



# Benchmarking For the Australian Print, Packaging and Visual Communication Industry

Benchmarking Volume 2

Process Benchmarking



INDUSTRY  
TOURISM  
RESOURCES

Report  
on  
Process Benchmarking for the Australian  
Printing Industries

to



by



**June 2003**

**Funded by**



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# **1. Introduction and acknowledgements**

## **Introduction**

This is the final report of the two reports in this benchmarking initiative on behalf of the Printing Industries Association of Australia, which was funded by the Department of Industry, Tourism and Resources under the Infrastructure and Industry Growth Fund of the Book Production EPICS Grants scheme. The consultants responsible for the report were Benchmarking PLUS and Negotiation.

The first report dealt with quantitative comparisons of performance (“Performance benchmarking”) between approximately 170 print enterprises and various sectors within the printing industries. That report established authoritative data regarding relative performance, and showed that there was a wide divergence between the best performing enterprises and the worst. It also gave some leads regarding key drivers of performance, and characteristics typically displayed by top performers.

This report deals more with practices than key performance indicators (“KPIs”). As such it is complementary to the first report. This report takes a more focussed view of the practices of leading enterprises (“Process benchmarking”). Four areas of activity or topics are covered:

- ⌘ Winning and keeping profitable business
- ⌘ Finance: making effective decisions on investment in equipment
- ⌘ Achieving effective utilisation of production technology
- ⌘ Minimising overs and spoilage

These were chosen after careful consideration and consultation with selected industry representatives; for their importance in the current climate facing the industry, and their combined coverage of the activities of an enterprise in the printing industry. They were not intended to cover all of the aspects that a printing industry enterprise has to consider in day-to-day or year-to-year operations.

Section three of this report outlines the process we adopted to uncover the practices (“leading practices”) that are profiled in this report, in particular:

- ⌘ How the topics were selected;
- ⌘ How the enterprises that were to be the source of the leading practices were selected;
- ⌘ How the practices that are profiled, were selected from all the other practices adopted by such enterprises.

Section four provides a brief profile of the enterprises that were selected as the source of such leading practices. They were selected because it seemed they had something worthwhile to offer in the topic for which they were chosen.

We must emphasis two points in this respect:

- ⌘ There is no representation that they are the best in the topic for which they were chosen. However there was evidence that they did what they did very well.

- ⚡ Because an enterprise was chosen for one topic, it did not mean that they had very good practices in any of the other topics. They may have, but for the purpose of this project it was not a consideration.

The objective of our approach was to select the best practices we could find, wherever we could find them. And by so doing, an amalgam of practices would emerge that collectively would represent a major step forward when compared with the same set of practices in the majority of print enterprises.

Section five of this report, the appendix, and the attachment, contain our findings. These are provided in three different forms and levels of detail:

- ⚡ A summary view (Section 5.1)
- ⚡ Details of the information we gleaned from our visits ('Collated visit reports', which are to be found in the Appendix)
- ⚡ A matrix of leading practices that is designed to be used as a wall chart, hence visible on an ongoing basis in the workplace.

The findings are meant to serve as a source of ideas and inspiration for all enterprises in the industry. We hope that will prove to be the case.

Finally, the term 'leading practices' needs some explanation. It is meant to describe practices that are more than likely to be worth emulating, not slavishly but with adaptation to the particular circumstances of the reader. Naturally there is nothing intended to be prescriptive in this comment. We avoided the term 'best practice'; in the experience of the writers, best practice is a very elusive concept – one never is certain when one has found it, and if one has there is likely to be a better practice that appears before too long. Better to choose a term that promises less but still delivers something very worthwhile.

## **Acknowledgements**

Many have made a contribution to this project. They are set out below.

### **The Department of Industry Tourism and Resources**

They provided the funding that made this project possible.

### **The Printing Industries Association of Australia**

They provided project support, and facilities for meetings with industry representatives. In this phase certain officers in particular provided input at Reference Group meetings and some of the benchmarking workshops. They are:

Philip Andersen  
Hagop Tchamkertenian

### **The Reference Group**

This group provided filled the role of an industry expert panel. They provided a sounding board on the direction of the project, involvement in choice of topics for process benchmarking, and a point of review. They are:

Dennis Cooper, JS McMillan Pty Ltd (NSW)

Paul Mullins, Canprint/Union Offset Pty Ltd (ACT)  
Terry Stone, Daniels Printing Craftsmen (WA)  
Chris Pfeiffer, Openbook Publishers (SA)  
John Dall'Amico, Valonia Graphics (VIC)  
John Germain, Hannanprint Victoria (VIC)  
Danny Trainor, PMP Print – Clayton (VIC)  
Paul Commins, Colorpak Packaging Pty Ltd (VIC)

Some members were involved for only the initial part of the project.

### **Benchmarking team members**

These people gave extensively of their time. This was for workshops to refine the specific focus of the benchmarking topics, and assist with the choice of benchmarking partners; for participation in benchmarking visits, and in development and review of the initial findings from the topic on which they were involved. They are:

John Dall'Amico, Valonia Graphics (VIC)  
Brenton Barrett, Nationwide Labelling (SA)  
Mark Bloustein, Hyde Park Press (SA)  
Ian Bowden, Bowden Printing (SA)  
David Chambers, First Print (QLD)  
Joe Clouston, The Printing Office (QLD)  
Dennis Cooper, JS McMillan Pty Ltd (NSW)  
Nigel Davies, Valonia Graphics (VIC)  
Tony Dedda, Hannanprint (NSW)  
Matthew Drummond, D&D Colour Printing (QLD)  
Elizabeth Fenton, New Creation Print (VIC)  
Mick Halliday, Pongrass Communications Group (NSW)  
David Jones, Printcraft (QLD)  
Ray Keen, Printgraphics (VIC)  
Mauro Mattarucco, PrintBound (VIC)  
Bruce Mayes, New Creation Print (VIC)  
Rob McGlinchey, Hannanprint (NSW)  
Paul Mullins, Canprint/Union Offset Pty Ltd (ACT)  
Patrick O'Malley, Gillingham Printers (SA)  
Chris Pfeiffer, Openbook Publishers (SA)  
Paul Rouget, Brown Prior Anderson (VIC)  
Jack Walter, Cutler Brands (SA)  
Matthew Whitton, Fast Proof Press (QLD)

Some members were involved for only a part of these activities, or shared their commitment with a colleague.

### **Printing Industry enterprises, or enterprises in another sector**

These enterprises either hosted a benchmarking visit to their premises or otherwise provided support and advice. We wish to particularly thank them, and the members of their staff that we spoke to. They are:

Colourcraft (VIC)  
Dynamite (VIC)  
Hannanprint (NSW)  
Hannanprint Victoria  
Heaneys Performers in Print (QLD)  
McPherson's (VIC)

Philmac – a plastics manufacturer focussed irrigation products, based in SA  
Company A (VIC)  
Platypus Graphics (QLD)  
Pongrass Communications (NSW)  
PrintDirect / DPA Australia (VIC)  
The Craftsman Press (VIC)  
Toll Holdings – a major national integrated logistics provider.  
Viscount – a major international plastics manufacturer, with head office in Victoria.

Collectively the efforts of all these people and enterprises mentioned here represent several person years of effort for which we, and no doubt the industry, are very grateful.

## **2. Executive Summary**

This report contains the results of a project to identify 'leading practices' as a source of ideas for enterprises in the printing industry. They arise from a careful selection of four topics of interest, careful preparation, and extensive site visits to 14 selected enterprises.

In most cases the enterprises that were visited were from the printing industry, but three were selected from outside the industry for insights they could offer. Further detail on the process by which this project was conducted appears in the body of the report.

The leading enterprises we examined, as a group display the following characteristics. These are set out in major topic areas:

### **Winning and keeping profitable business**

- €# They keep focussed externally, on the economic, technological, and competitive environment around them.
- €# They have developed a clear view of where they fit in that competitive landscape: the markets they serve most competitively, the type of customer they relate to best, and the nature of the offering they make to these customers.
- €# They go to considerable lengths to understand their customers' perceptions of value and their own costs, so that they can be confident the offerings represent profitable business to them as well as value to their customer.
- €# They present their service offerings to their major customers as packages of value, rather than a keenly priced commodity.

These practices provide them with a basis for an ongoing relationship with these key customers and less reliance on price sensitive, competitive tendering.

### **Finance: making effective decisions on investment in equipment**

- €# Their decisions on investment in capital equipment are guided in the first place by their understanding (noted above) of their place in the market.
- €# This is supported by a business plan, and an annual budget that possibly includes a budget for capital equipment acquisition.
- €# They follow a set procedure in deciding whether to invest. This procedure ensures that all disciplines – technical, sales, and finance – work as a team to make a thorough evaluation.
- €# The procedure involves calculation of specific KPIs and hurdles such as:
  - KPI: - payback period. Hurdle: - less than 4 years
  - KPI: - incremental return on assets. Hurdle: - greater than 20% per year

- ⚡# When calculating the KPIs, careful considerations are taken of likely source and volume of future revenue, all costs, and operating life .
- ⚡# They have a well-defined basis for selecting between alternative vendors; generally the quality of support during commissioning, and then over the life of the equipment, is very important.
- ⚡# They have a preference for how to finance the equipment acquisition, and a basis for choosing between alternative means of financing. The alternative each have a different cost and risk outcome. Alternatives:
  - Cash,
  - Debt funding, eg bank loan,
  - Finance lease
  - Operating lease.
- ⚡# They rarely invest in the expectation that business will flow to them because they have new technology. More likely it is to produce at a lower unit cost than is currently possible, or to gain or maintain business with key customers.

These practices enable them to invest in equipment that will provide them with a return on their investment, and avoid investment decisions that do not. Some commented that where they had departed from these practices, more often than not they regretted it in hindsight.

### **Effectively utilising technology**

- ⚡# They define utilisation as the volume of good output over an extended period such as a month or a year.
- ⚡# This broad definition encourages them to consider all relevant aspects impinging on effective utilisation.
- ⚡# Hence they work on a variety of aspects to ensure they get the most from their technology. These include:
  - Shift patterns,
  - short make ready times,
  - effective production planning and maintenance,
  - careful measurement and reporting of performance, and
  - involvement of staff at all levels to work in support of the objectives.

### **Minimisation of waste**

- ⚡# As they do for utilisation of technology, they also define waste very broadly. Overs and spoilage are two aspects, but excess capacity and excess inventory are two other examples.
- ⚡# Hence they utilise a variety of practices to bear down on waste and persistently work at reducing it. Some are set out here; others appear in the remainder of this executive summary:
  - Control of issues of paper stock to individual jobs,
  - back costing of jobs,

- follow-up of variances between estimated and actual cost, to ensure the reasons are known and avoided in future.

## **People**

- ⚡ They work hard to establish a culture where people feel actively committed to working as a team towards the enterprise goals.
- ⚡ Rewards play a part, but it is small in financial terms and has more importance as a symbol of recognition for effort.
- ⚡ More important is open and ongoing communication with operators, about objectives and personal and team performance

## **Measurement and reporting**

- ⚡ Measurement and reporting have an integral role in assisting to manage the enterprise.
- ⚡ This ranges from annual updates of business plans and budgets, down to short term on demand performance information for staff at all levels and in all roles.
- ⚡ Specific KPIs and targets are set for each aspect measured, and these form the basis for regular evaluation of performance. Examples of KPI / (interval between reporting) include the following:
  - Average make-ready times / (by operator, each shift)
  - Productive time as % of total paid time / (weekly)
  - Value of wastage incurred / (monthly)
- ⚡ Management and staff review and discuss the performance reports, often in joint meetings at the staff workplace.
- ⚡ There are three key roles for such measurement and reporting;
  - as a tool to encourage staff involvement,
  - as reassurance that performance is meeting expectations, and
  - as a guide to where problems and opportunities for improvement may lie.

## **Improvement**

- ⚡ The leading enterprises are never satisfied with the status quo.
- ⚡ They are always looking for means of improving their chosen market position, and working towards implementing them.
- ⚡ The practices outlined above assist them in doing so.

## **Conclusion**

These practices provide a powerful set of practices that can lead to improved business prosperity, particularly if taken as a whole, but also if adopted a section at a time. We commend you to the greater detail contained in the body of the report, and trust you will find something of value for you there.

### **3. Our Approach**

#### **3.1 How we defined the topics**

##### **3.1.1 Initial choice of process benchmarking topics and working arrangements**

We chose four topics (or ‘business processes’ or ‘key aspects of business’) for process benchmarking, in accordance with the terms of reference for the project. It was clear that in four topics we could not cover the total scope of activities that a printing industry enterprise has to consider in staying competitive and prospering. What we had to do was choose topics that had major current relevance, and covered as much of the scope as possible, without losing impact through being too broad in our coverage.

Based on the views of our reference group, our own knowledge of the issues facing the industry, and analysis of the results of the performance benchmarking, we drew up a shortlist of topics for consideration by the reference group.

The shortlist is shown in Exhibit 1.

## **EXHIBIT 1**

### **Short-list of proposed topics for process benchmarking**

#### **Process 1. Minimising overs and spoilage, e.g.**

- ⊕ Leading practices for set-up processes
- ⊕ Minimisation of overs
- ⊕ Minimisation of spoilage
- ⊕ How to deal with associated productivity issues

#### **Process 2. Winning business, e.g.**

- ⊕ Effective marketing practices
- ⊕ Effective sales practices
- ⊕ How to maximise customer loyalty and retention
- ⊕ Performance monitoring and management tools

#### **Process 3. Managing occupational health & safety, e.g.**

- ⊕ Health & safety organisation
- ⊕ Workplace hazard identification tools
- ⊕ Training practices
- ⊕ Rehabilitation practices
- ⊕ Performance monitoring and management tools

#### **Process 4. Achieving effective utilisation of production technology, e.g.**

- ⊕ Ensuring technology is competitive/ up to date
- ⊕ Avoiding over-investment in capacity
- ⊕ Leading practices for technology selection/ acquisition/ maximisation of utilisation/ divestment
- ⊕ Machinery sharing / joint venture production approaches

#### **Process 5. Management of IT (management information systems), e.g.**

- ⊕ Leading practices for MIS selection/ installation/ training/ ongoing usage and support
- ⊕ Software and hardware

#### **Process 6. Financial management, e.g.**

- ⊕ Leading practices for management of debtors, creditors, & inventory
- ⊕ Leading practices for job costing and quoting
- ⊕ Leading practices for evaluation of investment in equipment and machinery

Each member of the reference group was asked to select their four preferred topics and rank them in order of preference. The two major criteria were that:

- ⊕ Each topic chosen should be of major significance for the industry;

- ⌘ The four topics as a group should cover a reasonable broad spectrum of the different aspects of running a printing enterprise.

After some discussion the following four area of focus were chosen:

- ⌘ Winning business
- ⌘ Minimising overs and spoilage
- ⌘ Achieving effective utilisation of production technology
- ⌘ Financial management

Once this choice was made, we asked four members of the reference group if they would be responsible for forming a team of industry people with our assistance, to conduct a process benchmarking study on one of the four topics.

As a result, four teams were formed, and for reasons of logistics, capability of taking on the work involved in process benchmarking, and spreading the workload, teams were formed from senior representatives of enterprises based in:

- ⌘ NSW / ACT (Winning business)
- ⌘ QLD (Minimising overs and spoilage)
- ⌘ SA / NT (Achieving effective utilisation of productive technology)
- ⌘ VIC (Financial management).

### **3.1.2 Refining and focussing the four topics**

When each team was convened for the first time, we worked through their topic with them. We explained that some of these topics were very broad, and that to be able to select appropriate benchmarking partners and get into enough depth to produce worthwhile outputs, the central focus of topic had to be further defined.

Where possible we wanted the four topics to complement each other, so that the lessons as a whole were integral rather than disjointed.

As a result each of the four topics was defined as follows:

#### **Winning business**

The essence of this process is winning and keeping *profitable* business. Enterprises who are able to identify a market and type of customer that suits their own capabilities to offer superior service, and who are able to identify a method of providing better value to such customers, are more likely to enjoy:

- ⌘ Longer term relationships with their chosen customers
- ⌘ A greater degree of freedom from competitive pressures that focus on price
- ⌘ As a result, better margins and sustainable profitability

#### **Achieving effective utilisation of production technology**

The essence of this process was gaining maximum utilisation of the current investment in productive equipment. So aspects such as the following are especially relevant:

- ⌘ Shift patterns;
- ⌘ Minimising make ready times (or in other industry sectors “product changeovers”);
- ⌘ Effective production scheduling

- ⚡ Effective equipment maintenance
- ⚡ Using outside production capacity to cope with peaks
- ⚡ Involvement of staff in achieving maximum utilisation of equipment;
- ⚡ Collecting and reporting performance data in a manner to promote that involvement.

### **Minimising overs and spoilage**

The essence of this process was the impact of human resource management on the waste from overs and spoilage. So aspects such as the following are especially relevant:

- ⚡ Fostering positive relationships between people at different organisational levels
- ⚡ Fostering teamwork
- ⚡ Encouraging people to take a proactive role in waste reduction
- ⚡ Effective communication and reporting
- ⚡ Clarifying job roles and expectations
- ⚡ Providing leadership
- ⚡ Providing appropriate training and development.

### **Financial management**

'Financial management' is a very broad topic, covering a host of aspects such as product costing, management of working capital, and external and internal reporting. The working group considered that to make a significant contribution, it needed to focus on a more narrowly defined area in sufficient depth. Another consideration was to choose an area that was topically important, and complementary to the other three aspects chosen

The essence of this process was defined as:

- ⚡ How leading enterprises determine the appropriate time to invest in additional equipment.
- ⚡ How they determine what types of equipment they need to invest in.
- ⚡ What interactions they engage in with suppliers of equipment.
- ⚡ Within leading enterprises, who is involved in decision-making processes on equipment investment?
- ⚡ The systems that are adopted by leading enterprises to guide their investments in equipment.
- ⚡ The financing decisions associated with the investment decision.

## **3.2 How we selected benchmarking partners**

The choice of benchmarking partners is clearly a key element in process benchmarking. The enterprises chosen need to be a source of 'leading practices' and a model and inspiration for others.

Hence we searched for enterprises where we felt we were likely to find such practices. Our search relied on the following:

- ⚡ **The capability of our four industry teams**, each comprising members in the industry who between them had a wealth of accumulated industry knowledge, experience, and achievement.

- ⌘ **The combined knowledge and experience of the two consultants** in pursuit of best practice (a focus for Paul Coronel) and the print and allied media sector (a focus for David la Ferla).
- ⌘ **Emerging results from the performance benchmarking.** At the time we were choosing suitable benchmarking partners, some enterprises were emerging as candidates by virtue of the results they were posting in the performance benchmarking database.
- ⌘ **External information** we were able to gather from other bodies engaged in promoting the pursuit of best practice, such as the South Australian Centre for Business and Innovation. This State government sponsored organisation conducts an annual national competitions in aspects of good manufacturing such as ‘rapid product changeovers’ (or in Printing industry language ‘reducing make ready times’). These are a key element in improving utilisation of technology and reducing wastage.
- ⌘ **Coverage of benchmarking partners inside and outside the printing industry.** Our search covered not only the printing industry but also other sectors where, through a structured process of sifting information, we saw analogies with the printing industry. The analogies were different for each topic; for example Toll Holdings approach to business development, versus the approach of Philmac to meet a pressing need to get very high utilisation of its production machinery. Within those industries we searched for enterprises that had had a record of achievement to commend them as partners.
- ⌘ **Representation of larger and smaller enterprises.** We tried to ensure that the group of enterprises chosen for benchmarking partners included both large and smaller enterprises. This was partly as comfort to the whole range of enterprises in the printing industry. It was also to ensure that, if a ‘leading practice’ approach to a topic needed to be fundamentally different due to considerations of enterprise size, we would have ideas to offer both large and small enterprises.

