



# Productivity

*Construction Executive  
Leadership Seminar Series*

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# Agenda

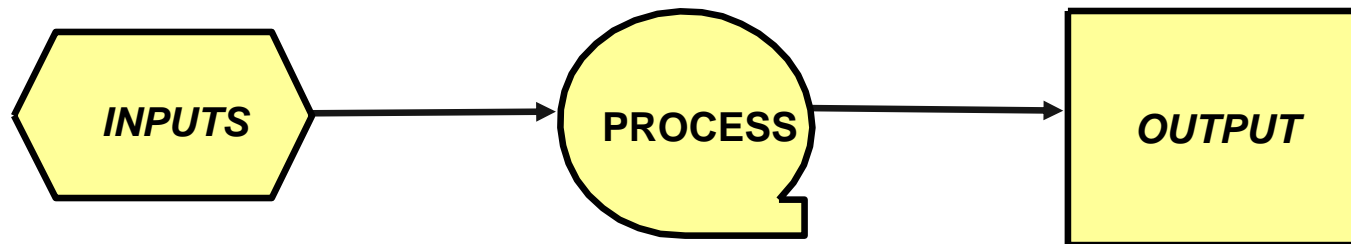
I. Productivity Overview

II. Technology

III. Best of Class Practices

# What is Productivity?

Productivity measures the number of units of output produced from each unit of an input used in production.



# Productivity

- Categories of Time (Direct Labor + Burden)
  - Primary Time
  - Secondary Time
  - Recoverable Lost Time
- FMI has done surveys on these categories of time

# Primary Time

## Doing the Work:

- Laying block
- Install trim
- Hang doors
- Spread asphalt
- Erect structural steel
- Install circuit breakers
- Running conduit
- Finishing concrete

# Secondary Time

## **Planning and Coordinating the Work:**

- Daily goal setting with crew
- Measuring forms to be cut
- Cutting block
- Hauling block to work area (for the first time)
- Shooting grades
- Signaling crane
- Laying out block
- Testing asphalt thickness
- Mobilization from one work area to another
- Meeting with inspectors

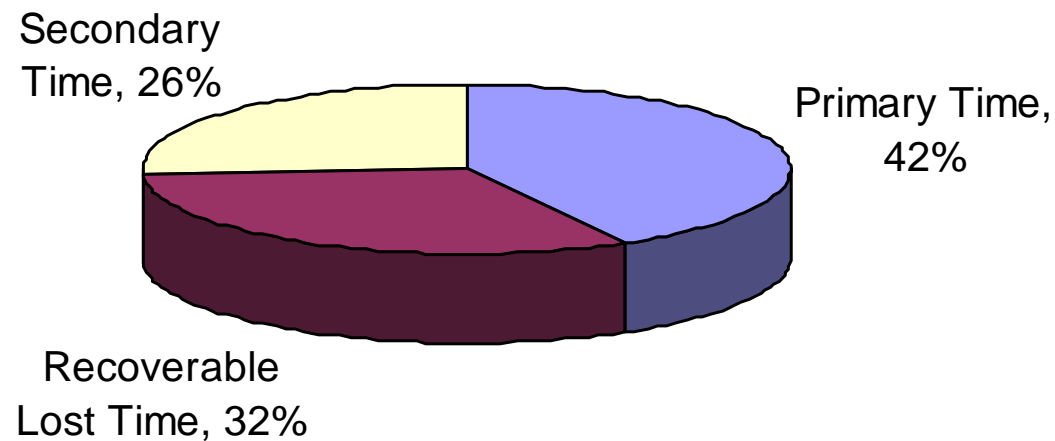
# Recoverable Lost Time


## **Unproductive Time.**

- Late start because of tardiness
- Waiting for material
- Waiting for the right equipment
- Waiting for a subcontractor to complete work ahead of you
- Waiting for instructions from owner
- Waiting for instructions from architect
- Unscheduled breaks
- Extended break or lunch
- Rework
- Pacing or standing around
- Cigarette breaks/Cell phones

# Productivity – Work Activities

## Productive vs. Unproductive Time





Why is reduction of RLT  
valuable to your organization?

