



Managing Risk in the Digital Age



.....

**Mechanical Contractors Association of Houston
September 26, 2018**

Industry Focus. Powerful Results.™



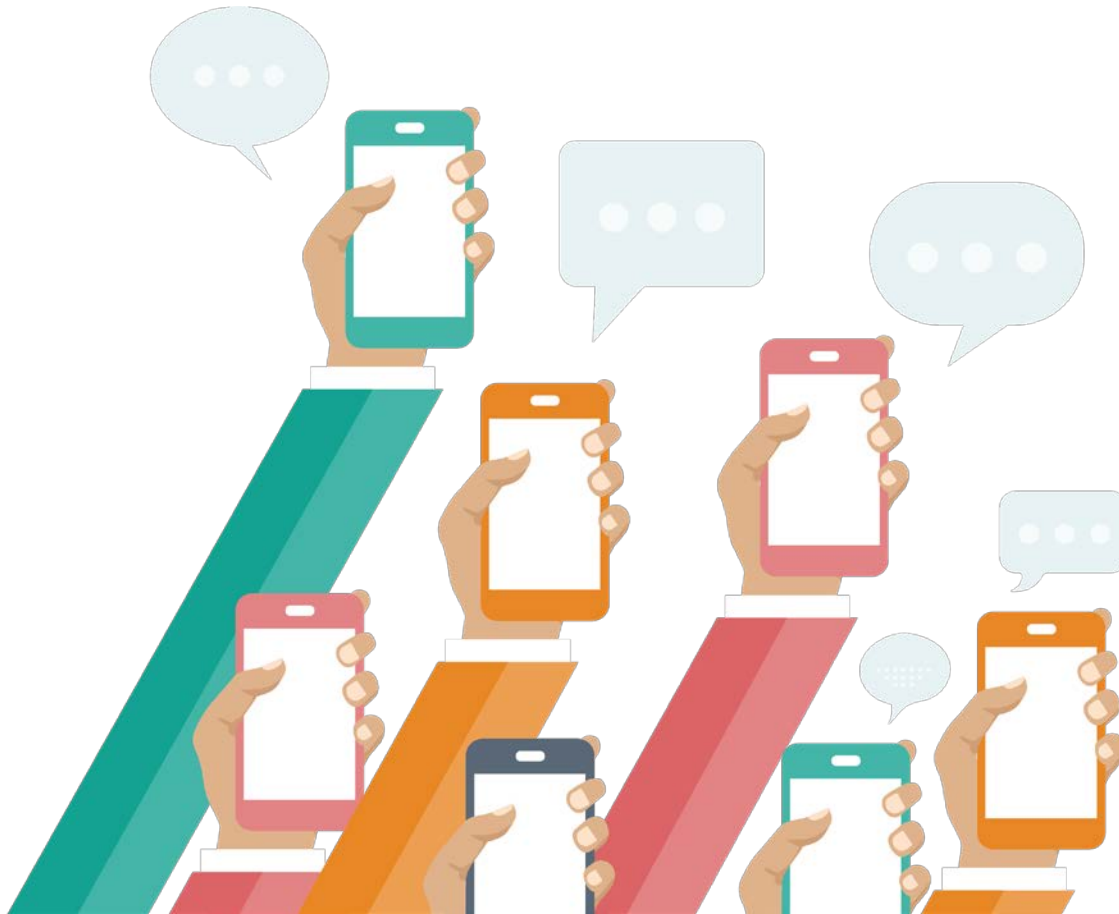
“If you don’t like change, you’re going to like irrelevance even less.”

— General Eric Shinseki, U.S. Army

What Does Disruption Look Like?

AT&T hired a consulting firm to predict future cell phone adoption in 15 years' time. The estimate was **900,000** users by the year **2000**.

Actual number turned out to be **109 million users**.



