



Using Cost and Operational Data to Improve Warehousing Decisions



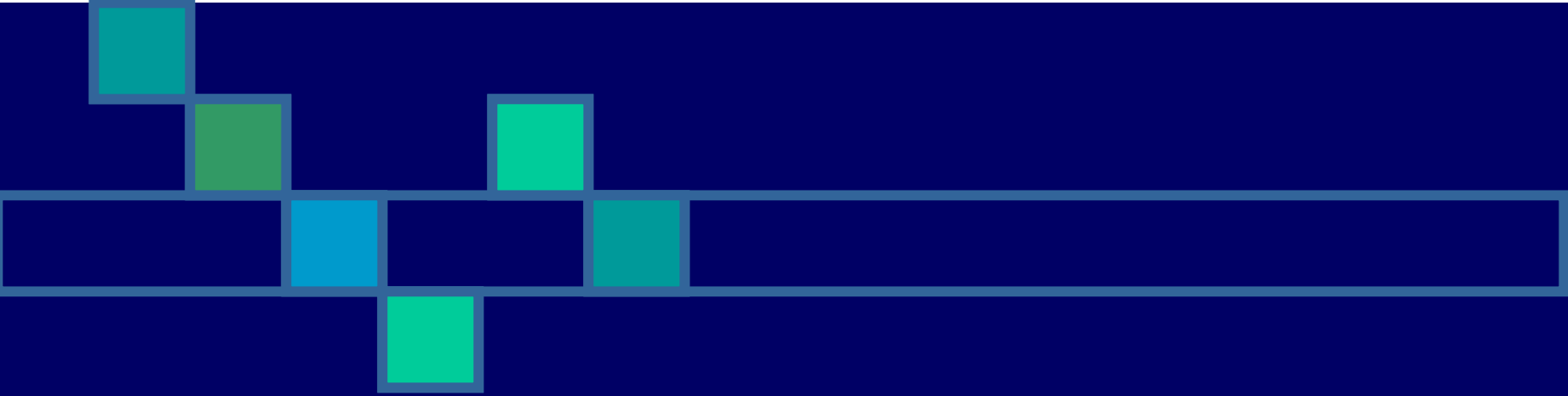
Presented by Tom Speh

Miami University of Ohio

&

Bob Murray

REM Associates of Princeton, Inc.



Financial Analysis of Warehousing Decisions



Presented by Tom Speh


Director

Warehousing Research Center

Miami University, Ohio




The Need For Effective Financial Analysis For Warehousing Decisions

1. Generally sloppy thinking that is often tolerated in financial analyses
 2. The competition for capital
 - A. Warehousing projects are not generally eye-catching
 - B. Need to give warehousing a better chance of success
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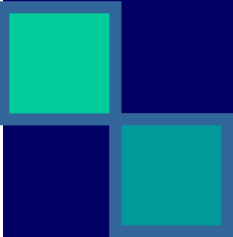



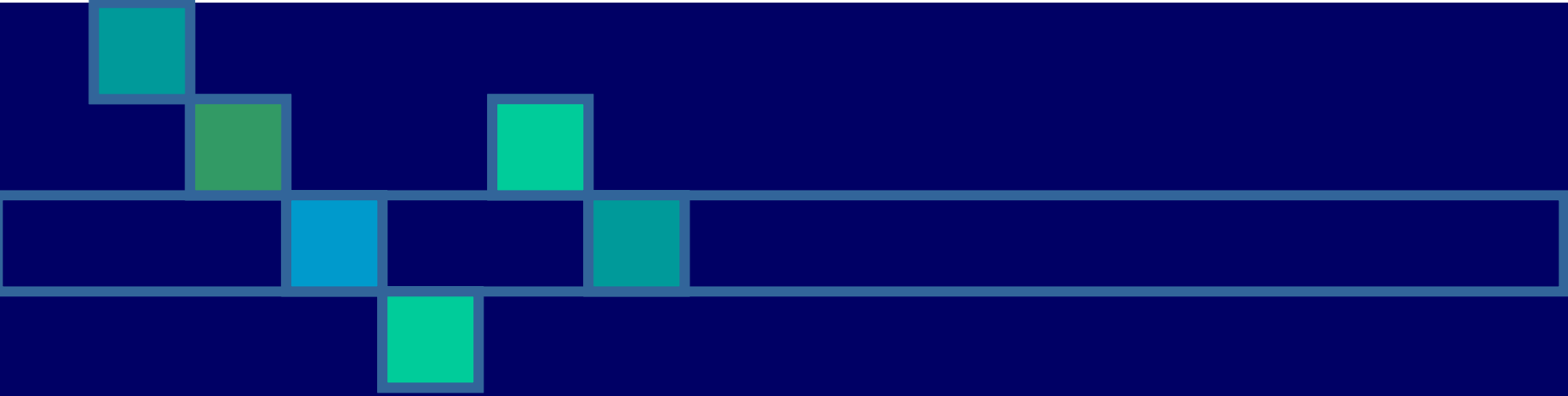
The Need For Effective Financial Analysis For Warehousing Decisions