Our initial objective was to visit a total of 16 enterprises, of which four were to be outside the printing industry. In the end we visited 14 enterprises of which three were outside the printing industry. Logistical issues in the final weeks leading up to the visits were the reasons for visiting 14 rather than 16. Profiles of each company - in some cases anonymous at their request – are provided in the detail of this report.

Note particularly, that each enterprise visited was not expected to be an exponent of ‘leading practice’ in all aspect of its activities. This is too much to expect. Rather, there was some evidence that they had some insights to offer in the specific topic we wished to discuss with them. For this reason each enterprise was selected and visited for just one of the four topics we chose for process benchmarking.

### **3.3 How we arrived at views on ‘leading practices’**

#### **3.3.1 Format of the dialogue with benchmarking partners**

From the previous section of this report, it follows that one of our benchmarking teams had dialogue with three or four enterprises for each topic. Note also that there was some crossover of learnings between topics, for example between ‘Effective utilisation of technology’ and ‘Minimisation of overs and spoilage’.

In each case we covered a very specific area that had been agreed when the visit was negotiated.

We had face-to-face dialogue with at least one senior person in each enterprise, and in a number of cases with other people at different levels in that enterprises.

In all but one case (Toll Holdings, where the topic and other logistical aspects meant that it was not appropriate) we went to their premises. And in all cases where it was appropriate to the topic, we toured physical facilities as well as engaging in workshop format discussions.

### **3.3.2 Confidentiality undertakings**

Part of our agreement with each enterprise that we visited, was that we would allow them to review our documentation of that visit, and that we would not publish any matters they wanted kept in confidence. In addition that we would respect their wishes if they did not want their names attributed to the information published.

Through this mechanism we were able to engage in very frank and open discussion with those we visited. It did also mean that we are unable to publish or attribute some of the information we gathered.

### **3.3.3 Distillation of findings to gather ‘leading practices’**

The detailed benchmarking visit reports are attached as an appendix to this report.

There are four, one for each of the topics chosen. Each in itself is a distillation of what passed between each enterprise we visited and our benchmarking team members on the 14 visits that were conducted. Nevertheless, in total there are approximately 40 pages of these detailed findings. These have been further distilled into the material that appears in Section 5 of this report.

The choice of material that found its way into the summary representations of leading practice was chosen, based on the following key factors:

- ⌘ **Judgement:** In the end, the experience of the benchmarking team members and the consultants was the deciding factor. The judgement of our industry reference group supported this. They viewed the collated visit reports before the process of report production proceeded further.
- ⌘ **Evidence of having a controlled process or approach:** We looked for evidence that there was a managed or controlled approach to the issues we were investigating. For example:
  - That there was a clear and consistent process
  - That it appeared to be understood

- That it was followed in the majority of cases
- If it was not followed, there was corrective action or process review
- That it made sense in the context of their business activities
- That it had been used, or could be, in other enterprises.

≠# **Longevity:** We looked for evidence that the process had been in place for some time, enough time for it to have a chance to show success or to fail. And similar to the previous point, where the process had been refined and improved over time to fit the changing business environment. In short, that the enterprise concerned was there for the 'long haul' and saw this process as a key part of their ongoing success.

≠# **Evidence that the process has been effective:** We sought verbal or documentary evidence that the approach or process had proven effective for the purpose intended. In most cases such evidence was there; however for confidentiality reasons it cannot be reported here. Examples of the type of evidence we looked for follow:

- In the 'getting and keeping more profitable business' topic, had there been sales growth or margin improvement, or effect on their market share?
- In the 'utilisation of technology' topic, could they point to improvements in utilisation as a result of their approach?
- In the 'minimisation of waste and spoilage' topic, could they point to reductions as a percentage of total output, and/or improvement in realised margins?
- In the 'effective investment in productive equipment' topic, could they point to long term profitable survival in a capital intensive industry?

**Information that was not used:** In some cases, the information gathered on the visits was not used, or used only partially, despite the fact that some elements of the approaches were of potential interest. Where this was the case, it was either because:

- ≠# The approach or processes had not been in place for sufficient time to be sufficiently supported by results.
- ≠# Or, the enterprise concerned had issues with confidentiality on specific items of information, and did not wish the information to be published.

## **4. Profiles of benchmarking partners**

### **4.1 Winning and keeping more profitable business**

#### **Toll Holdings**

Toll was selected because of its success and its key business strength and its competitive advantage, which rests on its ability to design, implement, and manage innovative supply chain solutions. These provide their customers with flexibility, reliability, and cost competitiveness in managing their complex logistics requirements.

In addition, Toll promotes customer partnering. It aims to develop long-term relationships based upon the experience and dedication of its people, combined with the quality and reliability of its service.

Toll Holdings Limited is Australia's largest logistics and transportation company with a turnover exceeding \$3.0 billion. Founded quite recently in 1988 by a group of experienced senior transport operators, Toll became a public company in 1993, and has since grown to become Australia's only true "Integrated Logistics Provider".

It has a range of specialised transport enterprises in the group; some built from the ground up, others acquired from other enterprises.

Toll perceives transport as a \$55 billion business of which \$30 billion is 'in-house'. It sees that sector as the real opportunity for enterprises like itself. Toll and its three or four major competitors have less than 15% of that market.

#### **PrintDirect**

PrintDirect began as a very small, on demand printing company that was able to produce work via digital and offset technologies.

PrintDirect has built a business by offering clients with multiple print purchasing points a solution that saves the client money but provides profitable ongoing business to PrintDirect. Over the last few years it developed its own proprietary management information system. This system is web enabled and allows clients and the PrintDirect staff to interface online.

PrintDirect proprietors steadily built their business, and were acquired by Document Printing Australia P/L ("DPA") in January 2003. The merger was undertaken to enhance profitability and secure a concrete exit strategy for the Directors of PrintDirect.

They have successfully transitioned their top clients to DPA, and have continued running their sales team now representing DPA and not PrintDirect. PrintDirect and DPA have congruent goals and vision as being solution providers and this has seen the integration of the two enterprises almost seamlessly.

The merged business employs around 75 people.

## **Colourcraft**

Colourcraft was founded by two directors who complemented each other in terms of agency relationships and technical expertise.

Colourcraft strives to be the best at what it does and it doesn't want it to be limited to print. As a strategy it has chosen to differentiate itself as a highly specialised niche player rather than a volume driven large player. Accordingly, the business does better in selling its intellectual capital rather than its physical capital.

Colourcraft has developed a reputation for innovating its technological processes. The heads of the company are passionate about technology and its application to challenges faced by clients, and they have strengths in what the company produces. Colourcraft has fostered close working relationships with suppliers and it innovates with them to refine the technology in use.

The company is enhancing the ways in which it runs its business rather than its manufacturing operations. It employs about 50 staff including 3 sales personnel.

## **4.2 Finance: making effective decisions on investment in equipment**

### **Viscount plastics**

The plastics industry has a number of characteristics in common with the printing industry:

- €# High cost of production equipment
- €# Over capacity in a number of markets

Hence they have a need to invest wisely on new technology, and to achieve high levels of utilisation once the investment is made.

Viscount Plastics are a major plastics products manufacturer in Australia and Asia (15 plants in Aust and Asia / NZ) they have been in business through several repetitions of the business cycle. They produce a significant percentage of the paint containers in Australia, including the printed designs on the exterior of the container.

Until a just over two years ago they were part of Pacifica, an Australian publicly listed company. Since then they have been owned by Linpac, a privately owned but international plastics company with head office overseas.

Capital equipment decisions are a big issue for them. They would have at least one capital expenditure project going in every plant at any time (Value ranges from \$10k to over \$ 1 mill).

### **Company A – a specialty printer who has added significant service elements**

Company A used to be solely a printing business based in Melbourne. Manufacturing and selling, but largely undifferentiated from close competitors.

It is now more sophisticated. Company A has moved beyond simple manufacture, which accounted for 95% of revenue in the 1990s but now around 55%. It now services its chosen

specialty market from concept to fulfilment with diverse offerings. It aims to be leading integrator of solutions within its specialty area in Asia-Pacific through customers and channel partners.

This transformation in their capability has taken place after very careful consideration of the needs of their major clients and the trends in the technology available. As a result they have made judicious investments in capacity, and selectively developed alliances with other companies whose technology is complementary to their own

Their parent company is based in North America. They have the final say in approval of capital investments.

### **Company B - a book producer**

The emphasis of the business is on cost control. Their view appears to be that significant revenue growth will only occur through acquisitions; that they are in a mature market, and major gains in market share are otherwise impractical.

They are very sophisticated in capital investment evaluation. Further information is embargoed for confidentiality reasons.

### **The Craftsman Press**

Craftsman Press is Melbourne's largest sheet fed commercial printer and operates a comprehensive pre-press service, several large presses and complete print finishing. In conjunction with their own city based design company, City Graphics, offer graphic design, pre-press, printing, digital print, forms printing, finishing and fulfilment distribution. Craftsman's client base encompasses many of Australia's major corporates.

Craftsman Press is owned by the Blue Star Print Group and is one of Australasia's most comprehensive print communication networks, which includes companies such as Link Printing, Kings Print & Mail Service, RapidAllmark Labels and Dunham Bremmer.

## **4.3 Effective utilisation of production technology**

### **Philmac**

The plastics industry has a number of characteristics in common with the printing industry:

- €# High cost of production equipment
- €# Over capacity in a number of markets

Hence they have a need to invest wisely on new technology, and to achieve high levels of utilisation once the investment is made.

Philmac is a plastics company that specialises in fittings for irrigation, based in Adelaide. They employ approximately 200 people, in three shifts operation and turn over about \$60 million per annum.

They were the winner of a “Changeover” competition (aimed at reducing time lost through changing production lines to run different products) organised by the SA Centre for Business and Innovation. Printing companies also entered this competition.

They are capacity limited by finance from their parent company and have been for a few years. Through various means they have improved their equipment utilisation over the last few years. They claim that they have saved the equivalent of 3 new machines (out of a total number of 42 machines currently employed) through better equipment utilisation.

### **Company C - a large contract printer**

The enterprise is essentially a contract printer that is production oriented and focused on achieving high volumes of output within well-defined deadlines.

It has made significant investments in prepress technologies, printing technologies and binding technologies and is concerned with capacity utilisation and productivity. These have improved significantly in the last 12 months

### **Pongrass Communications Group**

A Sydney based business that has embraced technology within the Australian Printing Industries and is recognised as a major client by Heidelberg Australia. The business has been built around sheet fed offset printing. It has recently invested in a high quality waterless printing operation (Pot Still Press), and a binding operation (Pot Still Bindery). It is also building a high-end digital printing company (Pongrass Digital) through its acquisition of the first NexPress in Australia.

The Pongrass group encompasses Websdale Printing, Pot Still Press, Pot Still Bindery, and Pongrass Digital. They service a broad range of clients and have been successful in satisfying the long-term needs of major accounts that require large volumes of printed products produced within very short timeframes. They employ approximately 150 people.

They are in the process of managing the cultural differences across the organisation that have resulted from the recent acquisitions of Pot Still Press and Pot Still Bindery.

## **4.4 Minimising waste associated with overs and spoilage**

### **Heaneys Performers In Print Pty Ltd.**

Started as a family business in 1979, it changed to a 3-way partnership in 1993 and was finally incorporated as a company in 1988 when the original owner was bought out by his daughter.

Previously there was an emphasis on sales but less attention was paid to in-house management controls. The directors realised the need to work smarter to attain acceptable levels of profit.

Management has given a high priority to follow up all areas where waste/overs are prevalent. Unacceptable overs could be several things, i.e.: a machine problem or an operator problem. In either case management takes action to prevent this happening again.

Heaneys believe they achieve on average 5-7% higher than industry standard gross profits. Monitoring and distributing the correct number of overs to a job and restructuring the store, gave the business roughly 2% of the 5-7%. In total approximately half of the 5-7% is claimed to be due to efforts to reduce overs and spoilage.

## **Dynamite**

Dynamite is a small family-owned company. It insists that each part of the business becomes self-reliant. This approach enables the business to spread risk.

Dynamite is predominantly a four-colour printer. It produces business cards, commercial printing, and is engaged in trade printing. It is lean in terms of finishing and, accordingly, outsources the majority of its clients' finishing needs. It organises distribution of flyers on behalf of its clients.

Branding underscores the difference between trade work and commercial work.

The company operates two 8-hour shifts, hence 16 hours per day, 5 days per week but has the flexibility to expand.

## **Hannanprint Victoria**

Hannanprint Victoria is a large contract printer that is part of the Independent Print Media Group. The plant covers 12 acres, and has been in place for 26 years.

Eleven of those years have been under HPV, who is not competing in global markets against global players, and hence has a domestic focus.

Business activities encompass prepress, printing, and finishing but not mailing. Clients perform distribution activities on their own behalf.

The business has five web presses and one sheet fed press and employs 270 people on a full time basis and up to 70 on a casual basis. It is focused on web fed contract printing. Accordingly, it typically outsources sheet fed work to those printers with which it has fostered strong relationships.

Major titles typically need to be turned around in one to seven days.

HPV has recognised that it has a sweet spot that enables it to generate profits that are in line with the expectations of its shareholders. If production is significantly above or below the levels targeted, profitability is impacted.

Waste control is of major importance to the business. HPV has developed a suite of processes that enable it to drive down waste.

## **5. Representations of leading practices**

### **5.1 Summary**

#### **5.1.1 Winning and keeping profitable business**

##### **The focus of our search for leading practices**

The team that took on this topic wanted to provide a model that differed from the ‘quote and hope’ approach to getting business. The central proposition of the team was that enterprises that are able to identify a market and type of customer that suits their own capabilities to offer superior service, and who are able to identify a method of providing better value to such customers, are more likely to enjoy:

- €# Longer term relationships with their chosen customers
- €# A greater degree of freedom from competitive pressures that focus on price
- €# As a result, better margins and sustainable profitability.

##### **A summary of what we found**

We were very impressed with what we found. Key themes that emerged were the following:

The enterprises we visited had a specific view of their own point of difference and the type of clients they best relate to. Furthermore, they acknowledged their production capabilities but placed those capabilities within the context of the needs of the markets they serviced. For example:

- €# Toll is a provider of integrated logistics solutions, in some cases to a total industry supply chain such as automotive.
- €# PrintDirect endeavours to become a sole supplier to organisations with multiple print buyers; it provides systems that facilitate such clients dealing with them.
- €# Colourcraft has developed relationships with a range of advertising agencies. Through understanding shifts in targeted communication and being seen as a provider of communication solutions not just a printer, it aims to avoid competition where print is seen as a commodity.

These enterprises engage in considerable effort to understand the needs of such clients. This may lengthen the selling cycle but that is accepted by such enterprises. Indeed, the enterprises were prepared to invest significant resources in developing services to support the creation, delivery and support of their physical products.

As part of the effort to understand a potential client’s needs, these enterprises aim to understand the client’s current cost structure, usually with the client’s collaboration. (For example, in developing an integrated logistics solution, Toll Holdings maps the whole supply chain to its client – both physical and information flows. PrintDirect conducts a ‘print audit’).

Such efforts assist clients to understand their own true costs in total.

In doing so these enterprises uncover solutions that add value to the client but at the same time provide a stream of profitable business for them. To do so, it is essential that the enterprises concerned understand their own cost structure very well indeed.

These enterprises develop an ongoing relationship with their key clients. Commonly, two key aspects of such relationship management are:

- ⌘ Spending a greater proportion of time on existing clients rather than new clients.
- ⌘ Open two way communications, particularly via KPIs agreed at the start of the relationship, and ‘open book’ costings.

Once the relationship is established, such enterprises often work with their clients to uncover savings through managing the supply relationship more cost-effectively. It is typical that such savings are shared between the supplier and the client, thus providing an incentive for both parties to continue seeking such efficiencies. The volume of the business flowing to the supplier may fall, but often it does not. The *margin* on the business to the supplier is much less likely to fall because of the nature of the relationship. The enterprises were keen to integrate their business processes with those of their clients to the greatest extent possible, and in doing so, creating some mutually rewarding interdependencies.

Such enterprises are less likely to be involved in competitive tenders. They feel it is less likely that they can demonstrate a solution to the mutual benefit of themselves and the client, and more likely to involve them in a tendering cost that results in business at low margins.

The enterprises also emphasise their brand within their chosen markets. They invest resources in raising brand equity and are particular about associating positive attributes with their brands.

While they understand the nature of their core business the enterprises we visited demonstrated high levels of creativity and agility and were not bound to concepts related to core business. For example, three of the enterprises acknowledged their printing capabilities but were eager to explore non-print communications solutions with, and on behalf of, their customers.

Information was seen as vital to the enterprises. They were particular about producing and acting on accurate and meaningful reports in a timely manner. Furthermore, they undertook regular surveys and engaged in disciplined research as a means of understanding their chosen markets better. Management Information Systems were and integral part of their information gathering, analysis, and dissemination efforts.

### **5.1.2 Making effective decisions on investment in equipment**

#### **The focus of our search for leading practices**

‘Financial management’ is a very broad topic, covering a host of aspects such as product costing, management of working capital, and external and internal reporting. The working group considered that to make a significant contribution, it needed to focus on a more narrowly defined area in sufficient depth. Another consideration was to choose an area that was topically important, and complementary to the other three aspects chosen

The essence of this process was defined as:

- €# How leading enterprises determine the appropriate time to invest in additional equipment.
- €# How they determine what types of equipment they need to invest in.
- €# What interactions they engage in with suppliers of equipment.
- €# Within leading enterprises, who is involved in decision-making processes on equipment investment?
- €# The systems that are adopted by leading enterprises to guide their investments in equipment.
- €# The financing decisions associated with the investment decision.

### **A summary of what we found**

Leading enterprises have a clear context that guides their early thinking in decisions on investment in capital equipment:

- €# Like those we encountered when covering the “getting and keeping better business” topic, they tended to have a clear view of the market they were focussed on, the type of customers the best suited, and the nature of their competitive strengths and weaknesses.
- €# This was embodied in a business plan that was routinely updated annually, and a budget that put quantitative targets and accountabilities in clear focus.
- €# The budget often incorporated not only revenue and expense items, but when applicable, a budget for capital expenditure.

The triggers for their capital investment decisions varied, but the most important were:

- €# An opportunity to reduce total cost (Equipment, materials and labour) on a per unit of output basis. This was probably the most common trigger;
- €# To fill a gap in their capability to offer a solution to their key clients. This was more likely for an enterprise with a very well defined niche, and generally they had been watching the evolution of technologies and client needs before making such a decision;
- €# As part of a bid to win a major contract. In such a case the enterprise concerned sought a written commitment from the client to a level of business that would support the investment on its own, before committing to the investment in equipment.
- €# Speculative acquisitions (that is, in the expectation that work would come of the equipment was purchased) were very rare, and generally proved in hindsight to have been unwise.

When an equipment acquisition was being considered, there was a specific process followed which involved the various skills in the enterprise; technical who often initiated the appraisal, sales, finance, and the General Manager or Managing Director. A written evaluation encompassing all of their input was almost always developed and signed by each before approval.

If the investment was above a predetermined value, external (non-executive) decision makers such as a Board of Directors were responsible for the final decision.

Quantitative measures were always used to guide the evaluation. The commonly used were:

- €# Payback period (using projections of revenue and cost, how long it would be before the surpluses earned would pay for the capital investment); this was the most commonly used. Typically the period was expected to be less than 4 years and in some cases less than one year.
- €# Return on incremental assets (again using projections of revenue and cost including depreciation or lease payments, what level of annual return the surplus generated by the investment would give on the additional capital investment). Where used, the minimum was 20% per annum.
- €# Methods that considered the cost of capital or put a time value on money (such as Net Present Value or Internal Rate of Return) were less popular. Our feeling was because of the relatively esoteric nature of these methods.

