

26TH ANNUAL



26TH LCI CONGRESS
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How to Surf as an IPD Team Without the IFOA Wave

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SURFING THE WAVE OF LEAN DESIGN AND CONSTRUCTION

23 October 2024

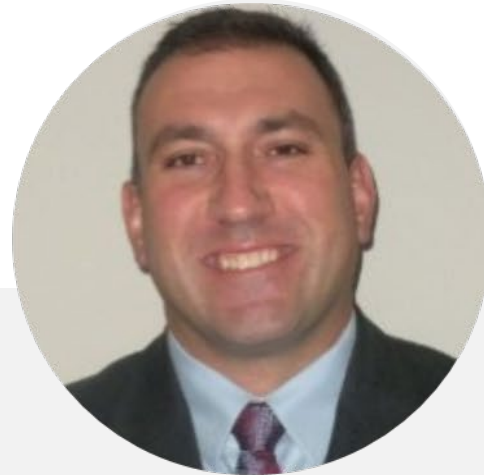
Who We Are



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Rob Ledder

Regional Director,
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***IPS-Integrated
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Jeremy Taylor

Project Manager

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Today's Discussion

The Lean Evolution



Alignment: Behaviors & Commercial

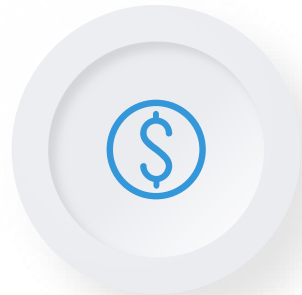


Alignment: Execution & Results



Key Takeaways

**Approach to
Unique Incentive
Structures**



**Evolution of
the Journey**



**Successes
Achieved**



**Risk/Reward
Mechanisms**



**Challenges
Overcome**

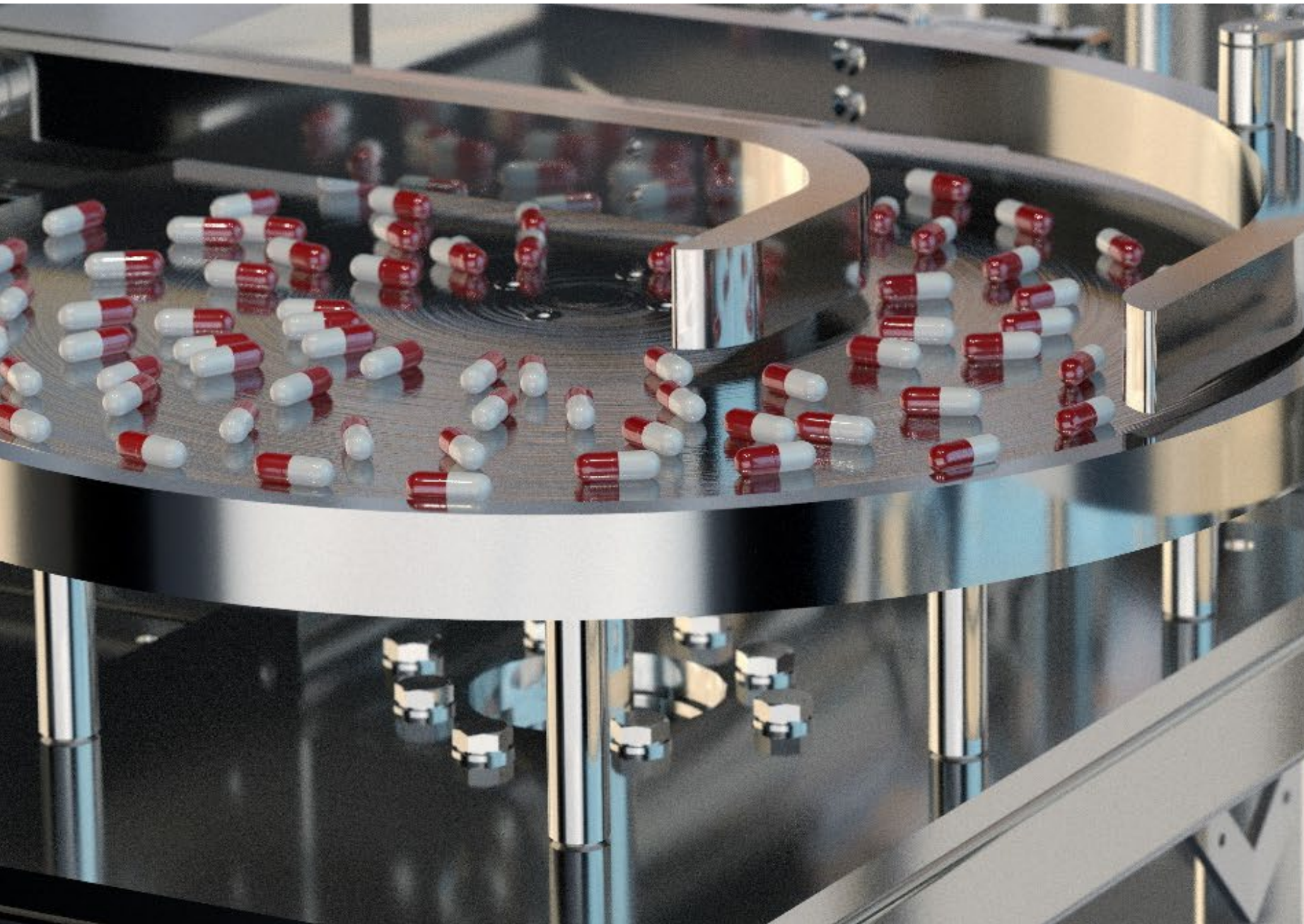


The Lean Evolution



The Pharma Landscape – Balancing Speed & Cost





The Pharma Landscape – Balancing Speed & Cost

Speed to Market

Unique Project Needs

Merck's Delivery Model
(pre-Lean)

Risk-Averse

THE LEAN JOURNEY



The background image shows a construction site at dusk or dawn. Silhouettes of several construction workers wearing hard hats are visible against a cloudy sky. They are working on a complex steel framework, likely for a large industrial building or bridge. The workers are positioned at different levels of the structure, with some standing on beams and others reaching up. The overall tone is blue and grey, emphasizing the industrial and construction theme.

