Crane Specifications

Off-the-Shelf or Tailor-Made?

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TOC - Lisbon
June 20, 2001

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Overview

- Evolution of Container Crane Industry
- Current Crane Purchase Environment
- Crane Procurement Strategy
  - Case Studies
- Procurement Costs
- Conclusion

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Purchaser Background

- Throughput – 200,000 teu
- Existing Quay Cranes – 1 to 2
- Purchase new quay cranes – 1 to 2
- Limited In-House Crane Expertise

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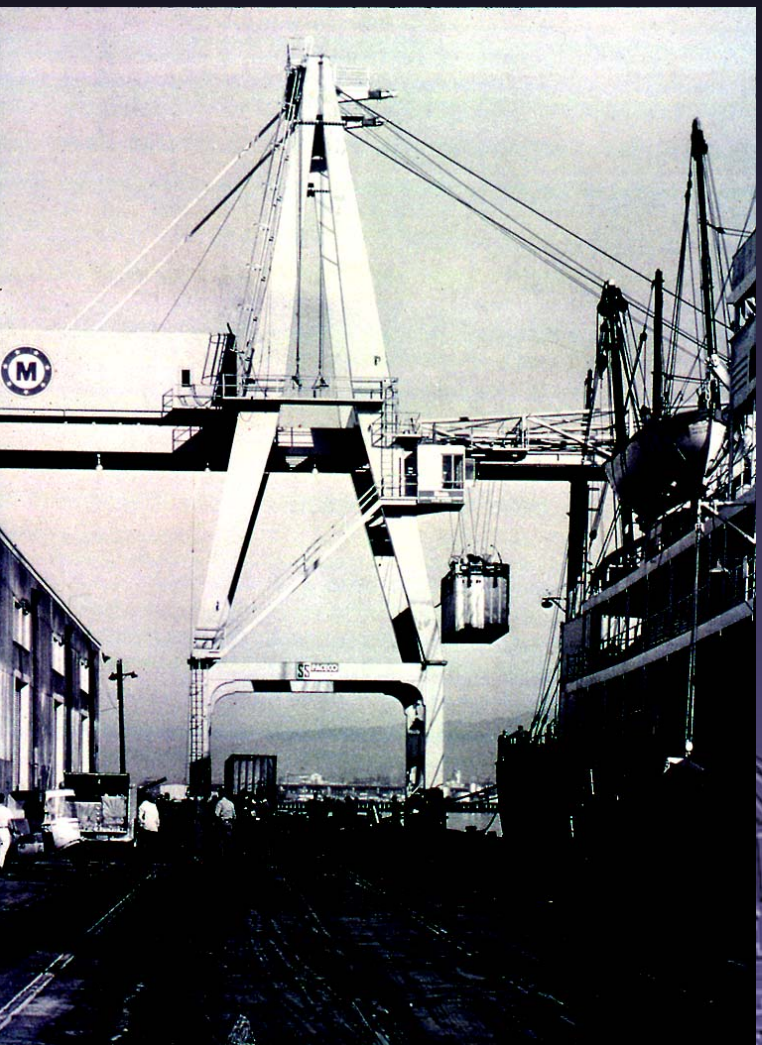
Evolution of Container Crane Industry



Paceco & Licensees

- Pioneer
- Good Quality
- Standard Features

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Evolution of Container Crane Industry

Europeans (Early 1960's)

- Improved Designs
- Good Quality
- Standard Designs
- Competitive Prices

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Evolution of Container Crane Industry

Japanese (Late 1960's)

- Lower Prices
- Initial Quality Concerns
- Birth of Tailor-Made Concept
- Good Quality
- Competitive Prices

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Evolution of Container Crane Industry

Process Repeated With

- Koreans (1970's)
- Others
- Chinese (1990's)
  - Most Significant Impact
  - Tailor-Made Procurement

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Crane Purchase Environment

- Chinese Success
- Highly Competitive Pricing
- Led to Cost-Cutting Measures by Others

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Cost-Cutting Measures

- Sub-Contract Fabrication
- Remote Fabrication Plants
- Standardize Components
- Electrical Integration
- Reduce Profit Margins

