



Rice Global E&C Forum
**Engineering &
Construction**



2018 RICE GLOBAL E&C ANNUAL FORUM



Rice E&C Forum
Waiting on – E&C Digital
Transformation
2:30 to 4:15 PM

NOVEMBER 13, 2018
RICE UNIVERSITY

www.forum.rice.edu

“Waiting on – E&C Digital Transformation”



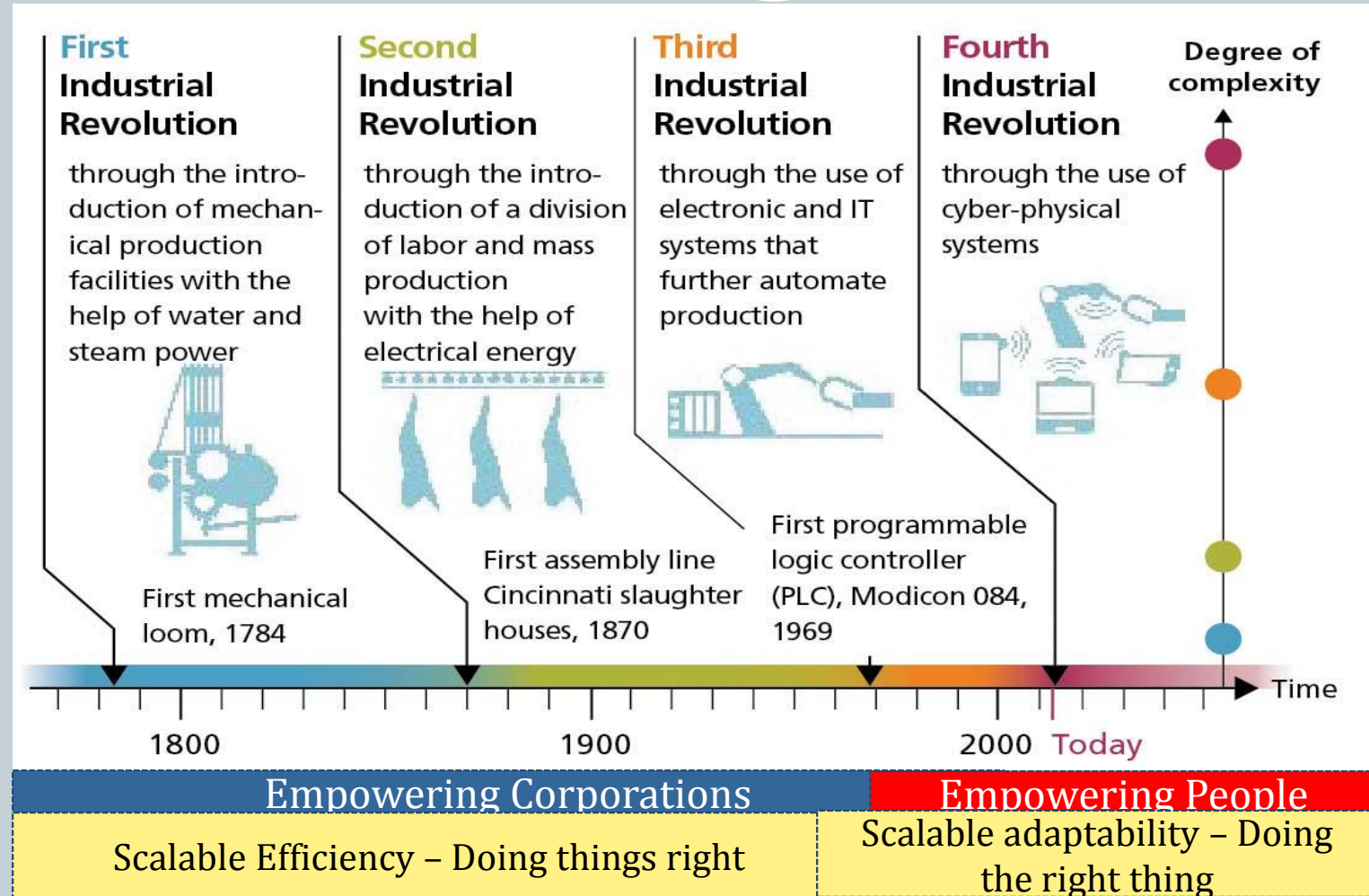
- Introductions
 - ✦ Moderator – Nrupa Shah, Director Business Development Jacobs
 - ✦ Dave Lafferty, Scientific Technical Services
 - ✦ Prabu Parthasarathy, VP Intelligent Operations– Automation and Control, Wood;
 - ✦ David Makin, VP Technology, Jacobs
 - ✦ Randy Williams, Director of Global Accounts, AVEVA

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- Industrial Revolutions
- Industry context of 4.0
- Our connected world
- What does it mean? Where are we? Where are you? What is holding you and I back? Who pays?
- How do you move forward?

