Managing Timber Sales and Operations Systems to more Effectively Link Orders to Log Inputs – a Sawmill Case Study

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Payback x 20 within 2 months from fit for purpose SOP with system still going strong 2 years later.
It’s not about the bike

A Case Study…..

• MARKET DRIVEN AND PRODUCTION SENSITIVE

• Fit for purpose Sales and Operations Planning system including LP designed to meet the market without breaking the bank

• Rapid payback – MORE PROFIT

• Seamless & comprehensive

• From Market Forecast to Log Order AND BACK AGAIN
Acknowledge the Team – up front!

• The outstanding results attained during the course of this adventure are largely attributable to the efforts of our clients team.

• They bought into the process and contributed strongly during a difficult time.

• The project came together quickly and successfully because of good leadership from the top and strong endorsement of the project at a very high level.

• But where did it all start………………

The symptoms

• DIFOT – 20%
  » Sales lower than production
  » Clients and team all frustrated
  » Order profiles out of control

• Log stocks
  » Length and diameter profile irrelevant to order file
  » Drying out in yard

• Inventory – Finished & WIP
  » Inventory aging and deteriorating
  » Some orders 6 months OD
  » Warehouse MAHEM!
  » Clumsy data management

• Processing
  • Inconsistent batching in processing operations
  • Process whatever is "in the way first"

All of this in a reasonably hot market!
Log stocks at start = 3 months supply

Log stocks 2 years on = 5 days supply
Planning gets results……

The logs didn’t stop arriving at the yard either

Timber Stocks at start
29,000m³ to 15,000m³ – down 48%

Timber stocks

<table>
<thead>
<tr>
<th>m³ month end</th>
<th>Rack</th>
<th>Finished</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>10000</td>
<td>1000</td>
<td>11000</td>
</tr>
<tr>
<td>2009</td>
<td>20000</td>
<td>2000</td>
<td>22000</td>
</tr>
<tr>
<td>2010</td>
<td>30000</td>
<td>3000</td>
<td>33000</td>
</tr>
</tbody>
</table>

Overdue order file – real or not?

Overdue Orders

<table>
<thead>
<tr>
<th>m³ month end</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5000</td>
<td>1000</td>
<td>5000</td>
</tr>
</tbody>
</table>
Today – real and manageable…

The customers must be happier…..

The causes……..not unusual

Planning
- Neither market driven nor production sensitive
- No clearly defined independence or responsibility for planning functions
- Influenced by production considerations rather than a market forecast & policies.

Drivers
- No link to a relevant KPI reporting system
- No clear individual accountabilities
- Companies goals not applied to drive the process

Existing Systems
- A good effort but not working
- Manual data assembly
- Limited analysis of numbers produced and trends
- Key issues not highlighted with recommendations for action

Outputs
- Not time sequenced
- No timely outputs appropriate to managing a high speed manufacturing operation
- No properly quantified inventory limits to support the business and service the market
Our Process…..Leadership

• On site review of current planning systems to identify strengths and weaknesses

• A mandate from the top to proceed within certain parameters

• Develop a fit for purpose tool modeling the supply chain from market forecast and match that with log order requirements

• We banned the development of adhoc systems

• Establish & implement SOP and regular routines

• Coach the team to attain good process and disciplines

• Management using KPIs to manage performance and improvement

Complicating factors….not uncommon but need to be understood

• Company was in a start up phase – still commissioning to some degree – so how did the inventory get so far out of control?

• Despatch yard and warehouse lacked systems and organisation (but had great people on board)

• Little idea of what was sold, or “Available to Promise”

• Capital constrained

• No demonstrated trust between the Sales and Production teams

• Young team – some inexperience albeit very willing

• Some manual planning systems but no real disciplines in play

• Villans in the team
The bottom line………

Efforts were great under the circumstances, but attempts to manage the supply chain did not represent the best interests of shareholders, the company, its customers, its aspirations or its balance sheet.

The Solution……

• Establish disciplines and systems to support the team. Work with the people.

• Identify and incorporate company goals and develop policies

• Model the business at the right level - FIT FOR PURPOSE using off the shelf tools

• Develop an LP planning tool optimising the log order file with the market plan

• Getting a rapid payback was non-negotiable
We designed a system incorporating……

• Planning disciplines and accountabilities

• A market forecast
  » team intelligence
  » statistical analysis
  » One off events

• Reflect production realities & resource constraints
  » Inventory and recovery patterns – Sawmill & Drymill
  » Lead times
  » Grade outputs – even in logs these are predictable
  » Capacity - upper and lower limits
  » Resource availability, characteristics, variability & constraints

• KPI/Budgets/Policies
  » Inventory limits – protect DIFOT and The Balance Sheet

A TOOL CAPTURING & MANIPULATING SEAMLESS DATA CAPTURE QUICKLY & AUTOMATICALLY

MARKET DRIVEN AND PRODUCTION SENSITIVE = MORE $$(x)

What happened the 1st time the model was deployed..??
Key Elements of a robust solution

- A mandate to act, supported by realistic policies with key player sign off
- Market driven and production sensitive
- Some non – negotiable principles that get results
- Engage with the team - a collaborative approach
- Design a system to suit the users skill set
- Utilise applicable client assets and tools that pass the test
- Minimise the cost – respect the budget
- Only build the modules that are needed using off the shelf tools
- Get quick results and fast payback

Outputs

- **DIFOT**
  - Manage the issues not the complaints
  - Available to promise – 3 months out (with limits)

- **FINANCE**
  - Guidance for stock valuation modelling and cash flow planning
  - More meaningful discussions without “smoke and mirrors”
  - A three month forward view of the sales vs. production with links to tactical budgeting tools if required

- **INVENTORY**
  - Stock profile for valuation purposes and sales management
  - Determine targeted inventory levels based on forecasts, recoveries and lead times
Outputs….

- LOG ORDER FILE
  - Log order file linked to market forecast using LP modelling & variables
  - Order profile for sales management purposes
  - Aged stock reporting for sales and inventory management

- PROCESSING
  - Predictability for the bulk of the Sawmill and Drymill production
  - Less variability and longer production runs
  - More efficiency overall

- PROFIT
  - MORE OF IT!!!!!!!

The payback………..

- Inventory reduction – logs and lumber
- Increased sales – volume and value/m3
- Increased operations efficiency & productivity
- DIFOT from 25% to 75% within 2 months
- 20 x the establishment cost saved in 1st 2 months
This result would not have happened without a robust SOP and LP

![Sales Volume graph]

The challenge is….

To embed the planning and optimisation disciplines within the team because…

- When the business is properly optimised actions become repetitive, patterns become obvious and only small changes should be required
Our process is transferable and to date………

✓ Several sawmilling operations. Existing operations, startups and upgrades
✓ Integrated Forest, Sawmill to Market operations
✓ Fire station rationalisation
✓ Port operations – log exports

And currently we are working on ……………

Sorry but we can’t say………

CONFIDENTIALITY IS EVERYTHING IN THIS GAME!!!

…. and remember
It’s not about the bike

Thankyou for listening