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Cost-Cutting Measures

APL – LA Cranes

Noell – Abu Dhabi

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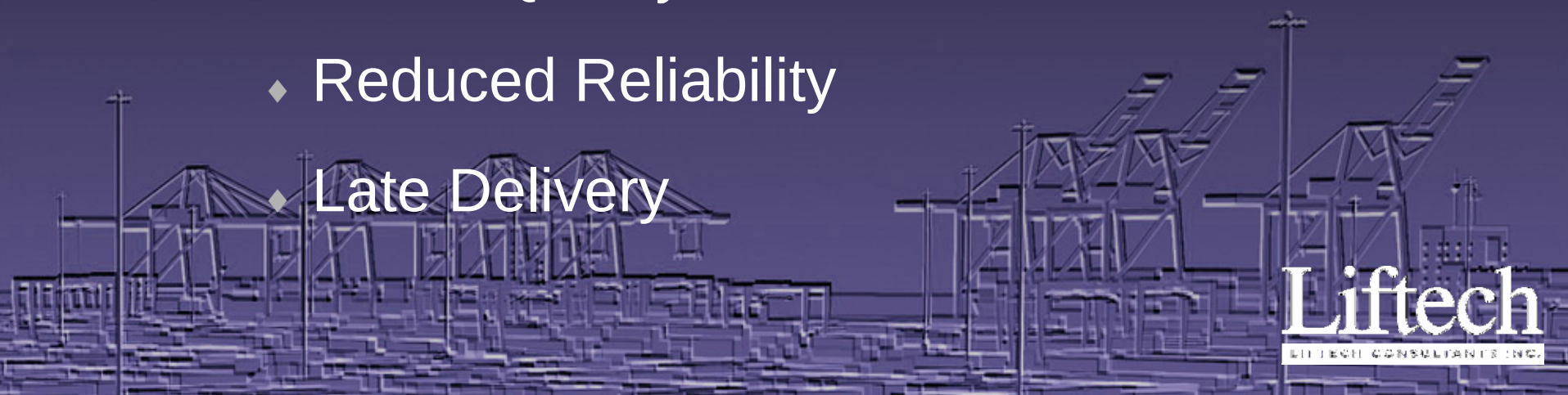
Consequences of Cost-Cutting Measures

- Some Manufacturers Maintained Quality
- Others Struggled
  - Lower Quality Cranes
  - Reduced Reliability
  - Late Delivery



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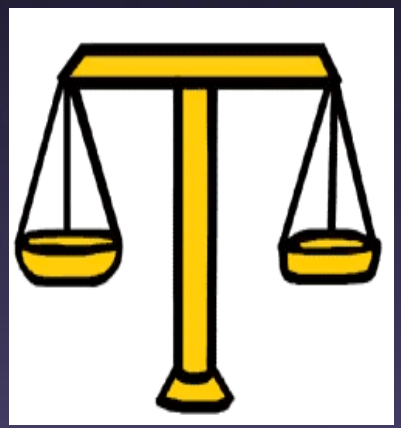
Crane Procurement Strategy



- Judging Quality and Price
- Appropriate Procurement Strategy

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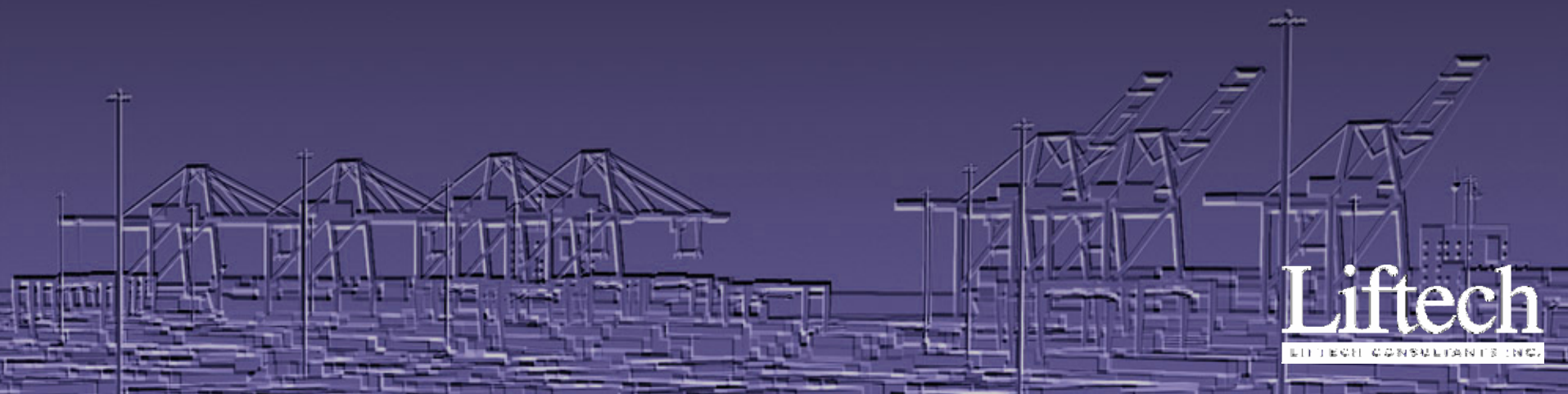
Procurement Strategies