3. Financial analyses can get very technical and overwhelming, which sometimes results in a less than effective job being done with the numbers
 4. "Good" data is an essential element
 5. What is needed: A structure, a process and some rigor
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Agenda

- 
1. What the study showed
 2. Case studies
 3. Improving the warehousing analysis and decision process
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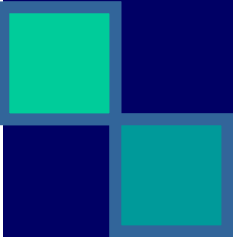



Financial Analysis of Warehousing
Options



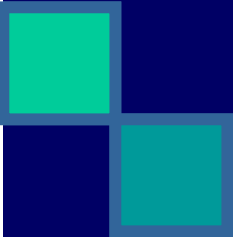



Research Objectives

- 
1. Understand the logic of the warehouse analysis process
 2. Understand the financial analysis process for warehousing
- 



Research Objectives

- 
3. To determine whether companies periodically review warehousing decisions
 4. Understand how non-financial issues are treated in the analysis process
- 



Results



The Analysis Process



Results



- Financial analysis techniques


- Hurdle rates





Investment Analysis

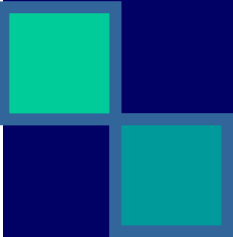
Techniques used to analyze warehousing operations




Investment Analysis Technique	Number of Respondents
Payback Period	2
Return of Sales	1
Internal Rate of Return	8
Net Present Value	7
Both IRR and NPV	13
TOTAL	31



Hurdle Rates

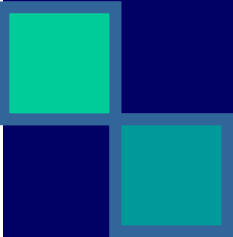



Hurdle Rate (after tax) For Warehousing Projects	Number of Respondents
9%	1
11%	1
12%	1
13%	2
15%	3
20%	4
Rate Varied	3
Not Used	3
Not Disclosed	13
Total	31





Results

- 
- Assessing private warehousing costs
 - Property valuation
 - Time horizon
- 



Warehousing Investment

Time horizon: Years over which cash flows are discounted

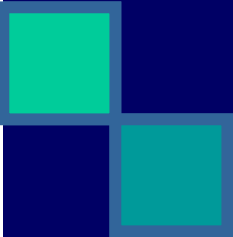



Time Horizon for Warehousing Investment Analysis	Number of Respondents
3-5 years	1
5 years	5
5-10 years	2
10 years	9
15-20 years	4
No warehousing investment	3
No answer	7
Total	31





Results

- 
- Periodic analysis?
 - Post audit
 - Non-financial issues
- 



Improving The Warehouse Analysis Process





Improving



I. The comparison alternatives

II. The data


III. The decision

IV. The audit process





The Comparison Of Alternatives

1. Analyze all the choices
 2. Compare all costs
 3. Re-think lease vs. buy policies
 4. Use ROI to compare private to third-party
 5. Technique easy to apply: "Re-examine the process"
 6. Compare to the least-cost option
- 



The Data



1. "Hard" data

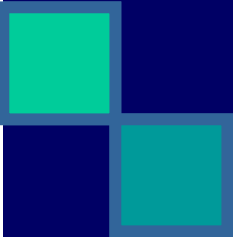

- Warehousing vs. other projects
- Look at service impacts

2. Integrity of the analysis



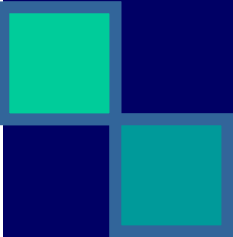



The Decision

- 
1. Hurdle Rates
 2. Adjust hurdle rates based on risk
 3. "Managing" data
- 

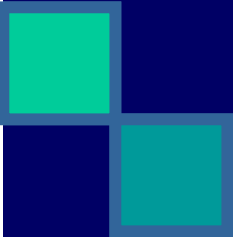



The Audit/Control Process

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1. Post audits
 2. Periodic Review
- 

