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Enhancing Construction Project Management through AI

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Learning Objectives

- Understand the impact and applications of AI and machine learning in construction project management
- Learn how AI can improve data capture and enrich project management data that can lead to better understanding of project risks
- Learn how AI can leverage past project experiences to improve the design of better-managed future projects
- Understand from industry leaders and early adopters the applications and value of AI in construction project management

Description

Construction is an inherently high-risk low-margin business with countless opportunities for miscoordination, miscommunication and disconnected processes. From initial design concepts to construction documentation, pre-construction to handover; many stakeholders, changes and versions can overwhelm even the most organized and well-aligned teams. 80% expect to face added costs from design errors and omissions. Efficient project management can determine the winners in the market. Construction project management effectiveness can be significantly improved through AI, especially in the early detection of project risks so that they can be mitigated. AI can make the link between change orders, RFIs, and submittals back into the design phase. AI helps reduce the number of frivolous RFIs and wasteful Change Orders with the ultimate goal of better project performance. Hear from industry leaders the application and value of machine learning in construction project management.

Speaker(s)

Dustin Hartsuiker

Regional Solutions Manager - Swinerton Builders

Dustin Hartsuiker works as the Manager of Technology Solutions for Swinerton Builders where he spends his time researching and implementing new technology and productivity enhancements for their project teams. His role in the corporate environment has caused him to focus on big data and the benefits it provides when properly harvested, organized, and evaluated. With a long-term goal of improving productivity in construction, Dustin is on a mission to advocate for enterprise programs which can collect, store, and organize the massive amounts of data that hold the secret to unlocking increased productivity in Construction.

Richard Holbrook

Director of Construction Operations - Layton Construction Company, Inc.

Kenneth H. Stowe

Worldwide Field Operations Executive - Construction Business Unit, Autodesk

Ken is a construction technology expert, development strategist, and project systems coach at Autodesk, Inc. With 25 years of experience in construction management and project control on projects as large as $1.4 Billion, 16 years in BIM and cloud software, experience in 21 countries, and contributions to four books, Stowe leads a team at Autodesk responsible for construction business development and strategy initiatives worldwide.

Charis Kaskiris

Principle Data Scientist – BIM 360, Construction Business Unit, Autodesk

Charis is a Principal Data Scientist in the BIM360 team working on advanced analytics and business intelligence for our suite of construction-related products.

Stella Xu

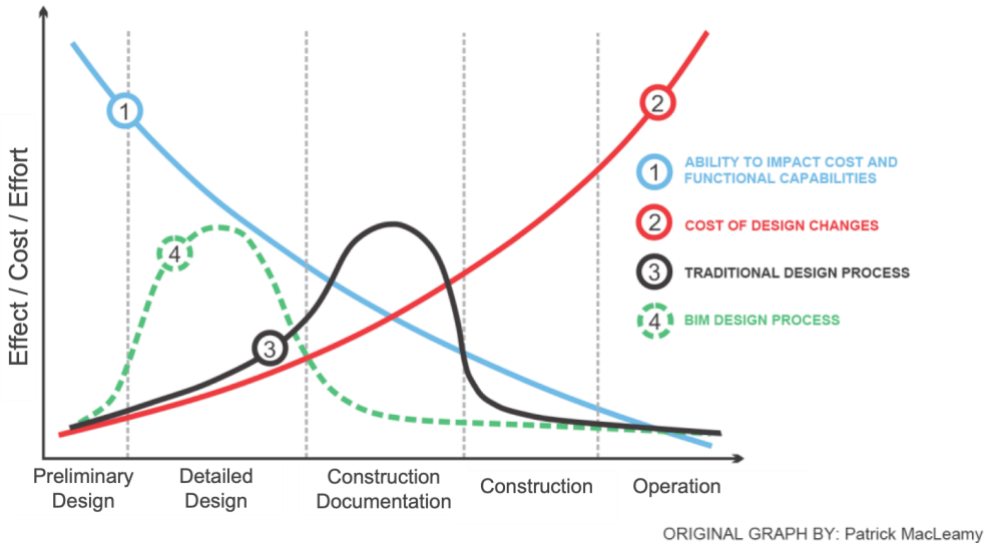
Data Scientist – BIM 360, Construction Business Unit, Autodesk

Stella is a data scientist with BIM 360 team. She got a PhD degree in civil and environmental engineering from MIT with a focus on data and modelling. She is currently contributing to build and productize data-driven features for predicting and minimizing risks for construction.

