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AUSTRALIAN CONTINUOUS IMPROVEMENT GROUP PTY LTD
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5 S AT TOMAGO - MORE THAN JUST HOUSEKEEPING

5 S is much more than just housekeeping at Tomago Aluminium, it is a key strategy for improving the Company's operational and safety performance.

Tomago Aluminium is one of the largest aluminium producers in Australasia, employing more than 1000 people and generating revenues in excess of $1.1 billion annually. The Company produces aluminium ingots, extrusion billet and rolling slabs, most of which is exported to Asia.

Tomago chose 5 S as its continuous improvement vehicle because it is a simple but powerful method for improving performance. As Mick Galbraith, Tomago's Continuous Improvement Coordinator says, "5 S is about establishing a solid base for performance improvement in all facets of Tomago's operations". According to Mick, while the physical improvements brought about by 5 S are important, 5 S is also about behavioural change and ensuring that those who work in the area realise there are better and safer ways of working. Everyone at Tomago is involved in the 5 S program, including Business Unit Leaders and CEO Laurent Musy.

Mick Galbraith, CI Coordinator at Tomago, says that it could take years to implement 5 S through the entire smelter, but the process has begun and the results are pleasing.

"It has not been all Smooth Sailing"

Although Tomago is beginning to see benefits of 5 S, it has not been all smooth sailing. With assistance from ACIG a number of staff were trained in 5 S. Implementation teams were launched shortly after with varying degrees of success. This was attributed to people not being convinced in the beginning of the wider benefits of 5 S, with some also seeing it as just a housekeeping exercise. Through ACIG Mick then organised a series of benchmarking visits and took key people to leading 5 S companies so they could see for themselves the benefits of the approach. Initially, there was some scepticism and comments such as "we're different". Mick's persistence and time eventually paid off however and, with leadership, working together and improving the work area, people started to see the benefits 5 S could deliver.

5 S Area: Re-line

Troy Martin is the Re-line Team Leader. The approach to 5 S in the Re-line area has been to split the workshop into five areas. The first area has been completed and the process is now underway in the second area. Troy admits there was some scepticism about the process in the beginning, with some people feeling that 5 S was a "fad".

According to Troy, it's important to understand 5 S is not a short-term project; it's a long-term process that will change the way Tomago works.

"I would encourage everyone to give it a go. The crews that haven't yet taken part are now asking when it's their turn, and we've even had one guy who's "5 S'ed his garage!"

For Troy, one of the greatest challenges of 5 S has been securing the involvement of shift crews in the process and ensuring all 28 people who work in the area have ownership of the process.

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5 S AT TOMAGO - MORE THAN JUST HOUSEKEEPING - *Cont. from page 1*

5 S Area: Ladle cleaning shop

Paul Thew is the Transport Services Team Leader, Ladle Cleaning Shop.

After initial doubts about 5 S, Paul says the process has more than proved its worth.

"We're seeing support from the Business Unit Leaders and receiving the funds to make the improvements that need to be made. I think this time around Tomago has put the planning and resources into the process, and that hasn't been there in the past. "

"We have defined the standards with the guys and now we work to ensure they're maintained. When some of our guys know they've got an audit and I'm running late, they're chasing me and that's great. "

"I also came back from a meeting one day to find some of the guys had carried out the 5 S process in a store room, without being asked to do it, which was really impressive. "

Paul also comments on the safety improvements that 5 S has brought about.

"There were things we did that made a difference to safety, like moving an air-line closer to the work area and removing a trip hazard from hoses. We also introduced a support boom for a large air-ratchet to reduce manual handling. "

"Some of these jobs we've been talking about doing for years, and we've finally done them. We're all pretty pleased with what we've accomplished. "

5 S Area: Cast products maintenance

Rod Taylor is the Cast Products Area Engineering Leader. For Cast Products Maintenance, the 5 S process began in an area in the internal workshop, which is primarily associated with parts management.

Rod has no hesitation in admitting that initially he saw no clear advantage in applying 5 S in Cast Products Maintenance. "Although prepared to give it a go, I could see no benefit in the 5 S process until the second day. It seemed we were just cleaning and moving equipment around. But then we all took stock of the benefits that would flow from the process and how that could improve the way we approached our work. "

The 5 S process has assisted Cast Products Maintenance in determining what needs to be done with the flow of parts and rebuilds in the workshop.

"It made 'parts management' more visual and we could see the benefits almost straight away. We knew this work needed to be done, but we'd put it off because we always had something more pressing to do."