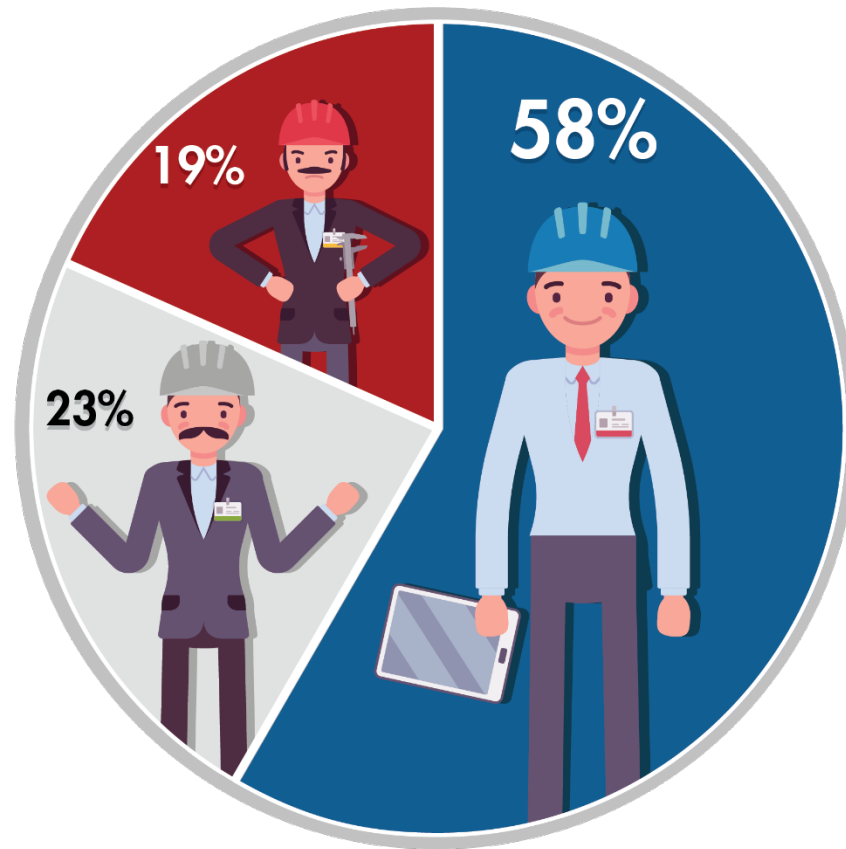


- Offsite construction
- BIM and 3-D printing
- Drones and robotics
- Augmented reality and artificial intelligence

“Most companies define themselves in terms of what they do, not as the benefits they provide.”

—Guy Kawasaki

Innovation: Where Are We Today?



