

# Kimberly-Clark Australia

## Combining a scientific approach with stakeholder partnerships to develop lightweight packaging



# Australian Packaging Covenant

# The Business Case for Packaging Sustainability

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## Summary

Kimberly-Clark Australia (KCA) manufactures consumer essentials including nappies, baby wipes and tissues. This case study describes how KCA has reduced costs while improving the environmental performance of its packaging by 'lightweighting' film and at the same time ensuring that the structural and heat sealing properties are maintained or improved. The KCA approach is based on establishing and maintaining a specifications system, with measurable properties fully defined for the current packaging. This serves as a performance baseline. Rigorous testing, evaluation and comparison back to the baseline properties throughout the process, and the development of constructive stakeholder partnerships across the value chain then ensures successful outcomes.

## Lessons from this case study

- A dedicated packaging team can deliver business value and improve the sustainability of packaging through the implementation of rigorous packaging redevelopment processes that combine a strong technical focus with effective stakeholder engagement.
- A 'scientific approach' to lightweighting adds rigour to the product development process and maximises the business benefits. This first requires the establishment of detailed quality and performance specifications for each packaging material category. The next step is to set quantifiable objectives in conjunction with stakeholders before undertaking trials and regularly reviewing performance against agreed objectives.
- It is important to reassure internal stakeholders throughout the process that lightweighting is not going to be achieved at the expense of other business priorities such as safety, quality or productivity.
- To underpin continuous improvement each packaging technologist or project manager at KCA undertakes an extensive program of packaging training. This is undertaken within the KCA packaging team, through networking with Kimberly-Clark Corporation (KCC) global packaging colleagues, and by running regular technical sessions with suppliers for all packaging material categories.



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## About the company

KCA began operating in Australia in 1926. Today, KCA manufactures consumer essentials including nappies, baby wipes and tissues. These products are marketed under global brands such as HUGGIES, POISE and KLEENEX.

KCA has an in-house packaging team that works closely with suppliers, manufacturing and marketing teams to improve the cost and overall sustainability of packaging. The packaging team also provides project management and technical prepress support for all new and updated graphics. Products are packaged at KCA's manufacturing facilities (mills) in Albury and Ingleburn (NSW) and Millicent (South Australia). The company has a broad aspirational goal of reducing the weight of its packaging by 10% by 2015 from a 2010 baseline.

Improvements in packaging sustainability also support the achievement of Kimberly-Clark's global environmental objectives and targets. These include a commitment in their Global Sustainability 2015 plan to achieve 20% recycled or renewable content in all plastic packaging and a 10% reduction in the overall weight of flexible packaging. Corporate responsibility and sustainability are integral to Kimberly-Clark's business strategy and brands. More information is available from <http://www.kimberly-clark.com.au/en/sustainability/>.

Figure 1: Kleenex Cottonelle and other KCA products place a strong emphasis on environmental attributes



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## KCA's approach to 'lightweighting' packaging

Over the years KCA cross functional teams have worked with packaging and equipment suppliers, to continuously reduce the weight of its packaging including cartons, corrugates and plastic film. This has been achieved by:

- Eliminating outer boxes for tissue products in 1993
- Changing plastic resins and processing technologies to reduce film gauge continuously since 2001
- Adjusting product size, loading orientation and pack counts, which saves packaging and improves transport efficiency
- Marketing larger bulk pack formats which results in less packaging per unit of product
- Adopting a continuous product development focus which provides ongoing opportunities to optimise packaging and distribution.

These initiatives have been driven by:

- The need to reduce costs and remain competitive in a challenging manufacturing environment
- The company's target of a 10% reduction in packaging by 2015 and overall sustainability objectives
- The company's involvement in the Australian Packaging Covenant (APC). KCA became a foundation signatory to the National Packaging Covenant (now APC) in September 1999.

Other environmental strategies are also being pursued as part of the company's commitment to the APC. These include research into the potential use of recycled resins and support for the REDcycle plastic film recycling program in supermarkets.

## The challenges

The challenges involved in developing lighter weight packaging include the need to:

- Engage multiple stakeholders
- Work around other manufacturing priorities at the mill to trial new packaging materials and processes
- Ensure that thinner films maintain the 'quality, premium look and feel' that is required by the marketing team.

These challenges and the strategies that KCA has developed to address them are summarised in **Table 1**.



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**Table 1: Challenges associated with 'lightweighting' packaging**

Challenge	Strategies
Managing the project with many KCA stakeholders including operations, marketing, procurement, packaging, legal, distribution and logistics. For example, operations people often feel that lighter weight packaging won't run as well in their equipment.	<p>Work with all stakeholders at the start of the process to:</p> <ul style="list-style-type: none"> <li>- Set measurable objectives</li> <li>- Establish roles, responsibilities and tasks for each stakeholder</li> <li>- Agree to the process that will be followed.</li> </ul> <p>Provide regular feedback on progress using measures relevant to each stakeholder.</p> <p>Apply Lean manufacturing principles to streamline the packaging development process.</p>
Progressing the project while accommodating business priorities including new product launches and upgrades	<p>Develop a 12 month plan with key milestones including when trials are expected to be undertaken.</p> <p>Conduct and evaluate trials beginning with a specific pack type and progressively expand to additional ranges and sizes.</p> <p>Don't run any trials until there is confidence that the trials are likely to be successful.</p> <p>Start trials at a small scale and build up to longer duration trials.</p> <p>Communicate achievements as they are made.</p>
Maintain the premium look of packaging by ensuring consistent, high quality printing	<p>Ensure high quality printing by updating press profiles and conducting print trials.</p> <p>Select packaging suppliers who manage printing by numbers (i.e. apply spectro-densitometry), establish optimum press running conditions and run to profile every time a new batch of packaging is printed.</p> <p>Ensure packaging suppliers and prepress houses work as a team with internal packaging and marketing teams.</p> <p>Maintain a focus throughout the process on the needs of the end-consumer.</p>

