

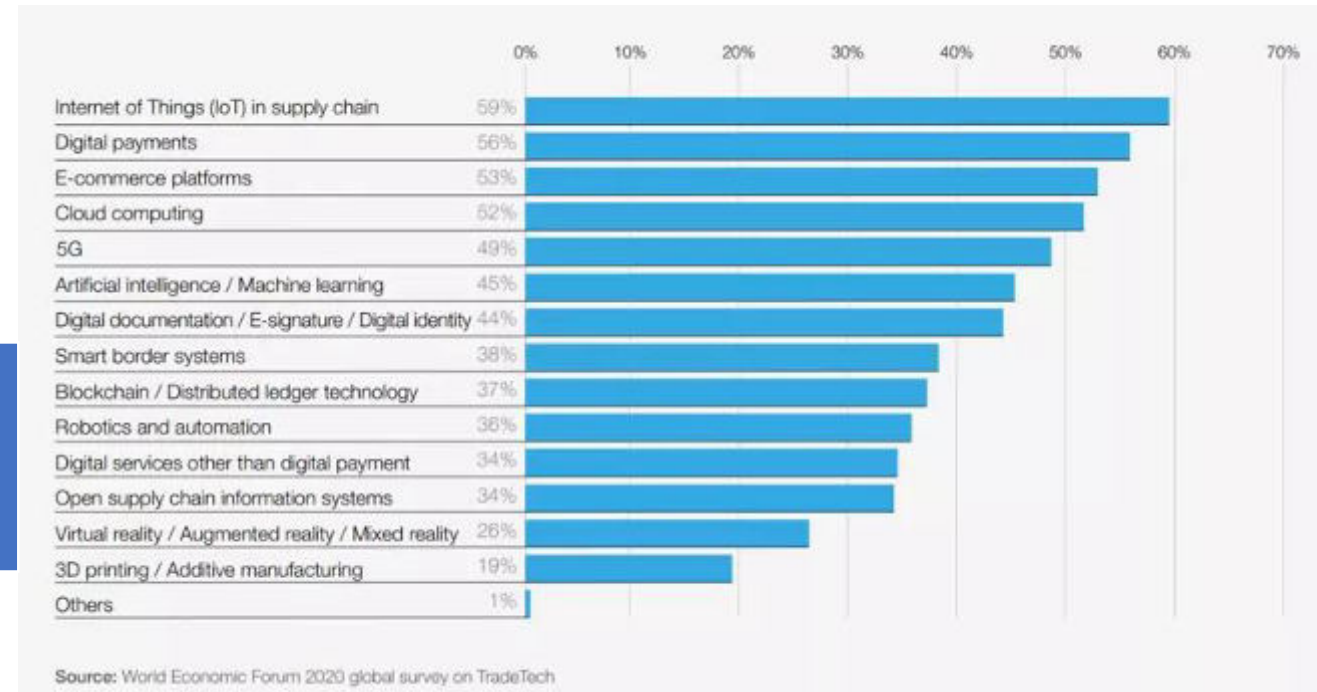