"We had parts that had been there for years and hadn't been used or were obsolete. We also found we had more of some parts than we needed to have. I guess it was like a stock-take, except it made us take stock of how we managed parts."

5 S AT TOMAGO

Because safety is critical it is the first (or zeroth) step of Tomago's 5 S program.
After some initial training, 5 S begins with assessing and dealing with any safety issues.
The next step is to **Sort**, where the work area is defined and everything in it identified. The team then assesses the usefulness of each item and discards what is no longer required.
Step 2 is to **Straighten**. This step recognises 'there is a place for everything and everything should be in its place', and should complement the work flow of the area.
Step 3 is **Shine** - this is the actual cleaning process, where the workspace is hosed and swept. The machinery is also cleaned and lubricated making the identification of repair work easier to see.
Step 4 is **Standardize**. With the hard work out of the way, the team establishes the rules and expectations for how the workspace will be managed.
The final step is **Sustaining** the work that has been carried out and ensuring it becomes a way of working for the future. This is carried out by the use of scheduled audits. The result of the audit is placed on the communication board and forms a measure of the team's performance. Areas for improvement identified during audits are actioned by the team to maintain the workplace to the defined standard.

INTRODUCING MARK LEY

ACIG is pleased to welcome Mark Ley as a Senior Consultant.
Mark first trained as an Engineer in manufacturing systems whilst working for tier 1 automotive suppliers in Australia and UK. He has industry experience in TPM, 5 S and Six Sigma, participating in and coordinating projects in these fields. Mark worked in Europe on an EC project to design and manufacture one of the first vision sorting machines for ceramic tiles.
From 2000 – 2004, Mark launched and developed an Engineering consultancy business providing solutions to manufacturing industry. In 2003, Mark managed the design, manufacture, installation and commissioning of Bombardier Transport's VLOCITY train assembly fixtures. Some of Mark's clients have included Cooper Standard, Silcraft, Dana, Autoliv, Empire Rubber and Bombardier.
Mark will continue the ACIG tradition of providing practical and quality assistance to help our clients improve their performance through the application of Lean principles.
Whether you're new to Lean or well down the track, contact Mark on 9650 7222 or mark.ley@acig.com.au for a no obligation chat on how to improve your Lean implementation.

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SMOOTH TRANSITIONS

Designing work cells for customer demand

The time: 6.15 one Tuesday evening not long ago.
The place: A factory near you.
The people: Jack Roland, General Manager and Peter Smith, Production Manager.

Jack: "Pete, help me out here. We have a new process with all the bells and whistles, yet there's stock sitting on the floor and we can't fill orders on time, what is going on?"

Peter: "We've had a few problems but we're ironing them out. We're filling the orders on time now and we're improving."

Jack: "We can't keep paying for all this overtime, it's killing us."

Peter: "The problem is the equipment was laid out wrongly, without focussing on the way in which materials come and go. We now have to rewrite all the operator procedures. Besides, we are producing vastly different quantities to what was originally planned. I know we've got problems but we're doing the best we can to work things out."

Jack: "I thought we sorted all this out months ago?"

Does this sound familiar? Too often companies introduce change to the manufacturing process only to see their plans fail because of poor coordination between workflow, logistics and work cell layout.

A storybook shows the whole story in one place.

Use a Storybook

One way to avoid the problems is to use a storybook approach. A storybook is a layout flowchart that shows all the relevant data for the workflow, including logistics, on one big sheet – it shows the whole story in one place.

The storybook tells everyone who is doing what and how the different parts interlink. This simple tool helps reduce confusion and misinformation, and creates a standardised approach which helps get the job done more smoothly as well as encouraging enthusiasm and morale.

The storybook should involve Sales, Logistics, Design, Engineering and Quality relating their information on suppliers, materials, processes, products and customers, all using a common terminology. For instance, part descriptions are often described in different ways by different parts of the business. A typical variation in the naming of a part description might be "lower housing" by sales, "housing" by engineering and "housing 149" by production. The storybook ensures a common terminology is used throughout all company documentation, reducing confusion and facilitating better relationships between functions.