In the mid-2000s, Merck experienced a large spike in workload, which was a catalyst for our journey in exploring different project delivery methods.

2007

Execution in an EPCM Model

Merck started executing projects in an EPCM model on a Fixed Fee with Risk/Reward basis

- EPCM Target Profit established at Final Funding
- Profit adjusted based KPIs
2 initial projects with good outcomes that drove good behavior

2010

A Step Back

The Main Sponsor was re-assigned, and the organization was not ready, which created a three-year **gap in implementation.**



2014

Sponsor Returns

- West Coast project helps engage the wider organization
- Increased workload
- 6-8 projects executed



2018 - Present

Engaging the Trades

- Further increase in workload
- Wider organizational Lean awareness and adoption
- Introduced new approaches with new expectations/opportunities
- Move away from historical Lump Sum

Alignment: Behaviors and Commercial Structure



The Shift from Traditional Contracting to an Integrated Model

TRADITIONAL CONTRACTING

80% DESIGN

Traditionally Merck would have onboarded an Architecture Engineering (AE) to complete 80% design.



GMP CONTRACT

Merck would have solicited proposals from two or more CM's and contracted through execution. Traditionally pushing for Guaranteed Maximum Price (GMP Contract).



SCHEDULE DRIVEN

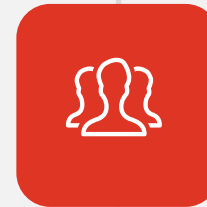
Our case for change was the high volume of schedule-driven projects.



INTEGRATED DELIVERY MODEL

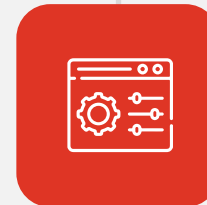
PANEL OF EPCM SUPPLIERS

Merck took this opportunity to identify and develop a panel of EPCM (Engineering, Procurement, Construction Management) suppliers to design and manage projects end to end.



