

Job scheduling can increase factory productivity

This article profiles Florin Albu, Managing Director of Auckland based Factory Productivity Advisers. Florin has worked in production management and software development roles for 15 years and is now a job scheduling implementer and advisor to timber and panel manufacturers in New Zealand and Australia.



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Key messages in this article are fourfold. Job scheduling software will:

1. perfectly suit manufacturing of both custom products (different products manufactured each time and quoted in advance) and standard products (usually the same products repeat manufactured);
2. ensure that all your staff and all management can clearly see, fully understand and can then work towards an accurate and clear production plan;
3. create better structure and systems to your production planning and entire business; and
4. increase your production and factory productivity by 25% plus within six months, which can increase annual profit well in excess of 50%.

Listed below are some of the features and benefits that manufacturers can expect from job scheduling software.

- All management and administration staff can see the current live job schedule on their own PCs. All factory staff can see a print out of the current A3 job schedule on the factory, office and smoko room walls.
- One key job scheduling report outlines both graphically and in Excel format the listing of planned start times and finish times of all stages of all jobs currently running through the factory, for example:

	Planned Start	Planned Finish
Office		
Design	7.00am Mon 3/5	5.00pm Wed 5/5
Materials Order	7.00 Thurs 6/5	10.00 Thurs 6/5
Materials Received	7.00 Wed 12/5	7.30 Wed 12/5
Programming	7.00 Thurs 13/5	10.00 Thurs 13/5
Factory		
Point to Point	11.00am Fri 14/5	12.30pm Fri 14/5
Edge Bander	12.40pm Fri 14/5	1.30pm Fri 14/5
Assembly	1.40pm Fri 14/5	5.00pm Fri 14/5
Load / Deliver	7.00am Mon 17/5	11.00am Mon 17/5
On Site		
Install	11.10am Mon 17/5	5.00pm Mon 17/5

- Pre-production jobs which occur in the office including client sign-off on specs, design, materials ordering, materials received, and programming machines are jobs included in the schedule. This ensures that both office and factory staff are a part of and work towards one common agreed production plan. This enables the office staff to better prioritise design and machine programming jobs based on the production plan. Factory production no longer has to stop or jobs be reprioritized due to the office forgetting to complete one of their requisites pre production jobs.
 - The job schedule is updated "live" and automatically in real time by all factory staff confirming on factory PCs each job

that they have started and finished. In real time this for example can turn any and all jobs on the schedule that start to run late to "red". This enables production management the option to clearly see late jobs and act immediately to bring jobs back on track.

- The job schedule ensures materials are ordered in advance and on time considering suppliers lead times.
- Purchasing staff can better budget cash flow requirements based on the production plan's planned dates to order materials and to engage sub contractors.
- The production plan shows the planned production to be completed weekly for the next month. This enables general



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management and finance to see dates expected jobs are planned to be completed and to be invoiced. Knowing your planned invoicing dates with accuracy enables you to know with some accuracy your cash flow position.

- Office or factory bottlenecks stand out clearly on the graphical job schedule. The schedule shows in advance when all staff will be waiting without jobs and without work who will be held up by bottlenecks – unless preventative action is taken.

- Job scheduling software incorporates PCs on the factory floor to time track all jobs and staff live. This enables production management to assess live all of the following:

- Are staff working on the right jobs?
- Are staff working on the right priorities?
- Do staff have plenty of assigned jobs ahead of them?
- Are jobs currently on schedule?
- Is each underlying job being completed within their respective budgeted time?
- Is any significant rework occurring in the factory now?

- Are any jobs currently “on hold” in the factory right now?
- Are staff completing their assigned downtime jobs on time?
- Are all pre production jobs in the office currently to enable factory production to commence their scheduled work as planned?
 - Is overtime necessary today and this week?
- If we get staff working overtime only in our bottleneck areas today or this week what impact will that have on the weekly job schedule?
- Factory staff generally lose 30 minutes production time per staff member per day – not being prompt six times a day at day start and day end and start and finish of smokos and lunch. This slippage of time totals approximately 2.5 hours per staff member per week – which in a 10 man factory totals some 25 hours lost production per week. The visual production schedule highlights slippage and lost production time day start, day end and both sides of smokos and lunch.
- When factory staff see a clear production schedule with accurate times and dates by which they must

start and finish each of their jobs they can make things happen to ensure the production plan and schedule is kept to. Likewise when management and administration staff see a clear production schedule they too can make things happen to ensure the production plan and schedule is kept to.

- When your clients or your sales staff, typically the more disorganized ones, phone you to request or demand that their job be reprioritised and brought forward or that you do an urgent job for them, your production staff are able to say “let me run the schedule and I’ll phone you back”. Your production staff can phone back and say “I have run the schedule and if we brought your job forward six other clients orders would be delivered late – so I am sorry we cant assist on this occasion”.
- When your clients or your sales staff ask for their job to be brought forward or that you do an urgent job for them your production management can also say “let me run the schedule and I’ll phone you back”. They can then phone back and say “over the next two weeks our production during the day is fully committed but if you wish

to we can get the boys to do overtime during the week and work all day Saturday to you the job on time – but this would cost us \$15 an hour additional wage cost and 78 hours will be involved – if you wish to cover this cost (at over and above the price of your existing quotation) then we will help you out as you request”

- Your management can hold a presentation evening and show all your material suppliers and sub contractors the scheduling software tool now being used and explain why it is so critical that everyone including materials suppliers and sub contractors work to planned and committed times on the job schedule. Management can also run a series of reports which highlights the time and cost of suppliers’ late or incorrect deliveries.
- As an owner you can take more time off and away from your business because you have a clear and accurate production plan for the week that everyone has agreed and committed to – and you need only to dial in on you laptop PC daily and see that the production schedule is being kept to. Last week one of our clients phoned me to tell me that he had just finished monitoring his production using Empower on his laptop PC – and he was currently enjoying a beer in a bar in Las Vegas.

Job scheduling software generally takes two weeks on site to implement and for your staff to be using it well. And the cost of software including full set up, training and implementation starts at around \$17,000 for a manufacturing business with 10 staff. ●