In any quantitative evaluation, the useful operating life of the equipment was considered very carefully and fully factored in.

The time and cost required to bring the new equipment to full operating capacity were also considered very carefully and factored in.

When choosing between vendors, key factors were:

- €# The quality of the support, especially during the initial period when the equipment was being installed and brought to fully operating capability.
- €# The level of ongoing support and training being offered.
- €# The likelihood that the vendor would still be around in the longer term to provide such support.
- €# When negotiating with suppliers, payment milestones were often established which tied the payment to a specific level of progress with installation and bringing to full capacity.

Really effective enterprises seemed likely to modify their equipment to meet their specific circumstances. And in a similar vein one commented that they placed very high importance on the equipment being flexible enough to suit the smaller Australian market.

Financing the purchase was seen by some as a separate decision from the decision to invest. In other words, the investment decision assumed cash up front – the evaluation needed to pass that hurdle before all alternative methods of finance were considered.

In choosing between methods of financing, the options in order of preference were generally:

- €# Cash
- €# Long term bank loan
- €# Lease (operating or finance lease) or hire purchase.

One enterprise commented that the decision between operating or finance lease was essentially about what level of residual risk the enterprise took versus the vendor. If the risk of technological obsolescence was high, they took an operating lease because the vendor had the risk. Otherwise if leasing they favoured a finance lease because it was usually less expensive.

New equipment was generally favoured over second hand; they felt that the risk usually associated with second hand equipment did not warrant the relatively small level of savings in the current market. However they kept an open mind for specific offerings by vendors.

### **5.1.3 Effective utilisation of production technology**

#### **The focus of our search for leading practices**

The essence of this process was gaining maximum utilisation of the current investment in productive equipment. So aspects such as the following are especially relevant:

- €# Shift patterns;
- €# Minimising make ready times (or in other industry sectors “product changeovers”);
- €# Effective production scheduling
- €# Effective equipment maintenance
- €# Using outside production capacity to cope with peaks
- €# Involvement of staff in achieving maximum utilisation of equipment;
- €# Collecting and reporting performance data in a manner to promote that involvement.

#### **A summary of what we found**

Leading enterprises seem to define utilisation of technology as the amount of saleable product they can produce from a given facility over a specific time period such as a month. This encourages them to take a broadly encompassing view of the factors that drive high levels of utilisation.

They run their machinery for as much of the 168 hour in the week as possible. If this extends to night shift, they tend to schedule longer run, less complicated work then and run with minimum manning levels. (One of the plastics enterprises runs with “lights out” - that is, no staff except on callout in emergencies - but that is not suggested as an option for printers).

They work very hard and persistently to minimise product changeover or make ready times. This is usually by means of a combination of:

- €# Doing whatever is possible to ready for the next order while the current order is still on the machine.
- €# Undertaking engineering modifications to equipment to minimise the difficulty of making the fine adjustments necessary to set the machine for the next order.

They define make ready times as “last good sheet to first good sheet”. This broadest possible definition ensures that all aspects of the changeover are considered in minimising downtime.

They have effective production scheduling. Key factors were:

- €# Holistic view of the total production system – prepress, printing, finishing are scheduled in an integrated way.
- €# Team approach; one commented that having a printer person with prepress scheduling and a bindery person with print scheduling helped reduce downtime.
- €# Use of an effective system; this could be manual such as visual ‘production boards’ or by software such as the scheduling module of PRISM. Either can be effective if other aspects of the approach are right.
- €# Looking at multiple time horizons; for example longer term, possibly months ahead in some cases so salespeople can try to fill ‘holes’ in capacity; at the other extreme very short term within the hour so that production needs and potential problems on a per machine basis can be anticipated and dealt with dynamically.

They have an effective maintenance system to minimise breakdowns. This often involves the machine operators undertaking as much routine maintenance as possible as part of their normal daily duties.

They are VERY STRONG on measuring and reporting of performance:

- €# In some cases the gathering of the data and calculating KPIs is proving laborious for them, even for some of the large enterprises.
- €# In other cases they have invested in data acquisition equipment and software that provides graphical images on terminals by each machine in real time or very near to it.
- €# The sort of KPIs they report include make ready times, waste/spoilage levels as percentage of good or total production, ratio of productive to total time.
- €# Reporting is very visible, on the production floor down to the operator level.
- €# Some reporting is very immediate – at least to the interval of a shift.

Effective reporting and communication of results is an integral part of encouraging proactive involvement by machine operators in achieving high levels of utilisation.

#### **5.1.4 Minimising overs and spoilage**

##### **The focus of our search for leading practices**

The essence of this process was the impact of human resource management on the waste from overs and spoilage. So aspects such as the following are especially relevant:

- €# Providing leadership
- €# Clarifying job roles and expectations
- €# Providing appropriate training and development.
- €# Fostering a positive culture: teamwork relationships between people at different organisational levels
- €# Encouraging people to take a proactive role in waste reduction
- €# Effective communication and reporting

## **A summary of what we found**

When we conducted the visits for this topic, we found that the people factors in particular, permeated both this topic and the topic on effective utilisation of technology. So relevant lessons were learned from both sets of visits.

Leading enterprises do just that – they lead. They provide leadership within their own organisation:

- €# In small enterprises such leadership will begin with the owner or chief executive, and be provided directly to those at the work face.
- €# In large enterprises such leadership will usually come from the chief executive. However because of the size of the enterprise other levels of management will also drive it to those at the workplace.
- €# Such leadership is persistent and continuing. It rarely seems to be effective if it is sporadic or endures for only a few months. And if it has been absent in the past, it seems to take some time to have a noticeable effect.
- €# In the simplest sense leadership is about encouraging desirable behaviour, and begins by providing a personal model. It also includes paying attention to the other relevant aspects noted at the beginning of this section.

One of these aspects is clarifying job roles and expectations. This aspect covers a wide range of issues; some examples:

- €# Clarifying with first line managers that they have a leadership role too.
- €# Clarifying with people in specific jobs, the requirements of that job. For example, Heaneys made the storeman responsible for issuing paper in exactly calculated quantities to each print job, and made sure this was done on nights and weekends as well as during the week. They credit this move with an improvement of 2% in gross margins.
- €# Several enterprises have a Quality System (eg, ISO 9000) or something similar that ensures that procedures are standardised and documented. The benefit is that there is “one right way” and that it is more likely to be followed.

- ⌘ Another has a “Code of conduct”, a small printed card that spells out the type of behaviour that is encouraged and what is not. This is widely disseminated to all employees.
- ⌘ Continuing to reinforce to individuals and groups, the expectations in terms of role, behaviour, and level of performance. This commonly occurs in two situations; whenever there is a specific problem such as a spoilt job, and in regular meetings with groups of operatives at the workplace.

These expectations are supported by training and development activities. Some examples:

- ⌘ Leadership training for supervisors and managers at all levels.
- ⌘ Specific on the job training, or formal external training for operators.
- ⌘ Participation in development activities such as the ‘Quick changeover competition conducted by the South Australian Centre for Business and Innovation. By such activities, teams of operators gain valuable personal development while contributing to enterprise goals.

We have already noted that specific behaviour is encouraged and other is discouraged. More than one enterprise spoke of:

- ⌘ Fostering trust between managers and operators, in large part by avoiding a ‘blame’ situation. The intent was to encourage openness when problems occur.
- ⌘ Notwithstanding the above, personal accountability was encouraged. That is, taking responsibility for the specific requirements of one’s job without having to be continually forced to do so.
- ⌘ The importance of frequent communication between managers and staff to break down hesitancy about open communication.

Teamwork was an aspect frequently mentioned. For example, having a production planning team comprising representatives of different departments (Hannanprint), and having sales people spend time at a printing press to understand problems created by impractical specifications (Heaneys).

People were encouraged to take an active role on waste reduction. Mechanisms include:

Incentives: a number of the enterprises utilise these. Usually they are team not individual incentives, to reinforce the teamwork element just mentioned. Usually they are small monetary incentives relative to total pay of those receiving them, or symbolic incentives such as a company barbecue at lunchtime, a meal entitlement with one’s spouse, or theatre tickets.

A “problem board”, where any operator is encouraged to write up a problem they have encountered, on a white board on the production floor. A stand-up meeting takes place in front of the board. Problems that have been identified are discussed and a member of management takes personal responsibility for following up and reporting back within a specified time.

Effective measurement and reporting was mentioned in the topic on ‘effective utilisation of technology’. Similar comments apply here. In respect of waste and spoilage:

- €# A budget is set at the beginning of the year.
- €# Specific KPIs are identified, separately for overs and spoilage.
- €# Specific targets are set by machine, and in some cases by type and size of job.
- €# Actual performance is regularly reported, in many cases to the individual operator concerned.
- €# Systems and procedures such as PRISM and back costing are used to gather the necessary information for reporting purposes.
- €# The reasons for spoilage are openly discussed, and measures taken to eliminate the causes or reduce their likely future impact.

These mechanisms for measurement and reporting, when actively used, appear to be a powerful tool for managing overs and spoilage. More than one enterprise that used them, reported major reductions and hence cost savings.

## **5.2 Wall chart matrix of leading practices – purpose and structure**

We have created a wall chart matrix of leading practices to assist in the interpretation and use of leading practices.

The matrix consists of a column of leading statements. There are presently 10 statements. Each statement is represented by a broad topic and each topic is supporting by some simple statements.

The matrix also consists of a column of evidence under each of the four subject areas covered during the course of this project.

By referring to the wall chart matrix you will be able to learn about each of the leading statements and how they have been demonstrating by the benchmarking partners in meaningful ways.

The wall chart itself appears as an attachment to this report.

## **6. Recommendations and next steps**

The momentum generated by this project should not be allowed to die down. There is a groundswell of support and enthusiasm that creates a firm foundation for further development of benchmarking as both a fundamental improvement technique for individual enterprises, and a significant boost to the industry as a whole.

There are three major thrusts that together should deliver lasting benefits to the industry and the individual enterprises in it:

1. Ongoing use and development of the Printnet Benchmarking On-line facility;
2. Development, dissemination, and updates of models of leading practice;
3. Persistent, well-targeted efforts by owners and managers of individual enterprises to gain and remain in a competitive position in their chosen market segment – using the two tools just mentioned and Print21.

The detail in each of these is highlighted briefly below.

### **Ongoing use and development of the Printnet Benchmarking On-line facility**

This will provide a continuing reference for comparative performance for individual enterprises. For it to remain relevant the following needs to happen:

- More printing industry enterprises should add their data so that they also have access, and certain very specialised areas of the industry are comprehensively represented.
- Enterprises who already have entered data should fill in any significant gaps in their data, so that they can compare their performance for the *whole* of their business rather than just parts of it.
- The data should be updated annually by all enterprises in the database, so that it remains relevant and emerging trends continue to be detected and hence acted upon by the industry.
- Some form of training or mentoring facility should be available, so that enterprises that want it can ensure they know how to use the on-line facility to best advantage.

### **Development, dissemination, and updates of models of leading practice**

The Printnet Benchmarking On-line facility is providing a view to individual enterprises on *where* they have performance gaps and the extent of those gaps. It is providing relatively limited information on *how* to bridge the identified gaps. That is primarily the role of the

models of leading practice that are the cornerstone of this Process Benchmarking phase of this initiative.

This phase has provided models on four important aspects of running a competitive enterprise:

- Getting and keeping profitable business;
- Financial management (particularly how to make profitable capital investment decisions);
- Effective utilisation of technology; and
- Control and minimisation of wastage.

Of necessity, these have covered some of the total aspects of running a profitable and enduring printing enterprise, and in time even these models will become dated. So the following needs to happen:

- Extension of the suite of models to cover other important aspects.
- The refinement of existing models to suit specialised niches in the industry more closely (for example, effective utilisation of digital technology by book printers).
- Update of the existing models as necessary (for example at intervals of two or three years) to ensure they remain current in the light of improvements to leading practice.
- It may also be worthwhile to make available, workshops or some other form of support to explain more clearly what the leading practice models entail, or to help individual enterprises see how they could adapt these models to suit their own particular circumstances.

### **Persistent, well-targeted efforts by owners and managers of individual enterprises**

This project will leave worthwhile tools for gaining and remaining competitive. By design these tools are available to all enterprises in the printing industries. But the final *essential* thrust is for owners and managers to use these tools to define and implement worthwhile and practical changes to their ways of doing business. Specifically they need to:

- Carefully search for performance gaps (using Printnet Benchmarking On-line).
- Adopt a positive and creative approach to defining the means of addressing the gaps (supported by Printnet Benchmarking On-line, Process Benchmarking models of leading practice, and their own creative thinking).
- Display persistence in leading and managing changes to attitudes and work practices on the part of their workforce (driven by their own personal leadership and management qualities).

History in other industries shows that the people who will make the greatest use of the tools, and make persistent efforts to improve, will be owners or managers of enterprises who are *already* at or near the top of their particular industry segment.

We believe this is primarily because of the attitudes they already possess towards seeking opportunities for improvement and doing what is necessary to put these opportunities in place.

We will be delighted if the take up is more widespread in the case of the printing industries in 2003 and beyond.

## **Appendix: Detailed collated benchmarking visit reports**

## VISIT REPORTS COLLATED (Winning business)

### PROCESS PROFILE

The essence of this process is getting and keeping profitable business. Companies who are able to identify a market and type of customer that suits their own capabilities to offer superior service, and who are able to identify a method of providing better value to such customers, are more likely to enjoy:

- Longer term relationships with their chosen customers
- A greater degree of freedom from competitive pressures that focus on price
- As a result, better margins and sustainable profitability

### STRUCTURED COLLATION OF PROCESS CHARACTERISTICS

**PROCESS CHARACTERISTIC: Defining suitable markets and customer characteristics for value adding relationship.**

#### THEORETICAL BACKGROUND

The industry is changing rapidly. Service is becoming far more important. The driver is no longer manufacturing.

Suitable markets are those that use print as a key part of their physical packaging requirements. Leading businesses are taking responsibility for their clients' communication needs and do not assume that those needs will necessarily require the output of hardcopy in a printed form.

Valuable markets will tend to be those that require communications solutions.

It is important to take a holistic view. Leading businesses look at an industry's total value chain when seeking out opportunities.

They understand who the customers are along the chain. They describe the end users, understand their needs and work backwards to integrate activities up the chain.

Leading suppliers understand the key decision makers and strive to influence them to the extent that they are able.

Value adding relationships will be based on the supplier's ability to develop and implement cost-effective solutions.

Customer relationship management is becoming increasingly important. Valuable clients are those that are focused on market issues rather than production issues. They are valuable because they tend to be less price-sensitive.

Leading businesses often use their brand to effectively reinforce standing relationships and attract interest.

**Organisation**

**Organisation's leading practice**

<p><b>Toll</b></p>	<p>From Toll's perspective the benefits of adopting a value chain approach include:</p> <ul style="list-style-type: none"> <li>## Providing a 'value adding' proposition for its customers</li> <li>## Through that proposition - decreasing the customer's overall supply chain costs <ul style="list-style-type: none"> <li>- Increasing Toll's profitability</li> <li>- Building barriers of entry versus our competitors</li> </ul> </li> <li>## Lowering administration costs for both companies</li> <li>## Less reliance on tenders where it is virtually impossible to create a value adding solution (If Toll gets involved in a tender it will help write the tender documents; if Toll is concerned with the tender process then it will engage in dialogue two levels above the person responsible for the tender)</li> <li>## Normally, better payment terms</li> </ul>
<p><b>PrintDirect</b></p>	<p>PrintDirect understands that it is in the communications business: the solutions business. Organisations with a range of internal print buyers tend to engage the business to develop and implement cost-effective solutions. Ideal clients are IT savvy, have a high need for print, pay well, do not focus heavily on price, are keen to build a relationship and are personable. Most clients come from referral. Customer relationship management is key to the business. PrintDirect has a strong brand image and has invested in promoting the brand. Company representatives maintain a presence on client purchasing committees so that they can influence key decision makers. While the business suffers from some volatility it tends to have stable relationship driven jobs.</p>
<p><b>Colourcraft</b></p>	<p>Colourcraft invests resources to understand in great detail how clients and prospects operate and what their specific needs are. The company then tailors its product and service range to suit. It is enhancing its ability to demonstrate return on investment (ROI) to clients. The company is responding to shifts in targeted communication that is being shaped by privacy laws and specific consumer behaviours. The company is in fact facilitating a different form of selling. The business is into the direct marketing market because it sees avenues and horizons that do not necessarily rely on output of hard copy. The sphere of the business is shifting. It will be responsible for communication. Paper reproduction may only be used as a carrier for products. Colourcraft targets clients often by seeing opportunities in the way they are currently approaching their packaging and distribution needs. Clients approach the business on most occasions. The business periodically revisits what business it is in. It is of the view that it is in value-added communications and not just printing.</p>

## STRUCTURED COLLATION OF PROCESS CHARACTERISTICS

### PROCESS CHARACTERISTIC: Understanding value to the customer in shaping response.

#### THEORETICAL BACKGROUND

Better solutions result from a good understanding of value. The value perceived by customers depends on many factors. Leading businesses understand their customers' costs as well as their own costs. This allows them to deliver valuable outcomes to their customers and to themselves. They help their clients understand the total cost of ownership of the products and services procured.

Leading businesses identify a manageable range of meaningful key performance indicators (KPIs) to guide their activities and they engage in regular performance reviews.

Open relationships that engender honest communication deliver mutually beneficial outcomes for leading companies and their clients.

Relationships underscore value. Perceptions of value are tied to the people involved.

Clear communication plays a big role in supporting perceptions of value.

Printers who perceive that they are offering commodities must use price as a key determinant.

#### Organisation

#### Organisation's leading practice

Toll identifies cost indices (eg fuel costs) as a basis for review before a contract starts.

#### Toll

KPIs tend to be linked to the income statement (profit & loss statement) but they also relate to service quality measures. Quarterly reviews of KPI's and performance are held.

The philosophy of mutual benefit is demonstrated by the statement "one dollar saved is 50 cents for both".

Within Toll, the qualification of a client's profitability is achieved through:

- ## A strong understanding of its own costs in providing all parts of the service offering
- ## The structure of Toll and the autonomous nature of each division
- ## Ensuring there is mutual benefit for both Toll and its customers as supply chain efficiencies are gained
- ## Cost indices being shared and agreed with customers prior to contract commencement so that sudden movements in key costs can be recovered outside formal reviews
- ## Having 'open-book' costings
- ## Establishing key performance measurements and using them to manage the continuous improvement process

#### PrintDirect

The value delivered has a lot to do with taking the hassle in procuring print out of the equation. PrintDirect attempts to make it easy for people to buy from them.

The business wants to make clients look good and sells the benefits of dealing with it.

PrintDirect is able to give information to prospects and clients about the true costs of procurement and, hence, is able to offer a print management solution.

The business needs to be price competitive but it fosters approaches that encourage a holistic view. PrintDirect has learned over time that tenders do not really deliver benefits to the business.

The company often undertakes a print audit for clients and prospects. The audit may uncover a significant lack of understanding by clients and this forms the basis of a relationship. PrintDirect places a charge on the audit service so that it is valued.

The formal quality program that is in place comforts most clients.

People are not encouraged to sell on price. People are remunerated as a team. A system is in place to support this.

