



# CONQUERING

★ THE SUMMIT ★

ASPIRING TO FLAWLESS PROJECT DELIVERY

45<sup>TH</sup>

ECC CONFERENCE

2013



engineering and construction contracting association

# Capital Project Complexity – The Supply Chain



**Manuel Junco**

Vice President, Houston Operations - Jacobs

# We plan to address.....

- The importance of procurement leadership
- The ability to source globally and understand associated risks
- The criticality of proper material management and logistics services on our projects
- The importance of supplier integration and the complexities faced by our suppliers
- The need for better supply chain education in our industry



# Capital Project Complexity – Panelist



**Jim Scotti**

## **Senior Vice President and Chief Procurement Officer – Fluor**

- Led the transition to a center-led global procurement organization.
- Responsible for a new Fluor supply chain entity dedicated to selling stand-alone procurement services to clients.
- Led the development of a Fluor endowed supply chain master's degree program that emphasizes global sourcing and early supplier integration on projects



**Jim Nyquist**

## **President PlantWeb Solutions - Emerson**

- Responsible for several businesses including Process Systems and Solutions, Asset Optimization, Power and Water Solutions, and Remote Automation Solutions businesses.
- Instrumental in the global sales launch of Emerson's Smart Wireless technology.
- Leader in driving Emerson Process Management's "Think Customer" global customer loyalty program.

# Capital Project Complexity – The Supply Chain



**Jim Scotti**

Senior Vice President & Chief Procurement Officer - Fluor

# My Job as a Chief Procurement Officer



**What my friends think I do**



**What my mom thinks I do**



**What society thinks I do**



**What my boss thinks I do**



**What I think I do**



**What I actually do**



# What Procurement Leadership Should Look Like

- Fully engaged company wide
- One company face to the supply base
- Single point of responsibility for acquisition of material, equipment and services across company
- Leverages supplier relationships as well as spend across capital project execution

# Procurement Leadership in the EPC Industry

- Establishes supply chain strategies for projects and the entire organization
- Collaborates with client & other industry CPOs
- Has a **real** seat at the table within their company!





# Ask Yourself...

- Does your company have a senior level procurement or supply chain executive?
- Do you personally know that individual?
- Does your procurement leader(s) have a seat at the table? **OR...**
- Is it all smoke & mirrors?



# Project Complexity

- 60 – 70% of project TIC is what we buy & deliver to our projects
- Take your *engineering* is king hat off!
- Take your *construction* is king hat off!
- Think of the *entire project as the supply chain*...not just the procurement piece
- Examine the many project supply chain complexities that we are faced with today

# Project Supply Chain Complexities





**Ask Yourself...**

**What do you see as  
the biggest supply  
chain challenge in  
your business?**



# Poll

**Q: How critical is the supply chain to project success in your business on a scale of 1 to 10, with 10 being extremely critical?**

1

A red flag with the number 1 is planted on a snow-covered mountain peak. A red line, representing a path or trail, leads up the mountain towards the flag. The background shows a vast, snow-covered mountain range under a clear blue sky with a bright sun in the upper left corner.

# Sourcing Globally







# Emerging Market Sourcing – Global Price Comparisons

## Material Prices Pipe and Plate\*

Commodity	Western Europe / USA	Eastern Europe	S Korea	China
CS Pipe	\$1500/MT	\$1250/MT	\$1000/MT	\$800/MT
CS Plate	\$742/MT	\$640/MT	\$585/MT	\$551/MT

## Fabricated Structural Steel – Sample Project Bid Comparison\*

Commodity	Western Europe/ USA	Eastern Europe	South Korea	China
Structural Steel	\$12MM	\$10MM	\$7.5MM	\$6.2MM

\*All amounts shown in USD

# Project Case Study



# Emerging Market Sourcing

- “Sometimes” Owner AMLs are too narrow
- No shortcuts to sourcing globally
- Requires investment of in-country resources
- Qualification of shops
- Ongoing monitoring of shop loads and quality...and QUALITY!