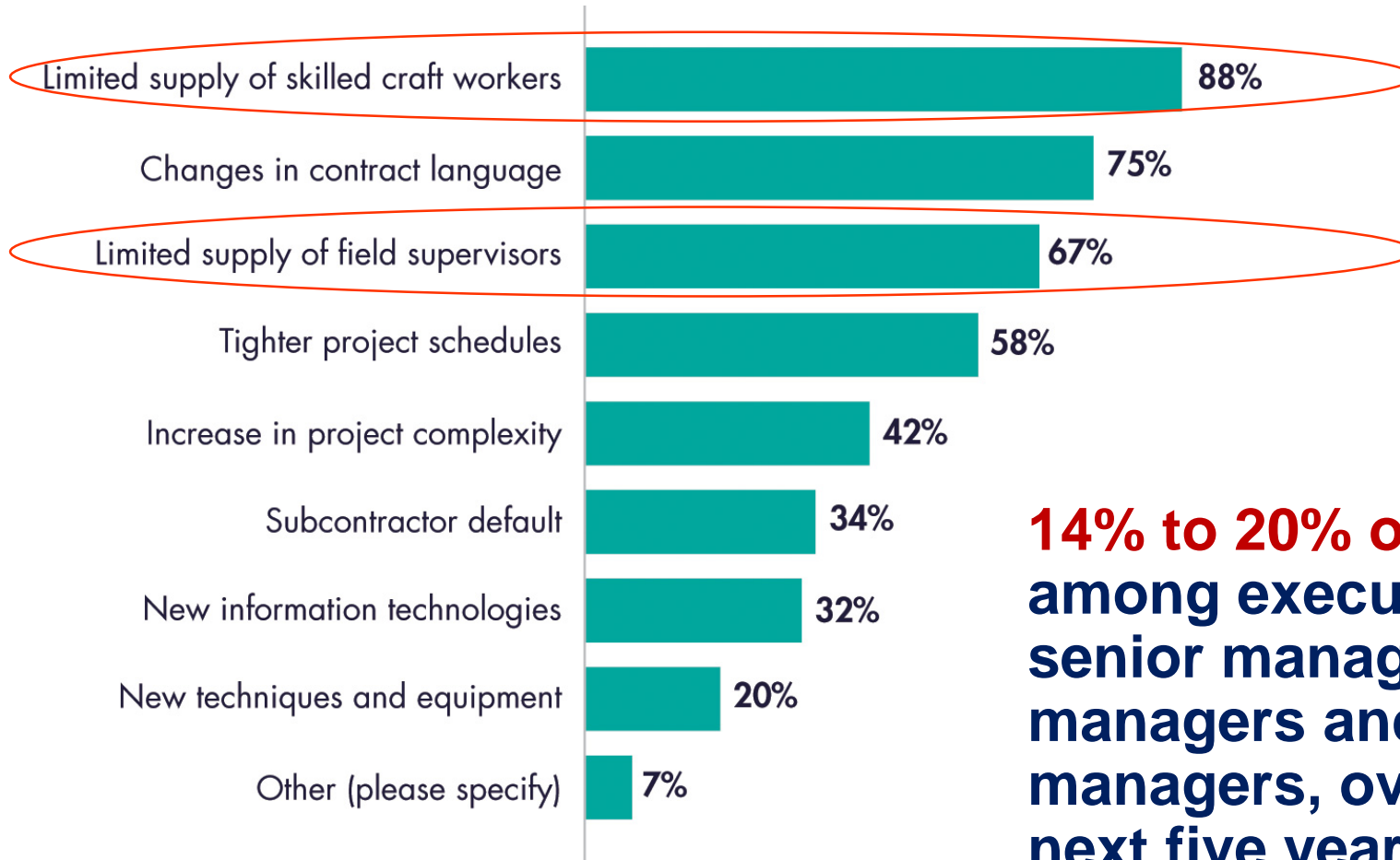
Almost two-thirds of respondents expect more change in how construction is put in place over the next 5 years than in the last 50 years combined.

