

MEETING: Realize the Strategic Advantage of Integrating Technology  
DATE: September 11, 2019  
LOCATION: Oswald Conference Centre

**1. MEETING PURPOSE: Goal**

To understand how we, as industry leaders, can create opportunity and not obstacles for infusing technology into our work. Lead by RJ Reed, Director of Practice Innovation for Whiting-Turner, he will engage us in a Choosing by Advantages (CBA) workshop to illustrate our role in selecting integrated, productivity boosting, technologies to facilitate a more efficient Design and Construction process.

**2. DISCUSSION**

**3. IMPLEMENTATION: Next Steps**

- Recommendations:
  - Define a root cause to help break the barrier for integration of new technologies.
  - Define what the industries' ideal software is using a cross-functional team for development.
  - Implement a CBA workshop for defining the needs of an industry wide technology platform.

**2. DISCUSSION:**

**A. Current State**

Introduction:

- Per Mckinsey Global Institute, the construction sector is second to last (of the sectors researched) on the use and integration of technology into the everyday workflow.
- The construction industry has an opportunity to improve on the leveraging of technology for on-site execution.

5 industry professionals were tasked with acting as their sectors spokes person to describe their day to day uses of technology. High level points that came out of the discussion where as follows.

- We have thousands of programs and tools to choose from, most of which do not communicate with one another.
- We use multiple programs that have similar Functions which all require user licenses.
- Duplication of data entry, due to use of multiple programs, creates a nonvalue add activity that increases an opportunity for discrepancies and errors.
- No training on new software is provided so, a learn as you go approach is typically utilized.
- Continually changing software is a missed opportunity for utilizing the tools to their fullest extent due to constantly learning software and not mastering the tool.
- The ability to link software to outside sources can be hindered by network security measures in place.
- The greater the cross platform and inter-organizational communication the greater the opportunity for a security issue.
- In some cases, the processing power to run a software to its fullest potential is needing improved.

**C. Root Cause**

- As referenced before, Per Mckinsey Global Institute, the construction sector is second to last, of the sectors researched, on the use and integration of technology into the everyday workflow.
- Understanding why the industry is cautious to adopt and integrate the use of Technology is a precursor to developing counter measures to drive the implementation for the desired future state. **Themes that came out include the following, however we did not get to the "Root Cause".**
  - Contractors are expected to use the software selected by the Architect or the Owner. This forces the contractor to purchase multiple licenses for multiple software that function in a similar fashion.
  - Software manufacturers develop programs that have no way to communicate with other programs.
- Unlike the manufacturing industry where "parts" are turned every minute, the construction industry turns a "part" every year, relatively speaking.
  - This poses a unique challenge on understanding how ROI is defined and measured.

**B. Desired Future State**

- Better Integration between software platforms.
- Improved product support with knowledgeable people on the first call.
- Progressing to a point where the architectural deliverable is a live model and not 2 dimensional sheets.
- All projects to begin with technology kick off meeting where software tools used are selected and team members are trained up front.
- As an industry, we need to not just adopt but live a continuous improvement culture especially when it comes to cutting edge technologies.
- The ability to easily quantify ROI on the investment of technological solutions.
  - Understand what ROI means to an organization as each organization's definition might be different.
- Understanding how a delivery will ultimately effect the way technology and software is used.

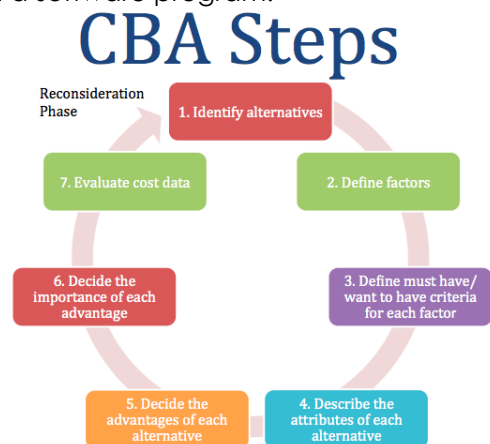
**D. Proposed Countermeasures & Standards for Measuring Performance**

- Utilize a project team CBA workshop early on to set the standard for what software(s) are to be used.
  - This event took us through the process and provided examples of out put from a CBA decision matrix. The matrix was generated by RJ Reed of Whiting-turner and was an example how to implement CBA on a project (The example provided was form the Disney world Star Wars: Galaxy's Edge addition)
- Develop a current list of industry "power" programs.
- Define Characteristics needed for cross-functional teams.
- Define what "Technology" is to the industry.
- Define what our ideal program is and contact software Manufacturers to express our feedback and what we are looking for in a software program.

Attendance



- Architects
- Contractors
- Engineers
- Industry Affiliates
- Owners
- Trade Contractors



References:  
1. Arroyo, Paz 2015, CBA Steps, Flow chart by Paz Arroyo PhD, Step by Step Guide to Applying Choosing by Advantages, Lean Construction Blog, Accessed 18 October 2019, <https://leanconstructionblog.com/applying-choosing-by-advantages-step-by-step.html>