# Impact on Bottom Line

- The following illustrates the financial impact of RLT

	(A)	(B)
Contract Revenues	\$70,000,000	\$4,500,000
Cost of Contracts	<u>58,000,000</u>	<u>3,200,000</u>
Gross Profit	12,000,000	1,300,000
Direct Labor & Burden Costs	32,000,000	1,000,000
Industry Ave RLT (32%)	10,240,000	320,000

A. A 50% reduction of RLT to 16% provides an additional \$5,120,000 of GP\$

A 25% reduction of RLT to 24% provides an additional \$2,500,000 GP\$

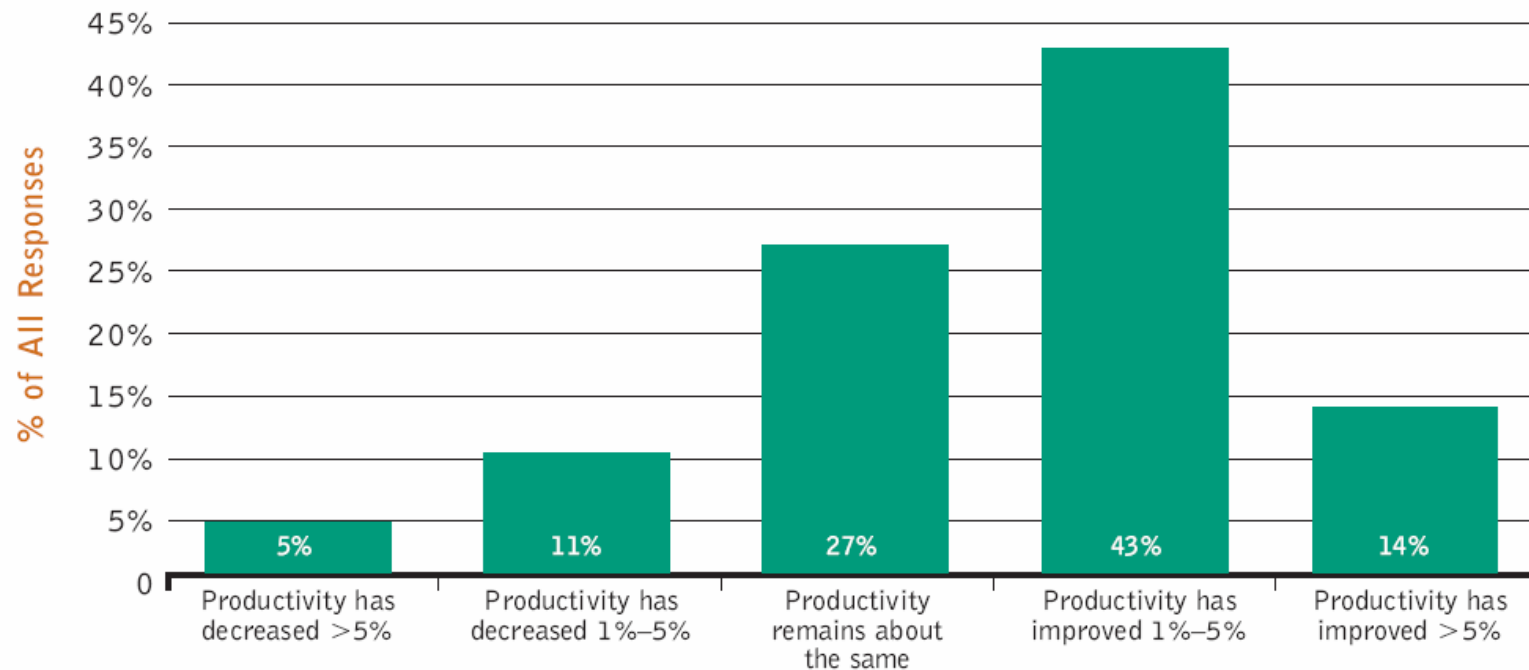
B. A 50% reduction in RLT provides an additional \$160,000; A 25% reduction of RLT provides an additional \$80,000

C. SHIFT of RLT to Primary time on another project increases GP\$

# 2009 FMI Survey

## EXHIBIT 4

### Describe the Productivity Trend in Your Company Over the Past Several Years



# Recent FMI Survey Results

## Why Aren't Contractors Productive?

- Contractor productivity increases have been less than 1% while other industries have had double digit increases
- “Contractors have invested less in productivity improvements than they have in the bosses new company car”
- Need to invest in productivity/training
  - Average age of field managers (Super/foreman) is >45 years old in most construction companies surveyed

# Reasons for Low Productivity

- Low investment in education
- Focus on results instead of process
- Lack of focus on measurement and defect analysis
- Lack of knowing project status: record keeping

# Causes - Planning

- Companies have improved their project delivery system but improvements are not consistently applied. Change without commitment and discipline can hurt rather than help.
- Lack of daily planning and goal setting
  - Only 20% (down from 25% in 2004) of respondents communicate quantifiable and measurable productivity goals starting each day
  - 60% Don't plan beyond 5 days

# Causes - PM and Field

- Management spread too thin results in profit fade – “construction mentality”
  - Poor communication
  - Poor planning
  - Focus on urgent matters, not important matters
  - Inability to provide field with right information, tools, equipment etc.

