



Real Time Costing



The Search for the Truth



Overview

- Understanding Real Time Costing
- Technology's Role
- Real World Accomplishments and Examples
- Next Steps for Real Time Costing
- Questions and Comments

What is Real Time Costing?

- Accounting's Worst Nightmare
- Production's attempt to prove Accounting Wrong
- Production's Worst Nightmare
- Accounting's Attempt to Prove Production Wrong
- Process Engineering's Attempt at IT



Real Time Costing is...

The process of capturing, calculating, and reporting information that reflects production performance in terms of money that was spent during a known timeframe and for a known production volume.



Real Time Costing is also...

The use of actual production data to compute the monetary impact (the costs) of the products being produced within as short of a time frame as possible.





Why Do We Attempt Real Time Costing?

- So we can improve production performance
- To report more frequently the results of our efforts / decisions
- To insure targets and standards are realistic
- Because our accounting system doesn't tell us anything
- To lower production costs

We Attempt Real Time Costing in Hopes of...

Better understanding how close our actual production performance is to the predicted performance within a time frame that allows for correction of production behavior OR a change in expectations of the predicted performance.





What About Our Accounting System?

- Completely Different Goals
- Typically Not Designed for
 - Level of Detail
 - Frequency of Execution
 - Level of *Inaccuracy*
- External versus Internal Focus
- Not Close Enough to Production Environment
 - Physically and Emotionally

The left side of the slide features a vertical stack of four images. From top to bottom: a clock with a blue and purple gradient background; a clock with a yellow and orange gradient background; a stack of papers with a green and blue gradient background; and a stack of papers with a purple and blue gradient background.

Real Time Costing Characteristics

- Very low level of detail
- Frequent execution
- Some inaccuracies okay
- Involves process and business systems
- Rarely represents 'full cost' picture of production

At What Level of Detail?

- Typically recipe line item
 - Fiber, additives, coatings
 - Energy – steam, power
- Run, reel, hour, minute
- Restricted to data elements being collected
- Makes most sense for direct, variable cost elements



At What *Realistic* Frequency?

- No faster than inputs can be collected, processed, and reported back
- No faster than the process response times
- No faster than the operator response times
- Minutes – not seconds, not hours



At What Level of Accuracy?

- No outside regulatory rules
- 100% not necessary
- Consistency is as important as accuracy
- Baselines with above / below reporting is effective
- Cost correlations are as valuable as actual costs



The left side of the slide features a vertical stack of four images. From top to bottom: a clock with a blue face and black hands on a red background; a clock with a yellow face and black hands on a blue background; a stack of white papers on a green background; and a stack of white papers on a purple background.

Involving Which Systems?

- Raw material inventory systems
- Process data collection and storage systems
- Production reporting systems
- Information display and distribution systems
- Front office accounting systems
 - GL, AP, Payroll



Involving What Costs?

- Doesn't have to be COGS
- May only be a portion of the full costs
- Typically focuses on paper machine conversion process
- Costs that process operators have some control over
- Immediate costs with no consideration for 'period' costs

What Role Does Technology Play?

■ Delivers the Basic Building Blocks

- Data Collection Systems
- Calculation Engines
- Reporting / Result Distribution Systems

■ Interconnectivity Between the Building Blocks

■ Security and Reliability



Real World Accomplishments and Examples

- 3 large, integrated mills
- All North-American based
- Different problems
- Different approaches
- All relatively new initiatives
- Common results & benefits
- Viewed as helpful & successful but with known room for improvement



The left side of the slide features a vertical strip of four images. From top to bottom: a clock with a blue face and black hands on a red background; a clock with a yellow face and black hands on a blue background; a stack of white papers on a green background; and another stack of white papers on a red background.

Mill 1

■ Problem

- Material disappearance from inventory (based on accounting records) was quite different than usage being reported by production systems
- Large variances between standard material usage and reported material usage

The left side of the slide features a vertical stack of three images. The top image is a clock with a blue face and black hands, set against a red background. The middle image is a stack of papers with a blue tint, set against a green background. The bottom image is a stack of papers with a blue tint, set against a blue background.

