

Koolmill Systems uses servitization to access global markets with sustainable food production

UK-based SME, Koolmill Systems, has combined the powers of servitization and disruptive technology to help feed a growing global population as well as giving the business a competitive edge. The company has teamed up with academics at Aston Business School to give customers across the world access to transformative techniques through its milling-as-a-service business model. The low-power waste-saving system is designed to empower small-scale milling operations and revolutionise cereal production.

At a glance...

- More than 3 billion people are reliant on rice as sustenance, yet milling techniques are out-dated and inefficient.
- According to the United Nations Food and Agriculture Organization (FAO), rice production must increase by 70% by 2050 to meet global demand.
- Koolmill's technology reduces the cost per tonne milled by up to 63% and drastically cuts processing losses.
- Given its performance data, Koolmill estimates that it can generate £1,200 to £2,000 of revenue per month per machine and is targeting operating 7,500 machines within the next 5 years, with annual turnover set to rise from £129,000 to £100m. That is based on Koolmill taking 20% of the financial gain and providing service contracts to just 0.05% of the obtainable market.



The family-owned company was founded in 1988 as a cereal milling machine manufacturer. Founder Alec Anderson is passionate about the need to drive output and efficiencies in cereal production. He has collaborated with global partners to develop pioneering displacement technology which allows rice to be milled by using less energy and generating less waste.

