

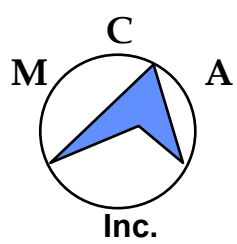


Project Management Symposium Report

Holiday Inn Atlanta Airport North Atlanta, Georgia

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**MCA Symposium
April 20, 2005**

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Understanding Risk:

The components of work for a Project Manager can be broken down by project delivery, project, and job (**Figure 1**). The project delivery items include everything from estimation to closeout. The project items include everything that is needed to complete the project (invoices, submittals, schedule, labor, material, purchase orders, bonding, etc.). The job items include everything that is needed to perform the work (material, labor, tools, etc.).

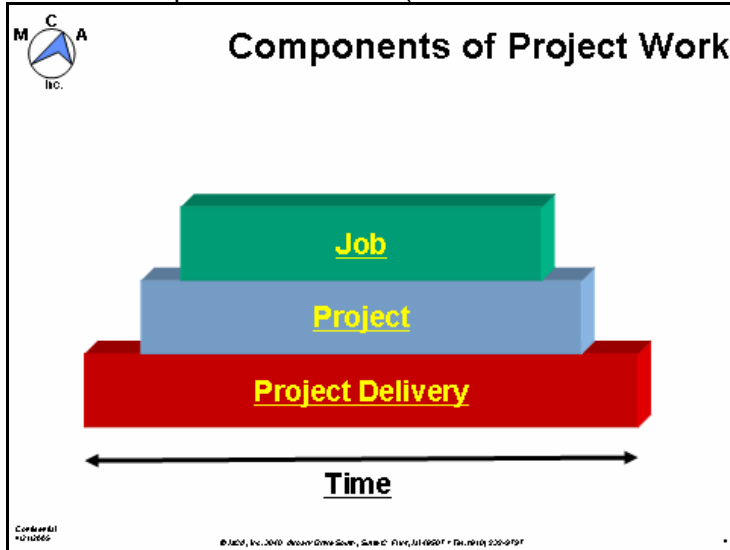


Figure 1: Components of Work

Each of these components of work entails risk. **Figure 2** shows a model of project risk and how it can be managed by the project manager. The risk is divided into business, technical, and integration risk.

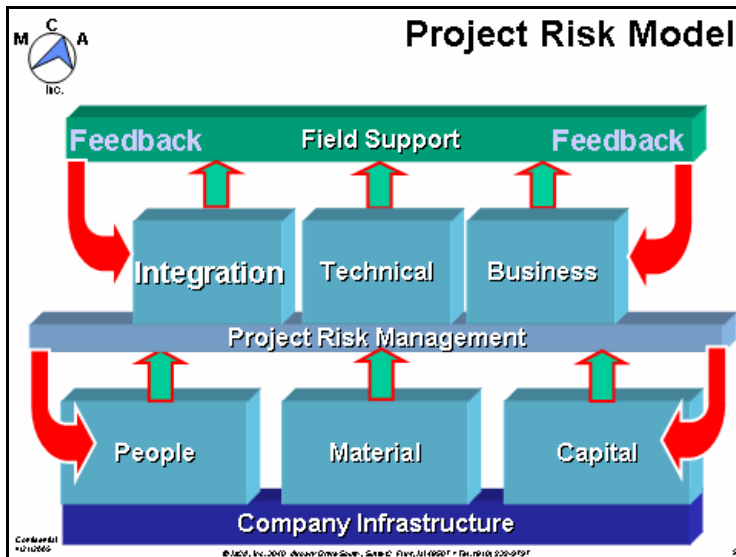


Figure 2: Risk Model

The teams determined the priority and sequence of each business risk (**Figure 3**). Items marked “U” were deemed urgent, “I” as important, and “D” as desirable. The second letter in the parentheses indicates the sequencing of the items, regardless of their priority level.