■ Agree ■ Neither agree or disagree ■ Disagree

Source: 2018 AGC/FMI Industry Risk Survey

Biggest Risk Today: People

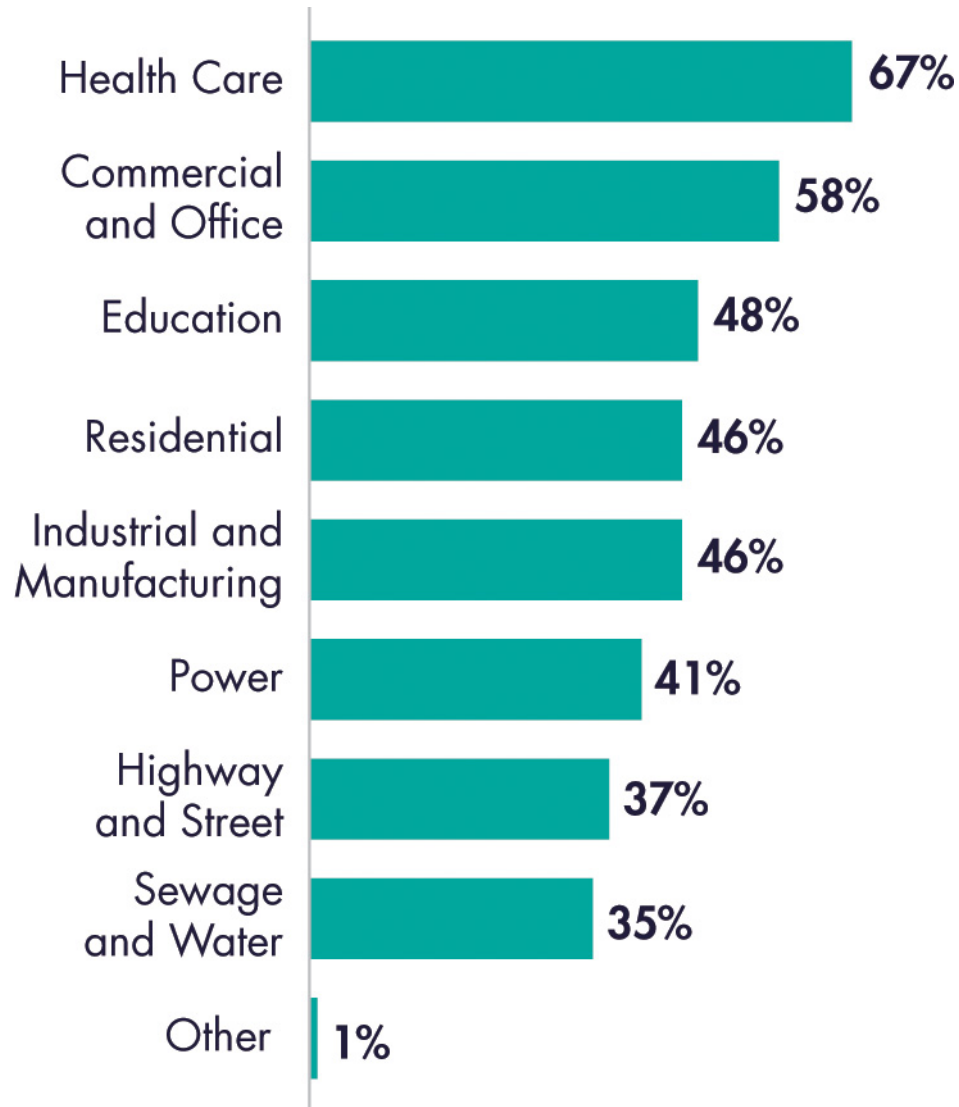
Which of the following risks are you encountering on an increasing basis?



14% to 20% of attrition among executives, senior managers, field managers and project managers, over the next five years.