CONTRACTING WITH AN A/E

This meant our partner performed the AE function or contracted with an AE for design in FEL1 or early FEL2.



TRADES ONBOARDING

In addition, this facilitated trades onboarding in FEL2 to support design assist activities ensuring greater constructability.

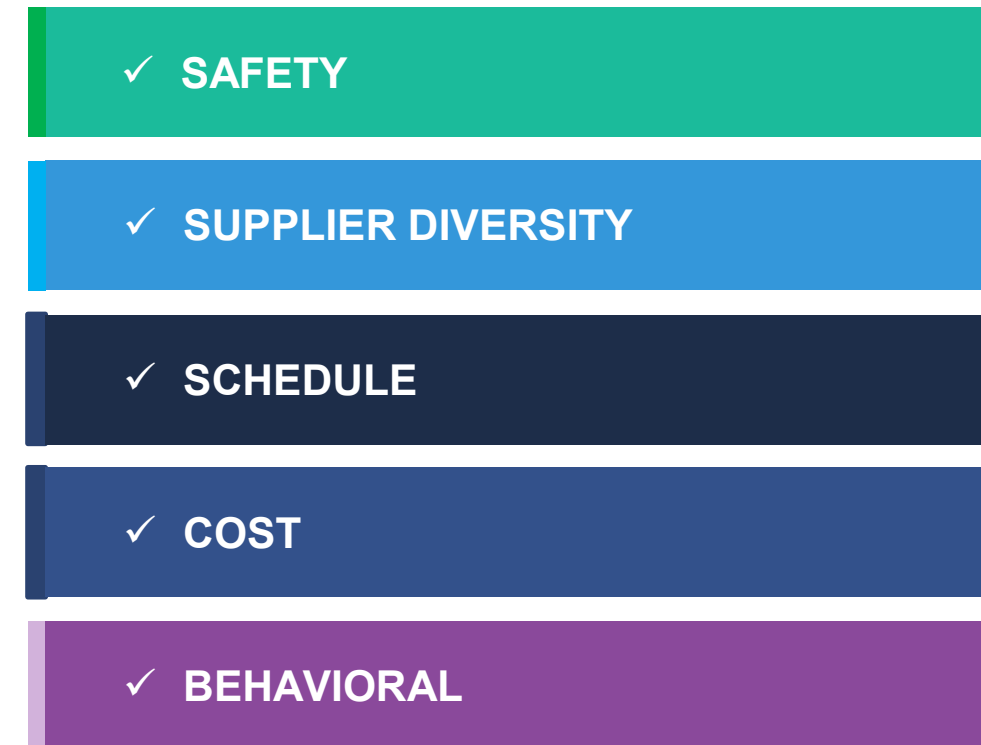


Evolution of the Incentive Program

RISK/REWARD MODEL

- Risk and Reward resided only with the EPCM.
- The program evolved to have critical trades participate in the program through incentivization to reduce hours.
- The next evolution is eliminating downside risk for the EPCM. The program is now either schedule (project-funded) or cost-driven (self-funded).

KEY PERFORMANCE INDICATORS



Procurement: Choosing the Right Partners

Key to a Successful Procurement Organization: The Role of Incentives

- Best-Value, Best Partner Selection Model
- Incentivizing Collaboration- shared savings
- Risk and Cost Predictability



Engaging our Partners – Project Timeline



Engaging our Partners – Project Timeline



Trades provide final estimate at IFC (100% design). Vetted by Merck and EPCM

Trade Incentive locks in.

Material and overheads are lump sum.

Incentive payout on shared savings for reduction in target field execution hours.


Drives collaboration and waste removal opportunities across the trades and with EPCM.