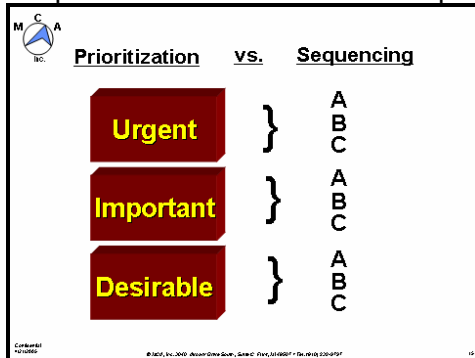


Figure 3: Prioritization v. Sequencing

Breakout Session: Identify different types of business risk.

BUSINESS RISK	
TEAM 1	<ul style="list-style-type: none"> • Anything that leads to loss of cash flow • Estimating <ul style="list-style-type: none"> ○ Project selection (IA) <ul style="list-style-type: none"> ▪ Labor ▪ Contractors ▪ Material (including delivery method) ○ Bid cost covered (UA) ○ Understanding scope (UB) ○ Qualifying owner (UC) ○ Choosing subcontractors (DA) ○ Project selection (IA) ○ Price escalation (IA) ○ Delivery method (DB) • Project Management <ul style="list-style-type: none"> ○ Contract (UA) ○ Scheduling (UB) ○ Schedule of values (UC) ○ Change order management (UD) ○ Billing (UE) ○ Choosing suppliers (IA) ○ Material delivery (IB) ○ Price escalation (IC) ○ Closeout (DA) ○ Understanding legal environment (DB) • Field Management <ul style="list-style-type: none"> ○ Safety (UA) ○ Scope of Work (UB) ○ Crew mix (IA) ○ Material handling (IB) ○ Equipment (DA)

BUSINESS RISK

	<ul style="list-style-type: none"> • Hiring new employees (field, office, PM's) (no ranking) <ul style="list-style-type: none"> ○ Filtering process • GC schedule (no ranking)
TEAM 2	<ul style="list-style-type: none"> • Cash <ul style="list-style-type: none"> ○ Finance cost (IB) ○ Under billing (including cost & profit)/SOV (IA) ○ Change orders (IB) ○ T & M (IB) • Materials <ul style="list-style-type: none"> ○ Release of materials (IB) ○ Specialty items – ordering, knowing lead time (UC) • Technical <ul style="list-style-type: none"> ○ New products (DB) ○ Means & methods (DA) • Safety <ul style="list-style-type: none"> ○ Insurance (U)(A,B,C,) ○ MOD rate (U)(A,B,C) ○ Injury cost (U)(A,B,C) • Labor <ul style="list-style-type: none"> ○ Training on the project training, handoff (IC) ○ Availability (IB) ○ Quality (IC) • Documentation (set up the job assuming you are going to claim) <ul style="list-style-type: none"> ○ Accounting (IA) ○ Dialogue with owner/GC/CM (UB) ○ RFI's (UB) ○ Schedule (UB) • Contract verbage (understanding bid docs, bylaws) (UA)
TEAM 3	<ul style="list-style-type: none"> • Management of cash flow (U) <ul style="list-style-type: none"> ○ Impact on sequencing of work (UA) ○ Managing buy outs (UB) • Labor <ul style="list-style-type: none"> ○ Getting them to the site (IA) ○ Overworking labor (IB) • Estimate <ul style="list-style-type: none"> ○ Force owners, etc. to be accountable for specs (UB) • Working hours (UC) • Defect lawsuits (IC) • Contract details (including all documentation) (UA)
TEAM 4	<ul style="list-style-type: none"> • Under & over billing (UC) • Aging of receivables (UB) • Schedule of values (UA) <ul style="list-style-type: none"> ○ Poor cash flow • Staging of material (IA) • Labor conditions (DA) • Who the GC & CM is (IB) • Material & labor prices (escalation) (DC)

BUSINESS RISK

	<ul style="list-style-type: none"> • Inaccurate bid schedule (UE) • Bid docs (estimate) (UD) <ul style="list-style-type: none"> ○ Missing stuff ○ Addendums ○ Change orders • Accidents & injuries (UF) • Weather (DB) • Vendors understanding of the project at bid time (IC)
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Breakout Session: Identify different types of technical risk.