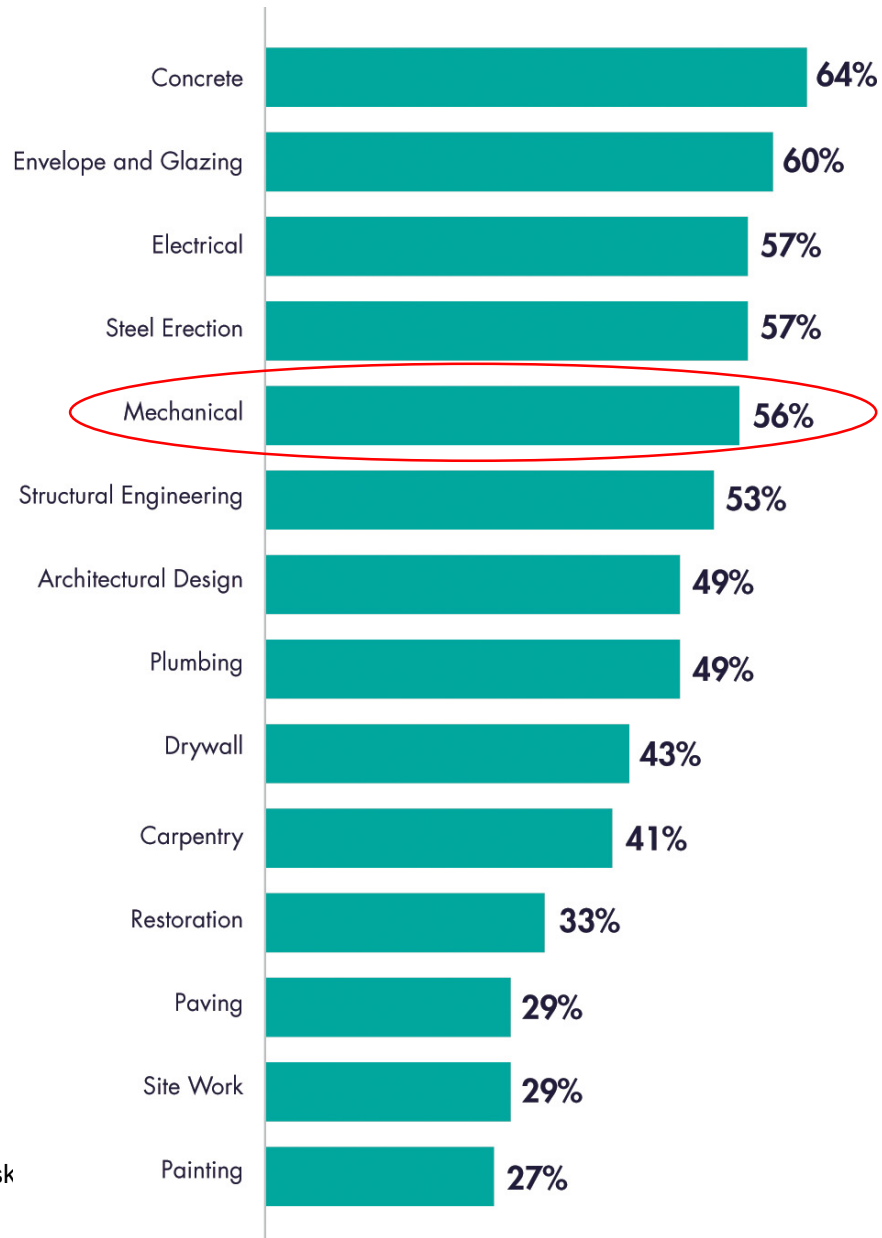
Source: 2018 AGC/FMI Industry Risk Survey

Where Will Disruption Take Place?



Source: 2018 AGC/FMI Industry Risk Survey

Where Will Disruption Take Place?



Source: 2018 AGC/FMI Industry Risk

“The level of change we’re seeing is not going to slow down; it’s only going to accelerate.”

—CEO of Building Product Manufacturer

A New Era in the E&C Industry

Four primary pressures that are impacting E&C but are accelerating the adoption of enabling technology solutions.

Project
Complexity

Labor
Shortage

Productivity

Schedule
Compression



A New Era in the E&C Industry

Technology and innovation will mitigate pressures and completely change the business of E&C.

Success Planning

RETHINK THE
VALUE CHAIN



REDEFINE
COMPETITORS



EVOLVE THE
BUSINESS MODEL



RETRAIN
YOUR PEOPLE



Change Ahead!

OFF-SITE
CONSTRUCTION



ENHANCED
VDC/AR



AUTONOMOUS
CONSTRUCTION & AI



BUSINESS
INTELLIGENCE



A Disrupted Value Chain in the Future

Today

Program/Project Management
Design/Engineering Services
Building Products Manufacturer
Distributor
Supplier
Installer
**Equipment Operators,
Technicians, Mechanics**
Testing/Commissioning

Tomorrow

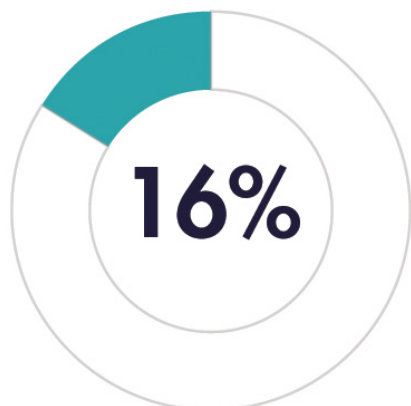
Visualization/AR/VR Consultant
**Offsite Manufacturer (e.g.
Prefabrication)**
**Onsite Manufacturer (e.g. 3D
Printing)**
**Surveillance Systems (aerial
photogrammetry, satellite imagery,
terrestrial drones)**
**Supplier/e-Commerce
Procurement**
**Equipment & Robotics Operators,
Technicians and Mechanics**

How Are Companies Innovating?