Investing in AI to win your next battle

Challenges in construction industry

Construction has long been considered as a high-risk and low margin industry. Despite the fact that it's a 10-trillion business, the industry is behind in terms of productivity and IT spend. Reworks and waste, cost and schedule overruns, safety and quality issues, are eating up the profit margins of construction companies. According to a study, 4 to 14% of every construction dollar pays for rework. The root cause of 38 % of rework was errors and omissions, and 10% was due to Late Changes. As indicated by the famous MacLeamy Curve below, the earlier you identify the problems in a construction project, the lower impact they would have on cost and margin. This requires a huge digitization effort and predictive insights driven from learnings from big data.



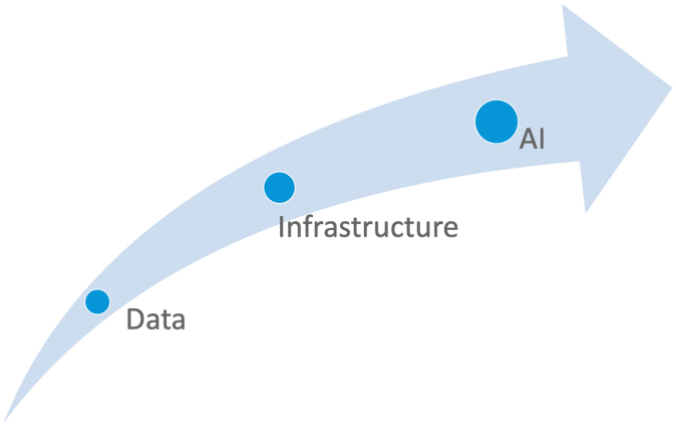
Construction industry is catching up the pace of digitization

Gladly, after years of stagnating productivity and antiquated processes and procedures, construction is slowly awakening. From planning to execution, from design to build, from onsite inspection to remote control, there has been a move-away from physical to digital over the past few years. More and more companies are becoming data centric. Since 2013, construction technology received more than $18 billion in cumulative investment, according to McKinsey. Leading construction companies started to invest in technologies like artificial intelligence, cloud-based data analytics, and mobile computing to drive efficiency and boost margins. (Read more in this article The Industry Is Finally Embracing Technology from Fortune). As a result of digital maturity, the construction industry is ready for the next revolution, which is likely to driven by AI.

Are you ready for AI for construction?

So, is your company set up for the next frontier?
The impact of AI is contingent on having the right data. You are not able to take advantage of AI without first collecting data of good quality and having reliable infrastructure for data consumption.

This includes investing in the right tools and capabilities for data collection and processing, such as cloud infrastructure and advanced machine learning.



Three essential elements for AI-powered solution

BIM 360: your best solution for construction project management

BIM 360 is built on Autodesk Forge, a common data platform on the cloud. It provides a single source of truth which enables collaboration among various trades, eliminating frictions and redundancy. On top of this, the AI-powered and data-driven predictive backend supported by Project IQ is the first intelligence system in the industry for project controls over quality, safety and risk management.

The power of AI-based solutions can be unlocked best when all data sources can connect to each other. To address this need, Autodesk is also working towards building a data platform that would allow third party integrations. This would enable different construction companies to bring all their data to one platform that would also have the capabilities of a common analytics layer.

Conceptual architecture of the BIM360 Data platform