TECHNICAL RISK

TEAM 1	<ul style="list-style-type: none"> • Unperceived conditions in field • Safety <ul style="list-style-type: none"> ○ How GC handles it ○ Our own safety training • Understand billings & collections process • Productivity tracking • Equipment needs • Preparing (and checking) the estimate • Statement of Work • Labor availability & quality • Project location
TEAM 2	<ul style="list-style-type: none"> • Estimate <ul style="list-style-type: none"> ○ Not understanding specs & docs ○ Improper estimate • Subs <ul style="list-style-type: none"> ○ Ability to do work ○ Our own knowledge of their work • Labor <ul style="list-style-type: none"> ○ Skills ○ Special ○ Availability ○ Not enough/too many people on job • Foremen <ul style="list-style-type: none"> ○ Knowledge ○ Motivation ○ Organization – material, tools, buyout • PM <ul style="list-style-type: none"> ○ Understand scope ○ Proper ordering & release of materials • Jobsite <ul style="list-style-type: none"> ○ Site conditions ○ Other trades ○ Weather ○ Safety

TECHNICAL RISK

	<ul style="list-style-type: none"> ○ Out of sequence work ● Tools (or lack thereof) <ul style="list-style-type: none"> ○ Theft ○ Purchase v. rent ● Material <ul style="list-style-type: none"> ○ Late deliveries ○ Wrong material
TEAM 3	<ul style="list-style-type: none"> ● Field <ul style="list-style-type: none"> ○ Site logistics (e.g. break areas) ○ Understanding how field personnel are envisioning the job ● Layout <ul style="list-style-type: none"> ○ What gets installed where (i.e. in slab above or below grade) ○ Who is responsible for this ● Different trades working together ● Waste ● Material <ul style="list-style-type: none"> ○ Grocery store order (pull system) ○ Receiving (and checking material) ● Inspections ● Safety ● As-built drawings ● Change orders
TEAM 4	<ul style="list-style-type: none"> ● Material handling <ul style="list-style-type: none"> ○ Correct materials ○ Staging ● Qualified labor ● Right tool for right job ● Competent subs & vendors ● Knowledge of costs ● Means & methods ● Interaction with clients ● Communication ● Schedule ● Changes in scope ● Preplanning ● Unforeseen conditions (recognize & manage)

While still convening in cross-company teams, the participants were asked to discuss specific processes within their organizations that have been implemented to help identify and manage project risk. The group selected the topics listed below as those of primary concern for their exchange during this session.

The following six areas of business risk were identified for discussion:

1. Creation of Work Breakdown Structure
2. Invoice approval
3. Billing
4. Cash management/cash flow scheduling

5. Contract administration (contract review)
6. Schedule of values

The following seven areas of integration and technical risk were also discussed:

1. Job kick-off/pre-planning
2. High performance teams
3. Education
4. Procurement & material handling
5. Cost coding & tracking
6. Pre-planning guidelines
7. Look-aheads

The discussions held in small groups allowed the participants to explore the various issues and solutions in detail. The highlights were then discussed among all participants as a whole. This in-depth discussion led to the final breakout session. For the final breakout the participants were rearranged into company specific teams. This format allowed each company's delegates to address the topics discussed in terms of their application at the specific company.

All of the participants both found and contributed value in the various aspects of managing risk. The following list of action items identified the areas where each company felt that they could best use the information gained during the session to make significant improvements within their own organization.

Action Items:

After discussing the business, technical, and integration risk items amongst themselves, the company representatives came away with the following action items:

Baker Electric

- Formalized in-house training (begin with PM's and expand to include field foremen)
- Continued focus on High Performance Teams
- Create a "Baker University" to provide consistent training

Ferguson Electric

- Risk awareness
- Superintendent role
- Create a "Ferguson University" to provide consistent training

H. Bruce Group

- WBS during estimate / Schedule of value
- Summary invoice from vendor
- Supervisor duties/role
- Contract administration (and types of risk involved with it)-
- Best price at bid time
- Avoid PM re-estimating after bid time

Miller Electric

- Vendor partnering
- High Performance Teams concept expanded
- Checklist for contract administration at kick-off