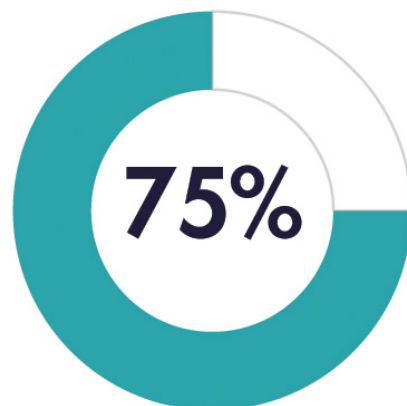


How Are Companies Innovating?

Of the respondents who do not perceive change ...




... **DO NOT**
innovate



HAVE
innovated six
times or more

Those firms that expect great change in the coming years are **over six times more likely to innovate** than those that don't feel great change is imminent.



Innovation has nothing to do with how many R&D dollars you have. It's not about money. It's about the people you have, how you're led and how much you get it.

—Steve Jobs, Former CEO of Apple

Why Is the Response to Disruption Not Happening Faster?

The “Owner Factor”

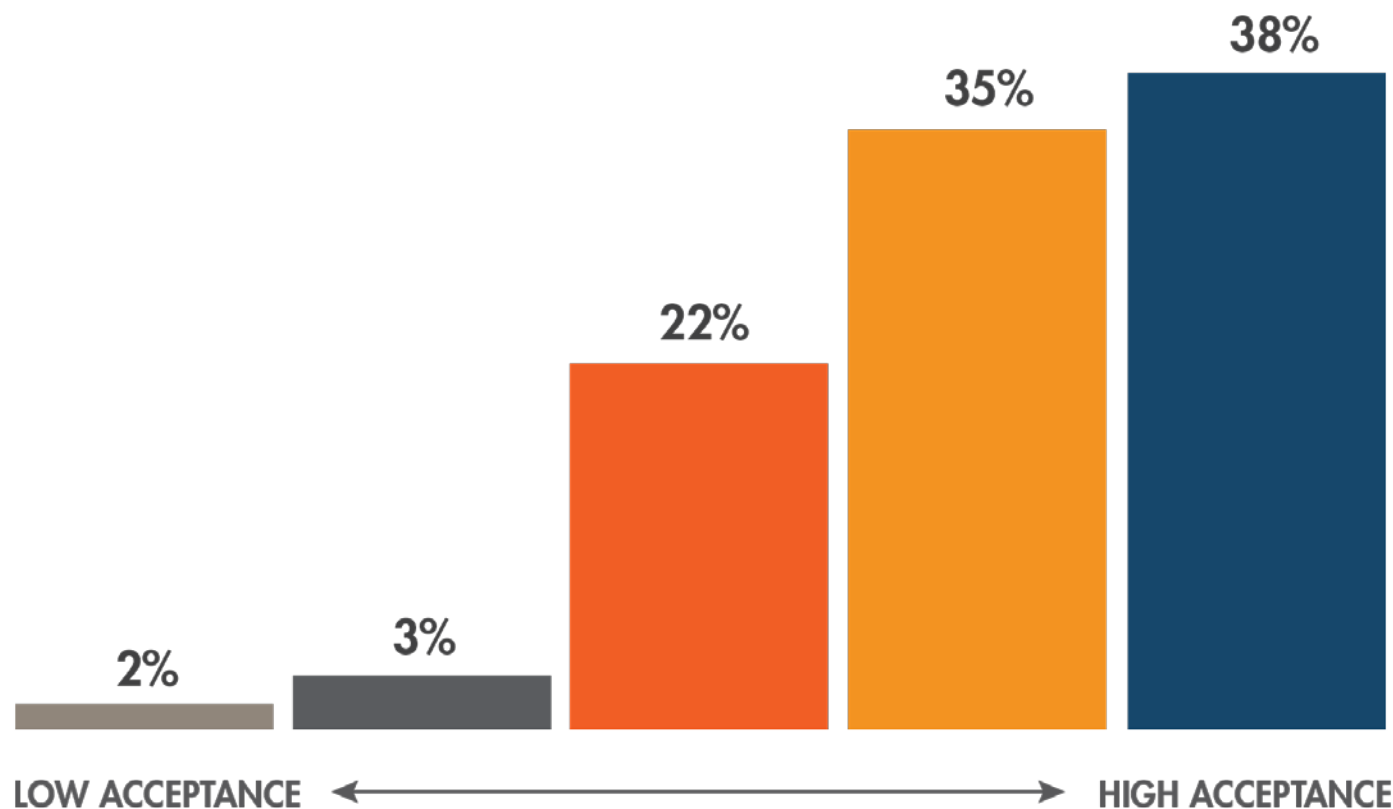
“In many cases, owners don’t have enough project professionals engaged in the early planning phase. It’s all business driven. Wall Street is driving these projects.”