Industrial Revolution to 4.0



Industry 4.0 – Context



Population increase of
2.5Bn by 2050



STEM graduates
continue to decline year
on year

Demand/competition for
resources and
infrastructure



Engineering and technical
services commoditized



1000 new
structures/buildings
required every day



Increased automation is
critical to meeting these
needs

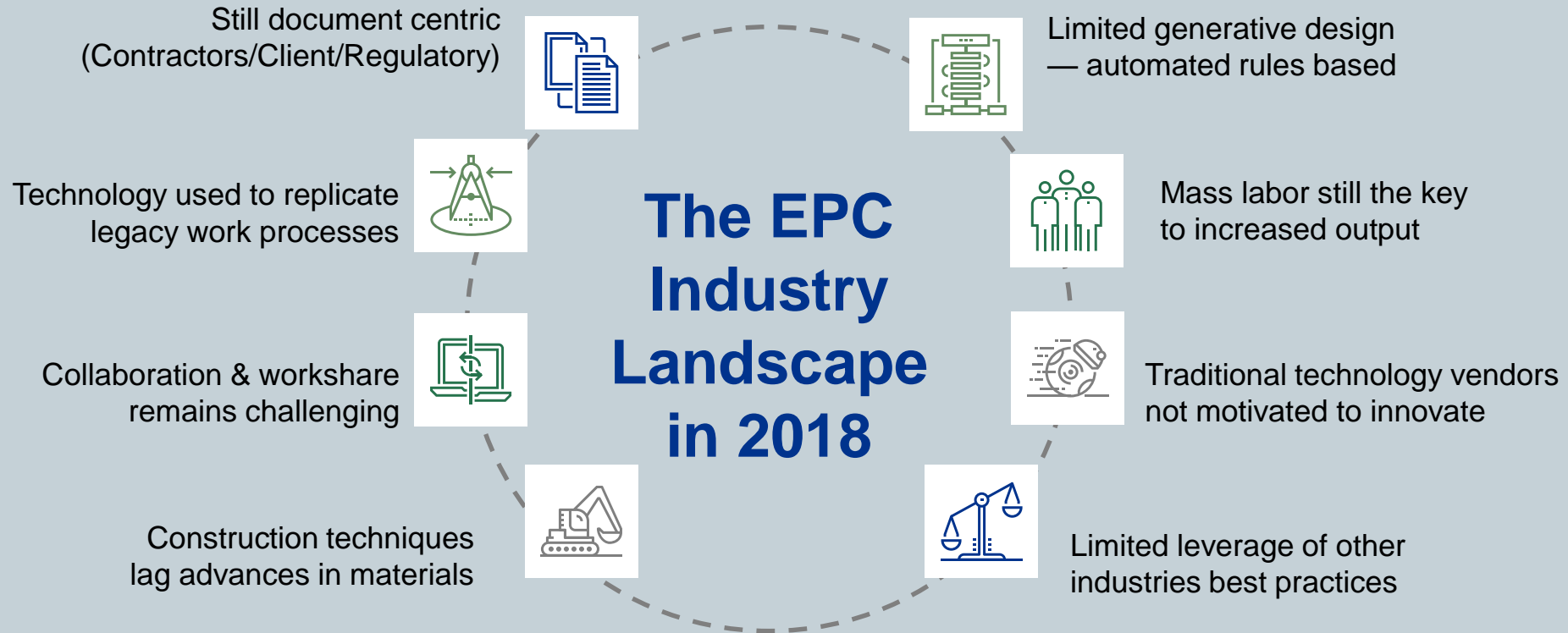
Construction spend
required \$3.3T; currently
\$2.5T



Impacts all major industries
undertaking capital projects



Industry Landscape 2018



Our Connected World



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Q: What does Digital Transformation mean?

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Question: What is the status of transformation in your organization

- a) Transformed
- b) In transformation now
- c) Just started the process
- d) Have not started
- e) Do not want to transform/what transformation?

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Q: Are organizations in this industry able to change behavior?

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Question: Is your organization able to change behavior?

- a) Yes, but contractors are not
- b) Yes, but clients are not
- c) Yes, but contractors should pay for innovation
- d) Yes, but clients should pay for innovation
- e) Yes, but no one is willing to pay for innovation

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Q: Before getting into the cost discussion, is the business problem defined? What are we trying to solve?

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Q: Where are the clients or the contractors failing at the transformation?

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Question: Where do you think the biggest impact on digitization is?

- a) Engineering innovation
- b) Construction Innovation
- c) Procurement innovation
- d) Project handover
- e) No impact, we are digital

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Q: Where do we think we can make the biggest impact on digitization?

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Q: How do you go about funding digitization journey?

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Question: What are barriers for realizing value of digital transformation?

- a. Focus on technology, rather than business problem
- b. Ability to change
- c. Don't consider cost of implementation
- d. Ongoing cost of solution

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Q: How do I get started? What are some steps to create a successful program? How to take on a digitalization program?

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- Takeaways:
 - Break the cycle of industry
 - We have collectively commoditized the industry, we need innovation
 - There is a C level focus on innovation in our industry that should enable us to drive some innovation into industry
 - Breakaway from the workhour pricing model
 - You are changing people and process, not about the technology