



# Where there's muck

**ENTREPRENEURSHIP** How two MBAs found value hidden in tonnes of gooey sludge

**H**ave you had a glass of orange juice from a carton recently? The chances are that the carton was made from a mix of plastic, paper and aluminium. And while those constituents do a great job of keeping natural beverages fresh, they're also likely to end up as non-biodegradable waste that burdens landfills, costs money and puts the squeeze on the environment.

## NATURAL SOLUTION

You may be thinking this article is about recycling used cartons, and perhaps making a business of it. But it's not. That has already been done. Across Europe, the system for collecting and recycling cartons is well developed. Around 25 billion every year end up at recycling plants, where the paper fibre is extracted and remanufactured into new packaging such as cereal boxes.

## RESIDUAL PROBLEM

Which is terrific... as far as the paper portion of your drink carton is concerned. But what about the plastic and the aluminium? You're not likely to see those in a cereal box. The reason is that the gooey muck left over from the paper part of the recycling process gets dumped into landfills. For a large recycler such as Stora Enso in Barcelona, that means 30,000 tonnes a year of sludge, costing about £1.3m to 'tip' into the earth. Messy however you look at it.



## RESIDUAL OPPORTUNITY

Unless you are Hans Cool or Gijs Jansen, that is. Where we see mess, they see money, by working to find a commercially viable use for the waste output from waste processing. Their solution combines two elements that were readily available: plastic/aluminium soup in large quantities; and an introduction from their MBA classmates to Carlos Ludlow-Palafox, a PhD in chemical engineering from Cambridge University working on pyrolysis, a process that gasifies plastic. With these ingredients, the team formed Alucha, a company whose name combines the word aluminium with the Spanish verb *luchar*, meaning to struggle. The next step was to manage the struggle by engaging as many committed partners as possible.

## PARTNER SOUP

Cool and Jansen's first stop was a visit to Stora Enso in Barcelona. After hearing their idea of converting sludge into value, the manager of the recycling mill showed the pair a dormant machine – a previous attempt at a system for processing plastic/aluminium waste. Could they use the space to try again with a new technology?

Cool and Jansen met with the German aluminium processor Konzelmann. Would they be interested in the grade of aluminium Alucha could extract from packaging? And in Austria, the pair talked with GE Jenbacher, maker of generators that run on specialised gas. Might they be interested in working together to co-develop machinery that would burn the gas that results

from extracting plastic waste from aluminium waste? As the yeses mounted up, the struggle turned into a business.

## CLEAN EVIDENCE

Since starting in 2004, Cool and Jansen, together with their partners, have faced technical, regulatory and operational struggle. But their efforts have yielded a functioning plant that today runs five shifts, 24 hours a day, seven days a week. Their compensation comes in many forms, from 2011 revenues that should reach £1.8m, to an award from the EC as one of the best LIFE environment projects of 2010, to the satisfaction of seeing trucks loaded with aluminium headed for production instead of sludge headed for landfill. Not to mention the knowledge that they provide Stora Enso with 20 per cent of its steam needs by burning the gas generated in their process.

Future efforts may direct that gas directly to a special generator that produces electricity for the plant or even for sale on the grid. From the grunge of entrepreneurial struggle they show us the glamour of creating an entrepreneurial venture that creates both profit today and a cleaner environment tomorrow. ●

## What a load of rubbish

The paper in used cartons can be recycled, but what about the plastic and aluminium?

## details

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