How to Draw a Storybook

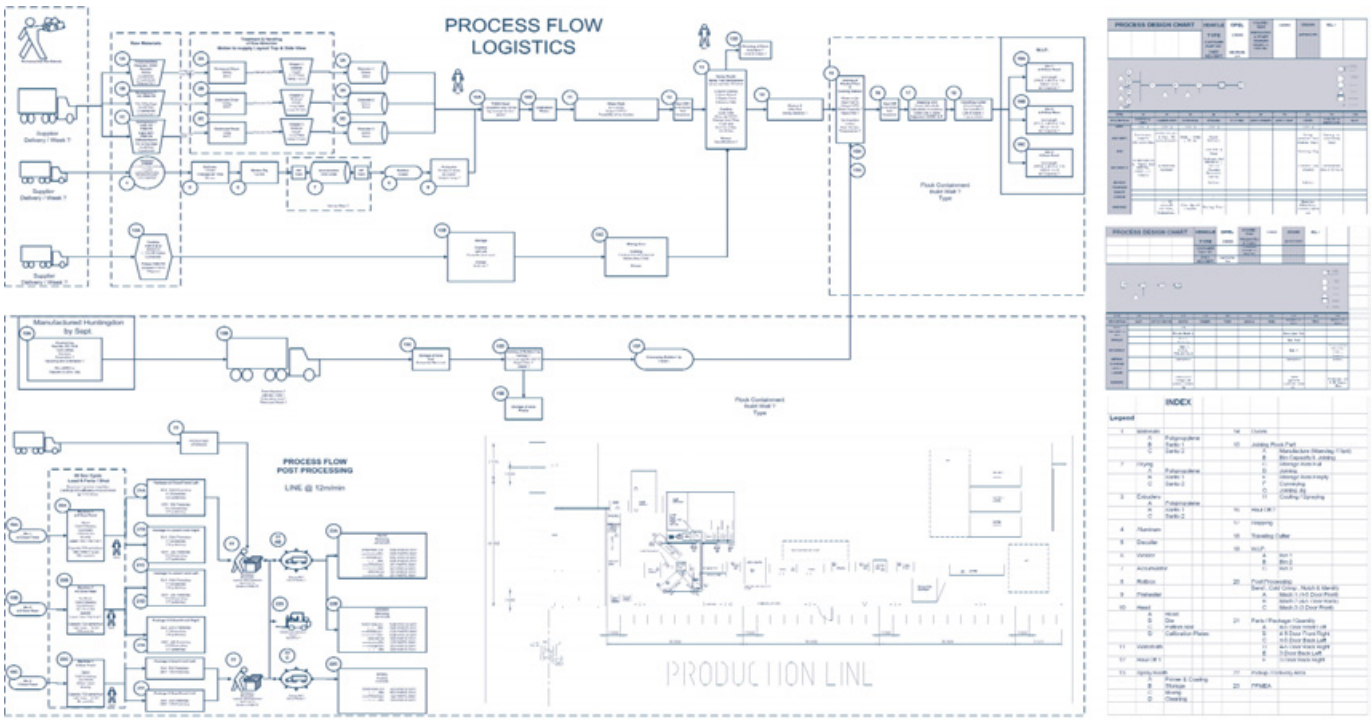
Start the storybook by drawing a map of products versus processes that relate directly to the customer's requirements. Combine process workflow, logistics, product matrix, plant layout and quality related information in a poster for display. The size of the poster is extremely important; it should be large enough to be easily read and understood.

Display the storybook poster in prominent positions both in the factory and office and invite everyone to critique it. Schedule presentations of the storybook and encourage participation and feedback – focus on removing any misinformation or misunderstandings. Conduct progress meetings, staff training and customer discussions in front of the storybook to clarify and confirm the information flow.

Using the storybook poster as the central point of information in developing work cells will direct the ownership of the process back through the people.

Storybook posters of work cell layouts are a simple and powerful aid to help avoid misunderstandings and facilitate a smooth flow of the project process. Consider using them next time you are planning a change to your manufacturing layout or flow.

For more information on developing storybook posters for work cell layouts contact Mark Ley on 9650 7222, or mark.ley@acig.com.au.



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MEETING SERVICE LEVEL AGREEMENTS
Optimising SLAs with Value Stream Mapping

Service Level Agreements, or SLAs, are a common way for organisations to manage service performance to meet agreed customer expectations. But having an agreement in place is only the first step, the really important part is managing your performance so you meet the agreed service levels every time. One technique which service organisations can borrow from their manufacturing cousins to ensure compliance to their SLAs is Value Stream Mapping.

A Value Stream comprises all the actions currently required to deliver a product or service to the customer. Value streams contain activities that add value and are desirable, but they also contain non value adding activities that could be removed without affecting the service output. Value Stream Mapping is a technique that helps remove or minimise non value adding activities while enhancing value adding activities. By improving the ratio of value to non value adding activities service processes are more likely to meet the criteria set out in their SLAs.