To make its technology accessible to small-scale millers in some of the poorest parts of the world, Koolmill needed help adapting its business model. By joining forces with the

Advanced Services Group at Aston University, the company has developed a servitized model which offers milling-by-the-hour.

Rather than relying on a one off sale, unaffordable to most rice millers, the advanced service business model delivers a guaranteed number of hours of high performance rice milling in return for a contracted monthly fee.

Global demand

Koolmill's technology is a game-changer, delivering power savings of 90% and maximising the return of food from a finite and valuable natural resource. It offers the opportunity for zero emission state-of-the-art milling to parts of the world struggling to provide an affordable and nutritious diet.

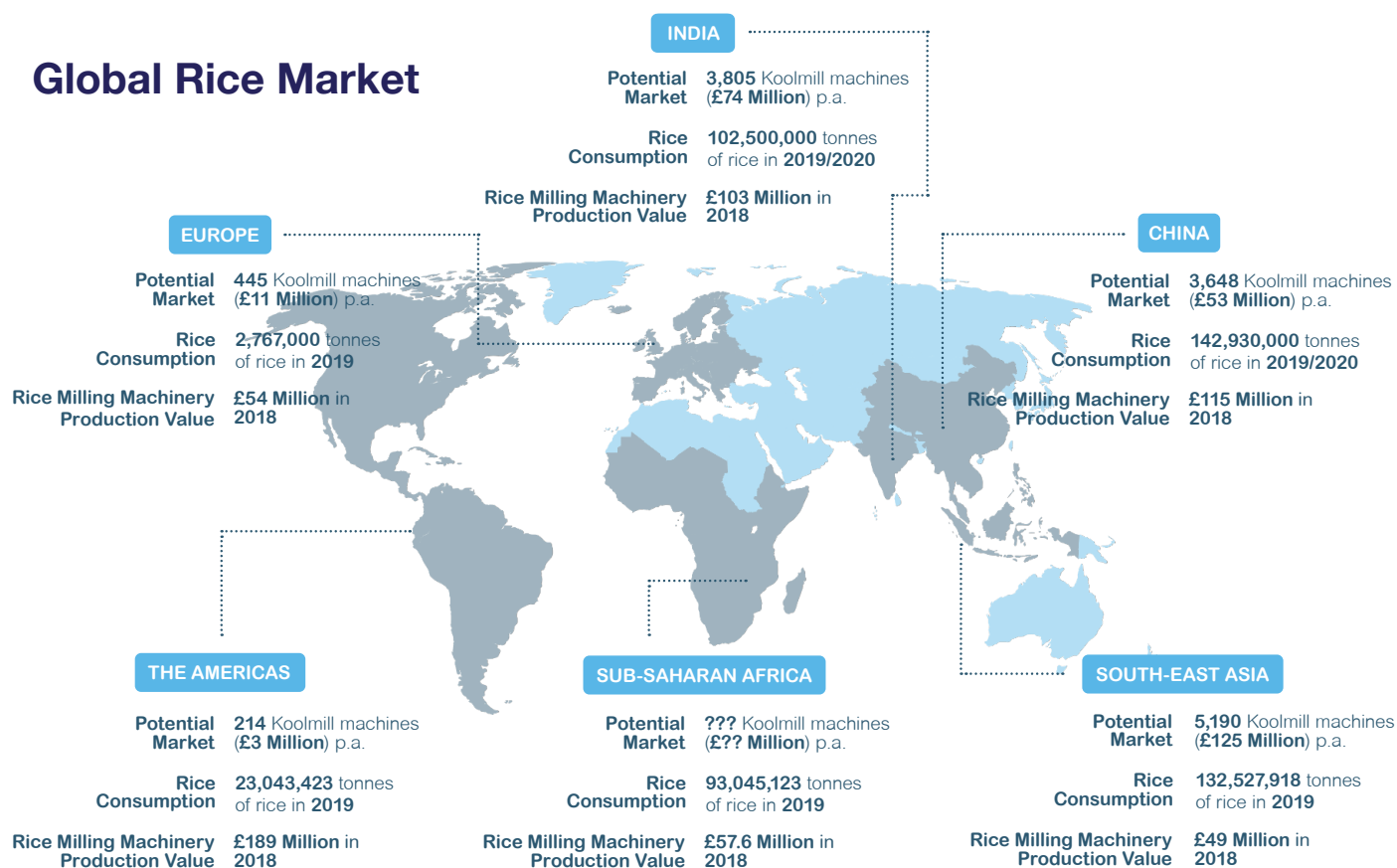
More than 3 billion people are reliant on rice as sustenance, yet milling techniques are out-dated and inefficient. According to the United Nations Food and Agriculture Organization (FAO), rice production must increase by 70% by 2050 to meet global demand, and Koolmill is committed to tackling food poverty through its next generation milling technology. It delivers a modern low power simplified and sustainable approach to cereal milling which is far more efficient than traditional techniques.