## A scientific approach to lightweighting: the Kleenex Cottonelle example

The lightweighting project for KLEENEX COTTONELLE tissue wrapping film began by establishing the objectives of the project with the packaging supplier and all internal stakeholders. The properties of the current packaging material were reviewed and clear specifications were established for the new resin. The aim was to reduce the gauge of the film by formulating a resin with:



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- Higher stiffness
- Wider sealing temperature range
- Lower seal initiation temperature.

Quality and financial targets were established and project status and next steps were reviewed in monthly development meetings with the supplier and internal stakeholders.

Operational staff were concerned that the lighter film could tear, burn or have difficulties sealing during the production process. This was addressed by:

- Paying careful attention to quality control systems at the resin supplier to ensure that the quality of the new material would be consistent, before it was used in trials. This involved material tests and ongoing dialogue with suppliers through meetings and site visits
- Explaining the key properties of the new resin compared to the old resin, including a wider sealing temperature 'window' that gave the mill operators confidence to run a trial. Other benefits that were highlighted included the higher film stiffness which enables easier wrapping and the lower sealing temperature which enables maintenance or improvement of run speed and equipment downtime
- Undertaking trials and ensuring that any performance issues were addressed through meetings between the packaging team, suppliers and operators. A phased approach was adopted for the trials. A very limited trial was undertaken first, and then after a review a full day trial was undertaken before ramping up production across 3-4 stock keeping units (SKUs)
- Carefully integrating trials with the production schedule. If failures occurred then follow up meetings were held with suppliers to determine causes and the corrective actions required.

KCA's Marketing team were engaged in the process as packaging samples were developed. Their primary concern was to ensure that the thinner packaging material did not compromise the 'premium' look of the product. This concern was addressed by putting a lot of effort into the printing process to avoid the 'crinkly' sound that can result from thinner films; and by continually working with prepress suppliers to trial, develop and implement new plate technologies. It is important to continually reassure stakeholders throughout the process that lightweighting is not going to be achieved at the expense of other criteria such as quality or productivity.

*"Cost savings and sustainability benefits have been achieved over time through great teamwork across functions (packaging, mills, marketing, sales, procurement, distribution and supply chain) and with our supplier partners. Our technical success has been facilitated by establishing detailed packaging specifications and reviewing our performance against quantifiable metrics."*

Frank Bova, Packaging Manager, Product Supply, Kimberly-Clark Australia

## The benefits

### Benefits in the Kleenex Cottonelle example

The KLEENEX COTTONELLE project demonstrates that production benefits are also achievable if projects are scoped and implemented appropriately. A 13% reduction in film



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weight has been obtained by using higher quality resin that can be sealed at a lower temperature, resulting in reduced energy inputs and improved productivity. It is possible to substitute the resin formulation with one that gives higher film stiffness, reduces film thickness, lowers the sealing temperature, widens the sealing temperature window and give packaging material savings all at the same time. If films can be sealed at lower temperature the speed of the packaging machinery can be increased, because it doesn't take as long to reach the sealing temperature and the heating time doesn't need to be as long. Recent improvements in palletising efficiency also translated into distribution and warehouse benefits in KCA retailer warehouses.

## Benefits of packaging improvements at KCA overall

Lightweighting, packaging material substitution, optimisation of the printing process and improving pallet cubic utilisation at KCA have delivered savings over \$10m over the past 12 years. KCA's 'Light weighting whilst maintaining packaging functionality' approach reduces the quantity of raw materials required and minimises environmental impacts associated with manufacturing and transport.

KCA received awards at the 2007, 2008 and 2009 Packaging Evolution Awards including an additional 'best in show' award in 2007.

Public recognition of KCA's achievements through these awards assisted the packaging team to promote the benefits of sustainability and cost reductions to management. This helped the packaging team to build their profile within the company and to demonstrate the value that a professional packaging team can deliver.

## Selling the benefits of a project to stakeholders: keys to success

- **Build trust over time.** To achieve lightweighting improvements over time, it is important to develop trust with each of the key stakeholders involved in the process. Trust is developed by understanding and responding to the concerns of each stakeholder throughout the process. It is also enhanced by recognising achievements and attributing success to the wider team including production teams, packaging suppliers, marketing and the packaging team.
- **Combine quantifiable metrics with regular stakeholder communication.** There are two key aspects of the KCA approach to lightweighting packaging. The first is adopting a 'scientific approach'. This means building a specifications platform and then setting objectives and regularly reviewing the performance of new materials and palletisation against current properties. The second is a partnership approach to working with stakeholders across the packaging value chain. Stakeholders are actively engaged in packaging reviews, provide input into objective setting and are provided with data on performance against those objectives.