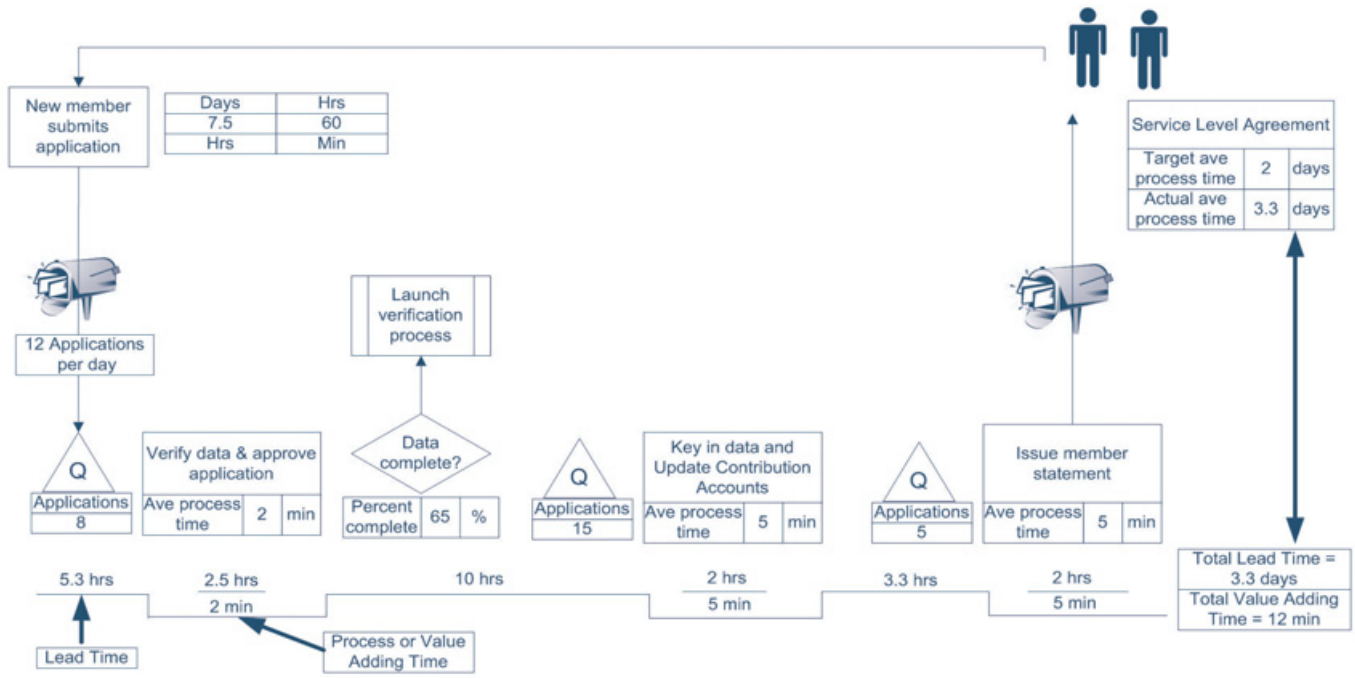
To map a value stream start by drawing each key step of the total process, from the initiation of a customer request to the completion of the service. Include all relevant measurements such as numbers of requests, time for each transaction, delays and queuing. Assess each process step for value adding and identify opportunities for improvement.

In the example below, the lead time is non value adding time. It is the time the request waits to be processed. Lead times also occur during processing steps. For example, in the process below it takes 2.5 hours to verify and approve each application however on closer inspection the value adding component only takes about 2 minutes. The rest of the time is non value adding and an opportunity for improvement.

A Service Level Agreement (SLA) is an agreement between a service provider and its customers about the level of service the customers can expect to receive.

Elements of a typical SLA include:
- Which services will be provided, or not provided
- Costs of different service levels
- Service standards, such as the response time
- Conditions of service availability
- Responsibilities of both parties
- Issue resolution procedures

When you have measured the lead times and value adding times, add up the totals. In the example below the total lead time, that is, the total time to process an application from receipt to customer is 3.3 days. The value adding time of that 3.3 days is 12 minutes. That is, only 12 minutes of the 3.3 days or 0.8% of the time it takes to process an application adds value, the rest is waste. Since the Service Level Agreement states 2 days as a target it is clear this provider is not meeting its SLA obligations. However, given the large amount of non value adding time there is plenty of scope for improvement. The next step is to rank the opportunities from most to least important and launch actions to reduce the non value adding time.



Australian Continuous Improvement Group is a specialist group addressing the best practice needs of the public and private sector. Our skills cover implementing continuous improvement processes which have a customer focus, meet strategic goals and achieve culture change. For advice, contact any of our named Directors, Consultants or Managing Director, Gerard Colla.

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