“

Koolmill's technology is a game-changer, delivering power savings of 90% and maximising the return of food from a finite and valuable natural resource.

”

Global Rice Market



Outcome-based business model

Koolmill's technology reduces the cost per tonne milled by up to 63% and drastically cuts processing losses. Its equipment exceeds the capabilities of any of its competition, with a far superior conversion of paddy to high quality rice.

With that in mind, as an export business Koolmill has huge potential in boosting the production of nutritious cereal whilst reducing waste and power consumption. Once scaled up globally, it promises to guarantee rice milling a more sustainable future and help governments meet their carbon reduction targets.

However, Koolmill's equipment is significantly more expensive than that of its competitors and when it comes to the global export market, that presents a significant barrier to entry. As a result, Koolmill set about developing an outcome-based business model which shifts the focus away from one-off cost to shared value.

Informed by academics at Aston Business School's Advanced Services Group, Koolmill has embraced servitization to offer customers an innovative pay-as-you-mill business model that makes its disruptive technology accessible to all.

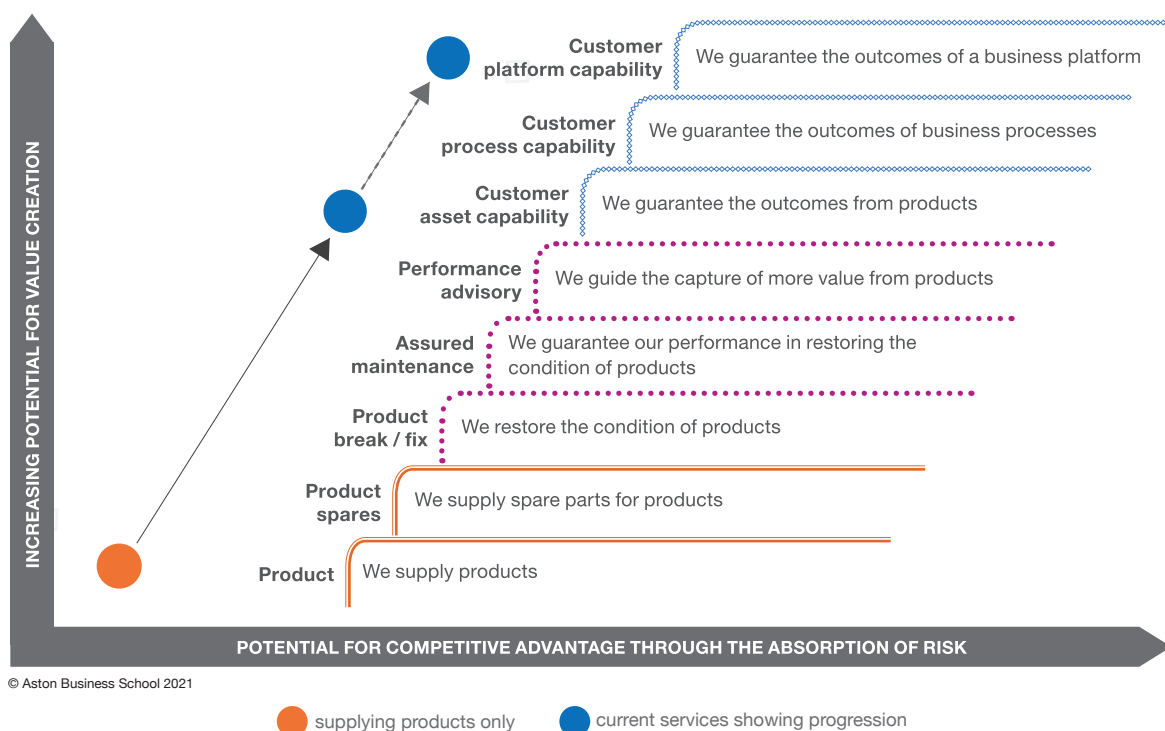
Its mission is to allow all millers, regardless of size and location, to deliver more high-quality food from finite natural resources. Rather than purchasing a piece of equipment, the customer enjoys guaranteed hours of high-performance milling paid for using a hybrid revenue model combining monthly payments for access to the equipment and an additional variable payment based on changing patterns of usage.

Koolmill has digitised its rice milling solution so that it can connect its equipment wherever it is around the world. The company has worked with strategic partners Siemens to create a real-time monitoring system, using augmented reality and digital twin technology. It allows UK-based engineers to remotely monitor equipment, helping them keep track of usage and performance. They can trouble shoot, anticipate the need for replacement parts and keep machine downtime to a minimum. Local agents are instructed to carry out necessary maintenance and repairs as part of Koolmill's service contract.

Koolmill's servitized business model is outcome based, focusing on the value it delivers to the customer rather than the quantity of cereal it can process. This approach takes the emphasis away from cost. It breaks down barriers to export and provides a vehicle for small-scale millers in low-income economies to share in the benefits of more effective and efficient technology.

Koolmill's servitized business model breaks down barriers to export and provides a vehicle for small-scale millers in low-income economies to share in the benefits of more effective and efficient technology.

Services Staircase



Joint venture partnerships

Koolmill's rice-milling-as-a-service offer will be delivered by forming joint ventures with partners on the ground in each of its key export markets. The model is to manufacture milling machines in the UK and sell them at a profit to a joint venture service operating company set up in Koolmill's target markets.

Servitization will therefore be delivered in-country. In India for instance Koolmill will set up a joint venture with a local service operator with expertise in the rice industry and an asset finance company to provide the initial capital. That way, Koolmill is abiding by the rules of ensuring asset finance is secured locally, as well as securing local partners with a vested interest in making the operation runs smoothly.

The local company will purchase a licence from Koolmill or agree to pay a royalty to manage the service side of the business. Koolmill will become a shareholder in the joint venture and takes an agreed share of the profits.

This model involves Koolmill giving away a proportion of its profits but brings significant benefits which remove many of the barriers to entry faced by conventional machinery exporters. As well as overcoming the challenge of making its solutions affordable to local millers, the business model reduces the cost and risk of export.

