Successful WorkFace Planning
10% Technology, 90% Sociology
Robin M. Mikaelsson PMP

Senior Construction Consultant

Quick Bio:

- Over 20 years in the construction industry
- Started as a tradesman in the field
- In 2000 completed education in process pipe engineering (SAIT and University of Houston)
- Worked as an engineering design lead for several years
- In 2003 completed education in Project Management and obtained PMP credentials (PMI)
- Returned to the field in construction management
- Helped develop the original WFP model
- Worked as WFP manager on many major industrial projects from 3 million to 20 billion
- Continues to work with industry bodies to further develop the WFP philosophy (Committee member with both COAA and CII)
- Joined Bentley in 2009 and has a global role in working with clients to further their WFP implementations in order to better utilize ConstructSim
- Now lives with his wife and two children on Skeleton Lake in northern Alberta (Lower area of the Alberta Oil Sands)
Good Plan, But I Think We Might Need Just A Little More Detail Right Here.
The Need For Innovation

• Success in construction is elusive

• Independent Project Analysis (IPA) study of 318 projects > $2B:
  
• 65% of projects FAILED, experiencing either:
  
  • > 25% cost overrun
  
  • > 25% schedule slip
  
  • Significant underperformance of the asset once constructed
What is the Answer?

Adoption of WFP Principles in Heavy Industrial Construction

Improve Visibility & Predictability!
But....

No thanks!

We are too busy
Challenges to Visibility, Risk Reduction

- Many stove pipe systems for data and processes – no single point of truth
- Data flow between engineering, fabricators, construction and commissioning typically not connected
- No change management technology in place to support change processes
- Work packages
  - Manually created versus assembled and published
  - Readiness or completeness managed by spreadsheets
  - Lack alignment with work processes
  - No consistency & poor integration with project controls
Build “off the shelf software”...

- Leverage our core competencies in engineering & information management
  - Modular and scalable

- Our system comprises of:
  - Construction business process management services
  - Graphical and non-graphical work packaging, look ahead planning, status visualization and reporting tools
  - Connections to other enterprise systems

- Built on enterprise proven products
  - eB platform
  - ConstructSim platform
  - Bentley’s open enterprise interoperability strategy
Connecting Project Data…

Bentley Construction Solution

Enabling

Change management

Models  Schedule  Cost Plan  Resources  Materials  Equipment  ERP  Many others

Many others

Work package management

Status visualisation, Look ahead planning

Field based work progressing

Field based QA/QC

Dashboards & reports

Engineering model & data management
Technology is out there...
Instant Updates From The Field
# Bentley Mobile Apps

<table>
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<tr>
<th>App Name</th>
<th>Description</th>
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<tr>
<td>Field Supervisor</td>
<td>Create personalized views into project data sources on an iPad</td>
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<tr>
<td>InspectTech Collector Mobile</td>
<td>Inspect transportation assets, capture photos, and create reports on an iPad</td>
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<td>Map Mobile</td>
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<td>ProjectWise Explorer Mobile</td>
<td>Create, browse, and view ProjectWise documents on an iPad</td>
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<td>Structural Synchronizer View</td>
<td>View structural models on an iPad</td>
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Making it Work

UP-FRONT ALIGNMENT
TEAMS ARE ACHIEVING SIGNIFICANT PRODUCTIVITY GAINS BY ADVANCING EARLY PLANNING CONCEPTS (P. 94)

Also Second Quarterly Cost Report (P. 23)

ALL-IN-ONE SYSTEMS SLASH PLANNING TIME

...
Silent Killers
10) Alignment of Rates and Rules of Credit (ROC)

- ROCs need to align with IWPs
- ROCs need to be flexible in separation of code groupings
- ROC must be structured to allow single crew completion of IWP
9) Complete work procedures

- Detailed outline for dept. operation
- Training and onboarding
- Work Package content
- Clear deliverables of stakeholders
8) Regular monitoring and audits

- Use of cold eyes reviews
- Third party auditors
- Required standards
- Established metrics
Best Practice Lessons Learned

7) Appropriately staffed positions

• Planners need to have skills specific to the area of planning

• Managers need to have a working knowledge of the Best Practice Model

• Administrators of WFP/AWP systems require specific skill sets
6) Management buy in and understanding

- All management needs to support planning efforts
- Staffing requirements need to be protected
- Supply of required resources
- Understanding the difference between Planners and Schedulers
5) Material management alignment with WP content and process

- CWP/IWP boundaries need to be established in material system
- Ability to request at component level
- Appropriate level of tracking into construction
4) Support of all phases for WPs

- Engineering following standard on EWPs based on CWP boundaries
- Construction completion of CWPs
- IWP aligned to hierarchy
- Path of construction supported by deliverables
3) IWP Constraint management

- IWP release plans need to be followed
- Look ahead plans must be in place
- Physical constraints must be satisfied
- Feedback loop must be in place
Best Practice Lessons Learned

2) A time and place for everything

- Planners need to be located near and embedded with the construction craft
- EWPs / CWPs need to be completed well ahead of the IWPs
- FIWP release plan need to be complete based in the CWPs
- IWPs need to be completed ahead of time but not to far in advance to lose the influence of the field
Best Practice Lessons Learned

1) Contractual alignment

- Expectations of stakeholders
- Process standards
- Required data specification
- Reporting intervals
- Required deliverables
- JV integration and interface management
- Ownership and accountability
Question & Answer
Thank you!

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