—Senior manager, global chemical manufacturing company




The Big Culture Obstacle

More than 25% of owner organizations are still on the fence about offsite construction.



Source: 2017 FMI/CURT/CII Offsite Construction Survey



The challenge with doing prefab is, it's not just thinking about prefab. Instead, it's more about thinking of how your prefab strategy fits within the overall strategy of delivering a project.

—Atul Khanzode, Ph.D., Head of Technology and Innovation, DPR Construction

Time to ask: How will you compete in the future?

Irrelevant

- **Business as usual**

→ Zero listening or adaptation

Momentary

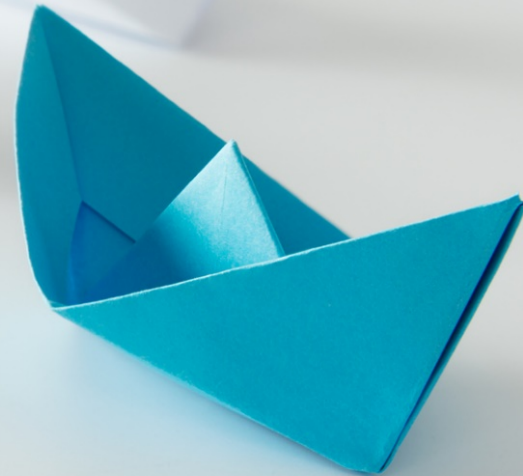
- **Compete for the moment**

→ Reacting to trends & behavior

Relevant

- **Compete for the future**

→ Proactive to shape meaningful experiences



The Big Culture Obstacle

Getting people to embrace new ways of thinking and doing work differently is one of the most challenging aspects of organizational change.



Are You Ready for Disruption?

- **Is your organization strategically positioned for change?**
- **How is your firm being intentional about transformation?**
- **Would your employees say your organization is innovative?**

