

**REAL-TIME REPORTING'S INFLUENCE ON DRIVING
ORGANISATIONAL PERFORMANCE: A Case Study ABBs shutdown
performance at Kinleith Mill.**

Author: Craig Green

Introduction

Lean accounting uses performance measures which provide timely, easy-to-understand financial reports, and eliminates the traditional budgeting process by employing the efficient notion of rolling forecasts to improve accuracy based on relevant market information not budget assumptions decided 9 to 15 months previously. The accounting profession must find a way to make the paradigm shift from the historical cost, historical variance analysis mindset towards providing real-time, easy-to-read, easy-to-understand information. This information will help a business by eliminating wasteful activities, developing a culture of continuous improvement, striving for perfection, and creating value for the customer.

The following case study examines the effect lean accounting has on:

1. Real-time reporting (creating value to the organisation)
2. Improving organisational culture and performance.

Plan - Designing Future state

The demand for a shift in shutdown execution has seen an increased expectation for work order costing, providing real-time information and labour capacity. While this practice is not a pure lean accounting ideal, it is important to note that, of the total shut costs, total labour costs account for over 50% of the total spend. In a lean environment, actual labour usage is significantly less and, therefore, the focus of monitoring labour hours is not seen as important.

DO - Real-time Reporting (Information Flow)

A plethora of "real-time" information has been created and communicated during the Annual maintenance shutdown. Total labour (ABB and contractor) has been tracked (and presented daily) by the cost centre. Daily shut meetings have

included cost updates, incorporating the number of unapproved timesheets, as well as updates from each business unit manager as to how their area is progressing according to plan.

Traditional spend curves (S curves), based on ‘planned’ early start/early finish and late start/late finish for each value stream based on planned work scope, were printed and posted (by the ABB site manager) in each workshop across site each morning of the May shut 2010. Making these S curves “visual” created much discussion, highlighting areas of concern allowing for timely corrective action. Implementing continuous improvement into the May shut 2010, the traditional S curves were enhanced based on the earned value concept, where actual hours are mapped against early start and early finish planned hours (and dollar values). While the new S curves are in the developmental stages, these have provided additional real-time information, have been available on-line, and have increased the value creation to the customer.

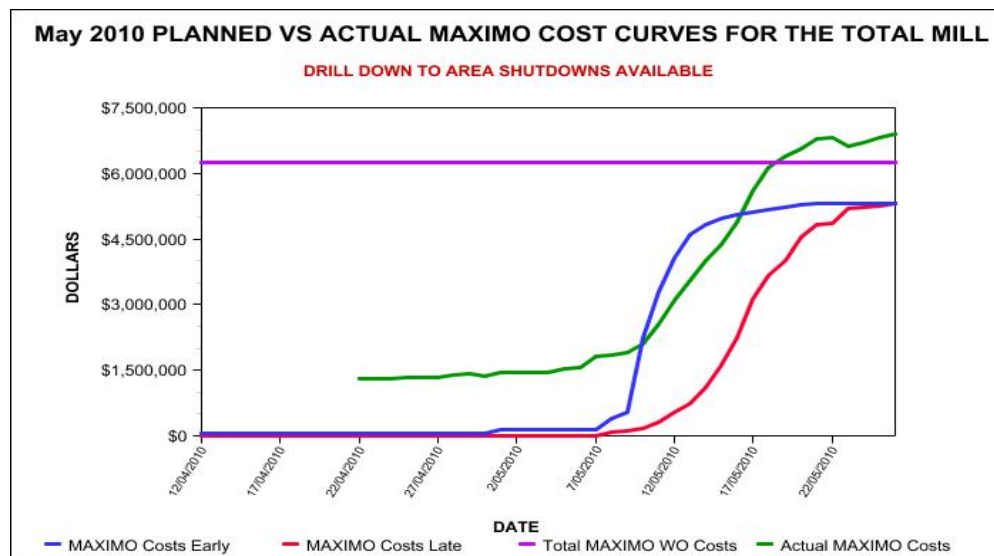


Figure 1 May 2010 Planned vs. Actual Maximo Cost Curves for the Total Mill (Dollars) Source: ABB Kintranet

Figure provides an example of the Maximo cost curve for the May 2010 shut. This graph demonstrates the early start, early finish (blue line); the late start, late finish (red line); the actual costs entered against a May shut 2010 work order (pink line) and the actual costs (green line) where cumulative costs are updated daily.

Timesheet Entry and Approval Lag

The lag between day worked and timesheet entry did not reduce markedly between May shut 2009 and May shut 2010. What is encouraging is that the approval lag greater than 2 days has decreased from \$487,371 in May 2009 to \$166,648 in May 2010. The challenge is to continue with increasing the visibility on site, to “making information visual and making it ugly”.