<b>Colourcraft</b>	<p>The success of Colourcraft is being underpinned by customers' perceptions of what constitutes a good marketing product. The company ensures that its clients and prospects understand its differentiation in its markets. The business has recognised the importance of running its business overall rather than just its manufacturing operations. This approach will enable the business to deal with higher-level corporate clients with greater confidence. Historically, the company was production driven and had developed a portfolio of equipment and products. In order to deliver valuable outcomes the company has become far more market savvy.</p>
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<p><b>STRUCTURED COLLATION OF PROCESS CHARACTERISTICS</b></p> <p><b>PROCESS CHARACTERISTIC: Gathering information on markets and potential customers, and monitoring performance.</b></p> <p><b>THEORETICAL BACKGROUND</b></p> <p>The value chain of each potential customer must be understood and mapped. Without doing so prospective solutions will be flawed. They could be totally or partially flawed, perhaps by a major degree. The point is that leading businesses engage in structured processes that enable them to understand their customers' real needs. The processes also allow them to guide the creation and implementation of solutions. Mapping encompasses the physical components of a business and also the information components. Physical refers to the storage and movement of physical goods within a business and between businesses. Information refers to the storage and movement of information within a business and between businesses. Leading businesses recognise that information flows are easily overlooked. They recognise that these flows are integral to demonstrating transparency when delivering solutions. They also recognise that information flows are becoming increasingly important to leading companies given the changing printing industries.</p> <p>Planning and communication are important elements of account management.</p> <p>The business structures adopted by leading companies are influenced by the structures adopted by their value chain partners. Leading businesses do not treat all customers equally. Indeed, they tend to adopt a refined approach for their best customers.</p> <p>A form of client surveying is conducted regularly by leading businesses. Key points tend to be covered swiftly and opportunities for discussion and exploration are provided. The surveying supports research efforts of leading companies.</p> <p>Management information systems that provide meaningful and timely information are in use at leading businesses. These systems tend to report on the performance of clients and products against the KPIs defined and targets set.</p> <p>Leading businesses are focused on results and, accordingly, accountability is key so that extraneous factors are limited.</p> <p>Disciplined research is undertaken by leading businesses. Many of them also experiment and test the boundaries of possibility. Certain people devote at least a proportion of their time to legitimate research and development activities.</p>	
<b>Organisation</b>	<b>Organisation's leading practice</b>

<p><b>Toll</b></p>	<p>Toll strives to understand how the value chains fit in with its customers' business strategies. The company recognises that it won't always see eye to eye with its value chain partners. This was the case in the early days of working in the automotive industry. The experience enabled the partners to respect their positions and work toward enhancing their mutual interests. This approach has led to a positive outcome for Toll and its automotive partners.</p> <p>Toll looks for early gains in efficiency to demonstrate potential. It then aims to deliver on the potential while working in conjunction with its partners to demonstrate more potential.</p> <p>If Toll is dealing with an existing customer, it will probably deliver very well on existing products/services. If the company is not performing well on existing products/services it will struggle to go much further in the relationship unless the rules of engagement are changed.</p> <p>The structure of the business is important. Toll operates a series of 'corner stores'. These are individual business units such as Toll Refrigerated that understand their costs and their particular business very well.</p> <p>Toll has developed an approach to 'Account Management' for its top 100 customers. Three organisational levels are being developed within Toll:</p> <ul style="list-style-type: none"> <li>## Lowest level: Typically, a business unit that has a specific product offering.</li> <li>## Middle level: Business development activities.</li> <li>## Top level: Account management that includes the strategic responsibility to review accounts and plan for future development. The key aspect is that an account manager may need to redirect business away from an individual business unit to another in the interests of furthering the relationship with the client overall.</li> </ul> <p>The Account Plan ensures that knowledge about the relationship isn't limited to one or two people. Typically, the plan is a small document. For example, a \$16 million per year account has a two-page document that covers just the essentials.</p>
<p><b>PrintDirect</b></p>	<p>PrintDirect has data that yields information about likely print buying behaviour. Historical performance is used to guide assessments of prospective orders in the pipeline for each current period. A review is performed every month.</p> <p>Surveys are performed regularly. Survey data is sorted and assessed and key people are informed of the findings.</p> <p>People involved in the sales function perform their own research. Sales people engage in a range of networking functions and use these functions to gather information.</p> <p>PrintDirect is driven by its management information system. Its people are connected to the system via e-mail. Sales people extract reports from the system and assess their performances against the targets entered. Results are posted in real time on the website linked to the jobs in question.</p> <p>Team members follow progress in line with KPIs and are alerted of performance in relation to budgets in real time. Development opportunities are highlighted and pursued too.</p> <p>Weekly performance is highlighted in a senior management meeting. The review process undertaken enables the business to monitor perceptions of value.</p>
<p><b>Colourcraft</b></p>	<p>The company spends a lot of time researching on the Internet.</p> <p>Colourcraft experiments a lot and is inquisitive about the unknown.</p> <p>The director is deliberately imparting a sense of researching and experimentation amongst others and, in doing so, is impacting the culture of Colourcraft.</p> <p>Better reporting will assist the business to take firm steps forward and enhance bottom line performance. Reporting will enable the business to get a much better handle on its performance and an understanding of which clients and products are generating favourable returns.</p>



## **STRUCTURED COLLATION OF PROCESS CHARACTERISTICS**

### **PROCESS CHARACTERISTIC: Generating and implementing 'solutions' and getting results from a solutions approach.**

#### **THEORETICAL BACKGROUND**

Leading businesses make sure they understand what their clients really want to achieve. They also make sure their clients understand what they (the clients) want to achieve and what goals they have set for themselves.

Leading businesses produce value propositions rather than costs for its clients. They understand the thrust of clients' marketing efforts and present options to solve problems.

Their marketing and sales teams are more focused on clients and their needs than on production processes.

In line with their views on Relationship Management leading businesses spend a greater proportion of their time on existing clients rather than new clients.

They develop opportunities for greater value recognition and value delivery for mutual benefit.

Leading businesses attempt to capture as much of the headspace of their clients as possible.

As solutions providers they need to own the relationship with the primary customer. Otherwise their understanding of the customer's needs and/or the solutions created is at risk of being significantly compromised.

They make informed recommendations and connect clients with their online and offline offerings.

Increasingly, the needs of major customers demand an integrated value chain solution. This means that a number of different services will be integrated to address particular requirements.

A good solution will mean that a company will be working for the benefit of a number of players in its value chain. Of course, the company will be one of the players that benefit.

Leading businesses strive to understand the rules of engagement in certain industries. For example, they develop an understanding of the role of manufacturers and dealers in the automotive industry.

The relationships between electronic forms of communication and printed forms of communication are many and varied. The Internet is seen as a valuable tool for leading businesses that are part of the Australian Printing Industries.

Print auctions and other initiatives that reinforce commodity thinking are detrimental are dying. Things that enable information exchange and facilitate decision-making are positive because they add value to multiple players simultaneously.

#### **Organisation**

#### **Organisation's leading practice**

<p><b>Toll</b></p>	<p>Toll is focused on integrating its business process with those of its key clients. This integration approach involves:</p> <ul style="list-style-type: none"> <li>## Collaboration: Working with good data for the benefit of multiple parties</li> <li>## Optimisation: Eliminating inefficiencies</li> <li>## Connectivity: Making sure platforms in multiple businesses can speak to each other given that re-manipulation of data to make it accessible and useable is debilitating to relationships</li> <li>## Execution: Doing what you say you will do and measuring it</li> <li>## Speed: Increasing the ability to react</li> <li>## Visibility: Tracking and confirming completion</li> </ul> <p>Toll is keen to attract new clients. The company attracts new clients in two chief ways:</p> <ul style="list-style-type: none"> <li>## Leverage an existing (traditional) client relationship</li> <li>## Take an industry view for larger scale clients (for example, the automotive industry value chain spans spare parts suppliers, car companies, dealerships, and ships with imported cars off the wharf).</li> </ul> <p>Toll uses its management information systems to run contingencies (“what if?” scenarios) in conjunction with its clients. This approach enables the business and its clients to challenge the assumptions that are made.</p> <p>The company strives to deliver existing services in line with agreed standards. The confidence gained by ‘doing what we say we will do’ provides a solid foundation for a ‘true’ partnership.</p> <p>Toll and its clients jointly measure current performance and continually make improvements based upon those measurements. The strength of relationships is impacted by the degree of visibility. Toll creates visibility across the supply chain by interfacing systems and exchanging timely information with its clients.</p> <p>The company is far more interested in solutions than it is in one-off jobs.</p> <p>Client contact initiates the PrintDirect process. This contact may come in many forms.</p> <p>Robust customer relationships and not production transactions drive the agenda. The former leads the latter.</p> <p>The management information system supports the marketing and sales function but it does not compromise the function’s ability to foster and enhance relationships. Indeed, the system alerts PrintDirect’s people to opportunities to engage with clients in meaningful ways. Valuable solutions are underscored by these engagements.</p> <p>Solutions tend to be on-line so that clients do not need to leave their desks. PrintDirect has an interest in centralising clients’ print buying by looking at clients’ internal systems. Clients can submit their own artwork, consult their catalogue or use templates to guide the creation of jobs. The business strives to make things template driven. PrintDirect installs software for clients and PrintDirect’s people show their clients how to use it. They don’t pretend that all buyers need to know everything about print – they leave a certain degree of mystery.</p> <p>The solutions acknowledge economies of scale and scope. Part of the benefits gained flow on to clients.</p> <p>The business is keen to work with good print managers in ways that allow the company to complement their offerings. It is beneficial for the business to work with so-called competitors. These benefits are linked to the company’s ability to solve problems. PrintDirect uses that problem-solving to secure printing orders. The business in this way is acting as a problem solver and a producer.</p>
<p><b>PrintDirect</b></p>	<p>Colourcraft is pushing to understand things that printers generally don’t understand. The business is striving to understand what products it produces and what impact they have when adopted in certain applications.</p> <p>Colourcraft is always striving to be different to at least some degree and, if possible, unique. The business always looks at coming up with solutions for its clients.</p> <p>The business has a strong solutions culture and a culture that supports clients’ needs. The business uses technology to impress clients and uses this to develop a relationship.</p> <p>The business is not in favour of taking orders and competing on price. The business actively generates ideas and presents them</p>
<p><b>Colourcraft</b></p>	<p>Colourcraft is pushing to understand things that printers generally don’t understand. The business is striving to understand what products it produces and what impact they have when adopted in certain applications.</p> <p>Colourcraft is always striving to be different to at least some degree and, if possible, unique. The business always looks at coming up with solutions for its clients.</p> <p>The business has a strong solutions culture and a culture that supports clients’ needs. The business uses technology to impress clients and uses this to develop a relationship.</p> <p>The business is not in favour of taking orders and competing on price. The business actively generates ideas and presents them</p>

to clients for uptake. It is far more successful when it responds to its clients' specific needs rather than when it develops offerings that may not be of interest. The company spends a lot of time with clients in a creative capacity to understand their specific communications needs and how the message fits in with competing communications pieces so that effective solutions can be created. The business will rely less and less on knocking on doors selling print in a transactional manner to an approach whereby the company is invited to offer value-adding services in a professional manner that differentiates the business. Colourcraft strives to influence each client's bottom line. After understanding the need it then understands how the products fill the need and generate a real bottom-line result. The business manufactures its own pieces of equipment to satisfy the needs of particular jobs. It experiments and tests the boundaries of what is physically possible. Colourcraft is comfortable in exploring industries beyond the printing industries to learn about key issues and adopting/adapting them. The nature of variable data is shifting; it now accommodates type and images in sophisticated ways. The business is often called in to demonstrate its IT expertise. The Colourcraft has moved from printing applications to mailing applications and, now, to marketing applications. The company writes code to drive initiatives. It is taking personalisation and making it truly personal in line with rules developed in conjunction with the client. The business has strived to develop a modular system that enables individual components to integrate. Colourcraft insists on understanding contingencies in minute detail because with personalisation in place the benefits and costs are magnified. Timing has become far more critical with the product mix manufactured now. Colourcraft has gained more respect and has been granted more input now given that it is far more highly differentiated from its competitors. The business is approached often when its competitors have found the task being set too hard to deal with. The physical tools are largely in place. Colourcraft is paying particular attention to becoming more systematic in its approach to markets and clients and prospects. It supports its decision-making through facts as opposed to gut feel.

**STRUCTURED COLLATION OF PROCESS CHARACTERISTICS**

**PROCESS CHARACTERISTIC: Decision making for marketing and sales functions.**

**THEORETICAL BACKGROUND**

Given that the marketing and sales function facilitates an exchange between a business and its clients leading businesses are keen to empower their marketing and sales people to make decisions within well-understood frameworks. Leading businesses make decisions in structured ways.

**Organisation** | **Organisation's leading practice**

<b>Toll</b>	Generally controlled within the business divisions.
<b>PrintDirect</b>	<p>Many projects are run in line with set contractual rates agreed and communicated within a matrix. If a job goes beyond the specifications of a matrix the senior people within the sales department determine the selling price. The price is supported by quotations.</p> <p>The weekly meetings engaged in by PrintDirect can seem superfluous given the level of interaction that occurs on a daily basis. Positive reinforcement is used to encourage positive behaviour. People are rewarded in line with the results they achieve.</p>
<b>Colourcraft</b>	<p>The business has migrated beyond an <i>ad hoc</i> approach, and a passion for technical solutions. Colourcraft is formalising its approach in the way that it developed its strategic business plan. The key mission is to place <i>ad hoc</i> approaches into a streamlined system.</p> <p>The business is encouraging a collective team effort. The future of the business will depend on accountability.</p> <p>Colourcraft recognises that it's hard to take everyone on a journey with the company's directors. The directors frequently facilitate change for their people who fear change.</p> <p>Colourcraft is now interested in developing collaborative expertise within the business as opposed to engaging generalists.</p> <p>The business has key people that have adopted the directors' innovative thought processes. For example, Colourcraft has developed the 3:48 system – named for the time in the morning one of Colourcraft's people woke up out of bed with a solution to a client's problem!</p>

# VISIT REPORTS COLLATED (Effective decisions on new capital investment)

## PROCESS PROFILE

The essence of this process was defined as:

- €# How leading enterprises determine the appropriate time to invest in additional equipment.
- €# How they determine what types of equipment they need to invest in.
- €# What interactions they engage in with suppliers of equipment.
- €# Within leading enterprises, who is involved in decision-making processes on equipment investment?
- €# The systems that are adopted by leading enterprises to guide their investments in equipment.
- The financing decisions associated with the investment decision.

## STRUCTURED COLLATION OF PROCESS CHARACTERISTICS

**PROCESS CHARACTERISTIC: 1. The context and triggers of capital equipment acquisition.**

### THEORETICAL BACKGROUND

#### CONTEXT

Effective decisions on capital expenditure usually don't take place in a vacuum.

Well managed companies have:

- A clear view of the market segments in which they are able to compete without being disadvantaged
- The type of customers they serve best in those segments
- How they provide value to those customers that is better than those customers can get elsewhere.

In other words, they have defined their *competitive position* very clearly.

Having a clear view of their competitive position, they develop an annual business plan and budget.

The business plan contains at the minimum, realistic projections of revenue from various sources, the costs that need to be incurred to achieve them, and hence the profit that the business expects to earn in the year.

If it is not possible to achieve these revenue projections with existing equipment or facilities, the planning that has been done will make this clear. It is here that a *capital expenditure budget* fits in; it is complementary to the revenue and expense budget.

The critical point of all this is; capital expenditure decisions that take place in such a context are usually better, more effective and hence more profitable decisions than those that take place without it.

## SPECIFIC TRIGGERS

Individual decisions on pieces of capital equipment have a specific 'trigger.' Triggers come in various forms:

- An opportunity to produce existing products at lower cost by purchasing a newer, more efficient machine to reduce labour, maintenance, or spoilage. Such opportunities are usually the easiest to quantify in terms of costs, benefits, and hence return on investment.
- A supplier may need additional capacity in existing product offerings. In such cases, unless a customer will commit to a minimum level of requirement, some spare capacity will be created and hence the potential for reduced profitability.
- For a very specialised supplier to a niche market, an evolution in the needs of their customers may cause the supplier to invest in a different type of capability. Note that this is often very high risk investment. If the needs are new it is hard to know them exactly and it is therefore more likely that equipment a supplier commits to will prove to be unsuitable.

To keep the financial risk within acceptable levels, when the second or third of these triggers apply, companies often ask for a commitment to a given level of business from major customers before investing in new capacity.

**Organisation** | **Organisation's leading practice**

<p><b>Viscount</b></p>	<p>They have an annual capital budget drawn up as part of the annual budget process. About 80% of the projects are identifiable as part of that. Other projects may come up during the year but then the manager is asked to drop one of his other budget items to keep within the capital budget.</p> <p>Their main reasons for investing in new equipment:</p> <ol style="list-style-type: none"> <li>1. Increased capacity because can't meet need in existing products. Tend to be conservative rather than 'push' the market.</li> <li>2. Replacement of aging equipment.</li> <li>3. Safety issues/legislative.</li> <li>4. New market, eg, plastic pallets substituting for wooden.</li> <li>5. Cost downs.</li> </ol> <p>5 normally gives terrific paybacks. 4 could be for 'sustainable' competitive advantage, eg, shorter run capability from digital printing technology. With 4 try to get the customer to commit as much as possible, eg letter of intent or partially fund the tooling, possibility in return for a period of exclusivity in their own market.</p> <p>NOTE: They try to minimise the risk always but occasionally have made speculative investments in capital equipment. Ins such cases it has not turned out as well. Entrepreneurial competitors have done so: some have been successful for a number of years but seem to be under pressure or have folded. Often in markets such as Auto where they have marginally costed and offered cost-downs, that is, programmed reductions in price over the term of a contract in anticipation of cost savings.</p>
<p><b>Company A</b></p>	<p>They believe there is a 'growth capital' and a 'maintenance capital' approach.</p> <ul style="list-style-type: none"> <li>- On the one hand they feel they must anticipate the needs of its clients. To this end it is developing alliance partnerships with firms that have a track record in performing in technologies that are in use in their own markets.</li> <li>- The business also pays a lot of attention to maintaining ageing equipment rather than investing to replace the technology.</li> </ul> <p>Strategy is the prime driver of their acquisition decisions. To them, capital investments make little sense in the absence of strategy. They keep in touch with market developments, but do not speculate on markets being available.</p> <p>Sometimes acquisitions of equipment serve to replace the offerings of suppliers to the business.</p> <p>At Company A capacity utilisation is important. Hence they focus on gaining returns on investment from existing equipment before looking acquisitions. They will increase shifts before making additional capacity. Also, Company A prides itself on doing intelligent things with its equipment and encouraging its teams to innovate processes rather than relying on capital acquisitions to solve its challenges.</p>
<p><b>Company B</b></p>	<p>All investments must fall in line with the strategy of the business. Each business unit has its own business plan and budget that are tied to a strategy.</p> <p>Pricing pressures are intense. Overcapacity is high. Labour costs are continually rising while productivity is also rising. Hence a major reason for investment in new equipment is to reduce the unit cost of output through reduced per unit labour costs.</p>

	<p>Wear and tear of equipment is also a driver. The business undertakes controlled disposal of equipment. Surplus equipment is scrapped or placed offshore.</p> <p>They keep watching the developments in technology and markets. Sometimes there is a quantum shift that causes them to invest for this reason. But they are at the conservative end of the risk spectrum, and are wary of vendors and other printers with a higher risk profile. They commented that “ A seemingly attractive market often attracts too many players, which in turn makes it unattractive!”</p>
<p><b>Craftsman</b></p>	<p>Capacity: They believe that adding capacity will not solve problems but add to them; that capacity needs to be managed in line with revenue so that there is no excess. Any limits in capacity are managed by sending the work to other in-house or external facilities.</p> <p>One trigger includes 'capability': This refers to the ability to value add to clients. Rather than trying to print more sheets, adding value to the sheets that go through. They avoid trying to be a one-stop-shop. They have tried to find out about the true needs and wants of clients. For example, CTP investments have been driven by markets. The next wave of investment is likely to be soft proofing that is web enabled. This will require investment in big pipes and servers.</p> <p>Another trigger is cost reduction: The business traditionally has employed too many people so investment decisions have been influenced by the desire to automate and remove the HR impost. The old technology requires more people to process the same amount of work. The recent investments have enabled the business to make-ready a lot quicker and do so with far less people.</p>

***PROCESS CHARACTERISTIC: 2. The process that guides the decision on capital equipment acquisition.***

## **THEORETICAL BACKGROUND**

New capital investment is normally a major, long-term commitment no matter how the equipment is financed. For this reason it is prudent to draw up a considered business case, to evaluate whether the proposed investment is worthwhile and try to ensure it will not prove be a long-term handicap for the company.