Labor overrun reimbursed at cost

Alignment: Execution and Results



EPCM Perspective – Early Practice

- 
- **Fixed Fee (Staffing / Trade)**
 - **Design-led early effort**
 - **View the Project Life Cycle differently**
 - **Groups operated in Silos (Design / Construction / Cx)**
 - **Change in project success definition**

EPCM Perspective – Current Model

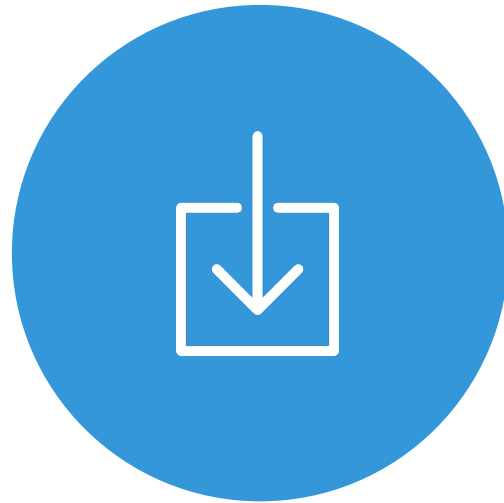
- EPCM accountable lead
- Collaborative partnership
- CM-led End to End team solution
- Engage DA partners earlier (FEL2/3)
- Incentive Structure drives behaviors over Fee focus
- Cascade Incentive thinking to DA Trades

GOAL: Drive better Cost and Schedule Certainty



Trade Partner Perspective

Incentives – Reducing the Risks



Incentivizing Labor Reduces Risk

Direct labor makes up 50%-60% of entire project.
Other cost are predictable or fixed (Management,
Equipment, Material).



Open Transparency in Estimates

Complete open book negotiations to
ensure best installation and value are
achieved.

Trade Partner Value

Advantages

Trade Partner Value



Increased Productivity

Increasing productivity to the project through buy-in and having a clear sense of purpose.

Trade Partner Value



Innovation

Prefabrication
Multi-Trade Assemblies
Trade-to-Trade Collaboration

Trade Partner Value



Predictability

Early On-Boarding to eliminate “grey”
areas of scope
Less Waste in CO Processing.