# Causes - Job Cost Information

- Over 43% of contractors surveyed do not require the field to report installed quantities (ie units per man hour)
- Job cost information is compiled but it is not presented in a format that helps them “manage” the job or measure production.

# Bonus/Incentives

- Only 24% of contractors surveyed experienced a positive impact on field productivity after field bonuses were implemented.
  - Companies paying larger bonuses actually saw better returns
  - Bonus and incentives *ALONE* will not produce significant, substantial results in productivity improvement

# Variables Affecting Productivity

- Weather and climatic conditions
- Site location and accessibility
- Type of project
- Skill and motivational level of the local market
- Availability of suitable equipment for tasks to be performed
- The skills of the project manager & superintendent in planning and controlling the work
- The amount of defective work requiring correction
- Others

# Variables Affecting Productivity

- Number and extent of changes to the project
  - Changes in project scope
  - Changes to correct design defects
  - Changes in project duration, especially schedule acceleration
  - Changes in the schedule for the client's convenience



## 2. Technology

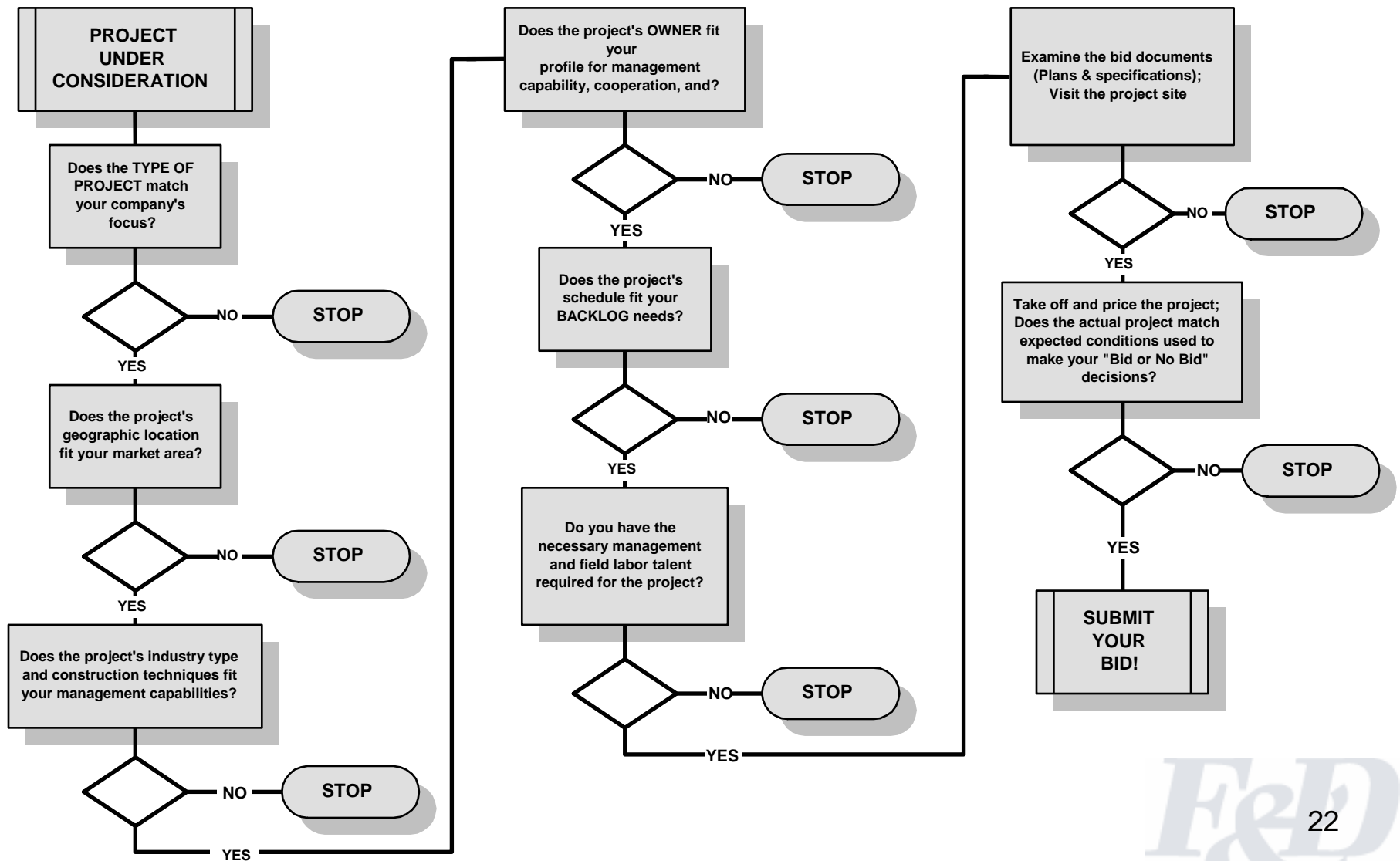
- Survey and Breakout Session

# 3. Best of Class Practices

- Job Acceptance
- Pre-Job Planning
- Project Management
  - Expectations (Customer, Vendor, Staff, OSPs)
  - Document Management
  - Labor Coordination