- Off-the-Shelf – Specification Outline
- Tailor-Made – Detailed Specifications
- Hybrid



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Off-the-Shelf

- Visit Operating Cranes – 2 to 3 Vendors
- Get Input from Operations and Maintenance Personnel
- Obtain Vendor Specifications
- Understand Procurement Process and Quality Monitoring Effort

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Off-the-Shelf Procurement Process

- Issue Specification Outline
- Solicit Terms
- Confirm Vendor Specifications
- Negotiate
- Implement Monitoring Effort

Off-the-Shelf Specification Outline Key Points

- Geometry and Capacity
- Power Supply
- Quay Capacity
- Electrical Vendors
- Specific Features and Components
- Classification Groups
- Stability Against Storm Winds

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Limitations – Off-the-Shelf

Suitable for Private Industry

- Can use Different Standards
- Not Limited to Low Bidder
- Can Negotiate

May not be Suitable for Public Agency

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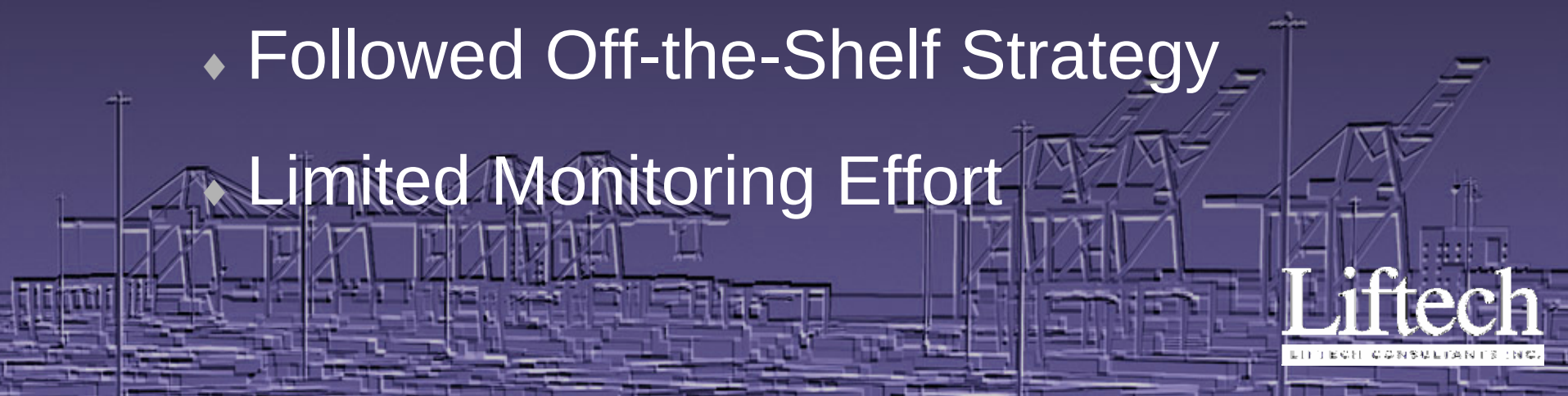
Case Study

NYC EDC – Red Hook Terminal, NY

- Public Financing of Private Industry
- Small – Medium Size
- Experienced Personnel
- Followed Off-the-Shelf Strategy
- Limited Monitoring Effort



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NYC EDC – Red Hook Terminal

Two Liebherr cranes

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Tailor-Made

- Detailed Specifications
- Permit Bid Alternates
- Confirm Technical Proposal
- Implement Quality Monitoring Program

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Detailed Performance Specifications

- Start with Detailed Baseline Specifications
- Identify Specific Components
- Identify Specific Needs