To develop a well considered business case requires consideration of markets and sales, production costs, whether the technical capability of the equipment is suitable and what it is claimed by the supplier to be, and whether all of the above meet financial hurdles to give a worthwhile return on investment.

For these reasons most well managed companies have a structured approach that involves people with these different specialist skills. Usually the head of the business or the Board of Directors make the final decision, but the supporting decisions are a made by those with the appropriate skills. In total, the capital investment evaluation process is a team effort and commitment.

**Organisation** | **Organisation's leading practice**

<p><b>Viscount</b></p>	<p>With plastic moulding equipment, the process tends to be driven by the technical people.</p> <p>A business case is prepared that goes to management of the unit. The accounting/finance people look over it. It then goes to the CEO who gives an indication of whether he is in favour of proceeding. If so, the proposal is then 'polished'.</p>
<p><b>Company A</b></p>	<p>Operations &amp; national sales managers tend to be the originators. Various members of the team (Production, Sales, Marketing etc.) are invited to provide input into each request where relevant. All four parties must sign for the request to go forward. Assumptions need to be very well <u>qualified</u>. The business assigns one person to "own" the acquisition and see it through to completion. Company A does not rely on external parties for the decision-making process.</p> <p>Being in a very specialised market, Company A secures contracts with key clients before major capital equipment acquisitions are considered. One contract tends to support one capital expenditure. Contracts are typically 2 years with an option for a further year or in terms of volume. Company A looks at the base level for an investment tied to the contract and the potential upside beyond the contract. They look for incremental work to achieve better financial returns. A business case is presented with the contract for review and ratification by the parent company. The parent company approves the acquisition if it is confident the contract is in place.</p>
<p><b>Company B</b></p>	<p>The company adopts disciplines and this is reflected in the process the use.</p> <p>Applications to acquire come from the business unit. The business unit puts the plan together and pays particular attention to prospective achievements, risks and market factors. The technical/production people tend to come up with ideas that are cost driven. The outlines go to the finance people after the CEO decides it is worth pursuing.</p> <p>Sometimes, ideas come from sales/marketing people when opportunities are perceived. They tend to confer with technical/production people first.</p> <p>Finance people can highlight prospective problems and get input from technical/operational people.</p> <p>Prospective equipment acquisitions are put to the CEO for consideration. Should they meet with his approval they are forwarded to the board - if they cost more than \$250,000.</p> <p>All expenditures must be justified with clear rationale. The investment decision assumes cash is used to fund the acquisition. The investment decision precedes the financing decision. The investment decision does not take depreciation/amortisation into account, other than in determining economic life and residual value. This is a matter for the financing decision.</p>

## Craftsman

Bluestar is a privately owned company with a firm board. Rules govern what the management team can and cannot do. Approval limits exist within the group. The general manager has a limit. The CEO has a limit. The bigger the proposed investment the more work is required.

A business case is put together to guide investments. The executive team and the board consider the case.

A business analyst who is a qualified accountant is involved because of his ability to work with numbers.

The estimating manager is involved because of his operational focus.

The board receives a 2-page summary.

The management team considers recommendations and priorities.

The document has background that provides benchmarks across the group (facilitated by MIS) to do with operational parameters like press performance, crewing, plate volumes, and energy usage to assist in evaluating assumptions made in the business case.

The document also builds up facts from sales and marketing trends.

The sales and marketing angle needs to be established. The brand angle is looked at in terms of the impact of the investment on the brand. The investment must support the brand – doing it right, being responsible, progressive.

All investments approved must satisfy financial parameters. There are no hard and fast rules governing the make up of the business case. It depends on the nature of the investment. Different chargeable rates and colour models were used. (Is this last bit about sensitivity analysis or is it just a statement that there is no hard and fast model?).

Heidelberg is involved in the process; they gather data out of Prism and break it down into its parts to build a model that explores all options.

**PROCESS CHARACTERISTIC: 3. Quantitative means of evaluation of the investment decision.**

## THEORETICAL BACKGROUND

Various methods are used for quantitative evaluation of capital investment proposals.

### Payback:

One of the simplest is 'Payback period', which is the time elapsed before the additional profit expected from the capital investment would equal the value of the investment. The shorter the payback period, the better the investment is considered to be.

The strength of the payback period approach lies in its simplicity, but it is not a good method for choosing between two or more possible investments with similar payback periods but with widely differing investment periods, or between two different investments of different size.

### Discounted Cash Flows:

Another, more sophisticated set of methods of quantitative evaluation—generally called a Discounted Cash Flow or DCF - is based on the concept of money having a time value. That is, a dollar today is worth more than a dollar at some point in the future. A percentage 'discount rate' is used to put this concept into action when comparing revenue streams and costs incurred over the expected life of the equipment being considered. So for example if the discount rate is 10%, a dollar received in one year is worth just 90 cents in present day terms, or 81 cents if received two years hence. The most common of these methods are:

- 'Internal Rate of Return' or IRR: This is the discount rate at which future profits exactly equal present day capital outlays. The higher the internal rate of return the better, and often a minimum IRR (the "hurdle rate") is required for the capital investment to go ahead.
- 'Net Present value' or NPV: Using this method a particular discount rate is chosen, and the capital investment is subtracted from the present day value of all expected revenue streams and costs. The higher the NPV the better, and often the NPV is required to be above a minimum multiple of the value of the proposed capital investment before it will succeed.

DCF approaches deal with most of the shortcomings of the payback approach, but they are complex and not easy to understand to all but an expert.

### Future P&L and Balance Sheet modelling:

A third approach is to create a financial model (Excel spreadsheet or similar) of the revenues, costs and assets values of the company over the life of the investment to assess its impact on the company's profits, balance sheet, and return on assets. This approach is time consuming but the presentation is in terms that are likely to be more meaningful to a CEO, Directors or group of shareholders than the more esoteric DCFs.

### Sensitivity analysis:

All the approaches mentioned have one thing in common; they rely on assumptions regarding future revenues and costs. Because of the inherent uncertainty and hence risk involved in these assumptions, different assumptions are input to whatever model is used and their impact assessed. By this means assumptions that have the greatest impact on the eventual success of the proposed capital investment are highlighted and hence able to be considered more carefully but senior management or owners of the company.

Organisation	Organisation's leading practice
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<b>Viscount</b>	<p>The two preferred measures are ROA (hurdle 20% on increased base), payback (hurdle was 4, now 3 years). When owned by Pacifica used IRR (hurdle 15%).</p> <p>They do sensitivity analysis on volume and price (less 10%, less 20%). If they show the return drops substantially on doing so, would normally not go ahead.</p> <p>Sometimes the entrepreneurial spirit comes in at the end of the process, contradicting the qualitative rigour. When this has happened the tendency has been for the investment to fail.</p>
<b>Company A</b>	<p>Everything over \$20,000 will follow the full process and be put to the parent company for approval.</p> <p>The budget is clearly communicated up front.</p> <p>Costs and benefits are modelled and assessed. Depreciation is over 10 years. Incremental profit as a ratio to cost without discounted cash flow.</p> <p>Simple ratios are calculated on an annual basis. Also the payback period; the hurdle here is very short.</p>
<b>Company B</b>	<p>Payback periods are looked at closely.</p> <p>Also cash flows from Day One.</p> <p>Discounted Cash Flows, Net Present Values and Internal Rates of Return (Payback Period) are considered.</p> <p>IRR is judged relative to the cost of capital and must be significantly greater. Changing conditions will determine the gap between IRR and the cost of capital.</p> <p>Capital expenditure calculations don't consider market uptake too closely because it is speculative unless it is contracted or underwritten. The focus is on cost savings. The team tries to take uncertainty out of the process.</p> <p>The costs associated with installation and commissioning must be considered. It is best to secure a turnkey deal where the company doesn't pay beyond deposits until the equipment is performing in line with key parameters.</p> <p>People tend to underestimate the time required to get up to speed because of the learning curve involved. Thus, capital expenditure calculations must not be based simply on Day One.</p> <p>Each acquisition must be measured properly so that performance can be measured.</p> <p>The prospective negative impacts of an acquisition on other parts of the business are taken into account.</p>
<b>Craftsman</b>	<p>"Ego and a love for printing technology typically drive investment decisions. Historically, its been made too easy by vendors and banks."</p> <p>All investments approved must satisfy financial parameters. There are no hard and fast rules governing the make up of the business case. It depends on the nature of the investment.</p>

	<p>There is a fixed model that incorporates things like IRR with hurdle rates, DCF, but not a fixed rule in terms of a make-or-buy number!</p> <p>The competitive – rather than the useful - life of equipment is a key concern! Currently 10 years is the maximum competitive life of equipment but this is contracting.</p> <p>The business follows a set of guidelines with respect to depreciation and amortisation and cases argued about the treatment – Currently 15 years bindery, 10 years presses, 5 years prepresses, 1, 2, 3 years IT.</p> <p>Cash flow is important. When do we want to pay for it? Do we pay cash for it?</p> <p>Do we want to own the piece of equipment (eg computer equipment and vehicles are not core to the business)? What are the tax implications of the investment given the tax regime the business operates in? What risk is involved?</p>
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<p><b>PROCESS CHARACTERISTIC: 5. Key factors in choosing <i>alternative equipment vendors</i>.</b></p>	
<p><b>THEORETICAL BACKGROUND</b></p> <p>In some cases there is a wide choice of vendors, at other times not. The key factors to consider are the following:</p> <p>The technical complexity of the equipment – will it operate trouble free, and will the company's staff be able to maintain it without difficulty?</p> <p>The level of support that is available from the vendor or others, especially during the installation and ramp up to full productive capability, but also ongoing support for the life of the equipment.</p> <p>The cost; not just the purchase price, but also the expected cost per sheet over the life of the equipment. Factors driving this aspect include maintenance cost, equipment flexibility, expected level of utilisation, and operating life in years before technical obsolescence sets in.</p>	
<p><b>Organisation</b></p>	<p><b>Organisation's leading practice</b></p>

<b>Viscount</b>	<p>No supplier has a monopoly, except in some niches where no choice. Try to keep it narrow between 'good' suppliers.</p> <p>Service and price are the key considerations. May vary, eg exchange rates have recently favoured Europe over USA.</p> <p>With 'core' business tend to buy 'the best'.</p> <ul style="list-style-type: none"> <li>- the best possible equipment if high volume critical quality difficult product,</li> <li>- cheaper equipment if a low margin, low tech product.</li> </ul> <p>Have not used their buying power well in past, eg by consolidating orders.</p>
<b>Company A</b>	<p>The company adopts a "fitness for purpose" approach to its capital investment. It sources very specialised equipment and ensures that the specifications of the equipment suit the Australian market in terms of flexibility and typically low volumes. Suppliers tend to be very reactive and are restricted in the offers they make. Suppliers are very specialised given the nature of Company A's business. Probably for these reasons, the company has a fairly complex evaluation process.</p> <p>The technical complexities of the equipment are understood by a person within the company to give it the most appropriate context of each prospective acquisition. Technical team make an informed assessment across a range of offerings. Each offering is assessed against a number of key criteria.</p> <p>Company A talks to other customers of prospective suppliers to make informed decisions to assess realistic specifications, support, price, scope of offerings/skill sets, ability to deliver, professionalism etc.</p> <p>Extensive tests are performed on the equipment.</p> <p>Service, support, and training are included as key criteria.</p> <p>Agreements need to be articulated, negotiation, documented, and executed well! In house expertise is important.</p> <p>Company A has established key milestones to guide interactions. Payments to suppliers are staggered in line with these milestones.</p> <p>Company A will persevere in working with suppliers to get a piece of equipment working as expected.</p>
<b>Company B</b>	<p>Key issues in assessing alternative vendors are :</p> <ul style="list-style-type: none"> <li>- Original cost, residual value, and cost of maintenance and consumables.</li> <li>- Performance, economic life, residual value, local support, supplier relationship and stability.</li> </ul>
<b>Craftsman</b>	<p>The options are limited. The vendors influence the kind of equipment purchased, which influences the kind and number of people the business is able to attract.</p> <p>Continuity of equipment and the ability of people to multi-task influence the decision.</p> <p>We look at the level of support on the ground and the extent to which the vendors have good people that are accessible.</p> <p>Warranties are sought for major investments.</p> <p>Heidelberg is involved in the process to gather data out of Prism and breaking it down into its parts to build a model that explores all options. Heidelberg was able to demonstrate that a 10-colour perfecting press is the answer rather than the original thought process.</p> <p>The 10-colour press is a used press! It was bought through Heidelberg and the business has access to the Heidelberg resources.</p> <p>Komori's were previously bought for the wrong reasons – to teach Heidelberg a lesson!</p>

**PROCESS CHARACTERISTIC: 6. Preferred means of financing the equipment acquisition.**

**THEORETICAL BACKGROUND**

The most common methods of funding capital equipment purchases are:

- Cash, if sufficient exists in the company. This is often the cheapest form of money.
- A loan, for example from a bank. Depending on the company it may be the next cheapest, but the bank may require security to be lodged which could include personal guarantees of Directors or shareholders.
- A finance lease or hire purchase. Generally more expensive money than a bank loan, but it may be easier to gain approval with less security.
- An operating lease, which is more than purely a financing method. IN this case the lease company generally takes on more of the ownership risk, including for the equipment at the end of the lease period.

There is not one preferred method. The financing decision is based on the circumstance of the individual company: its financial strength, and the views of the directors regarding alternative uses of available funds.

**Organisation | Organisation's leading practice**

<b>Viscount</b>	<p>They buy rather than lease – they have ‘run the numbers’ on cost of money and have come up with that answer. It may change, they will keep under review.</p> <p>Trying to get the total annual capital budget under the total annual depreciation figure. This is due to their view of over capacity in the market and the degree of competitiveness.</p>
<b>Company A</b>	<p>Group preference is to engage in finance leases.</p> <p>They look for all alternatives and commit to the best deal.</p> <p>Term is four years and residual is in line with tax guidelines.</p>
<b>Company B</b>	<p>The type of equipment, the company’s circumstances, and the environment – such as interest rates - influence the financing decision.</p> <p>The funding decision influences the overall investment decision given that competing proposals are tendered for consideration.</p> <p>Once the financial justification is performed they consider whether internal cash reserves can support it. If not the business will look at acquiring debt or an operating lease.</p> <p>Residual values influence calculations.</p> <p>The choice between a finance lease or debt (on balance sheet) and an operating lease (off balance sheet) is determined by the residual risk involved.</p> <p>They commented that the party that takes on the residual risk will charge a premium to do so. Operating leases tend to be expensive but can be used to take up residual risk in cases of equipment that is subject to high obsolescence, eg computer equipment.</p> <p>Sometimes manufacturers will help to guarantee the residual value of significant purchases.</p> <p>The impact on financials will be calculated and presented to the board so that it can see the impact on the business.</p>
<b>Craftsman</b>	<p>The business looks at the cash position of the business, makes cash position projections, and this determines the financial arrangement.</p> <p>A core asset like a press can be done under operating lease.</p> <p>The terms and conditions entered into with vendors are fluid. The vendors are keen to enter into arrangements with printers to keep their competitors out of markets.</p>

**PROCESS CHARACTERISTIC: 7. Post investment review**

## THEORETICAL BACKGROUND

A 'Post Investment Review' normally takes place a considerable time after the capital investment has been made.

It compares the business case that was made to support the investment, with what has actually occurred since the investment made. Specifically whether the investment lived up to expectations and if not, for what aspects and why?

The purpose of a post investment review is to learn lessons for use in future capital investment decisions, not to blame somebody for any mistakes in hindsight.

<b>Organisation</b>	<b>Organisation's leading practice</b>
<b>Viscount</b>	They feel they are "a bit loose" in post investment audit. The process came in a few years ago and have only done a few. Had to present one to the board in Pacifica. Market and competition issues (a new competitor) arose which affected the sell price (down 30%) of the product and hadn't been envisaged. The original investment sounded great but the post investment said it was marginal. Would they have done it if they knew? Probably not. Possibly a more 'entrepreneurial' competitor would still have done so.
<b>Company A</b>	A review process is in place but has not been tested given that substantial investments have not been made recently . Parent company has just instituted a quarterly review.
<b>Company B</b>	Post acquisition reviews are performed 12 months after. This facilitates the learning process. Sometimes it is very hard to measure the impacts of an acquisition especially when it is concerned with market issues as opposed to cost issues.
<b>Craftsman</b>	A post audit is conducted. The performance is monitored closely and the investment reviewed. The business has its own well-defined terms and conditions in place that it makes reference to in judging the performance of the investment.  The print manager, the operations manager, the estimating manager and the analyst come together to construct a summary of the performance of pieces of equipment. In effect, the business looks at labour cost, make-ready times, run times, upstream effects, downstream effects etc. The review happens twice a year initially and then rarely afterward. Lessons learned from within the group are communicated broadly. The board pack includes financial data, commentary and actions and is distributed.

## **COLLATED VISIT REPORTS (Effective utilisation of technology)**

### **PROCESS PROFILE**

The essence of this process is gaining maximum utilisation of the current investment in productive equipment. So aspects such as:

- Shift patterns;
  - Minimising make ready times (or the analogy in other industry sectors);
  - Involvement of staff in achieving maximum utilisation of equipment;
  - Collecting and reporting performance data in a manner to promote that involvement;
  - Minimising spoilage and other forms of waste;
- are all especially relevant.

### **STRUCTURED COLLATION OF PROCESS CHARACTERISTICS**

***PROCESS CHARACTERISTIC 1: Key equipment factors in maximising productivity through configuration of production technology***

## **THEORETICAL BACKGROUND**

How the production equipment is configured plays a big part in the utilisation finally achieved. Factors here in cluded:

Purchasing policy:

- Many companies try to standardise their equipment to minimise the effort required in developing and maintaining the knowledge required to maintain it effectively and fix it quickly when it breaks down.
- Flexibility of equipment is also important; in a country with a small market like Australia, this can be an important factor.

Production layout:

- Minimising the handling of materials from one work station to another can play a big part in reducing downtime hence maximising output per period. Some companies have set up mechanised, even automated transfer of work in progress from one workstation to the next. This frees production staff to focus on more valuable activities than manual handling.
- Setting up the physical facility so that materials and other requirements for production can be made ready while the previous job is in progress. This is one major factor that drove the Japanese manufacturing revolution in the 1960s and '70s.

Quick changeover technology:

- Attention to detail, and purchase of technology, to allow the shortest possible interval between 'last good part' (on the previous job) and the 'first good part' (on the succeeding job).
- This is the other major factor that drove the Japanese manufacturing revolution in the 1960s and '70s. It allows for smaller jobs to be produced economically and for faster response to customer requirements.

Effective maintenance:

- Effective maintenance of equipment allows the 'uptime' to be maximised at minimum cost per unit of good output. Well managed companies are very good at this aspect.
- Considerable attention will be given to scheduled maintenance outside normal productive times, to minimise the level of disruptive breakdowns. For well managed companies this often includes having operative staff in carrying out some of the scheduled maintenance during the time a job is running and they would otherwise be unoccupied.