The visual presentation of the S curves in each area, easily enabled staff to see how well or badly they were performing. Making it visual helped generate a sense of ownership and comradeship within work teams as each area wanted to perform better than its counterparts.

Attacking the waste during a shut is critical to achieving the shut goals of being on time and on budget. Anything that wastes time has a financial impact during a shut and can cost a great deal of money. The problem arises where money lost is an accumulation of thousands of small amounts of lost time due to waiting for material, waiting for personnel, waiting for projects to be handed over and rework. Wasted time can be eliminated only by having effective procedures, and all persons involved with the shut complying with these, as well as giving sufficient attention to detail at the planning stage.

CHECK - The Improvement

ABB Annual Maintenance Shut

For the purpose of retrieving data for the case study analysis, maintenance shut data (labour hours and associated dollar value along with the calculated delay (lag) in timesheet entry and timesheet approval) has been extracted from Maximo, for each of the respective shut periods (May 2009, September 2009 and May 2010).

The following analysis investigates the respective lag (in days) and associated dollar value and the impact these have on real-time reporting and information flow.

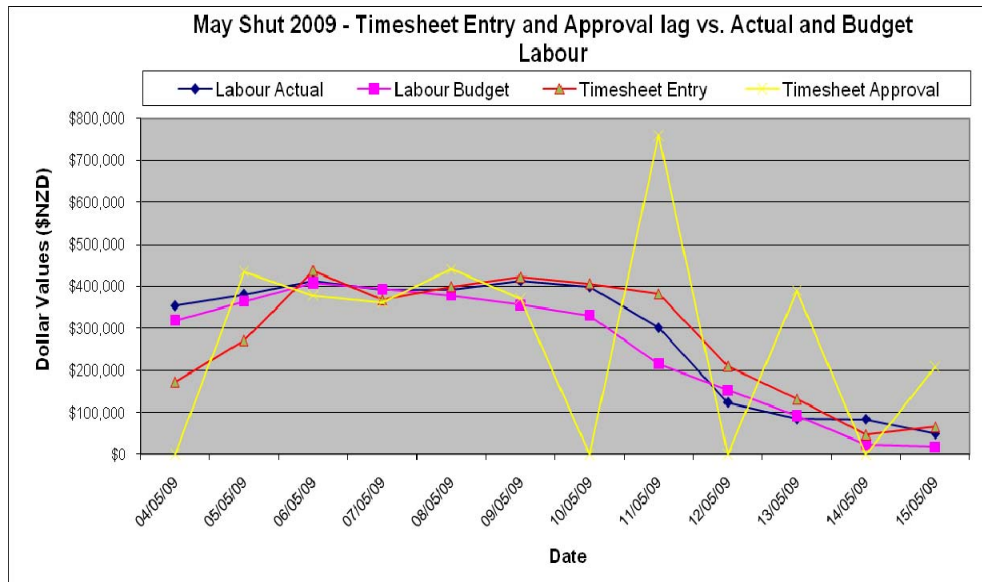


Figure 2 May Shut 2009 - Timesheet Entry and Approval lag vs. Actual and Budget Labour

Figure above demonstrates the relative consistency between total labour, timesheet entry and timesheet approval between Wednesday 6 May 2009 and Saturday 9 May 2009. However, this trend changed over the weekend where effectively 2 days were approved on the following Monday. Timesheet approvals continued with a two-day lag for the remainder of the May shut, as evident on Wednesday 12 May 2009 and Friday 14 May 2009.

The peak timesheet approval lag occurred on 11 May 2009 and totalled \$758,967 (ABB labour \$111,416 (18.9%) and contractor labour \$615,665 (81.1%)) was spread over a ten-day period. Of the total lag, the majority of the labour used was contractor labour (\$615,088 or 95.0% of the approval lag), with 40.7% consumed at day zero (\$309,192), and 40.3% on day one (\$305,896). ABB labour accounted for \$54,556 (38.1% of the ABB labour lag) approved after day one. The balance of the ABB labour lag was spread over the ensuing 7 days with two smaller peaks of \$32,463 (22.7% with two-days approval lag) and \$24,914 (17.4%) approved after 3 days lag. Approvals totalling \$26,534 were spread over the next 6 days, from day 4 through to day 10.