Any import taxes and duties will be spread over the lifetime of the service contract and have a relatively small impact on the bottom line. Similarly, the cost of the machine appears negligible compared to the long-term value it is offering the customer. If a machine is twice as expensive than a competitor's but offers 10 times the value, the debate is suddenly shifted, and customers can evaluate solutions in a completely different way. They also have the reassurance that the machine will be repaired and maintained, reducing the risk of adopting new technology.

Another risk of exporting to markets such as India and China is protecting the exporter's intellectual property. Manufacturers selling industrial machines to these markets often find they are taken apart and reverse engineered to make copies. However, if that company is providing a service rather a one-off transaction and has a local partner with a financial interest in protecting IP, there is real incentive for them to take preventative measures and combat infringements.

Koolmill already has a successful joint venture set up in China and its partners have already spent over £100,000 defending IP. By sharing the rewards, they also take responsibility for sharing the risk and in a complex export market that can prove invaluable.



Value proposition

It is taking time for Koolmill to establish its presence in its target market, not least because of the impact of the pandemic, yet millers are already recognising the benefits this new approach to milling can bring. Persuading people to look beyond cost and focus on long-term value and measure success on outcomes rather than inputs is challenging, yet the results of pilot studies are compelling.

Koolmill has been working with small rice mill in India's Punjab. Millers had been working on government contracts where they were given 2,350 tonnes of rice at the start of the season. By using Koolmill technology they had the potential to increase the value of what they produced and boost revenue to an incredible £240,000 a year.

Likewise, Koolmill is looking to extend its reach from servitizing machinery to entire mills and intends to build a new mill in India. With less rice broken during the milling process, Koolmill's system would use more than 1,300 tonnes less paddy, equating to an annual saving of more than £500,000. That would earn Koolmill £214,000 revenue over a ten-year contract – a significant amount for a single machine.



Overcoming challenges

The impact of Covid-19 has prevented Koolmill from capitalising on its global partnerships. The team has not been able to visit its key export markets or set up servitization contracts.

Like all exporters, the business has found the situation hugely frustrating yet has refused to rest on its laurels. The team spent their downtime innovating and developing digital technology to train people to use machines within a virtual environment. The intention is to get equipment up and running without the Koolmill team needing to physically be there.

Once Koolmill has clearance to travel, it is all systems go. It will take time to change the way people think in these traditional markets and persuade them to move away from a focus on ownership to seeing the benefit of shared value. Yet the more that Koolmill can demonstrate the impact of its servitized offer, the easier that process will be.

Given its performance data, Koolmill estimates that it can generate £1,200 to £2,000 of revenue per month per machine and is targeting operating 7,500 machines within the next 5 years, with annual turnover set to rise from £129,000 to £100m. That is based on Koolmill taking 20% of the financial gain and providing service contracts to just 0.05% of the obtainable market.

Despite not actively trying to sell machines under the current restrictions, Koolmill has received enquiries for more than £2 million of equipment. It plans to have around 40 new machines up and running in India and Indonesia by

“Once joint ventures are set up in India and Indonesia, Koolmill will have representation in countries which make up 60% of the global rice milling market.”

the end of the year and to begin making serious in-roads into its target markets.

Once joint ventures are set up in India and Indonesia, Koolmill will have representation in countries which make up 60% of the global rice milling market. As the business continues to strengthen its offer there is potential to adapt its technology to process a wider range of cereal and granular products, including wheat. Further developing its disruptive business model and demonstrating the power of advanced services will prove key to that success.

The Advanced Services Group

The Advanced Services Group (ASG) is a centre of excellence specialising in research into servitization theory and practice, as well as advanced service business models and the application to the manufacturing sector. Delivered through education and training programmes, the Group's research enables global manufacturers, small and medium-sized manufacturers and technology innovators to transform their business models based on services-led strategies. Underpinning ASG's research lie three critical questions: What is servitization and why is it necessary? What are the organisational structures, processes and technologies critical to success? How can a manufacturer transform to compete through services?

ASG translates its research findings into a series of practical frameworks, interactive tools, worksheet exercises and business games through which businesses are able to transform their business models and enhance their business performance. These tools take the company through road-mapping their business; benchmarking, identifying customer pains and gains, understanding their customer value proposition framework and storytelling. These enable the ASG to convey its findings to businesses in a clear and impactful way.

For more information go to: www.advancedservicesgroup.co.uk