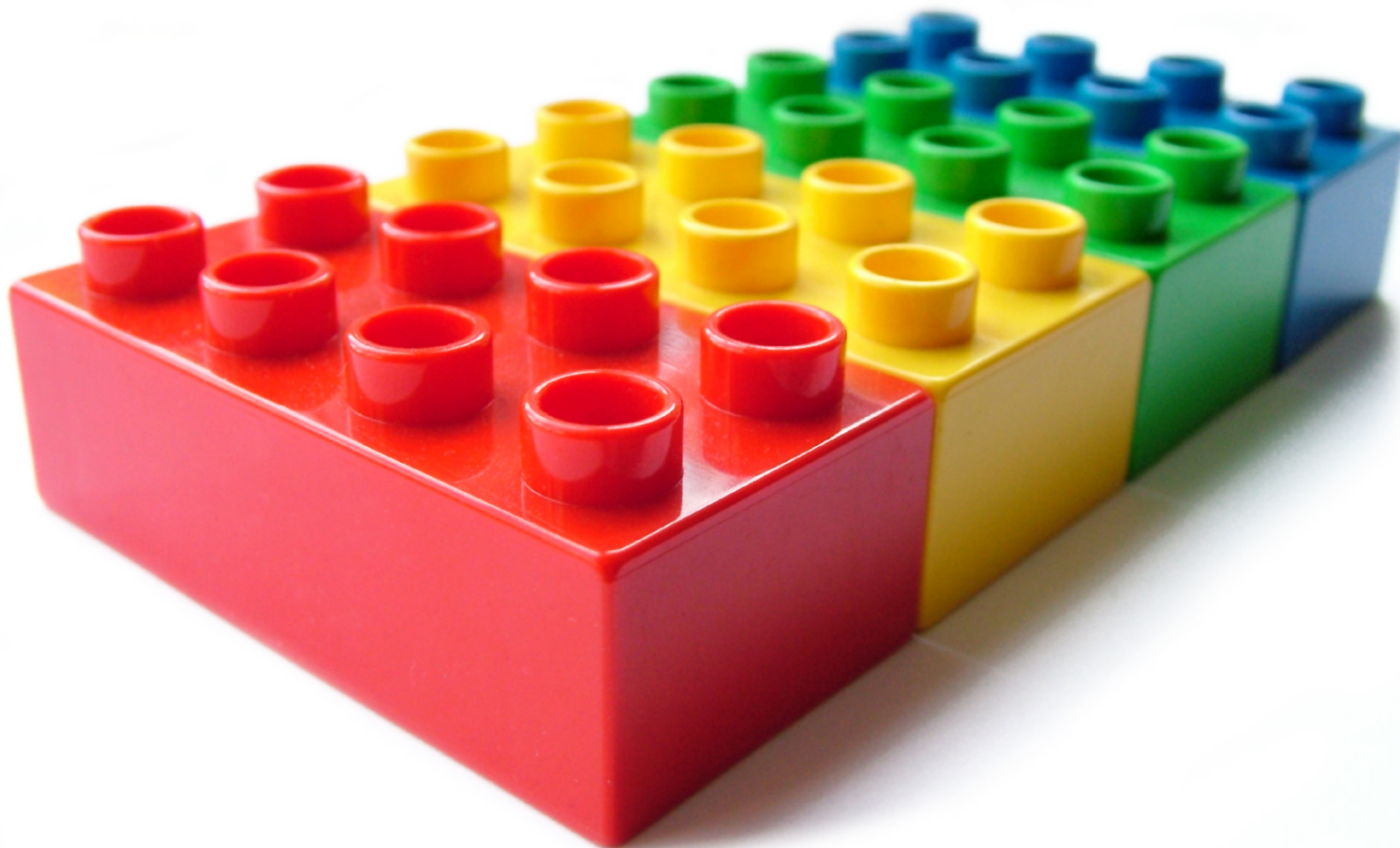


Questions & Discussion

Sabine Hoover

303.398.7238

shoover@fminet.com



About FMI

For over 65 years, FMI has been the leading **management consulting and investment banking** firm dedicated exclusively to **engineering and construction, infrastructure and the built environment**.

FMI serves all sectors of the industry as a trusted advisor. More than six decades of context, connections and insights lead to transformational outcomes for clients and the industry.

Sector Expertise

- A/E and Environmental
- General Contractors/CM
- Heavy Civil
- Industrial
- Specialty Trades
- Utility T&D
- Cleantech and Energy Services
- Construction Materials
- Building Products
- Oil and Gas
- Private Equity
- Owners



Industry Focus. Powerful Results.™

DENVER

210 University Blvd.
Suite 800
Denver, CO 80206
303.377.4740

EDMONTON

Edmonton, AB
780.850.2693

HOUSTON

1301 McKinney St.
Suite 2000
Houston, TX 77381
713.936.5400

PHOENIX

7639 E Pinnacle Peak Rd.
Suite 100
Scottsdale, AZ 85255
602.381.8108

RALEIGH (*headquarters*)

5171 Glenwood Ave.
Suite 200
Raleigh, NC 27612
919.787.8400

TAMPA

308 South Blvd.
Tampa, FL 33606
813.636.1364

WWW.FMINET.COM