# Poll

**Q: Does your company  
have an emerging market  
sourcing strategy?**

**A)Yes**

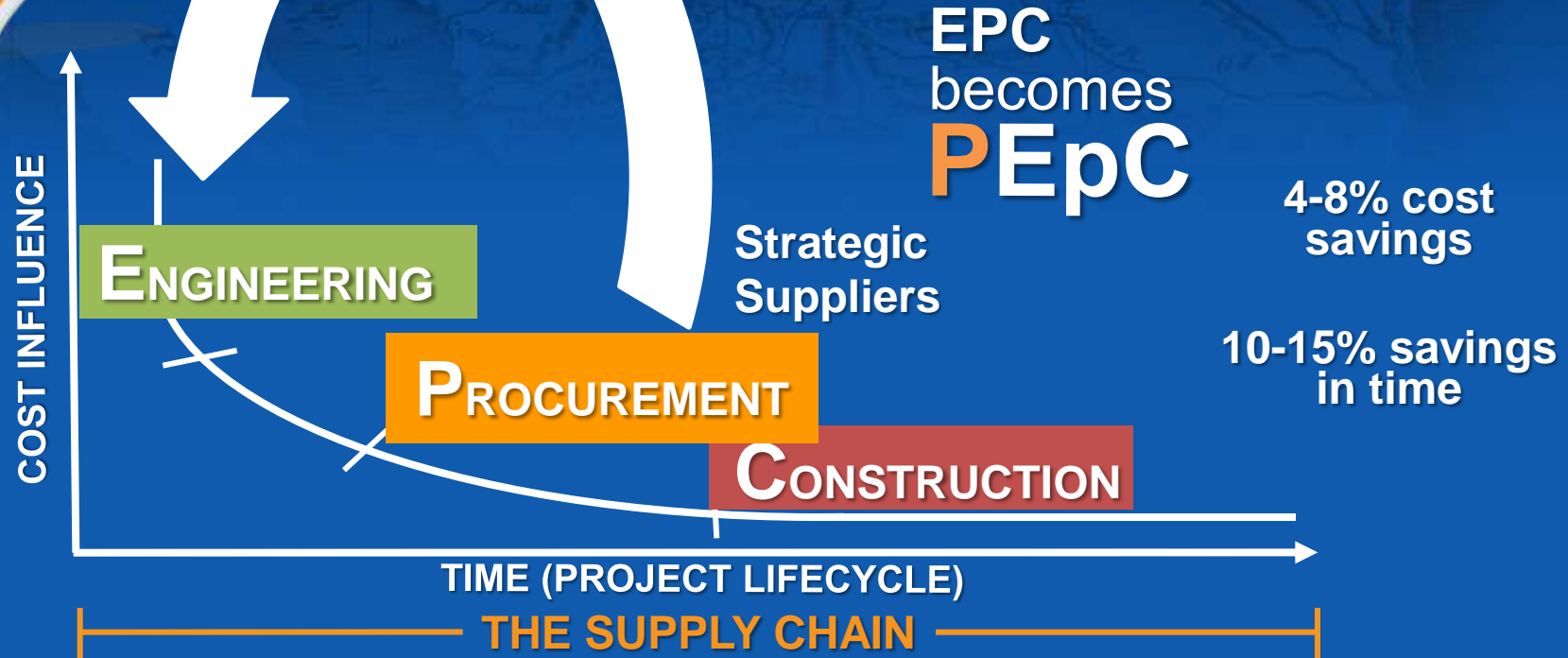
**B)No**

**C)I don't know**





# Early Supplier Engagement



*The ability to influence the cost of a project is greatest at the beginning of a project – bringing strategic suppliers in early is essential to success.*



# Poll

**Q: Does your company  
have an early supplier  
engagement strategy?**

**A)Yes**

**B)No**

3

A red flag with the number 3 is planted on a snow-capped mountain peak. A red line, representing a path or trail, leads from the bottom right towards the flag. The background shows a bright sun in a blue sky and a vast, snowy mountain range.



