>$205,000</td>
<td>$ 2 million</td>
<td>$2.2 Million</td>
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<tr>
<td><strong>HRK</strong></td>
<td>7296</td>
<td>$207,000</td>
<td>$ 2 million</td>
<td>$2.2 Million</td>
</tr>
<tr>
<td><strong>GLS &amp; ELN</strong></td>
<td>4143</td>
<td>$114,000</td>
<td>$ 2 Million</td>
<td>$2.1 Million</td>
</tr>
</tbody>
</table>

## Assumptions

- Cost of one LRK Rack 200$
- Cost of one HRK Rack 227$
Presentation of the Results

Pareto Analysis

Pareto Analysis of SKUs by picks

265,000 (80% of picks)

65,000 (20% of picks)

117 (24% of SKUs)
“Behold the turtle. He only makes progress when he sticks his neck out.”

- James Bryant Conant
  American chemist
  President of Harvard University
  (1893 – 1978)
Presentation of the Results

- Be tactful
Military Definition of Tact

“Tact is the ability to tell your Commanding Officer to go to H*%!, and make him glad he’s going.”
Presentation of the Results

• Be tactful
• Practice your presentation
  – Guinea pigs
  – Let them ask questions
• End with a strong conclusion
• Leave time for client questions
“Indecision is the key to flexibility.”

- Joe Zdziarski
Presentation of the Results

3 B’s
Be Brief
Be Bright
Be Gone
Always Remember the Money

"Interesting. Can you whittle down the ROI to something more like, say, 15 minutes?"
What I Told You

• Disclaimer
• Experience
• Logistics careers
• Project resources
• Understanding your client
• Compare two prospective clients
• Project solutions
• Project presentation
Food for Thought

Statements from British Army officer efficiency reports:

“This officer sets low standards and continually fails to achieve them.”

“The only reason anyone would follow this officer is in the spirit of idle curiosity.”

“This officer has many ideas, some of which are good.”
“Success is the ability to go from one failure to another with no loss of enthusiasm.”

-Winston Churchill
Questions?