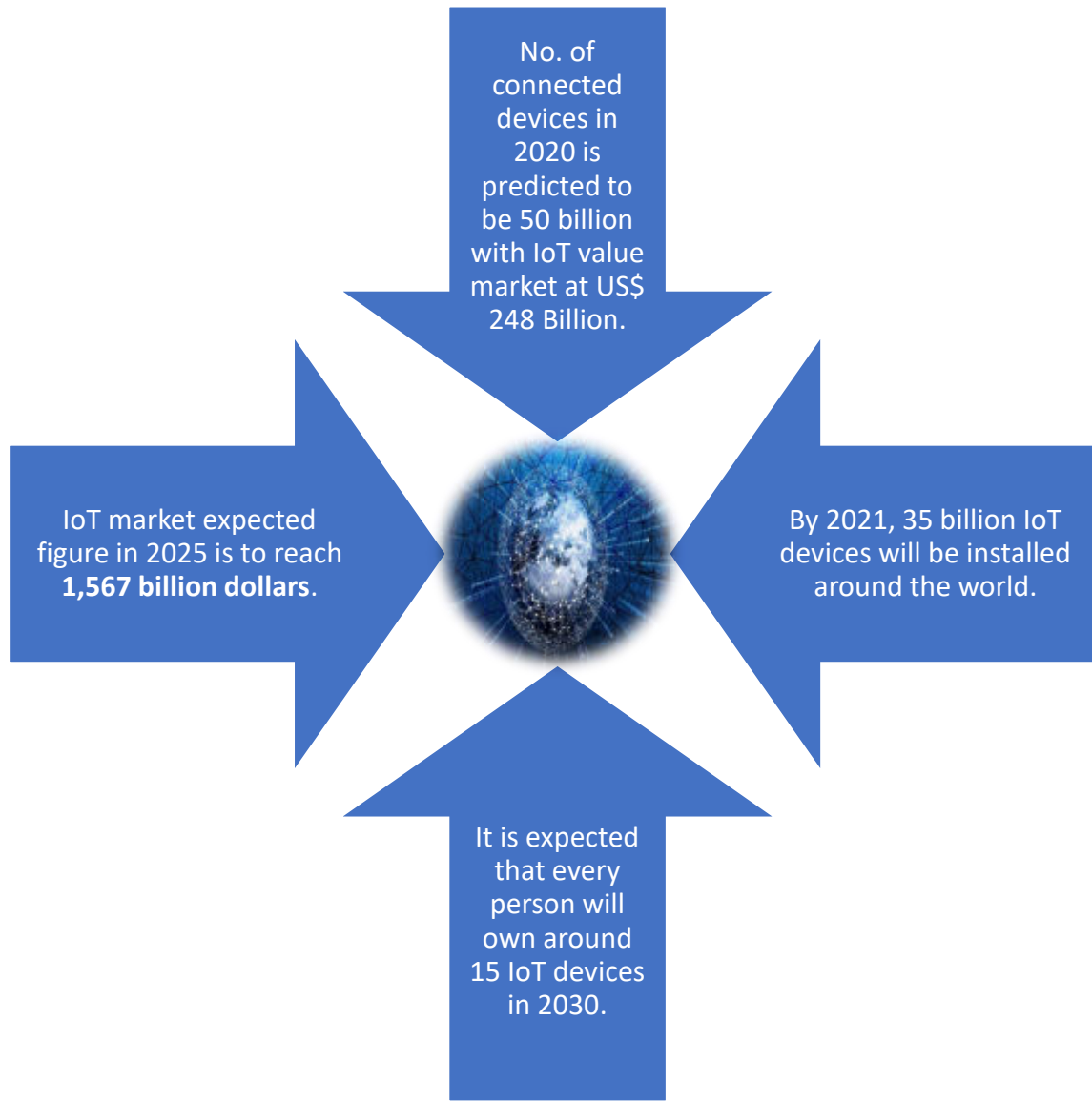