# Capital Project Complexity – A Supplier's View



**Jim Nyquist**

President PlantWeb Solutions – Emerson

# My Job in Supplier Leadership



**What EPC's HOPE I do**



**What Owners HOPE I do**



**What Employees HOPE I do**



**What my boss HOPES I do**



**What I WANT I do**



**SWH and the SWHES can't do it**

# Project Characteristics – What our Customers Need

- We need to be able to count on you as one of our **strategic suppliers**
- We need you to be **innovative**
- We need a more **seamless handoff** from sales to execution
- We need to be able to rely on your **promises**
- We need for you to be **fast** and **flexible**

# Project Supply Chain Complexities

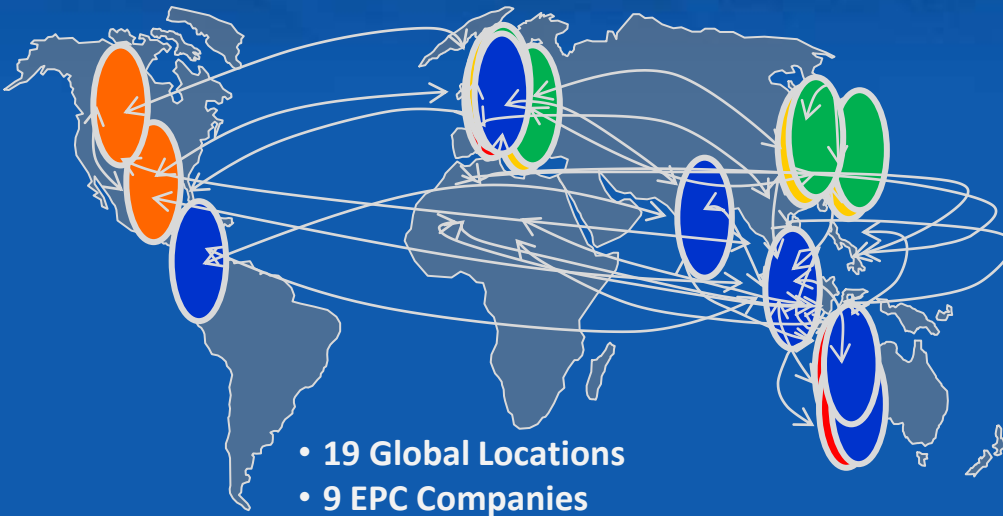


- Local content requirements
- Multiple EPC/client specs
- 3<sup>rd</sup> Party Vendor packages/sub suppliers
- Pace of technology change



# Automation Projects are Becoming More Complex

## Characteristics of a Main Automation Contractor (MAC) Project



- Multiple EPC interfaces
- 220K engineering hours
- 1,000 personnel involved
- 30,000 field devices
- 20 3rd party subsystem suppliers

# The Response – A Supplier Strategy That.....

- Involves the entire organization
- Accounts for differences in MRO (OPEX) and project supply (CAPEX) characteristics
- Incorporates simpler product designs that increase speed and flexibility through modularization and late customization
- Employs global and regional sourcing to balance cost with robust risk mitigation strategies
- Targets long term strategic relationships focused on value creation