  - Materials Coordination
  - Subcontractor Coordination
- Communication
- Training/Compensation/Teamwork
- Measurement
- LEADERSHIP/DISCIPLINE



# Job Acceptance – “Bid Screen” Activities and Decision Points



## PROJECT SELECTION CRITERIA

	Rating	Weighting	Weighted Score
1. Job Budget vs. Our backlog			
2. Type of project (retail, office, etc.)			
3. Project Owner (relationship)			
4. Management availability			
5. Field supervision availability			
6. Schedule Duration			
7. Project Location			
8. Architect/Engineer			
9. CM/ Prime Contractor			
10. Our experience/competence			
11. Project Owner's experience in this type			
12. Potential for future projects			
13. Special contract terms			
14. Owner's method of bidding/awarding			
15. Project location			
16. Our bonding capacity			
17. Competition for this project			
18. Anticipated Project Cash Flow			
19. Fee Potential			
<i>TOTAL SCORE</i>			

**Rating Scale**

5 - Very attractive; little risk or problem  
 1 - Not attractive; great risk or problem

**Weighting Scale**

5 - Most important  
 1 - Least important



# Expectations

- **Internal Expectations:**
  - Have a pre-job meeting outlining project (owner/GC) expectations and what was promised
  - Set expected project deadlines well in advance and see them through
  - Everyone on the team should be aware of project goals and timelines
- **External Expectations:**
  - Primary management issues including quality, schedule, change order process, payment process, dispute resolutions, closeout