**Organisation**

**Organisation's leading practice**

<p><b>Pongrass</b></p>	<p><b>Equipment acquisition / upgrading:</b> To the greatest extent possible the equipment is standardised to facilitate flexibility.</p> <p>Automation like pile-turners, shrink-wrappers, and carton-sealers are used to minimise materials handling.</p> <p><b>Maintenance of equipment:</b> The maintenance contract with the key vendor makes a difference. The vendor undertakes a monthly audit and responds to the log made by operators. This is preventative maintenance and overcomes major breakdowns. The Preventative Maintenance Agreement means that maintenance is planned and the expense is budgeted.</p> <p><b>Particular challenges remaining:</b> The business has recognised that it can enhance the performance across parts of its operations by involving people in decision making processes and assisting them to take more ownership. The business is using Heidelberg's imposition software and is working with the company to refine the system in order to overcome the delays associated with multiple impositions. Pongrass is exploring the means by which colour management processes can be standardised. The business is aiming to achieve colour fidelity in the make-ready stage by accommodating all the variables involved – stock, equipment, ink, client perceptions etc.</p>
<p><b>Company C</b></p>	<p><b>Equipment acquisition / upgrading:</b> The business is regularly reviewing the suitability of its equipment and making investments in the interests of enhancing productivity. Process innovations could include modifications to capital equipment. Having state of the art equipment with quick turnaround cycles gives the company an ability to attract business.</p> <p>The business looks carefully at product mix and acquire and configure the equipment accordingly. The business attempts to forecast market trends and respond accordingly. Vendors are involved in the process.</p> <p><b>Materials:</b> Reducing paper waste is a big challenge for the business given the expense associated with it.</p> <p>Having machines idle is the biggest concern for the business. Downtime is minimised through technological advancement and labour practices (overlap of shifts to create buddy handover). Shifts are managed in line with production demands and casuals allow the business to respond swiftly to short-term trends.</p> <p>Team leaders are duty focused rather than machine focused. In other words, these people are focusing on functions and not bound to set pieces of equipment. They are always active. At a minimum people tweak machines on the run to improve productivity.</p> <p><b>Maintenance of equipment:</b> An internal team of maintenance crew maintain the capital equipment in line with well-defined KPIs. "Total Productive Maintenance" has been implemented with the Production Crew so that key upkeeping tasks are accomplished on an ongoing basis.</p>

	<p>Engineers keep equipment performing They are deployed in specific areas.</p>
<p><b>Philmac</b></p>	<p>Minimising machine downtime is the top priority because they are short of capacity. The means of achieving minimum downtime include:</p> <ul style="list-style-type: none"> <li>- Good production planning so that product changeovers (set-ups), materials etc are not the cause of delays because essential items are missing;</li> <li>- Standardisation wherever possible of tools and dies so that the tasks involved in changeovers are as simple hance quick as possible;</li> <li>- Twist and lock fastening of plates, does to machines rather than screw/bolt with spanner for same reason.</li> </ul> <p>The product changeover is defined as 'last good piece (sheet) to first good piece". This is a tough definition but it ensures all tasks that are not actually producing good output are under intense scrutiny.</p> <p>Minimisation of reject rates (spoilage) is also a priority. They find that if lots of overtime is worked the reject rates go up. Also that if the reject rates are high, complacency regarding rejects seems to creep in.</p> <p>They have configured their factory so that materials handling is minimised (reduction in no-productive materials handling tasks). Part of this configuration is fixed roller conveyors with moveable sections to allow access across walkways, and for maintenance.</p> <p>They also had organised ready access to other manufacturing producers who were able to pick up any over production issues they were faced with. This provided them greater flexibility in choosing the time to invest in additional machines, while helping to maintain a higher level of utilisation than would otherwise be the case.</p> <p>Another highlight was a very well organised and tidy workplace which helped to ensure problem were immediately obvious and helped maintain pressure on reducing time lost.</p>

***PROCESS CHARACTERISTIC 2: The extent to which the business assembles and stages inputs prior to commencing production***

## **THEORETICAL BACKGROUND**

Effective production planning and control is critical to achieving a high level of utilisation. This can begin months before a job is actually being produced, when some materials may need to be ordered or capacity is being matched to demand. It extends down to the very short time interval leading up to the job commencing production, when plates, materials, and work instructions need to be available.

Key factors include:

Investment in appropriate technology:

Some companies invest in software that allows visual display of current job status and next job requirements in real time to each machine. Others rely on traditional ‘production boards’ where wall charts are used to display production commitments and expected schedules for each machine.

Team work:

Effective production planning and control requires input from  
Sales staff (customer requirements),  
Planning staff (coordination),  
Production staff (communication between production departments),  
Production staff (communication back to planning staff),  
Maintenance staff.

**Organisation**

**Organisation’s leading practice**

<p><b>Pongrass</b></p>	<p>Pongrass uses PRISM throughout the plant to assist with managing activities. The scheduling module is not used. A production board is used. The scheduling module will be considered in its latest form.</p> <p>A series of Production Meetings (Production – Day, Sales, Production – Afternoon) are run during the day to communicate the status of production processes. Problems are identified and courses of action are determined. At the meetings the participants look forward five days and focus on 48 hours ahead.</p> <p>Offline make ready is achieved through an IT solution that enables all pieces of equipment to be configured through a central production management system (CIP3).</p>
<p><b>Company C</b></p>	<p>Scheduling of all parts of the business in an integrated way has assisted the business to perform. Placing a person from the bindery into the scheduling department has made a significant difference. The production board being coordinated across the business has enabled the company to better identify bottlenecks and reduce or remove them. Extra production capacity is also identified.</p> <p>The business focuses on getting the next job ready as much as possible and start setting up the equipment if it enables it. Having information on hand is important. Jobs are prepared as much as possible before all components arrive.</p> <p>Having machines idle is the biggest concern for the business. Team leaders are duty focused rather than machine focused. In other words, these people are focusing on functions and not bound to set pieces of equipment. They are always active. At a minimum people tweak machines on the run to improve productivity.</p>
<p><b>Philmac</b></p>	<p>They have dies (Probably the equivalent to a plate in the printing industry), which they fit into their machines for specific jobs. They have gone to extraordinary lengths with engineering work, to allow them to fit these dies with a few simple actions to make this task as quick as possible.</p> <p>As far as possible, dies are assembled into a standard cradle while the machine is still running on the previous job. The cradle is standard and fits into the machine in a few minutes.</p> <p>They have production schedules that ensure that the need for a changeover is known well in advance, so that materials, job sheets, tools and dies are all ready before needed and no delays occur. Their scheduling system also allows for individual machine schedules to be available to each machine operator via a computer terminal at their workstation.</p>

**PROCESS CHARACTERISTIC 3: How the business controls the quality and timeliness of inputs to production**

**THEORETICAL BACKGROUND**

This is very closely allied to the previous factor.

Materials must be suitable for purpose. This involves:

- Maintaining effective communication with suppliers so that they ensure they meet requirements.
- Effective materials handling so that materials are at the workstation exactly when required.

Instructions to operative staff need to be available, and in clear language. Sometimes sales staff play a role here in how customers requirements are communicated, but often the operating procedures are standardised to ensure reliability of output quality.

The mix of work plays a part also. If the mix of jobs is highly varied and average job size is small, it places a greater level of stress on the ability of production staff to produce at a high level of utilisation.

**Organisation**

**Organisation's leading practice**

The business does very well in handling very standard jobs because they flow very well through the factory. One-off jobs create some problems. A mix in standards (eg Woolworths Catalogues and Avon Catalogues are very different in terms of quality expectations) can cause issues.

The business has relationships with major printers and they help each other from time to time. This serves as a back up.

**Company C**

The company doesn't experience a huge variation and this is factored into the expectations of the machine. However, the mix is growing and the variation is expanding.

Set-up times are becoming more important given the shift in the nature of the work done. Thus, scheduling is even more critical.

**Philmac**

They use SOPs ("standard operating procedures") wherever possible.

These are in writing and are printed out from the computer when a procedure (such as a specific product changeover or production of a certain product) needs to be performed. Other SOPs relate to maintenance or materials handling and are accessible in other ways appropriate to those tasks.

## **PROCESS CHARACTERISTIC 4: How the business measures and reports performance**

### **THEORETICAL BACKGROUND**

This is a critical factor, not just for the value of the information itself, but also for the role it can play in motivated staff at all levels to focus on the key requirements to achieve high levels of utilisation. Leading companies almost invariably pay considerable attention to measurement and reporting of performance. Key factors are:

- Finding a way of gathering the necessary data on a routine basis so that regular reporting of performance can occur.
- Reporting at suitable *intervals*. For some performance aspects this will be every shift or even more frequently; for other aspects it will be weekly, monthly, or even quarterly or annually.
- Ensuring performance is reported to those who can most directly affect it. In many cases this will be to the operators themselves. Leading companies often have performance reported on very visible boards next to the workstation of the operators concerned.
- Follow-up: This means discussing performance with the staff who can most directly affect it, and encouraging them to come up with ways of improvement. This should occur every time a new/updated performance report becomes available.

**Organisation**

**Organisation's leading practice**

<p><b>Pongrass</b></p>	<p><b>Non Conformance Reporting</b>  This is done every month. Three types:  ## Done at the time the error is picked up.  ## At the costing phase voluntarily.  ## At the costing phase after some investigation.</p> <p>Non Conformance Reports demonstrate that errors occur as a result of people missing steps in the ISO 9002 processes in place.</p> <p>Every job is reviewed in real time. Seven areas are measured and listed on a chart that is displayed in a central location in the marketing and sales office and a central location on the factory floor. The seven performance indicators (eg proportion of good output to total output) assist the business to monitor the extent to which it is able to produce work that is in line with client expectations in a profitable manner.</p> <p>Department Managers report the problems. Problems are reported as cost incurred (without margins) as a percentage of sales (dollar amount against dollar amount). Previously the problems were reported to the individuals involved. Individuals were feeling victimised and problems were not being tracked. Now the business has moved away from a blame culture into a no blame culture.</p> <p>NCRs have demonstrated the link between productivity improvements and financial returns.  NCRs had increased dramatically after about a dozen people were retrenched and has slowly reverted back to normal levels.</p> <p>Apart from NCRs the business measures delivery on time, and plate spoilage, but these are not factored into the reward system. Pallet movements across the plant were used once to track performance. The business has recognised that it has an opportunity to probe more deeply into the root causes of results.</p> <p><b>Incentives</b>  A bonus of \$350 per quarter per person has been determined as an appropriate incentive. This figure has been determined by the spoilage experienced. Perhaps the system can be modified so that it's not "all or nothing". Incentives are paid to everyone except Tom Pongrass and Scott Telfer if the target of 0.7% is achieved. The target will be reduced if the target is achieved on a regular basis.</p>
<p><b>Company C</b></p>	<p>KPIs include crewed output, sections per crewed hour, books per crewed hour, paper waste, waste control, number of waste bins used, sick days, days in lieu taken, annual leave liabilities current.  KPI in prepress is good plates to press @ 99%.</p> <p>The management team engages in toolbox talks to communicate performance.  Performance is also being reported on the intranet.</p> <p>Currently KPIs are followed closely and are laborious. The MIS is being tailored to make reporting instantaneous. The business is committed to refining the suite of KPIs in use.</p>

## Philmac

They work by the motto " If you can't measure it, you can't improve it".

They have a computer system called Millennium. It cost them \$200,000 plus training. There is a terminal at each machine which:

- ## Machine operators use to key in their activities and time spent on each activity as they go;
- ## Displays the days work schedule and where they are at, at any given time, in relation to the schedule;
- ## Displays various other items of information to the operators to help them manage their machine as effectively as possible.

On bulletin boards near various parts of the production line they show graphically ("a picture is worth a thousand words") various items such as the following.

By shift:

- Visible graphs of an individual person's results in changeovers for the past week.

Monthly:

Updates of month and year to date graphs for

- Average changeover times
- Value added time to total paid time (Here "value added time" means time devoted solely to producing good product, not including changeovers or other downtime. All other time is referred to as "non value added time")
- Supplier evaluation scores
- Materials spoilage percentages
- Machine downtime
- Value of wastage incurred (as if the rejects were valued as good production)

At the consultative committee (committee of management and shop floor representatives):

- Company results.

## ***PROCESS CHARACTERISTIC 5: How the business goes about improving performance***

### **THEORETICAL BACKGROUND**

Companies who are leaders in utilising their technology are restless and persistent in seeking performance improvement. The Japanese automotive industry over the period 1960 to 1980 was a superb example of the impact this can have. Commonly used terms and approaches such as “continuous improvement”, “quality circles”, “just in time production”, “quality circles”, and “total quality management” were coined during this period.

All of these approaches have a common theme:

- Ongoing performance improvement is critical for survival in a competitive world;
- Ongoing performance improvement is less about a ‘big bang’ change and more about a large number of ‘small step’ changes;
- Unmanaged variation (in materials, skills of staff, machine setting and other factors) is the enemy of high performance levels;
- Managing variations can only occur effectively if all people in the company are actively committed not just the senior management;
- The primary role of senior management is to lead other staff to be committed to improvement, and to encourage and support their efforts.

**Organisation**

**Organisation’s leading practice**

<p><b>Pongrass</b></p>	<p>The business has trained managers and supervisory staff in the interests of improving productivity. Operators are given access to an in-house program designed to enhance morale and lifestyle – goal setting and goal attainment. The program was stopped after two years because it was getting a little stale.</p> <p>OH&amp;S is being revamped and is represented by an HR committee made up of people from the factory floor. This committee is charged with the responsibility for identifying issues and resolving them. Pongrass is working with Printing Industries Association of Australia to implement positive action.</p> <p>The business is moving away from acknowledging the efforts of individuals and moving towards acknowledging the efforts of teams, departments and the company overall.</p>
<p><b>Company C</b></p>	<p>The company is focusing on reducing problems upstream.</p> <p>Quality Circles are in place. The program was started in prepress with the input of operators. Operators run it on a weekly basis. Peer pressure is working to drive higher levels of performance. Ideas are put to managers. Progress is reported on large boards. Problems are not communicated – Solutions are!</p> <p>Employees come up with ideas for improvement. For example, the modification to the palletisation has utilised the equipment and the forklift driver substantially. Small rewards are given out (to employees?) to encourage assistance.</p> <p>The company works closely with new clients and provides them with procedures to follow that enable them to link in with the business especially with regard to prepress. Account managers are now closely working with clients along with the company's technical specialists to engender trust and mutual respect.</p>
<p><b>Philmac</b></p>	<p><b>Annual plans:</b> Departments other than manufacturing have to put forward a plan to measure and improve performance. The operations director sets the objectives (targets for improvement) each year; each department says what they can do to contribute.</p> <p><b>Problem board:</b> They also have a 'problem board' (a white board) at the edge of the factory floor, to highlight and solve problems mainly in the production process.</p> <p>Any person can identify a problem and write it on the board with their name. At 1010am each day there is a stand up meeting around the board, which the Operations Director and Ian attend. The problem is discussed with the person, and either:</p> <ul style="list-style-type: none"> <li>- Explained as not really a problem (very unusual, because de-motivating to workforce if happens frequently), or</li> <li>- Taken on board as something to fix. In this case Ian has to manage the 'fix' and report back within a month on what has been done to fix it.</li> </ul> <p><b>Die change competition:</b> This is a competition for all industries, run by the SA Centre for Business and Innovation, funded by the SA Government. They went into this a few years ago as a means of getting some improvements started and asked for volunteers. Any prizes they won (they did win) were shared between the employees who volunteered and were in the winning</p>

team. The year after they won there were a lot more volunteers!

Reduction in changeover times translates into more productive time hence more productive capacity.

**Raffle:** Any person who has contributed an idea for improvement is eligible for a raffle at the end of the year, with a prize of \$1,500.

**Other rewards and recognition:** There are monthly prizes for those who have contributed ideas that prove to result in cost savings to the company. These range from theatre tickets to dinner for two at a good restaurant. The reward depends on the scale of the cost savings.

**Facilitating suggestions and ongoing motivation:**

They have standard forms to assist in writing down suggestions for submission.

There is a written reply to every person who submits a suggestion.

If the suggestion could not be implemented successfully, why not.

If it was successful, what impact it had on company performance.

***PROCESS CHARACTERISTIC 6: The culture of the business and how it influences performance***

## **THEORETICAL BACKGROUND**

One way of defining culture in a workplace is “the way we do things around here”. It refers to the type of behaviour that is considered normal, and the routines or ‘rituals’ that are in place for communication and other aspects of running the business.

Culture has a major impact on how a company performs, and its effect on how well technology is adopted and utilised is no less profound.

It is clear from experience that culture can be created, managed, and destroyed. Obviously cultures can be ‘good’ (effective in delivering good results for a business) or ‘bad’. Hence companies do well to place considerable emphasis in managing their culture.

The top management of companies must take the lead in creating an effective culture. They do so by:

- Being very open with employees at all levels about the type of behaviour they expect.
- Constantly modelling that behaviour in their own actions, and expecting the same of their key staff.
- Providing training and support to staff in any leadership role (including front-line supervisors) in interpersonal communications and leadership behaviour. This is sometimes taken for granted with very negative results.

Others in leadership roles in the company support senior management in:

- Their own behaviour;
- Providing consistent and persistent encouragement and if necessary counselling to staff within their responsibility, on their behaviour.

**Organisation**

**Organisation’s leading practice**

<p><b>Pongrass</b></p>	<p>Customers influence the culture of the business. Pot Still Press culture is different from Websdale culture because their clients are different – artistic versus corporate. The Pongrass manufacturing staff found it difficult to adjust to the expectations of Pot Still Press clients. Some clients understand the impost on the business in terms of delays associated with press checks.</p>
<p><b>Company C</b></p>	<p>They have tried to institute a 'No blame' culture. The challenge is to balance robust procedures with a proactive, responsible workforce. It is folly for a business to run to set procedures as it runs the risk of people letting their good behaviours go soft.</p> <p><b>Encouraging a culture of teamwork.</b> Scheduling of all parts of the business in an integrated way has assisted the business to perform. Placing a person from the bindery into the scheduling department has made a significant difference. The production board being coordinated across the business has enabled the company to better identify bottlenecks and reduce or remove them. Extra production capacity is also identified.</p> <p>Teamwork is being extended to the company's customers and suppliers. Partnerships are being formed that are leading to company people operating from the customers' premises. Customers and suppliers are involved in presentations.</p> <p><b>A code of conduct underscores a shift in management thinking.</b> The management team is changing. People are being trained to be managers. Leadership, supervision, health &amp; safety, innovation, frontline management, work cover, communication appear prominently. Managers are involved in committees to make decisions on the spot in conjunction with others on the team. Managers are provided with budgets to spend on good ideas and are empowered to act within meetings. Leadership Principles, Business Plan and Code of Conduct have made a difference in instilling pride in the company. Metal trades mentality is continually being broken down. While there are not many long-term printers in place, the few that are find it very difficult to change.</p> <p><b>Recruitment</b> People are recruited in line with the Leadership Principles, Business Plan and Code of Conduct.</p> <p>The business works based on very simple principles of mutual respect.</p> <p>People create pressure from themselves given that they are aware of the KPIs they need to operate to.</p>
<p><b>Philmac</b></p>	<p><b>Creating and maintaining the culture:</b> It took a considerable time and effort to create, and they have to keep working on it to maintain it.</p> <p><b>How they got started:</b> 1. Prior knowledge of two key staff in the production management team, of some initiatives they had seen or heard about elsewhere.</p>

2. Emphasis on working smarter but not harder.
3. Go those people who were willing and worked with them to produce some results, hoping to "create a vortex".
4. Any awards (money or otherwise) went to the employees who were directly involved. The die change competition was used as a catalyst; it had a good prize attached to winning.
5. People who were interested in being part of the effort received training off site.
6. Made the results visible in the work place (see comments above in 'measuring performance').
7. Plus all the ongoing initiatives set out under question 5 above (problem board, raffle, etc).