4

# Poll

**Q: Does your company  
have a formal strategic  
supplier program?**

**A)Yes**

**B)No**

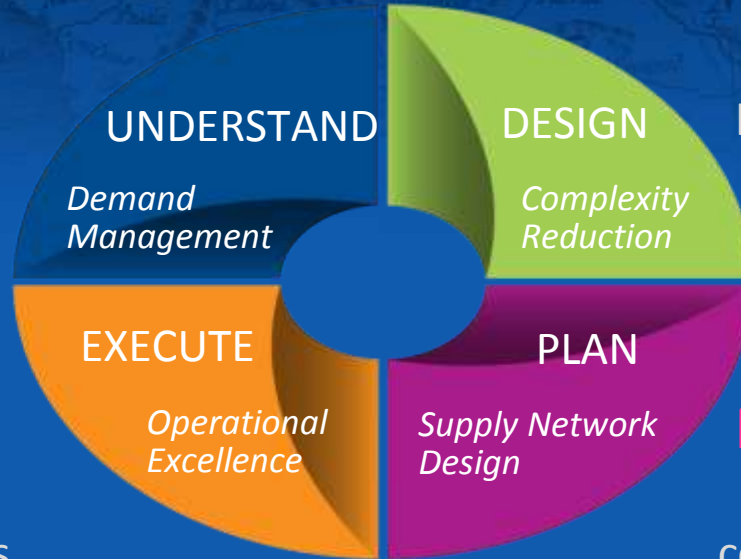
**C)I don't know**



# Perfect Execution Strategy

**Understand** the different demands between CAPEX (project) and OPEX (MRO) purchases and what the customer values...

**Execute** to promise through sub-supplier management, lean practices and real time metrics...



**Design** innovative products and processes to reduce project complexity...

**Plan** value chains for best cost sourcing, local content, risk mitigation, and speed & flexibility...

*“The Capital Project environment is far different from a typical manufacturing game.”*

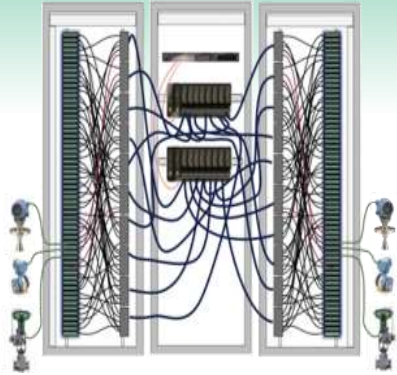




# “Ease of Use” Technology to Reduce Project Complexity

Design

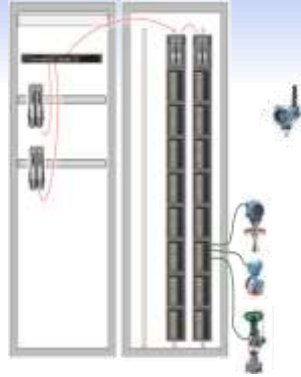
## Traditional DCS Systems



Historically DCS systems required marshalling

- Engineering, labor, and equipment intensive

## Electronic Marshalling



“Electronic Marshalling” is transformational technology

- Entire subsystems eliminated
- Ultimate flexibility

- Products designed to reduce project complexity
- Eliminates work
- Reduces cost and schedule risk
- Innovative, Simple, Ease of Use



# Tradeoffs in Global vs. Regional vs. Best Cost

Plan

- + Local Content
- + Speed
- Higher Cost
- Supply / Demand Variations

Regional  
Sourcing

Global /  
Best Cost  
Sourcing

- + Best Cost
- + Risk Mitigation
- + Consistent Quality
- Lacks Localization

# The 5 Questions You Should Ask Your Supplier

- Do your early engagement processes enable you to be a *strategic supplier*?
- Does your manufacturing and Supply Chain strategy *differentiate* between OPEX and *CAPEX project supply*?
- Does your technology development program emphasize designing products that *reduce project complexity*?
- Do you hold your regional and global suppliers to the *same performance and quality standards*?
- Do you have a supply chain *risk mitigation strategy* especially with sub suppliers?



# **Supply Chain Education**

**We need more supply chain programs tailored to our industry!**

**Our procurement resources, as well as our project managers, engineering, and construction personnel need this education.**

**So what are we doing about it?**





# Capital Project Supply Chain Education

- Fluor Foundation endowment to Clemson University
- Unique focus on capital project supply chain
- Fully accredited Master of Engineering
- Distance learning – no on-campus requirements
- 53 graduates to date, 139 enrolled
- New global focus initiative
- Some employers of current/past students include: ABB, BASF, Bechtel, BMW, Boeing, CH2M Hill, ExxonMobil, Fluor, GE, Jacobs, Luminant, Sandvik, URS



So...

**What supply chain complexities does your company need to work on to conquer the summit?**



A historical map of North America, showing regions like 'NEW NAVARRA', 'SONORA', and 'HIAWATHA'. The map is overlaid with a solid blue rectangle that covers the bottom two-thirds of the image. The word 'Questions?' is written in large white letters on the blue background.

# Questions?





# CONQUERING

★ THE SUMMIT ★

ASPIRING TO FLAWLESS PROJECT DELIVERY

45<sup>TH</sup>

ECC CONFERENCE

2013



engineering and construction contracting association