# Mitigating the Risks of Digital Transformation in Large and Complex Construction Organizations

Dr. Mustafa Abusalah



# Industry 4.0: Top Digital Technologies 2020



**Digital Disruption, Sources: IEEE, Economic Times, Martech Advisor, Statista, BCG**



## The risk of late transforming or failing to transform

What value could Digital Transformation bring to the Business?

13% increase in yearly revenue growth

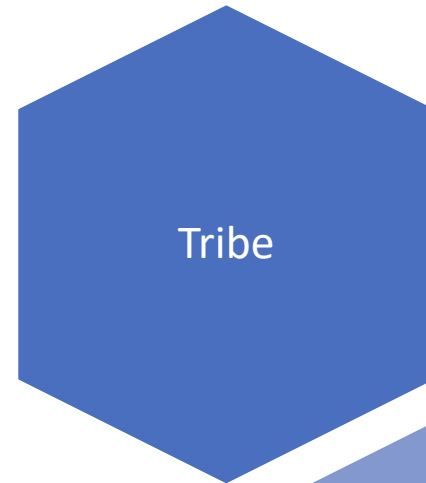
Digital Adoption Leaders

Digital Adoption Laggards

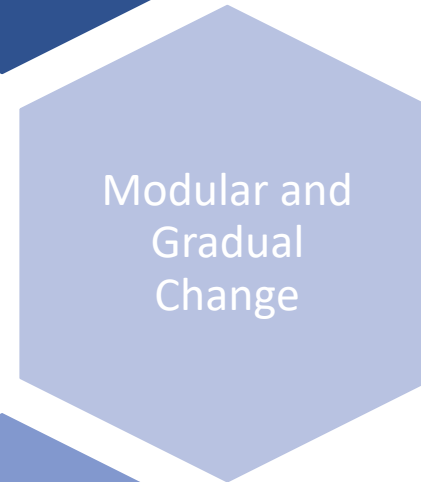


# Change Plan

## Change Implementation



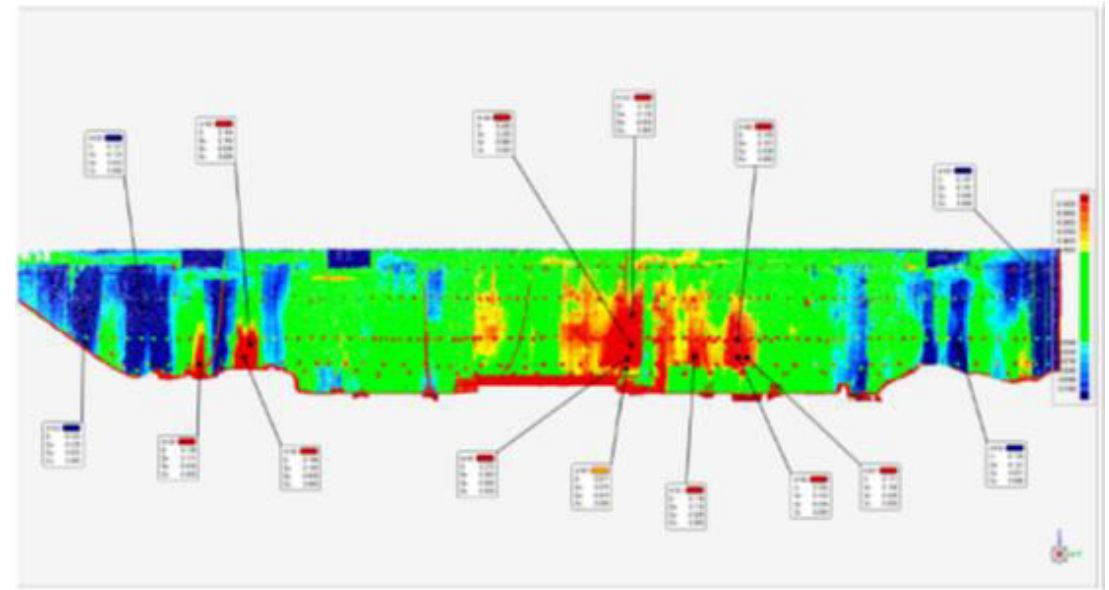
Unfreeze



Refreeze,  
Sustain the  
Change

# Modular and Gradual Change Early Wins– LIDAR Scanning

- Define objectives
- Obstacles caused when using traditional methods
- Define use case scenarios
- Example:
  - 3D lidar scanner was accomplished in two days showing that some of the as-built structure deviation compared to the BIM model.



Foundation structural inspection of the diaphragm wall – One of CCC Projects



# Sociotechnical Barrier

- Part of the Transformation is transforming people, jobs and skills.
- Adoption of suitable technologies and tools that could fit easier with the companies existing environment.
- Be Patient, time Lag in every massive Change





## De-Re-Regulation Risks

- Who sets the regulations? Government, Innovation, Technology Giants.
- Deregulation:
  - Microsoft and Atlassian are pushing customers to move to the cloud!
- Reregulation:
  - Drones, Data transmission
  - Ecosystem: Network of organizations and individuals exchanging information and goods to create a certain value
  - Covid-19: Work from Home...