Mill 1

■ The Approach

- Gather material usage data from data historian on daily basis for all runs completed
- Compute standard material usage on daily basis for all runs completed
- Conduct daily physical inventory count for select materials

The left side of the slide features a vertical strip of four images. From top to bottom: a clock with a blue face and black hands on a red background; a clock with a yellow face and black hands on a blue background; a stack of white papers on a green background; and another stack of white papers on a red background.

Mill 1

■ Findings

- Standards were highly inaccurate
- Actual measuring systems were quite accurate
- Accounting inventory system receiving erroneous data
- Material vendors not properly managed

The left side of the slide features a vertical stack of four images. From top to bottom: a clock with a blue face and black hands on a red background; a clock with a yellow face and black hands on a blue background; a stack of white papers on a green background; and a stack of white papers on a purple background.

Mill 1

■ Results and Benefits

- New and updated standards were established
- More accurate material needs and forecasts were produced
- More frequent variance reports available for production management
- Lowered production costs

The left side of the slide features a vertical stack of four images. From top to bottom: a clock with a blue face and black hands on a red background; a clock with a yellow face and black hands on a blue background; a stack of white papers on a green background; and another stack of white papers on a red background.

Mill 2

■ The Problem

- Expected profitability not being met
- Manually intensive accounting close process
 - Material allocation & GL entries
- New ERP system lost visibility into material usage by business and by grade



Mill 2

■ The Approach

- New methodology for computing grade costs
 - Run Level
 - Blend of actual and standard data
- Link actual run costs to sales orders
- Build new automated allocation system using reported, standard, and actual material usage data

Mill 2

- Sample Material Usage Data

	Std.	Rptd.	Alloc.
Mat 1	32	45	54
Mat 2	115	145	160
Mat 3	45	30	42

- Standard = theoretical recipe
- Reported = measurement systems
- Allocated = actual usage assignment allocated to run (based on reported)

The left side of the slide features a vertical stack of three images. The top image is a clock with a blue face and black hands, set against a red background. The middle image is a stack of several sheets of white paper, set against a green background. The bottom image is a stack of several books, set against a blue background.

Mill 2

■ Findings

- Standards were highly inaccurate
- Production reporting process was different than accounting's understanding
 - Rolls not weighed
 - Cross period tons not counted
- No exact methodology fit the business needs



Mill 2

■ Results and Benefits

- Actual run costs were available for profitability analysis
- Many man hours cut from monthly close process
- Use of reported *and* actual material usage methodology
- Closer monitoring of measurement systems
- Lowered production costs



Mill 3

■ Problem (*Initiative*)

- Improve machine operating efficiencies
- Varying run results for same grade / machine
- Unite Cost & Production department efforts
- Equate production inefficiencies to dollars



Mill 3

■ The Approach

- Focus on costs of varying operating conditions
- Build immediate feedback systems for operators
- Develop baseline operating parameters for each grade and machine



Mill 3

■ The Findings

- Correlation of operating speeds to cost consumption
 - Steam, power, overhead absorption
- Operators react to \$'s more emotionally than %'s
- Target or standard operating parameters are not always most cost effective

Mill 3

■ Results and Benefits

- Grades 'banned' from certain machines
- Operators more conscious of operating parameters / conditions
- Increased focus on specific customers and businesses
- Lowered production costs



Where Do We Go Next?

- Real time cost capabilities
 - Further understanding of goals
 - Partnerships between Accounting and Production
 - More data collection
 - Materials are the easy part
 - Energy can be more challenging
 - Storage of results over time periods for comparison



Where Do We Go Next?

■ Real time cost capabilities

- 'Smart' systems for automated feedback, process control, and optimization
- Golden run targeting
- Close loop with accounting close process
- Marginal cost logic
 - Material, energy, and overhead unit costs with volume variability





Where Do We Go Next?

- Real time cost capabilities
 - Integration of cost results to ‘pre-order’ business decisions
 - Profitable-to-Promise initiatives
 - Customer / specification costs based on run history
 - Post-machine costing
 - Integration of real time costs with other customer related costs

Where do we go next?

■ Technology

- Not far...
- Tools are readily available
- Improved integration or communication
- More application development
- Accuracy – quite good for straight forward cost reduction and awareness initiatives





Closing

- Real time costing is being done
- Still relatively new to industry
- Tools already in place in most environments
- Mostly understanding and mind shift
- Valuable in lower costs
- No silver bullet



Real Time Costing



Questions and Comments