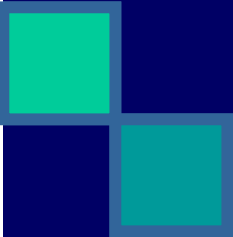



Fundamental Principles

- 
1. Challenge and justify company philosophies and assumptions
 2. Analyze every warehousing alternative
 3. Include all costs
 4. Make every effort to quantify the "Service effects" of warehousing alternatives
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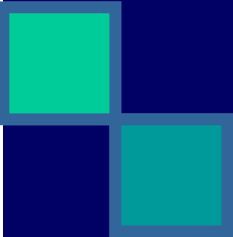



Fundamental Principles

- 
5. Recognize “Soft” dollar and “Hard” dollar impacts
 6. Compare warehouse ownership options to third-party options on the basis of return investment
 7. Develop decision rules for comparing warehousing options that have unequal levels of service
- 



Fundamental Principles

- 
- 8. Do not confuse bookkeeping and accounting rules with cash flow effects
 - 9. Use post-audits to evaluate asset management performance
 - 10. Periodically review current warehousing approaches
- 



End of Part 3



Tom Speh



Using Cost and Operational Data to Improve Warehousing Decisions



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Improving Warehouse Operations



Presented by Robert E. Murray
President
REM Associates of Princeton, Inc.



Case Study Review



- Review of case details

- Presentation of results

- Evaluation

- Lessons learned






Organizing For Improvement



The process


- Define the functions, tasks, and activities
 - Map each element of the process
 - Document the volumes and flows
 - Identify the cycles and variations
- 



Organizing For Improvement



The process (continued)


- Identify “Realistic” alternatives (storage and handling)
 - Evaluate alternatives
 - Determine “Best” solution
 - “Carefully” plan implementation
 - Audit results
- 



Improvement



In product storage


- Determine product storage requirements
 - Specify equipment according to requirements
 - Analyze volume and inventory requirements – selection vs. storage
 - Select vendors based on equipment requirements
- 



Improvement



In product handling


- Determine product handling requirements
 - Specify equipment according to requirements
 - Analyze volume and flows, including peaks and valleys
 - Select vendors based on equipment requirements
- 



Inventory Management

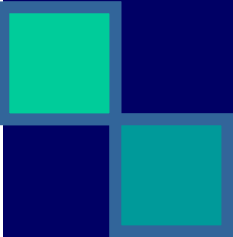



Key to warehousing improvement

- Inventory segmentation: Products, orders, and customers
 - Inventory segmentation Flows, "hits," , patters, and cycles
 - Manage according to segments
 - Cycle counting and physical inventories
- 




SKU Analysis

- 
- A, B, C, and D items
 - 80/20 rule
 - Mechanize the 80
 - Manage the 20
- 



Improvement Opportunity Analysis


- Identify the key issues
 - Prioritize opportunities – Benefits
 - Logic and sequencing
 - Prioritized opportunities - Complexity
- 



Improvement Process



How to proceed


- Set objectives and scope
 - Establish approach
 - Estimate anticipated results
 - Monitor and control the process
 - Get everyone involved
- 



Tools

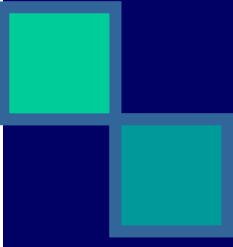



To use in the process

- Short-interval scheduling
 - Internal and external benchmarks
 - Operations simulation
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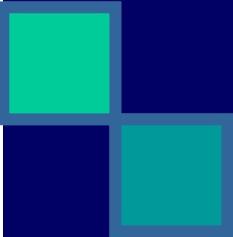



Evaluating Value vs. Cost

- 
- Capital vs. operating costs
 - ROI, ROA, etc.
 - Examples
- 




Reports And Controls

- 
- Measurement – units
 - Productivity measurement
 - Daily, weekly, and monthly reporting
 - Management review and action
- 



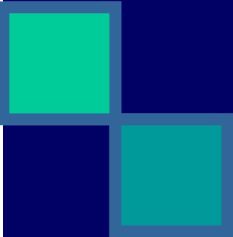

Training

The tool for successful implementation

- Focus on the process
 - Train the people
 - Mix OJT and instructional
- 



Post-Implementation Audit

- 
- What was done
 - How well was it done
 - Clean up of activities
 - Lessons learned
 - Results – ROI, ROA, etc.
 - Path forward
 - Celebration for “All”
- 



End of Part 4



Bob Murray