The internet of things: a nightmare or golden opportunity for the construction industry

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CONNECT & CONSTRUCT SUMMIT
About the speaker

Stephanie Whittaker

- 19 years in the construction industry
- I lead the ENCORD Foresighting workgroup exploring how forces of change will impact the industry
- Senior marketing and communications professional at BAM
- Construction trends, digital, IoT and smart cities blogger
IoT = OR

WISH COME TRUE
Contents

• IoT: a quick overview
• What are we already doing in construction?
• What are the opportunities?
• What are the challenges?
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IoT: a quick overview
What is the Internet of Things (IoT)?
IoT: Open data
Better user experience and operations

Airbus Connected Experience

Innovative solution for seamless connectivity of cabin elements enabling additional value for airlines and passengers.
Better decision making and outcomes
Better insights

Why are fewer people travelling by tube?
IoT: Data analytics – multi-variables

Why did we run out of salad this weekend?

- New in store location
- Hot weather
- A fire at the distribution hub
- Weekly promotion
- Trend for lettuce smoothies
- Problems with suppliers
- Theft
IoT: Data analytics – data collection
IoT: Data analytics – multi-variables

Sales in hot and cold weather

Baseline sales

Sales during promotions

Baseline sales
What are we already doing in construction?
Data collection via BIM (Design, construction and operations)
IoT- construction

- MSITE personnel tracking and verification
- Environmental impact sensors/apps – noise, air quality
- Activity sensors – concrete etc.
- AI and machine learning.
IoT- operations

Asset in use sensors (asphalt, footfall)

Smart tech (lighting, BMS)

Space utilisation

Mapping
Digital twin
IoT to improve decision making and outcomes

“The use of BIM 360 Field for snagging has made an incredibly laborious and time consuming process much more straightforward. Within minutes of completing site inspections, an automated report is generated giving the team access to a consistent set of information. It is a brilliant tool which I’d be keen to use on all projects going forward”

Jen Ponting – Argent LLP, Senior Project Manager
What are the opportunities for construction?
Better decisions and outcomes
Better customer experience and operations

- Smart apps let users engage with the asset
- Rooms/spaces are chosen and customised based on previous use
- Dashboards provide management and FM teams with building performance metrics and info
- Data is analysed to improve the way things are done and the asset itself
Better insights (individual, portfolio and citywide)
Rather like BIM we need to understand what data we need and how and when we will get it.
Why is my asset not performing as expected?
Why is my asset not performing as expected?
Benchmarking assets – trends and lessons learnt
Generative design based on data collected and client requirements
Come In
WE'RE OPEN
Colouring London

Credit: Colouring London
Sharing lessons learned to create better assets
Collaborative design and innovation
Community design – via platforms
The challenges
Silos and other issues prevent data sharing and analysis
End user behaviour and its impact on assets
Data storage
Privacy and security
Regulatory framework
Next steps
IoT offers a golden opportunity for the construction industry but we need to resolve the challenges we face before we can realise its benefits.