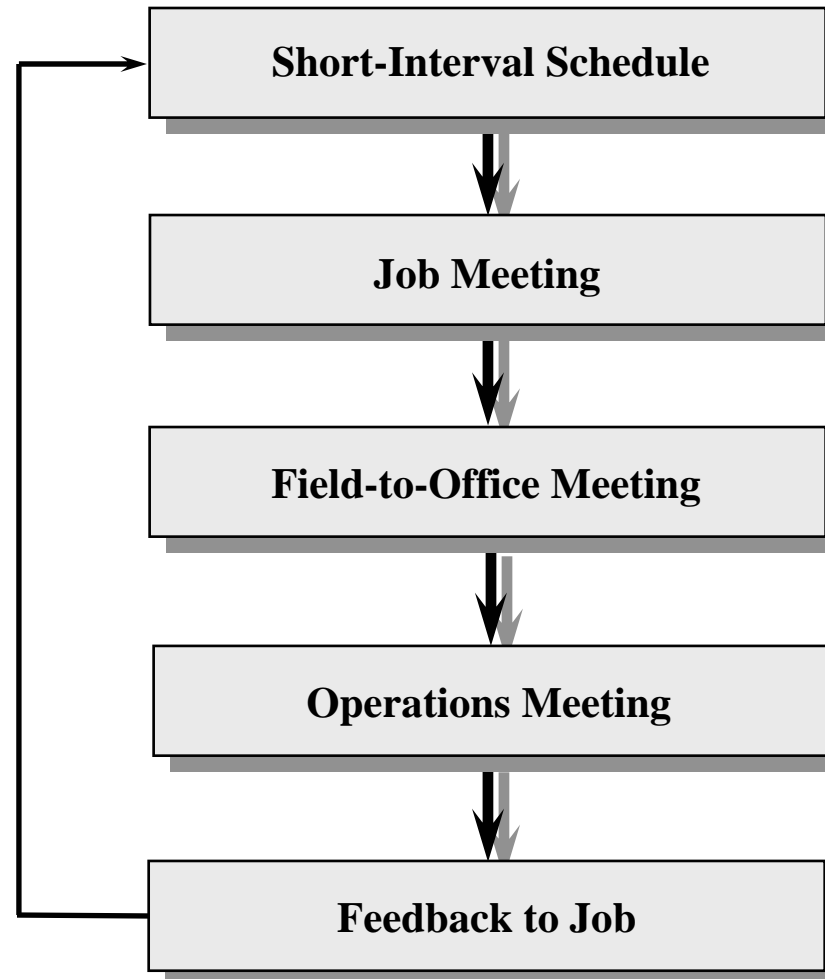
# Planning

- Implement daily crew huddle/Insist on good daily crew task plans
- Adopt company wide formal planning policy
  - 100% participation
  - ZERO tolerance for non-compliance
- Accountability PM/Foreman on weekly production goals
- Insist on good daily crew task plans
- Get material to site when needed/create focus/excitement
- Set daily goals at the foreman levels (measure/manage)  
PM/Foreman (3-5)
- Institute short interval scheduling/Implement 3-4 week look ahead schedules

# Project Management

- Assign project managers to project site, make them responsible for updating construction schedules
- Have project superintendent assigned to job from start to finish
- Increase accountability from over project managers to ensure they effectively support the field manager

# Project Management - Consistent Process



# Labor Coordination

- Generate reports to track staff:
  - Utilization
  - Availability
  - Chargeability
  - Managed hours
- Utilize a scheduling software
- Identify activities and time required resources needed/people needed for each task
- Constantly notify team regarding scheduling issues and changes
- Set deadlines and completion dates
- Use reports to track:
  - Peaks, valleys, cliffs
  - Use reports to track scheduled hours vs. budget hours

# Materials Coordination

- Allow sufficient time for obtaining the necessary materials
  - Know lead times and availability for all critical items
- Organize your job site
- Determine what you need, where you need it and when
- Decisions about material procurement may be required during the initial planning and scheduling stages
- Move materials once mindset

# Subcontractor Coordination

- Assist with schedule development and progress verification
- Have scheduled meetings throughout job duration
- Review open issues with subcontractors and set/update completion dates
- Document completion dates memorialized
- Monitor subcontractor's construction activities and compliance to Safety and Quality requirements
- Evaluate requests for changes and initiate change orders process with project team
- Verify & Approve Subcontractor payment schedules/prequalification standards

# Communication

- Instill sense of urgency on jobs/set milestones
- Make productivity along with safety and quality a top priority
- Meet with PM and Super/Foreman to agree on goals (planning, kickoff, monthly meetings, etc.)
- Require field managers to plan/communicate daily with crews
- Work on standard practices and documentation to improve communication
- Post project reviews (what went wrong) with whole team (estimator, PM/superintendent/foremen) – what would we do the same? What would we change?

# Measurement – Field Reporting

- Provide field with production expectations and hold them accountable
- Automate field data collection daily
- Educate field on the need for better reporting on productivity related data
- Demand cost reports more often from PMs
- Develop/implement better measurement/tracking/feedback systems regarding productivity, schedule costs
- Implement unit of measure tracking

# Document Management

- Provide hands-on training to teach everyone how to document each process and how to use the system effectively
- The best contractors utilize a document management system
- Document how you expect each project planning process to be carried out, standardize tools expected for each project
- Monitor and measure compliance to ensure documentation becomes a common practice
- Administer consequences for non-compliance

# Compensation

- Incentives/Bonuses:
  - Bonuses can provide a great tool to reinforce behavior and reward results but are only one piece of the productivity puzzle
  - Bonus plans based on objective criteria

# Training

- Review performance with each employee:
  - The employee's accomplishments
  - Specific areas requiring performance strengthening
  - Jointly develop goals for the upcoming period
  - Hold them accountable to their goals/how was training applied?
- Provide specific training for each employee in the area(s) where strengthening is required
- Provide company-wide employee training for introducing new concepts and improving current procedures

# Leadership/Discipline

- REINFORCE/Stay the course



# Questions or Comments?

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