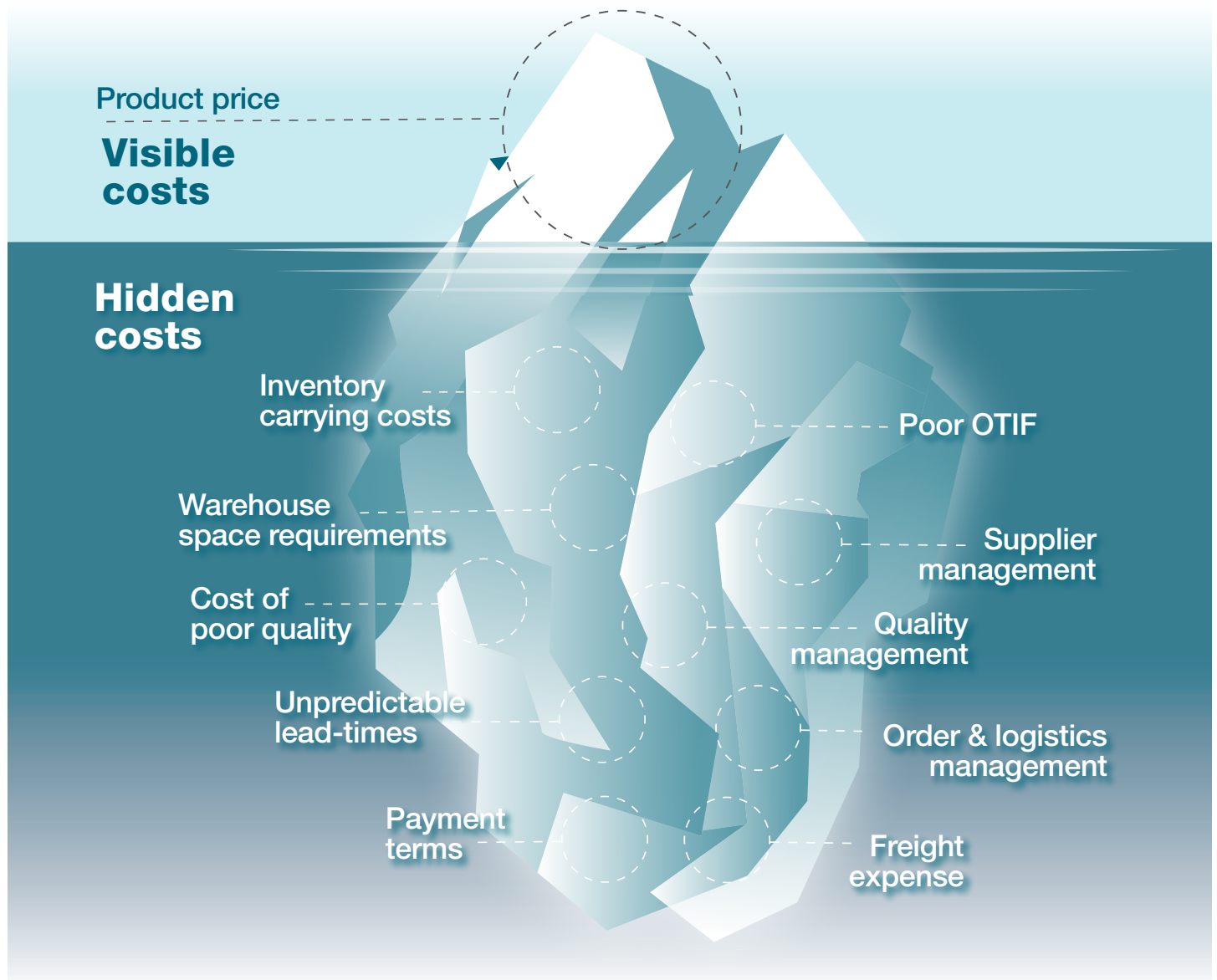


Total Cost of Ownership

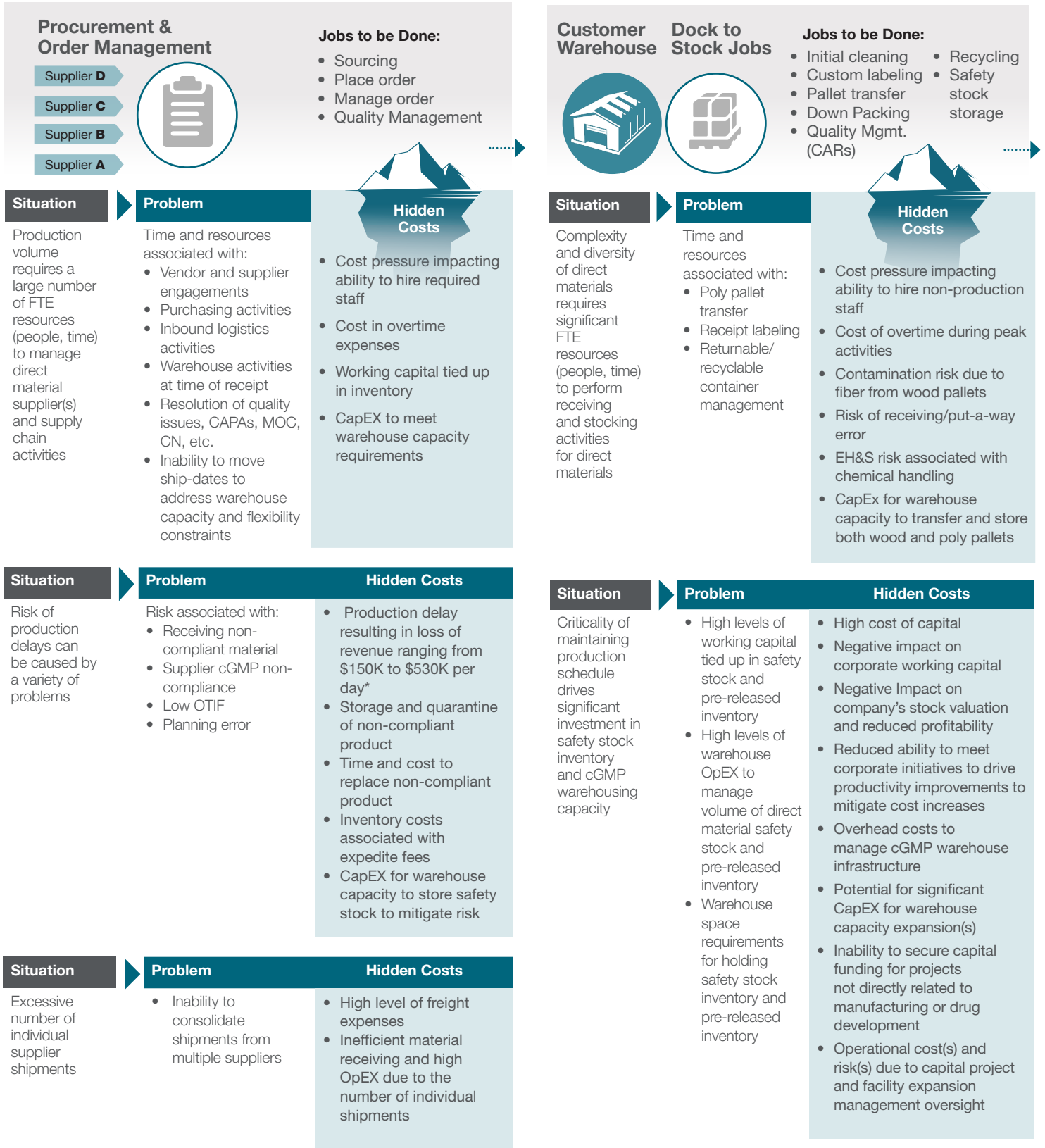
Uncovering the hidden costs: product price is only the tip of the iceberg

The Total Cost of Ownership (TCO) of production chemicals and direct materials used in bioproduction can vary depending on your business model. While the product price is an important element, analysis of the ancillary or hidden costs can have a significant impact on the overall cost of your production chemical supply. These hidden costs impact your ability to mitigate risk and optimize operational efficiencies within your supply chain journey.



TCO Considerations Within the Customer Supply Chain Journey

TCO has implications across the entire Supply Chain journey from supplier management to QA released material for production and beyond. Hidden costs add up over time, and can drive inefficiencies across the supply chain and bioproduction workflow processes.