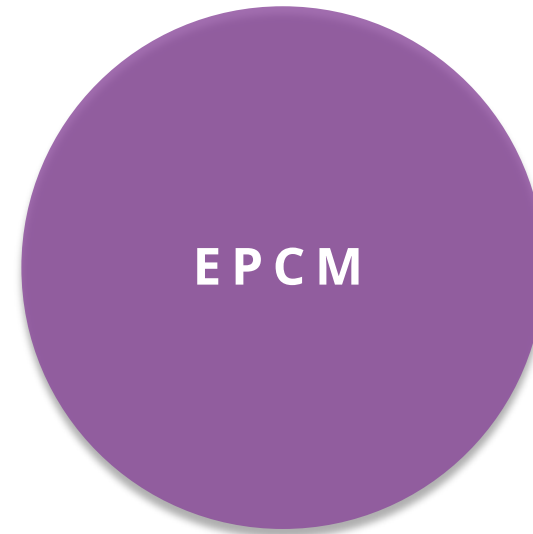
Win-Win for All Stakeholders



**Direct Rewards for
Efficiency**

**Long-Term
Partnerships**

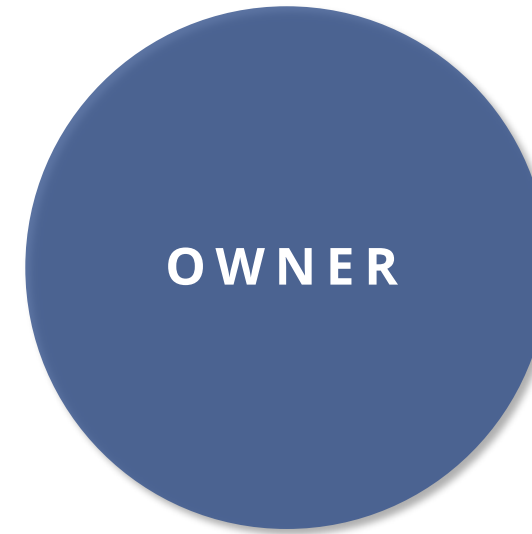
**Collaboration and
Input**



Shared Rewards

**Fostering
Innovation**

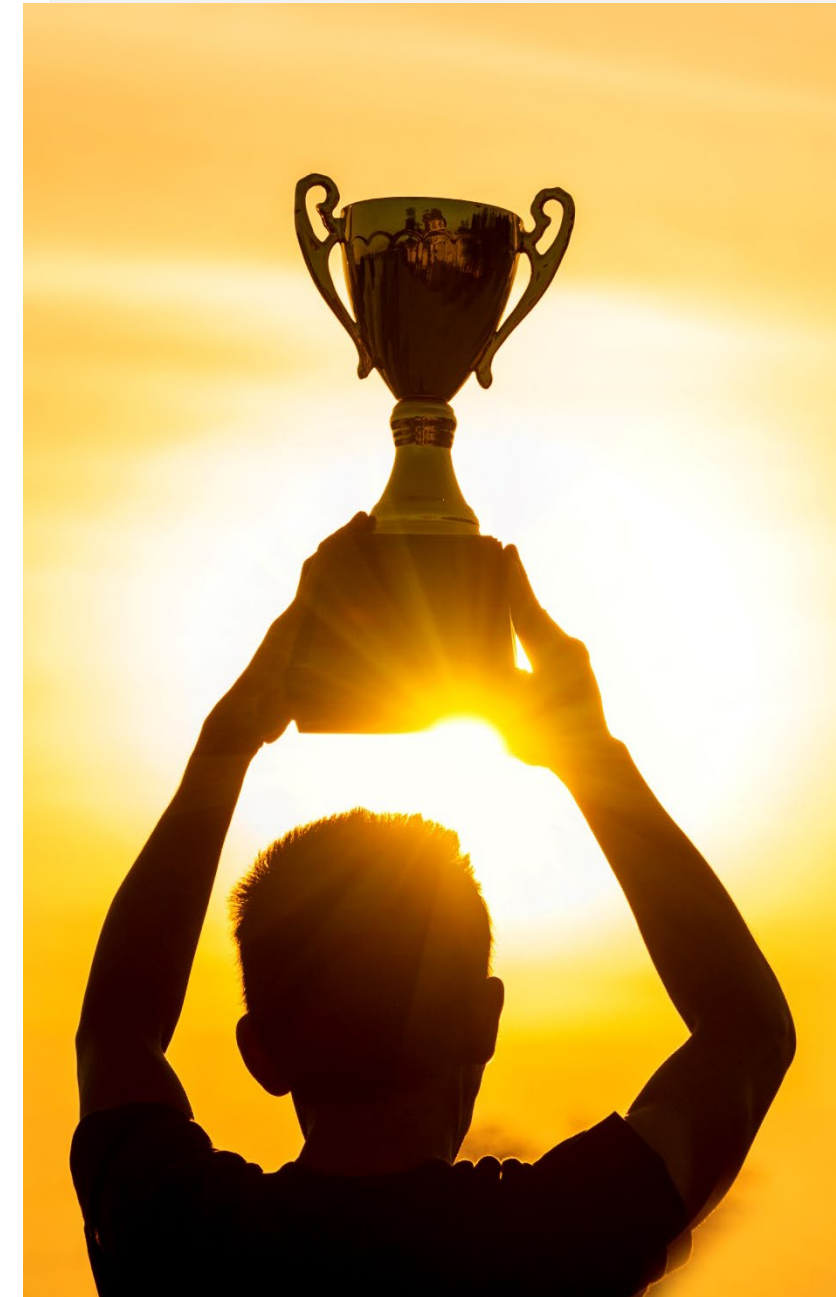
**Long-Term
Partnerships**



Risk Mitigation

**Improved
Collaboration**

Motivated Partners



Questions?





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In the spirit of continuous improvement, we would like to remind you to complete this session's survey! We look forward to receiving your feedback.

Contact Us

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Thank you for attending this presentation. Enjoy the rest of the 26th Annual LCI Congress!