There is a constant dialogue on performance between the Operations director( Ian's boss), and Ian. Also (as seen by comments above in 'measuring performance') with the work force on the shop floor.

# VISIT REPORTS COLLATED (Minimising overs and spoilage)

## PROCESS PROFILE

The essence of this process is the impact of human resource management on the waste from overs and spoilage. The process explores the cooperation that may exist across departments and between companies (for example sub-contractors, suppliers, and clients). By exploring the process we will build a model for optimising overs and spoilage. The model will explore the manner in which people communicate within a business to identify and respond to waste and will reflect the implications of peak workloads on a business.

## STRUCTURED COLLATION OF PROCESS CHARACTERISTICS

**PROCESS CHARACTERISTIC: Determining appropriate levels of overs and spoilage**

### THEORETICAL BACKGROUND

Waste means different things to different companies. To some it includes overs as well as spoilage, but to others it does not. To some it includes much more, including idle capacity. Thus, it is important to define waste and place it in well-described contexts.

The view taken of what constitutes waste will be important in framing action to manage and reduce it. Companies that take the broader view are likely to undertake a wider range of initiatives to control and reduce wastage.

The first leg of a waste reduction journey will typically involve:

- ## Awareness that waste (at least some of it) is a large avoidable cost,
- ## Making a firm decision to do something to reduce it,
- ## Setting realistic targets and costing parameters.

**Organisation**

**Organisation's leading practice**

<p><b>Hannanprint Victoria</b></p>	<p>The industry is well aware of wastage and many large contract printers are attempting to drive waste lower and lower. Firms are trying to sit below 10%. Every machine has a waste allowance that covers make-ready and running. The consumption of paper is an important consideration. The company controls the size (diameter and weight) of its residual paper cores. The waste is measured by absorption costing methods. A make-ready allowance for each piece of capital equipment guides the activities of the company's production teams. The amount of waste in printing and binding is influenced by run length. Human, mechanical and electrical elements of the business play an important role in waste control. The product mix makes a very big difference to the levels of waste produced. HPV has a highly variable product mix which adds to the challenge in reducing waste. HPV's people are aware of these differences and tune their operations accordingly.</p>
<p><b>Dynamite</b></p>	<p>Anything that does not form part of the end product and costs money along the way is considered waste. By measuring but not comparing against some external standard the company could institutionalise lousy performance. Waste is primarily measured by the cost of paper purchases as a proportion of printing gross revenue. Other materials (eg printing plates, ink, and solvents) are used to give the company some additional context. <i>Overs are factored in and allowed for in costing processes.</i> The quoting system incorporates "worst case" scenarios. Operational targets are set and communicated via job bags. Allowances have been defined for four colour work:     €# 5,000 run length or less – allow 500 sheets     €# More than 5,000 run length but less than 20,000 run length – allow 1,000 sheets The company limits the range of stock it uses in the interest of taking stock selection parameters out of the equation. The company builds up an inventory of stock allowed for and not consumed to gradually reduce its purchase of stock. Jobs in production do not allow for overs. More materials than normal are allowed for when jobs are outsourced or when they involve extra steps. The Managing Director and the Production Managers decide the levels of overs allowed for and which suppliers are to be used. COGS as a percentage of Revenue is improving. The company is buying better (cheaper prices) in terms of paper stocks.</p>
<p><b>Heaney's</b></p>	<p>Overs are recorded separately from spoilage because clients pay for overs while the company bears the cost of spoilage. The storeman books specific materials to each job. Overs are calculated separately for each machine. If fewer overs are used than quoted on a particular job, it is either a boost to the bottom line or a bonus that can be passed on to the client.</p>

**STRUCTURED COLLATION OF PROCESS CHARACTERISTICS**

**PROCESS CHARACTERISTIC: Measuring and reporting performance**

**THEORETICAL BACKGROUND**

Once waste is defined, it is critical that it is recorded in enough detail to diagnose the causes and facilitate follow-up action that serves to prevent or at least reduce it in future.

**Organisation**

**Organisation's leading practice**

<p><b>Hannanprint Victoria</b></p>	<p>Information is gathered press-by-press and shift-by-shift. Factors like speed (maximum and operational), uptime, make-ready time, and paper waste are KPIs that can be meaningfully used by contract printers. This type of company looks carefully at productivity, efficiency, and crewing levels. Every morning at 9:00 AM the business holds a production meeting to look at performance over the previous 24 hours and to plan the next shift. The Manufacturing Manager is charged with the responsibility for looking at pure production KPIs. The focus includes the reduction of wastage. The Production Services (Quality) Manager explores maintenance and considers its impact on wastage. The Technical Services Manager looks at technological performance and also considers its impact on wastage. The three managers report to the General Manager. There are schedule boards that report on and communicate performance across the plant. KPIs are reported on daily, weekly and monthly bases. Daily is for operational performance. Weekly is for internal planning. Monthly is for reporting to the parent company, IPMG. People need to be very habitual within a large contract printing operation! Good habits lead to good results. The managers decide whether to bring in casuals, move jobs to other presses, or outsource parts of jobs in response to sudden changes in production schedules and/or the passage of jobs through the plant. If a press is down for two hours the key Production Manager is called onto the production floor and consulted. People understand that many products (eg BRW and Who Weekly) are time critical. Hence, they perform in line with tight timelines to avoid serious implications for the company.</p>
<p><b>Dynamite</b></p>	<p>Responsibility for an onerous bill for a major client's spoilt job acted as the catalyst for Dynamite's interest in reducing waste. The company searched for the cause of errors. The company now has a quality system in place and uses the system to quantify errors and monitor them. Waste is recorded in the non-conformance register. Costs do not take labour into account. Management is confident that its simple system provides a valid indicator of performance. Greater consumption of materials is a trigger for investigation. The company measures stock costs (in dollars), compares it to gross revenue (as a percentage) and breaks it down across departments (in number of errors and the cost of those errors in terms of materials while taking into account other costs). A monthly non-conformance report is compiled and issued. Preventative steps are agreed on. The company drives the quality system via excel spreadsheets. Feedback is given on a regular basis. The Managing Director and the Production Managers communicate with the staff informally so that barriers aren't raised.</p>
<p><b>Heaney's</b></p>	<p>Materials are booked to each job separately, even at night and on Sundays. Management gets people to check their own work, however cross checks are available in all areas for difficult jobs, a second opinion (if required) and for all trainee/apprentices' work. Some clients' also double-check their work. Ongoing education for the correct interpretation of job tickets is essential as it is one area where complacency sets in. Every job is quoted, with the exception of some repeat jobs. All jobs are re-costed during the course of production if alterations are made. This helps Heaney's to get a re-quote back to the client to cover all additional costs. The MIS allows for each job to be tracked throughout production and to be back costed prior to invoicing to ensure no charges for alterations have been missed, that estimates are in line with the actual costs for goods and services. If the estimate to actual are</p>

	<p>not correct and cannot be on-charged a flag is set so jobs are requoted before a repeat order is received.</p> <p>The company creates a new job ticket for all re-prints.</p> <p>The management information system enables the company to track the reasons for spoilage/waste in all processes.</p> <p>No formal production meetings are held. Instead the Production Manager communicates with all the various departments over the course of the day, as dictated by the scheduling requirements. The Production Manager personally works out the cause of waste and follows through with the people directly responsible, usually on a one-to-one basis.</p>
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<b>PROCESS CHARACTERISTIC: Motivating operative staff to measure and report</b>	
<b>THEORETICAL BACKGROUND</b>	
<p>Much of the waste that occurs in a company may not be apparent to management. Managers may be too far away on an hour-by-hour basis for it to be otherwise.</p> <p>Hence, it is critical that operative staff play a role in measuring and reporting wastage, and acting on a spontaneous basis to reduce/prevent its occurrence.</p>	
<b>Organisation</b>	<b>Organisation's leading practice</b>

## Hannanprint Victoria

Remuneration reviews of managers are linked in a positive way to waste control. This allows the company and its managers to benefit from waste control achievements.

The business looks at this every 24 hours.

Personal attitudes make a difference. The company strives to build and reinforce positive attitudes.

HPV tries to provide flexibility for its people.

The company must be committed to its people and its people must be committed to the company if it is to succeed.

The General Manager at times gives people time off to relieve pressures that follow from major contributions they have made at work. He personally fills in the gaps in these situations.

Loyalty, pride and a sense of responsibility make a big difference to people's behaviour.

Part of the motivation is personal pride. Part of it is camaraderie. Part of it is fear of retribution.

It is important that the philosophy translates across all parts of the business.

The General Manager and his management team recognise that some people have a natural sense of loyalty and teamwork.

They also acknowledge that people are driven by money. The General Manager points out to people: "If you want what he earns, let's work together to help you to do what he does!"

"Generation X" people that may not have had the benefit of experience often have expectations that are out of step with reality.

To manage careers the business strives to explain what jobs are about in significant detail and encourages the long-term path of development. Young people are being brought on via cadetships. HPV lays a six-month foundation for these people.

Printers on the shop floor tend to be very satisfied with their career paths and acknowledge that they are remunerated well.

Management acknowledges the balance that is required between its people and the capital equipment they operate.

Every month managers and supervisors hold a toolbox meeting with their workgroups.

There is a state of the nation address every year by management for three hours for the whole plant where supervisors and managers talk about their KPIs and performance.

A dollar figure is placed on non-conformance reports and client concern reports so that people can work to an objective standard in bringing waste down continually.

## Dynamite

Dynamite created a simple reward system to encourage people to inspect the quality of inputs for jobs prior to commencement.

This shift acted as a cultural change for the business.

People are being encouraged to spot problems, solve them, and partake in the benefits via rewards.

A points system is in place to reward positive behaviour and/or punish negative behaviour.

Very high retention rates suggest that people care about what they do. However, official warnings are used if people are repeatedly causing problems.

Rather than fire people who were linked to unacceptable levels of waste Dynamite decided to keep its people and work with them to improve the culture of the company.

The Production Managers attempt to work with people and get to know them. This action allows managers to understand the real causes of their concern and tailor their management responses.

Things that are valued by people who work at Dynamite drive motivation activities.

The Managing Director consulted with staff to gain their input about what they value.

Now people see this as a part of their job and don't necessarily require a reward to root out problems!

Now the system has migrated to reward positive performance.

The Quality Officer is independent and reports directly to the Managing Director.

Interdepartmental conflict existed largely because departments were isolated. This was a product of the previous production facility. In the current facility people work closely together. Many people from the old place left the business and so the company crafted a new culture with new people.

There is a closer tie between production and sales functions in the current environment.

	<p>The company does not formally train its people to reduce waste. The company relies on its culture. It attempts to learn through sharing knowledge and information.</p>
<p><b>Heaney's</b></p>	<p>The Storeman draws the stock for each job so there is a culture of care and attention to detail.</p> <p>The Directors realised the need for the company to have the right staff in the right positions. The staff were included in these discussions and the requirements of each position and person in a particular position was outlined. It was made clear that to operate effectively and profitably that these changes were required and would happen.</p> <p>Not all staff responded and over time some people left. With better education and more suitable staff placements, habits eventually changed.</p> <p>The Directors believes having the right people (read attitude) is critical.</p> <p>A key challenge was to overcome complacency through re-education.</p> <p>Teaching new skills to staff is difficult but worth the effort.</p> <p>Heaney's put policies in place to enable the company to charge for things it can't control. For example, if a job is unable to be printed due to design not suiting the stock, the Production Manager, Sales Representative and client are all involved to make the necessary changes to design/stock and more importantly invoice cost.</p> <p>The MIS has a diary log that enables the company to keep information on important events such as alterations, time lost through breakdowns etc.</p> <p>Persistence is key to achieving results. Ongoing communication also makes a big difference.</p> <p>The approach involves going to staff with the data, explaining the problem, either telling them about a better way or, better still, asking them to come up with a solution to tackling the problem in future.</p> <p>Management is not tolerant of blame shifting.</p> <p>If necessary, management will make system changes or install equipment to prevent future errors. For example, the company installed a light table by the press to enable more accurate checking.</p> <p>Weekly sales meetings are important for all staff. Issues between Sales and Production are discussed and if necessary non-production people are taken out onto the production floor work with operators to learn in depth the implications of good or bad practice.</p> <p>Getting staff to work as a team is key to preventing problems before they occur.</p> <p>Management impressed on people that if they want to avoid having the same old problems in future, they need to continually communicate with their peers re all issues, big or small.</p>

<p><b>STRUCTURED COLLATION OF PROCESS CHARACTERISTICS</b></p>	
<p><b>PROCESS CHARACTERISTIC: Engendering trust and mutual respect – shop floor and management</b></p>	
<p><b>THEORETICAL BACKGROUND</b></p>	
<p>Operative staff can be very reluctant to report waste.</p> <p>One key reason is the fear that it will be a catalyst for some form of sanction against them. Another reason may be apathy.</p> <p>Overcoming fear or apathy is, therefore, a key step in establishing and maintaining a capability to control waste at minimum levels.</p>	
<p><b>Organisation</b></p>	<p><b>Organisation's leading practice</b></p>

<p><b>Hannanprint Victoria</b></p>	<p>The quality of the relationships between shopfloor people and management is influenced by mindsets and culture. The culture of HPV is evolving into one that is proud of quality printing. This culture is enabling the business to streamline its operations.</p> <p>Training, education, retraining, and re-education are done in line with set benchmarks.</p> <p>The business is moving from a reactive approach (eg breakdown maintenance) to a proactive approach (eg preventative maintenance).</p> <p>HPV plans to extend its QA system to encompass the quality of people, training, and maintenance not just the quality of its product.</p> <p>There is a significant amount of energy devoted to breaking down barriers between layers of the business.</p> <p>The more people know and can see and understand about the business the better they are able to perform.</p> <p>The General Manager is encouraging a positive, enhancing Enterprise Bargaining Agreement rather than a negative, protective EBA. He is looking at a bonus for performance in the upcoming EBA that is linked to profit success as determined by tangible elements. This will contribute to aligning the interests of the company with the interests of its people. The figures will be externally audited by KPMG.</p> <p>In this scheme the General Manager's performance and remuneration will be linked to the same things others' remunerations are linked to. This demonstrates a clear commitment to teamwork and respect for people across the business.</p> <p>HPV will pay particular attention to rewarding its high achievers.</p> <p>The business strives to provide its people with news and information updates in a timely manner.</p>
<p><b>Dynamite</b></p>	<p>Because of the absence of realistic benchmarks the company challenged prevailing levels of acceptability.</p> <p>Dynamite is of the view that it is dangerous to rely on just historical data generated by the company and not have reference to external benchmarks.</p> <p>Staff involvement has made a big difference in terms of being able to give a valued judgement call.</p> <p>People now take care.</p> <p>Growing at people failed. A positive approach encouraged performance enhancement. Negativity bred negativity.</p> <p>The approach has enabled the business to enhance its bottom line performance as well as maintain key accounts.</p> <p>The company needs to be selective about training. Training that is not well directed (perhaps the wrong person chosen) is an example of waste. Training is perceived as an investment and not a cost.</p> <p>Not everyone cares about enhancing performance and the company makes the most it can of the resources it has available.</p> <p>Management is confident that mutual respect and trust exist at Dynamite because workers are not being asked to go the extra yard. However, it recognises that not everyone falls into this category.</p> <p>Little things like staff barbeques make all the difference.</p>
<p><b>Heaney's</b></p>	<p>Training operators in basic, good work practices has proved important. This extends to the smallest detail such as not leaving a tin of ink open after use.</p> <p>Making the time to undertake 'education' is important.</p> <p>Putting in timesheets on the factory floor was met with resistance. So management took the operators to the computer, explained why doing timesheets was important (not to check whether operators were working, but to cost the jobs), and showed them how it was done. Not all staff were convinced so a second session with the Accounts Manager was organised. It was explained/shown that the timesheet was a critical element to invoicing jobs and thus a critical part of cash flow, i.e.:- paying wages. After that getting timesheets completed was not a problem.</p> <p>Training must alter to suit different individuals.</p>

## **STRUCTURED COLLATION OF PROCESS CHARACTERISTICS**

### **PROCESS CHARACTERISTIC: Engendering trust and mutual respect – customers and suppliers**

#### **THEORETICAL BACKGROUND**

Customers and suppliers can unwittingly be causes of waste. Openness, trust, and hence effective communication between them and the company can help reduce or prevent wastage.

#### **Organisation**

**Organisation's leading practice**

Current dynamics in the printing industry (consolidation, closures) are driven by supply and demand. Curiously, some new players are entering where their return on investment is questionable. They will probably scrap for survival. HPV does not rely on price to drive its business but on loyalty underscored by service. Clients are savvy enough to work with HPV to determine the appropriate levels of waste. Clients have a big influence on the levels of waste allowed for. Size of client, run lengths of their jobs, frequency with which orders are placed, typical order sizes, timelines required all have an impact on the levels of waste expected. If HPV is left with stock bought for jobs that were subsequently cancelled by clients the business buys the stock and holds it in inventory until it is required for use. The implications of this practice on waste is significant and so HPV strives to work closely with its clients to determine their short-term and long-term needs.

Dynamite insists on receiving inputs in standard formats. This enables the business to minimise variations and reduce waste. The company maintains very close relationships with its key clients. It does little things to demonstrate care and this makes a difference.

Heaney's gives its clients strictly on-time delivery and advises clients if it is not able to perform in terms of delivery time or the quality required. On a number of occasions the company has offered a client a price reduction because of the lower costs incurred. Cost reductions were due to the consolidation of several jobs from the client. In this way gains are shared. As a result the company believes it gets loyalty from clients in the form of repeat business with less price pressure. This is not the case with all clients of course.

#### **Dynamite**

#### **Heaney's**

## **STRUCTURED COLLATION OF PROCESS CHARACTERISTICS**

**PROCESS CHARACTERISTIC: Enablers (eg, systems, technology)**

### **THEORETICAL BACKGROUND**

Systems and technology can play an important role in helping to identify, record, and control waste.

The role they play in practice is very much an individual company decision. Good examples of 'high tech' and 'low tech' solutions exist.