Stock to Production Jobs

Jobs to be Done:

- Raw material Sampling
- QC Inspections
- Quarantine Labeling
- QA release Labeling



Situation

Complexity and diversity of direct materials and cGMP manufacturing release process requirements mandates significant FTE resources (people, time) to manage pre-production activities

Problem

Time and resources associated with:

- Raw material sampling
- Production material (consumables) QC inspection
- Production material QA release labeling and documentation

Hidden Costs

- Cost for multi-lot testing in absence of large lot positions
- Costs associated with QC testing (internal and/or external)
- Cost and time for QC labeling and documentation in absence of large lot positions

Situation

Inefficient and/or lengthy cycle times from direct material product receipt to QA release

Problem

- Extended inventory holding of pre-released safety stock
- cGMP space requirements to hold pre-released safety stock
- Inefficient OpEX use due to poor workflow processes

Hidden Costs

- Cost of working capital
- Negative impact on corporate working capital
- Inability to meet corporate initiatives to reduce working capital usage
- Negative impact on company's stock valuation and reduced profitability
- Reduced ability to meet corporate initiatives to drive productivity improvements to mitigate cost increase
- Overhead costs to manage cGMP warehouse infrastructure
- CapEX for warehouse capacity expansion(s)
- Inability to secure capital funding for projects not directly related to manufacturing or drug development
- Operational cost(s) and risk(s) due to capital project and facility expansion management oversight

Situation

Requirement for risk mitigation specific to direct material QA release process

Problem

- Current cleanroom capacity is constrained to handle forecasted demand
- Lack of redundancy for raw material sampling

Hidden Costs

- CapEX investment to build additional sampling suites
- OpEX costs associated with cleanroom staffing to handle raw material sampling for QC testing
- Risk of Production delay resulting in loss of revenue ranging from \$150K to \$530K per day*

Situation

Requirement for high levels of QA released safety stock to mitigate risk of production delay

Problem


- High levels of working capital tied up in safety stock and QA released inventory
- High levels of warehouse OpEX to manage volume of direct material safety stock and QA released inventory
- Limited warehouse space capacity to hold safety stock and QA released inventory

Hidden Costs

- Cost of working capital
- Negative impact on corporate working capital
- Inability to meet corporate initiatives to reduce working capital usage
- Negative impact on company's stock valuation and reduced profitability
- Reduced ability to meet corporate initiatives to drive productivity improvements to mitigate cost increases
- Overhead costs to manage cGMP warehouse infrastructure
- CapEX for warehouse capacity expansion(s)
- Inability to secure capital funding for projects not directly related to manufacturing or drug development
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* Estimated cost of production delay can vary based on manufacturer type (e.g., CDMO vs. innovator), and includes consideration for idle manufacturing assets, depressed supply of finished goods, potential penalties for missed supply deadline, and potential revenue loss of finished product sales. Actual cost of production delay is customer/ site specific.

Are you effectively managing the hidden costs driving your Total Cost of Ownership?



TCO
=
Visible Costs
+
Hidden Costs

- Are you measured on TCO or simply cost of product?
- How does your company measure TCO for your production chemicals?
- What are the biggest TCO drivers for your company?
- Does the company have effective strategies in place to address these TCO drivers?
- Are these strategies proving to be cost effective in addressing the TCO drivers?
- How has managing the production chemicals supply chain – and the TCO drivers – impacted core manufacturing?
- Is senior management looking for improved operational and manufacturing productivity?

Partner with Thermo Scientific Production Chemicals and Services for a production chemicals supply chain assessment to identify opportunities to mitigate risk, improve productivity, and reduce total cost of ownership.

Thermo Scientific Production Chemicals and Services works with biologic developers and manufacturers who want to do what matters most, innovate and produce life-changing therapeutics. With over 30 years of experience delivering production chemicals and direct material supply chain solutions, we deliver risk mitigation, improved operational efficiencies, and reduced total cost of ownership so our customers can accelerate their speed to market, speed to clinic, and improve productivity.

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*Certified ISO 9001:2015 Quality Management System incorporating applicable elements of 21 CFR parts 210 & 211 and The IPEC Good Distribution Practices Guide.

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