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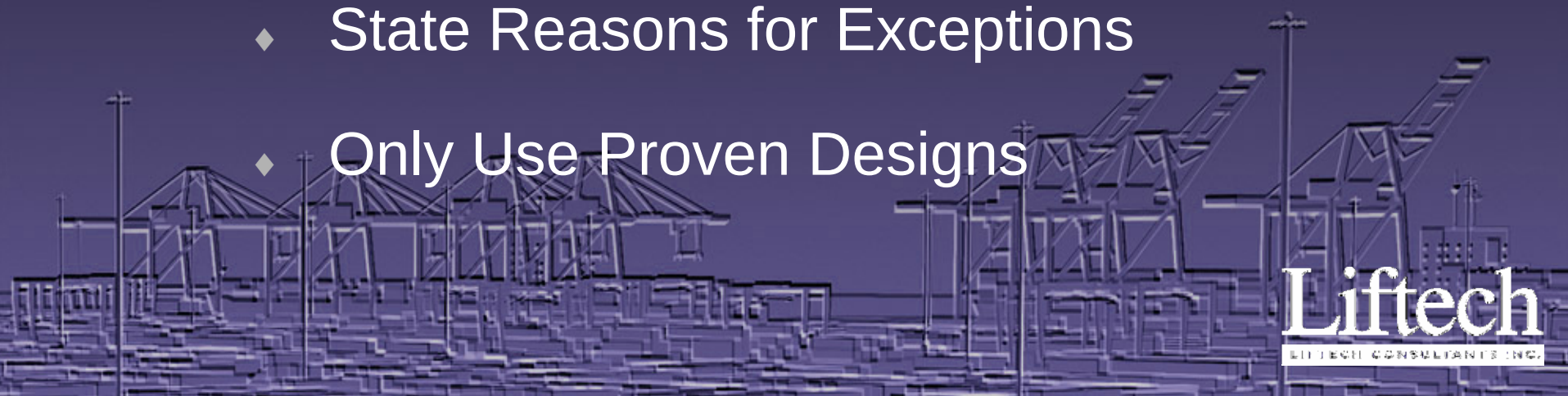
Consider Bid Alternates

- Require Bid for Specified Crane
- Alternate Bid for Vendor Specifications
  - Bidders Note Exceptions
  - State Reasons for Exceptions
  - Only Use Proven Designs



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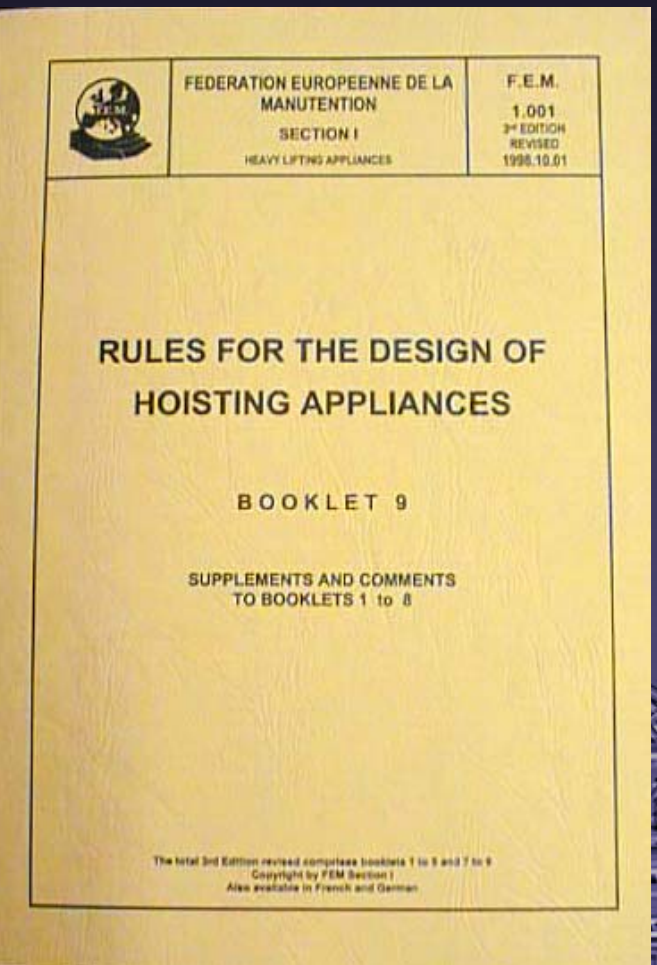
Confirm Technical Proposals