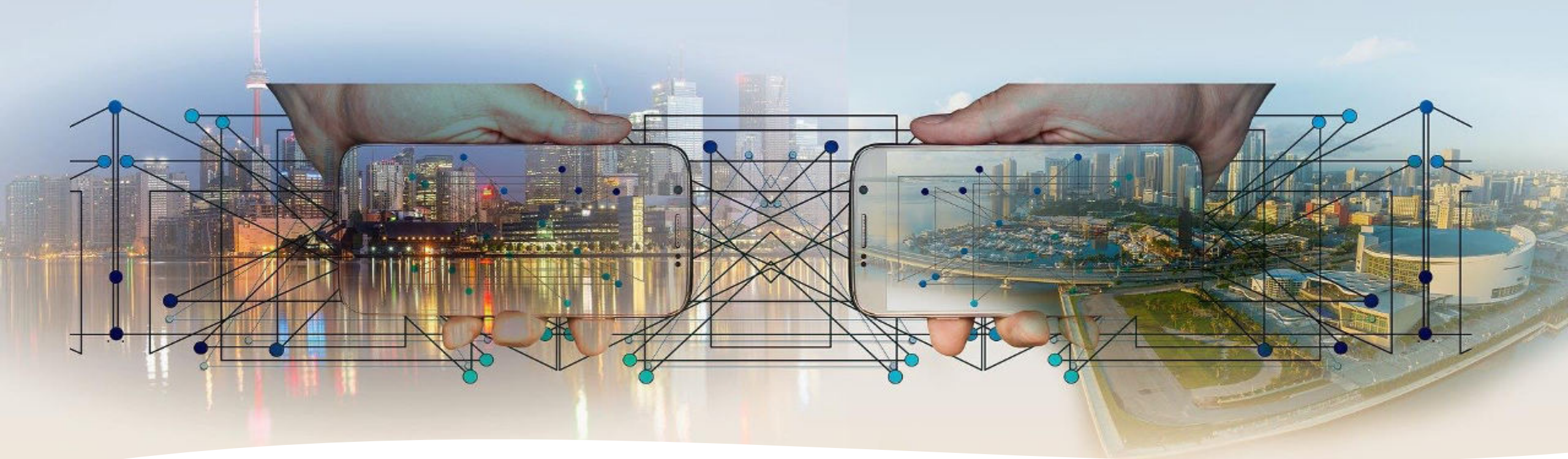


# Digitization Increases Risk Complexity & Performance Measures

- Risk Transformation: Data Transfer & Information Sharing among Vertical Ecosystem!
- The use of sensors and tracking software will likely be a challenge as it poses privacy concerns among the construction employees.
- Systems, Network, IoT ... Complexity
- Mitigation: Compliance & Governance, Utilization of AI & Data Science.







## Deconstruction of Value Chain

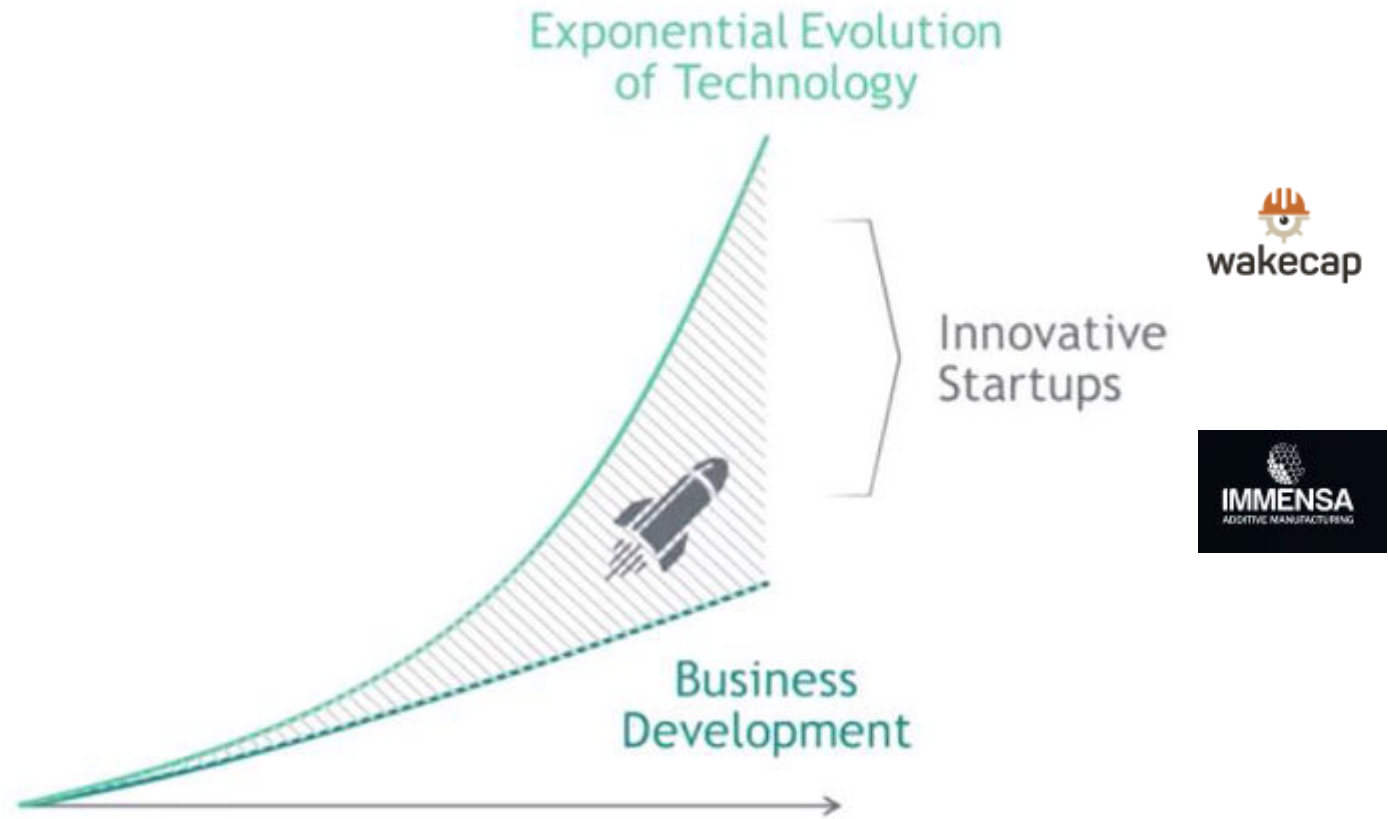
SMEs - Innovators

Subcontractors

Scaled Base Layer  
Key E&C Dominators



# E&C Business Growth & Digital Technology



Startups will help shaping the future of DT