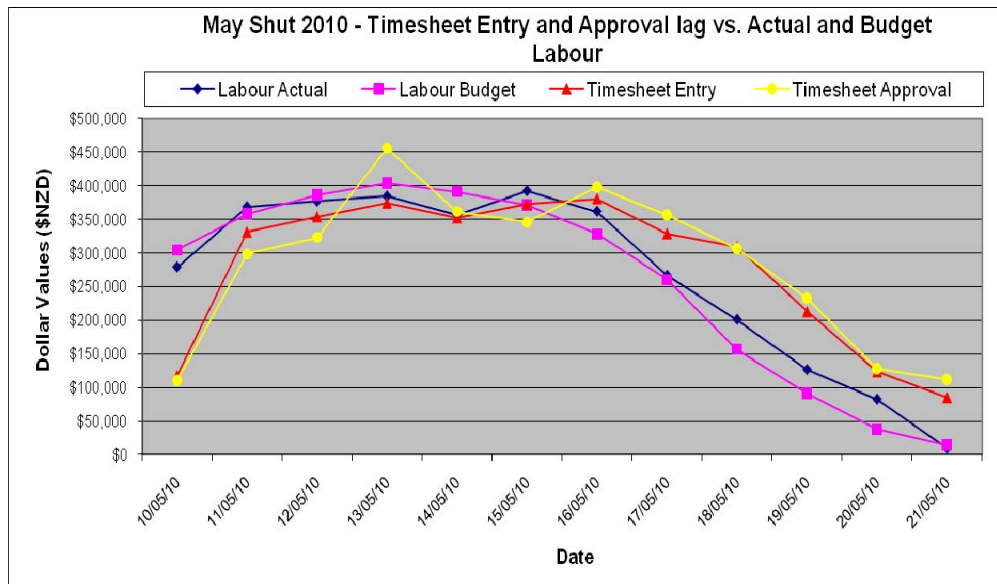


Figure 3 May Shut 2010 - Timesheet Entry and Approval lag vs. Actual and Budget Labour

With the exception of a catch up in timesheet approvals on 13 May 2010 Figure presents the consistent flow between timesheet entry and timesheet approval during the May shut 2010, with the exception of what appears to be a catch up in approvals on day four of the shut.

The worrying trend is in the gap between day worked and timesheet entry and approval between 17 May 2010 and 21 May 2010. The anomaly on 10 May 2010 is caused by the delay in timesheets being entered (and approved), in the case between 01 May 2010 and 17 May 2010, mainly due to pre-shut work which typically commences over the preceding 2 to 3 months prior to the shut start date. The anomaly identified on 10 May continues for the remainder of the shut period.

ACT - Standardise and Sustain

There must be a benefit to the organisation for any lean initiative to be considered. The ability to provide real-time information, the ability to know the status of shut costs on a daily basis and the ability to have discussions with tradesmen, supervisors, managers and the customer around costs incurred, costs to come and work scope was encouraging. The benefits that real-time reporting have on providing real-time information which then enables real-time decision-making is clear from the informal discussion held with ABB employees at all levels.

People are aware of how their areas are progressing against plan. Business unit managers have the most up-to-date information available which allows them to plan and forecast their work. Making information “visual”, making it available across the ABB maintenance areas and making it consistent are vital in creating discussion and in creating a culture of waste elimination and continuous improvement. Making the information “visual” is vital to sustain lean; presenting the information in an-easy-to-read, easy-to-understand way (usually graphical) provides awareness, provides the opportunity for discussion and highlights issues of concern. Promoting and celebrating the positive effects of real-time information helps entrench the real-time process.

The key to success will come in standardising processes which are critical to shut execution: planning, scheduling and real-time reporting coupled with inspirational leadership. Developing a site-wide training programme to educate the employees of ABB in the benefits of standardisation and real-time information flow will assist in this initiative.

Conclusions

The fundamental question under consideration is the utility of real-time reporting as a means to enact positive change in maintenance shut performance. The various areas involved in the May shut 2010 have demonstrated an understanding of the lean concepts and a willingness to somewhat engage the process of timely entry and approval of timesheets. The flow of accurate information improved the quality of daily cost reporting and forecasting the full May shut 2010 position.

Lean accounting takes a proactive, forward looking approach (management at the point of action), using real-time information to make real-time decisions that improves profitability and drives the business forward.

Lean accounting endeavours to make instantaneous improvement by eliminating waste and creating a learning culture which embraces continuous improvement. Making it visual, by presenting visual graphs (S curves, forecast cost and capacity information), enables employees to *see* exactly how they (and their teams) are performing against plans and against each other.

Inspirational leadership is required to set the clear vision for where the organisation is headed, what the future state looks like, and what will inspire the lean transformation, focused on creating excellence in real-time information flow, continuous improvement in shut execution, and ultimately value for the customer.