Freeing Up Boundaries

With Digital Engineering

BC QUAH
Head of Marketing Asia-Pacific
Who is FARO?
Founded in 1981
NASDAQ since 1997
Global technology company

Offering a range of
3D Portable Measurement and Imaging Solutions, that are DISRUPTIVE in Pricing, Features and Design
“The world is likely to spend $14 trillion on construction by 2025 to keep up with global demand”

Construction-related spending accounts for 13% of the world’s GDP

Construction matters, but it has a long record of poor productivity

Source: McKinsey Global Institute
Underinvestment in Digitalization

Construction industry underinvests in digitalization and innovation

Construction’s annual productivity growth increased only 1% over the past 20 years

1 Based on a set of metrics to assess digitization of assets (8 metrics), usage (11 metrics), and labor (8 metrics); see technical appendix for full list of metrics and explanation of methodology.

SOURCE: BEA; BLS; US Census; IDC; Gartner; McKinsey social technology survey; McKinsey Payments Map; LiveChat customer satisfaction report; Appbrain; US contact center decision-makers guide; eMarketer; Bluewolf; Computer Economics; industry expert interviews; McKinsey Global Institute analysis
Technological Adoption Constraints – Construction

- Transparency & Traceability Restriction
- Schedule & Budget Overrun
- Archival & Retrieval Limitation
- Static Analytics
- Inefficient Building Techniques

*Lack real-time data to optimize decision making*
Digital Disruption in Construction

5 Trends to Overcome Constraints

1. Higher-definition surveying and geolocation
   Rapid digital mapping and estimating

2. Next-generation 5-D building information modeling
   Design platform for the future

3. Digital collaboration and mobility
   Moving to paperless projects, from the office to the workforce

4. The Internet of Things and advanced analytics
   Intelligent asset management and decision making

5. Future-proof design and construction
   Designing with materials and methods of the future

Source: McKinsey Global Institute
Digital Disruption in Construction

5 Trends to Shape Construction Projects

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5 Trends to Shape Construction Projects

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Survey techniques complemented by GIS → for use in project planning

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Digital Engineering: Online, real-time sharing for transparency and collaboration → reliable outcome

Source: McKinsey Global Institute
Digital collaboration and mobility

Resolves:
- Transparency & Traceability Restriction
- Schedule & Budget Overrun
- Static Analytics
Building Project

Digital Engineering via Tools (eg. BIM)
– Common Platform to Access Single Data Set

Transparency on Project Progress
(track schedule)

Visualization for Timely Critical Decisions
(check for compliance with specifications, safety issues)
Infrastructure Maintenance

Digital Engineering via Tools (eg. BIM)
– *Common Platform to Access Real Time Data*

Monitoring with Data Analytics

(*Deformation analysis of tunnel elements; ground stability monitoring*)
Higher-definition surveying and geolocation

Resolves:
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Smart City

Globally, 1,000+ Smart City Pilots Planned

Amsterdam, Stockholm, Helsinki
Smart City
Digital data empowers decision making

Constructing Children’s Paths
- Improve safety with safe walking and biking paths for children

Real-Time Data to Understand Current Conditions to Build Optimal Routes
- re-visit at regular intervals
Digital Engineering Adoption

5 Trends: Bringing Down Barriers to Improve Productivity

Real-time Digital Collaboration for a “Single Source of Truth”

- *Transparency & Traceability on Project Progression*
- *Visualization for Effective Decision-making*
- *Monitoring with Data Analytics*
Digital Engineering Adoption Empowers Stakeholders with Real-Time Data to Make Critical Decisions
3-Define your World™