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Greening e-commerce in China

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Cainiao, Alibaba's logistics arm, is leading the charge to address e-commerce's waste and carbon footprint issue

Singles' Day in China, which falls on 11 November, marks the culmination of the annual eleven-day online shopping frenzy that dwarfs Black Friday and Cyber Monday in America. Alibaba Group alone accounted for US\$74 billion in gross merchandise value (GMV) from 1-11 November 2020, while rivals JD.com pulled in roughly half of that.

While businesses bask in the glow of record profits and consumers enjoy their purchases, there is one problem: the mountains of discarded carton boxes and plastic courier bags that end up in landfills after consumers had unboxed their parcels. Worse still, there is the increased carbon footprint from deliveries, adding to concerns about e-commerce's environmental impact.

In response to global calls for greater participation in sustainable development, Cainiao (菜鸟), Alibaba's logistics arm, implemented a slew of green logistics initiatives over the years. Since 2016, Cainiao has innovated on packaging, sorting, and routing of parcels, as well as smart warehouses and logistic robots. Green logistics was Cainiao's proposition for corporate social responsibility and the firm's promise to society to help the economic system decelerate the pace of destruction to the environment.

Going green would be a win-win for both the environment and the business. What else could Cainiao do to promote going green, keeping in mind that there was an economic cost associated with all such initiatives?

GOING GREEN

Strategically positioned within the Alibaba Ecosystem, Cainiao played a critical role in logistics and fulfilment to support the Group's global and domestic e-commerce businesses. As an e-commerce logistics platform, the primary function of Cainiao was to connect Alibaba marketplaces, warehousing systems, merchants, and third-party logistics service providers.

Cainiao's first large-scale initiative came in 2016 with the Go Green campaign that involved 32 industry partners. Targeting to reduce 3.5 million tons of carbon emissions by 2030, the campaign planned to promote green logistics through green packaging, green recycling, green technology, and green distribution. A year later, the Cainiao Green Alliance Foundation was established as China's first non-profit entity dedicated to the promotion of green logistics.

Cainiao and Alibaba Foundation jointly launched the new charity together with China Environmental Protection Foundation and six other logistic companies. The foundation pledged to invest RMB 300 million (US\$46 million) into research on innovative solutions to address the

environmental impact created by the logistic industry; the solutions include eco-friendly packaging and resource optimisation through the application of big data.

The company also digitalised its operations and capitalised on emerging technologies. In 2014, it downsized its electronic shipping labels, which contained delivery information condensed into a barcode that was scanned at every stage of the delivery process. From an initial stack of five pieces of paper, the label was subsequently reduced to a single piece and its size was further shrunk to two-third of the original size. As a result, it has saved 400 billion pieces of paper over the past five years.

To reduce the environmental impact of packaging waste, Cainiao developed an artificial intelligence (AI) algorithm to increase packing efficiency and maximise space utilisation of carton boxes. According to the product category, dimensions (length, width and height) and weight of the items to be packed, the algorithm would recommend the right-sized box and the order in which the items were to be packed. The result was a significant reduction in wastage of materials from over-packing by 12 million shipments during the 11.11 Global Shopping Festival in 2020.

WHAT NEXT?

As the 11.11 Global Shopping Festival in 2020 unfolded, Alibaba continued to step up efforts to deliver its promise of making the annual shopping spree “greener than ever”. Cainiao revealed that almost 100 percent of the parcels shipped from its warehouses were biodegradable and nearly 50 percent of its carton boxes were tape-free. To incentivise merchants to adopt sustainable packaging, Cainiao offered online advertisements worth more than RMB 10 million (US\$1.5 million). In addition, over RMB 3 million (US\$0.46 million) worth of subsidies were provided to offset the price difference between biodegradable and non-biodegradable plastic bags.

Meanwhile, Cainiao had started researching into ocean conservation as plastics from packages contributed to land waste and would end up in the sea. Still, much work remained to be done, but at a cost. How could Cainiao strike a balance between the costs and benefits of going green? What would be the right mix between optimising economic and ecological goals?

This is an adapted version of the SMU Case, "[Alibaba Cainiao's Smart Green Logistics Strategy: Good for the Earth, Good for the Business](https://cmp.smu.edu.sg/case/5016)". To see the full case, please click on the following link: <https://cmp.smu.edu.sg/case/5016>.

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