- Specifications Compliance
- Evaluate Standards
- Evaluate Bid Alternates

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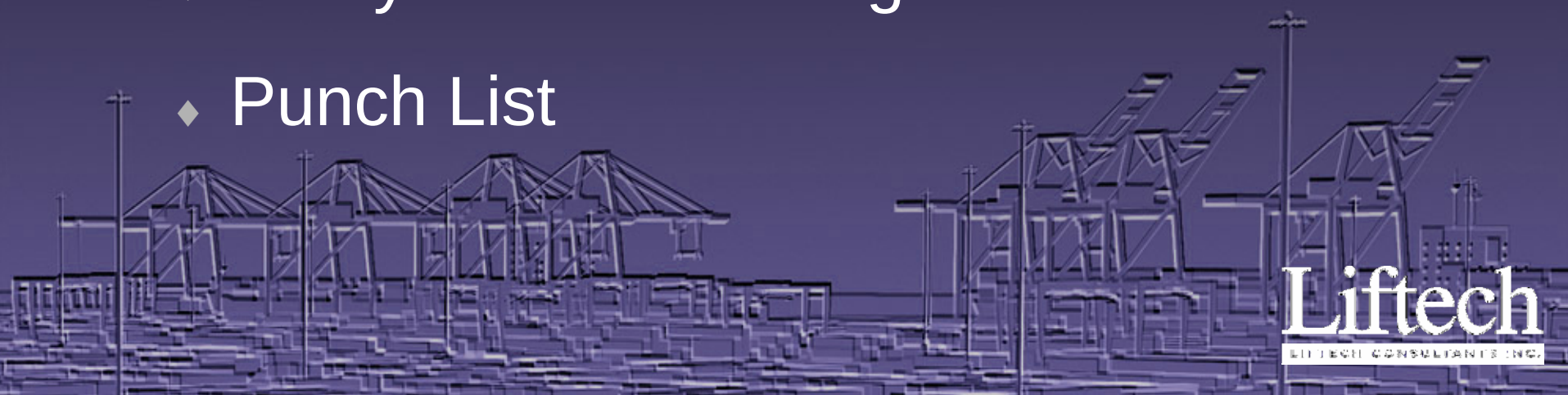
Evaluate Commercial Proposals

- Capital Costs
- Lifetime Costs
- Other Costs
  - Specifications, Bidding, Bid Review
  - Quality Monitoring Costs
  - Administrative Effort

Quality Monitoring

- Verify Designs
- Verify Manufacturing Quality
- On-Site Inspection
- Verify Commissioning
- Punch List



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Case Study

CeresCorp Company

Halifax Terminal, Canada

- Private Industry
- Small – Medium Size
- Experienced Personnel
- Followed Tailor-Made Strategy
- Extensive Monitoring Effort

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CeresCorp Company – Halifax

One ZPMC Crane

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Monitoring Cost Variables

- Manufacturer Location
- Extent of Sub-Contracting
- Existing Relationships
  - Purchaser – Manufacturer
  - Manufacturer – Fabricator
  - Fabricator – Erector
- Manufacturer Quality Control

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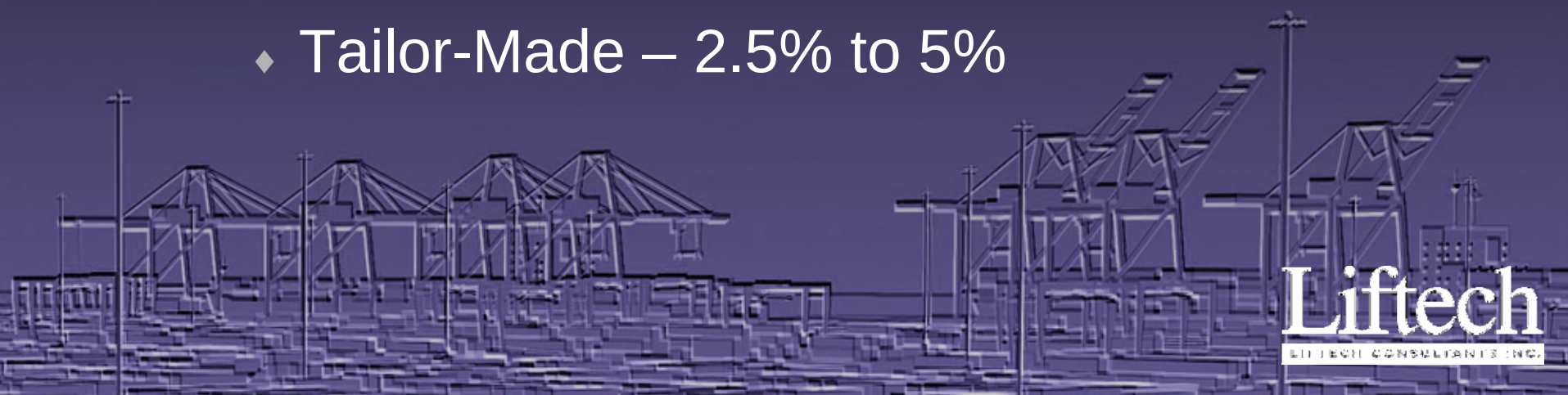
Monitoring Costs

Typical Monitoring Costs as % of Price of Two Crane Order

- Off-the-Shelf – 0.5% to 1.5%
- Tailor-Made – 2.5% to 5%



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Conclusions

- Highly Competitive Market
- Better and Cheaper Cranes
- Can Use Off-the-Shelf & Tailor-Made
- Requires Quality Monitoring
- More Diligence by Purchaser
- Trend: Tailor-Made

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