**Organisation** | **Organisation's leading practice**

<p><b>Hannanprint Victoria</b></p>	<p>Set policies and procedures are in place. The business is moving to an electronic data management system. Prior to this system the information was largely captured manually.</p> <p>In the prepress area technology is being standardised and people are being multi-skilled to minimise waste of time and to enhance the quality of outputs. Currently, the prepress area is producing 99.4% good plates. While this result is impressive the people working in this area of the business are not complacent and are striving to achieve perfection.</p> <p>Paper is a big part of a contract printing business given that it constitutes a high proportion of cost of goods sold (COGS). The paper store is run exceedingly well because of the pride of the Paper Store Manager.</p> <p>In the Production Department a buddy system is in place to enhance the quality and timeliness of information.</p> <p>The sales team has either business maintenance or business development responsibilities.</p> <p>HPV runs its business like it owns it. All businesses in the IPMG group are autonomous. The businesses in this way take responsibility for their actions.</p> <p>HPV is striving to standardise its production equipment. Standardisation will require ongoing dialogue and commitment from all parts of the business.</p> <p>Lifting jobs and putting them on again costs the business dearly and so sophisticated scheduling underscored by courage and communication plays a big role in reducing waste.</p> <p>There is little benefit for the business to keep its plates because of the problems they may cause.</p>
<p><b>Dynamite</b></p>	<p>The company has developed its own Filemaker database MIS that enables clients to access information via the Internet. Some clients are reluctant to use the system but this will change over the next six months because there will be a requirement for tracking and tracing for upcoming projects.</p> <p>The company uses a standard software package for estimating purposes. The company uses a separate package for accounting purposes.</p> <p>All waste reduction efforts are run under the regime of the quality system.</p> <p>The methodology is more in line with continuous improvement. These improvements are supported by flow charts.</p> <p>Technology has been used to reduce wastage.</p> <p>The company is looking at productivity improvement through technological advancements to the extent that its resources allow.</p> <p>Technology, if affordable, can improve the performance in terms of wastage.</p> <p>While larger companies may have access to resources that could be used to acquire technological devices to drive down wastage, smaller firms need to be more resourceful.</p>
<p><b>Heaney's</b></p>	<p>The MIS gave Heaney's the ability to explore specific areas of where and when spoilage occurred most frequently.</p> <p>It also enables the business to properly book all costs to the appropriate jobs.</p> <p>The system is an enabler but its not so much the system but the willingness of staff to use its full functionality that makes a big difference.</p> <p>Job costs, job tickets and education are the basis of the company's approach to waste control. 'Back costing' is performed before invoicing. This highlights any problems and allows management to look for patterns. It tells management what the cost implications are, i.e.:- how many dollars of new sales are required to compensate for waste.</p>

**STRUCTURED COLLATION OF PROCESS CHARACTERISTICS**

**PROCESS CHARACTERISTIC: Results**

**THEORETICAL BACKGROUND**

**Organisation**

**Organisation's leading practice**

<p><b>Hannanprint Victoria</b></p>	<p>The company has reduced the costs resulting from non-conformances by 86% over one 12-month period.</p> <p>The minimum acceptable utilisation of equipment is 80%.</p> <p>The company's earlier attempts to minimise core size from 25% to 8% paid dividends. However, its attempts to reduce it below 8% created paper breaks and press downtime and hence defeated the company's waste minimisation efforts.</p> <p>Attempts at making people managers without the necessary training often fails. It makes a difference if the candidate is trialled with the person who holds the position in question. In this way, gaps are identified and steps taken to fill them prior to the handover.</p> <p>HPV creates clear job descriptions and recruits and develops people in line with them.</p> <p>The Prepress Manager became exceptional because his focus was clearly defined and he received appropriate leadership training. The manager won, HPV won and his family won because he spends more quality time with them.</p> <p>Focusing on positive goals and empowerment makes a big difference.</p> <p>Getting people to see the facts has made a big difference when figures are put into context – not in terms of money (unless it is physical cash!) but in terms of time, products or materials.</p> <p>An in-house newsletter is published monthly to communicate achievements.</p> <p>Accidents have fallen because people with a vested interest are driving the agenda.</p> <p>HPV recognises the importance of fostering positive relationships between management, staff and the union and is working to enhance trust and mutual respect. Empowerment is the key and emulating successes is important. If the company is to succeed its people need to take responsibility after being given the tools in line with a game plan.</p> <p>Managers must have tools to negotiate successful outcomes.</p> <p>To succeed the business needs to be proactive.</p> <p>The tough economic conditions faced by all and sundry in the industry are acting as a catalyst for change.</p> <p>HPV is making levels of profit that are acceptable to the shareholders. However, the shareholders do not become complacent and expect waste control to contribute to positive outcomes on an ongoing basis.</p> <p>Presses have a life of over 20 years and so they must be maintained for optimum performance.</p> <p>Greater automation, faster make-ready, and smoother runs are the noticeable benefits of the newer technologies the company has invested in.</p> <p>The business aims for a fair rate of return for a printing business.</p>
<p><b>Dynamite</b></p>	<p>The company must continually reassess things so that it does not become complacent.</p> <p>The people in the business consult broadly and gain input.</p> <p>Dynamites philosophy: "Make it easy. Keep it simple. Build the right resources around you."</p>
<p><b>Heaney's</b></p>	<p>Heaney's achieves on average 5-7% higher than industry standard gross profits. Monitoring and distributing the correct number of overs to a job and restructuring the store gave the business roughly 2% of the 7%.</p> <p>The company doesn't send overs to client, instead they are put in store for issuing against the next order.</p> <p>Negotiating better freight rates, and organising the consolidation of transport made a large difference to costs.</p> <p>Workplace agreements were implemented to catch overtime and better utilise equipment.</p> <p>Overall, the Managing Director attributes about half of their gains to the work done on production issues. At the beginning the company was performing roughly in line with the industry according to the company's accountant/business advisor.</p> <p>Culling some customers helped. This was determined by the difficulty of the client, payment history and the type of work relative to core.</p> <p>The company has demonstrated persistence over years.</p> <p>What the company measures it measures very well.</p> <p>The MIS is necessary to support the measures.</p>

	<p>Heaney's costs all goods/services against jobs and is very proactive in following up with staff over discrepancies. Employees are aware of consequences of the company not performing to the companies required standards/budgets. The directors have a very personal interest in achieving their goals and have a hands on approach to management. This takes a lot of time and effort and therefore it may be a very difficult undertaking to implement and control into larger corporations. The company is moving in a positive direction with the help of a team of staff who understand the requirement to have the right people in the right positions.</p>
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## **Attachment: Wall Chart**

SUBJECT AREA				
LEADING STATEMENTS	Marketing & Sales	Utilisation of Technology	Overs & Spoilage	Financial Management
<p><b>1 MONITOR THE EXTERNAL ENVIRONMENT</b></p> <ul style="list-style-type: none"> <li>Identify economic trends</li> <li>Identify social and cultural changes</li> <li>Assess new technology innovations</li> <li>Analyse and understand competition</li> </ul>	<p>Take a big picture approach.</p> <p>## Look at an industry's total value chain when looking for opportunities.</p> <p>## Understand who the customers are along the chain.</p> <p>## Map and understand the value chain of each potential customer.</p> <p>## Describe end users, understand their needs and work backwards to integrate activities up the chain.</p> <p>Map the physical and information components of their business and its chain.</p> <p>Undertake disciplined research and development. Experiment and test the boundaries of possibility.</p>			
<p><b>2 UNDERSTAND MARKETS AND CUSTOMERS</b></p> <ul style="list-style-type: none"> <li>Identify specific target customers</li> <li>Determine customer needs and wants</li> <li>Monitor changes in market or customer expectations</li> <li>Understand customer perceptions of value</li> <li>Understand one's own total costs incurred in delivering value</li> </ul>	<p>Strive to understand how the value chains fit in with their customers' business strategies.</p> <p>Understand what clients really want to achieve. Make sure clients know what they want and what goals they have set for themselves.</p> <p>Produce value propositions rather than costs for clients. Understand what their clients' marketing efforts are about and present options to solve problems.</p> <p>Define valuable clients as those that are focused on market issues (less price-sensitive) rather than production issues (more price-sensitive).</p> <p>Understand how customers perceive value.</p> <p>Understand customers' costs as well as their own costs.</p> <p>Target clients by seeing opportunities in the way they are currently approaching their (printing, packaging and</p>		<p>Recognise that clients have a big influence on the levels of waste allowed for.</p> <p>Work closely with their clients to determine appropriate levels of waste.</p> <p>Understand that waste is influenced by size of client, run lengths of their jobs, frequency with which orders are placed, product mix, typical order sizes, and degree of urgency.</p>	<p>Acquire capital equipment for unit cost reduction where the product and the sales generated are clearly understood or there is a major contract on offer. In cases of contract support they expect the contract to justify all or most of the investment, and get a letter of comfort from the client before they commit to the capital expenditure. Sometimes there are major technology shifts that will cause them to invest, but ONLY after they have satisfied themselves (independently of equipment suppliers!) that they understand those shifts and can use them to their advantage.</p> <p>Extend a capability to fit clearly defined long-term strategies of value add in a niche market.</p> <p>Respond very rarely to a speculative opportunity where the market for the output from the new equipment has to be guesstimated.</p>

			<p>distribution) needs.</p> <p>Ensure that they stand out from the crowd in servicing their clients and prospects.</p>	
<p><b>3 TRANSLATE CUSTOMER NEEDS AND WANTS INTO PRODUCTS AND/OR SERVICES</b></p> <p><b>Refine existing products/services in line with customers' needs and wants</b></p> <p><b>Develop new product/service concepts and plans in line with customers' needs and wants</b></p>	<p>Spend a greater proportion of their time on existing clients rather than new clients.</p> <p>Do not treat all customers equally and adopt a refined approach for their best customers.</p> <p>Tailor products and services to suit clients' and prospects' specific needs.</p> <p>Actively generate ideas and present them to clients for consideration and uptake.</p> <p>Pursue valuable opportunities for the benefit of their clients and themselves.</p> <p>Link their business processes with those of key clients. Use focused problem solving to secure orders.</p> <p>Understand the impact of products and services on clients when used for specific applications.</p> <p>Respond to clients' specific needs rather than develop offerings that might be of interest.</p>	<p>Ensure that their people are client oriented, aware of differences that impact waste and encourage them to adapt their operations accordingly.</p> <p>Maintain very close relationships with key clients and insist on receiving inputs in standard formats to enable the businesses to minimise variations and reduce waste.</p> <p>Are very inventive if they do not have access to resources that could be used to acquire technological devices to drive down wastage.</p> <p>Give their clients detailed delivery estimates and advise them if they are not able to perform in terms of delivery time, quantity or the quality required.</p>	<p>Work for the benefit of a number of organisations. Of course, a leading company will ideally be one of the ones that benefit!</p>	
<p><b>4 MARKET PRODUCTS OR SERVICES TO RELEVANT CUSTOMER SEGMENTS</b></p> <p><b>Develop pricing strategy</b></p> <p><b>Develop marketing messages to communicate benefits</b></p> <p><b>Develop ongoing customer relationships of mutual value</b></p>				
<p><b>5 DELIVER VALUE TO THE TARGETED SEGMENTS</b></p> <p><b>Schedule customer orders into production and service delivery process</b></p> <p><b>Identify and schedule resources to meet specific requirements</b></p> <p><b>Produce and deliver the product/service to customer requirements</b></p>	<p>Adopt sophisticated scheduling and use courage and communication to reduce waste.</p> <p>Resist lifting jobs and putting them on again because of the implications on waste.</p> <p>Attempt to limit the range of stock used in the interest of taking stock selection parameters out of the equation.</p>	<p>Used production boards or integrated software systems to effectively provide real time visibility to planners and operators.</p> <p>Look forward up to six months for capacity filling and balancing, and in the short term down to the minute, to ensure materials and other resources, such as paper and plates, are available when needed (hence, no delays).</p> <p>Use documented 'Standard Operating Procedures' for specific product types or make ready routines, to help</p>		

	ensure the most effective procedure is followed.	
<p><b>6 UNDERTAKE BUSINESS PLANNING</b></p> <p>Define the business model/concept</p> <p>Formulate a holistic business plan with adequate return on assets</p> <p>Link the plan to specific performance measures and targets</p> <p>Involve staff in plan development and target setting</p> <p>Regularly measure and communicate progress</p>	<p>Recognise the importance of running a business overall rather than just a manufacturing operation.</p>	<p>Acknowledge that the first leg of each waste reduction journey typically involves:</p> <ul style="list-style-type: none"> <li>## Awareness that waste (at least some of it) is a large avoidable cost,</li> <li>## Making a firm decision to do something to reduce it, and</li> <li>## Setting realistic targets and costing parameters.</li> </ul> <p>Use their quality systems to quantify errors and monitor them in the interests of continuous improvement. Record waste in their non-conformance registers. Compile and issue a regular (monthly) non-conformance report. Agree on preventative steps. Give feedback on a regular basis and support improvements with flow charts.</p>
<p><b>7 MANAGE INFORMATION RESOURCES</b></p> <p>Derive requirements from business strategies</p> <p>Manage information storage &amp; retrieval</p> <p>Facilitate information sharing and communication (internal and external)</p>	<p>Cultivate open relationships with customers and suppliers that engender honest communication and deliver mutually beneficial outcomes.</p> <p>Focus with customers on results and accountability.</p> <p>Use real data that yields information about likely (print) buying behaviour.</p> <p>Connect their own staff to their management information systems and design their systems to highlight opportunities to engage with clients in meaningful ways.</p> <p>Use their management information systems to run contingencies ("what if?" scenarios) in conjunction with clients in order to challenge the assumptions made.</p>	<p>Use schedule boards to report on and communicate performance across their plants.</p> <p>Track jobs through their production departments via their management information systems to discover the reasons for waste in all processes.</p> <p>Recognise that their systems are enablers; they know that the willingness of their staff to use each system's full functionality makes a big difference in waste reduction.</p> <p>Acknowledge that education is the basis of their approaches to waste.</p>
<p><b>8 MANAGE IMPROVEMENT AND CHANGE</b></p> <p>Create commitment for improvement</p>	<p>Make performance reporting very visible on various aspects of production (eg changeover times, waste/reject levels, units of good output, materials wastage, and ratio of productive time to total</p>	<p>Use speed (maximum and operational), uptime, make-ready time, and paper waste as meaningful KPIs.</p> <p>Place a dollar figure on non-conformance</p>
		<p>Make capital investments in the context of a clearly defined strategy and a formal annual business plan.</p> <p>Clearly consider whether a given investment is logical, how critical the investment is to meeting budgets and implementing strategy, and whether it is affordable.</p> <p>Use payback period as a quantitative measure for an investment. Typically, the period is four years or less.</p> <p>Model the effect of each investment on Return on Total Assets and expect around 20% per annum on the incremental investment.</p> <p>Use various discounted cash flow models (Net Present Value, Internal Rate of Return) for some investments.</p> <p>Clearly cost the useful operating life of each investment and the prevailing depreciation regime into each evaluation.</p>

<p><b>improvement</b></p> <p><b>Create measurement systems</b></p> <p><b>Measure organisational performance</b></p> <p><b>Identify and implement improvements</b></p> <p><b>Manage ongoing change</b></p>	<p>Engage in regular performance reviews with their customers.</p>	<p>time).</p> <p>Report at appropriate intervals; monthly for some measures, each shift for others.</p> <p>Report to appropriate levels; to supervisors in some cases, to operators in others.</p>	<p>reports and client concern reports so that people can work to an objective standard in bringing waste down continually.</p> <p>Use a simple reward system to encourage people to inspect the quality of inputs for jobs prior to commencement. Acknowledge their cultures and encourage their people to spot problems, solve them, and partake in the benefits via rewards.</p> <p>Recognise that persistence and ongoing communication are keys to achieving results.</p>	
<p><b>9 DEVELOP AND MANAGE HUMAN RESOURCES</b></p> <p><b>Review knowledge, skills and attitude required in a changing environment</b></p> <p><b>Develop and train employees</b></p> <p><b>Manage employee performance, reward and recognition</b></p> <p><b>Ensure employee involvement</b></p>	<p>Empower their marketing and sales people to make decisions within well-understood boundaries.</p> <p>Encourage positive behaviour through positive reinforcement.</p> <p>Reward their staff in line with the results they achieve and remunerate as a team.</p>	<p>Exercise strong leadership from senior management down to the direct supervision level.</p> <p>Expect teamwork within crews and across departments and employ formal activities to develop teamwork (eg training of supervisory staff in leadership, entry into inter-company changeover competitions, and execution of Quality Circles).</p> <p>Encourage people at all levels, including operators, to be involved in day-to-day decisions and to take ownership for results.</p> <p>Adopt visible and very structured performance reporting as a key aspect.</p> <p>Facilitate active involvement on problem identification and resolution techniques.</p> <p>Provide rewards and incentives (generally small) for operators in line with the achievement of improvements/savings.</p>	<p>Encourage operative staff to play a role in measuring and reporting waste, and act on a spontaneous basis to reduce/prevent its occurrence.</p> <p>Look at pure production KPIs, explore maintenance and look at technological performance.</p> <p>Link the remuneration reviews of their managers in a positive way to waste control to allow managers to benefit from waste control achievements.</p> <p>Recognise the importance of fostering positive relationships between management, staff and the union, and work to enhance trust and mutual respect.</p> <p>Rely on their culture and attempt to learn through sharing knowledge and information.</p> <p>Are of the view that having the right people (with the right attitude) is critical. Issues between Sales and Production are discussed and, if necessary, non-production people are taken out onto the production floor to work with operators to learn in depth the implications of good or bad practice.</p>	
<p><b>10 MANAGE FINANCIAL AND PHYSICAL RESOURCES</b></p> <p><b>Plan for and acquire necessary resources (Capital equipment, materials and other supplies)</b></p> <p><b>Manage financial resources (Capital, cash flow, financial risk)</b></p> <p><b>Manage physical resources</b></p>	<p>Define utilisation as the amount of good product that can be produced per period (eg 24 hours, 1 week, 1 month) from a given production facility and expect people, materials and machines to come together to create the best outcome.</p> <p>Break total utilisation for each of their production centres into two components:</p>	<p>Have waste allowances for every machine that covers make-ready and running.</p> <p>Strive to standardise their production equipment to the extent that this removes unnecessary complexity from their operations.</p> <p>Recognise that standardisation requires ongoing dialogue and commitment from</p>	<p>Have well-defined processes for evaluating investment in capital equipment.</p> <p>Begin proposals with the 'technical' people who see an opportunity for cost reduction or resolution of a critical quality issue.</p> <p>Engage their financial people to put a ruler over the investment in</p>	

**(manage inventory, maintain equipment)**

	<p>€# Availability: that is, for what proportion of the total hours is the equipment actually available to produce product? Factors here include the level of time lost due to scheduled maintenance and breakdown patterns.</p> <p>€# Utilisation: that is, during the time it is actually producing, what proportion of maximum possible output is it producing? Factors here include make ready time per job, average job size, availability of materials and other inputs when required, and the skills and commitment of management and operative staff.</p> <p>Standardise equipment, or key components such as that used in make ready.</p> <p>Engage in cost effective maintenance to ensure minimum downtime.</p> <p>Minimise materials handling through judicious investment in materials handling between production stages.</p> <p>Minimise product changeover/make ready times, again to ensure minimum non-productive time (recognise the implications for labour as well as machinery).</p> <p>Maximise the amount of the week that equipment is operating, possibly by means of night shifts for long run work that requires lower levels of human intervention.</p> <p>Use other companies to take overflow work, to ensure average utilisation over the long run is maximised.</p>	<p>ongoing dialogue and commitment from all parts of a business.</p> <p>Invest in technologies that deliver greater automation, faster make-readies, and smoother runs.</p>	<p>'ruler' over the investment in a preliminary sense. Other disciplines (marketing, sales) may provide expert input also.</p> <p>Engage their CEO for a 'proceed to further evaluation' or 'forget it' decision. If the decision is to proceed further a more detailed evaluation is carried out. This will involve at least (a) detailed technical evaluation of the proposed equipment and competitive offerings including proof of capability, and (b) detailed financial evaluation with 'what if?' tests of key assumptions such as unit costs and sales levels.</p> <p>Look closely at the costs of installation and bringing the capital equipment to full production capacity when evaluating the financial aspects.</p> <p>Make the decision to invest/not invest at the top management, owner, or Board of Directors level.</p> <p>Take the decision on how to finance separately from the decision on whether to invest.</p> <p>Choose equipment and suppliers based on the quality of support provided by the vendor during commissioning and on an ongoing basis.</p> <p>Negotiate the specific nature and extent of support before agreeing to invest, and write payment milestones into contracts dependent upon achieving progress and performance milestones with the installation and equipment performance.</p> <p>Generally prefer new equipment because in the current environment the deals seem to narrow any differential that may otherwise exist between new and used, and the risk of used equipment having faults is avoided.</p> <p>Engage in a formal post investment review.</p>
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