



The rise of a Chinese giant

ALIBABA'S
DIFFERENTIATION
IN ECOMMERCE
MARKET

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The rise of a Chinese giant: ALIBABA'S DIFFERENTIATION IN ECOMMERCE MARKET

Climate change continues to be a growing and much-discussed issue, both in China and on the global stage. While governments around the world work to impose more environmentally friendly regulations, companies are expected to focus not only on profit revenue, but to shoulder the responsibility for making a positive impact on the wider society and environment.^{1,2} Alibaba Group, utilizing the technological advancements and making significant changes to its infrastructure, developed a series of actions, such as making its IT Green and the Ant Forest Program, to support the Chinese government's battle to reduce air pollution and raise the accountability of businesses.¹The key to Green IT is to use renewable energy. Data centers consume gigantic quantity of Energy which counts of 7% of global electricity. IT giants build sustainable data centers to have a positive impact on the world³, to cut costs and reduce energy use.

A] ENERGY-EFFICIENT CLOUD FACILITIES

Alibaba Cloud's Qiandao Lake Data Center:

This is a unique, high-tech deep-lake water cooling system by using cold water from Qiandao Lake, that allows for a cooler and more stable temperature in the data centre servers. ⁴ The control logic is developed by the Alibaba infrastructure Service team with real-time monitoring of server power consumption and operating temperatures to adapt actual cooling capacity to maximize energy savings.⁶ With this technology, Alibaba saves 300 million kWh of electricity and reduces CO2 emissions by 300,000 tons each year. This technology also reduces the annual average Water Use Efficiency (WUE).¹ The lake water enables free cooling in data center for more than 90% of time without mechanical cooling such as chiller. This creative practice cuts energy costs for the AliCloud Qiandao Lake Data Center by 80% compared to mechanical cooling, and more importantly, without any impact to the environment.⁶

Moreover, the specific Data Center uses green technology such as solar energy, hydraulic power, and heat recovered from server operations in order to heat offices within the facility while the renewable energy and design innovations put the center in the list with the top of the most extreme energy efficient data centers in the world. "At the AliCloud Qiandao Lake Data Center, every drop of water contributes towards the future of cloud computing and big data. With its smart use of the lake water for cooling and recycling, the AliCloud Qiandao Lake Data Center combines the best of natural resources with the comforts of modern city life and state-of-the-art technology in a unique way," says Jian Wang, Alibaba Group's Chief Technology Officer.⁶

In this way, by taking full advantage of cold lake water instead of non-conductive cryogenic liquids, the company is able to ensure a maximum power effectiveness (PUE) close to 1.0.⁵

ALIBABA'S ZHANGBEI DATA
CENTER IS EXPLOITING
SOLAR AND WIND ENERGY

by 100%,

ATTAINING EFFICIENCY

by more than 4%

AND IN PARALLEL

ACHIEVING BUILDING AND
MAINTENANCE COSTS.



B) GREEN/SMART LOGISTICS SYSTEM

Alibaba with Cainiao Network as its leader and coordinator of its large logistics ecosystem is able to effectively implement its Green Philosophy. The goal is to bring together thirty-two partner companies including courier service providers, warehouse operators and trucking firms and create a "Green Logistics Alliance"⁵. By 2020, Cainiao Network will apply AI algorithms to drive smart routing across 40,000 villages. This will shorten the average delivery journey by 30% in rural areas. In addition, the company will deploy new energy vehicles to a hundred cities in China in its effort to minimize its carbon footprint.^{9,1}

The goal is to

replace 50%

OF ALL PACKAGING
MATERIALS ON ALIBABA
RELATED PLATFORM

with 100%

eco-friendly or
biodegradable packaging
materials.

“Cainiao is committed to driving green smart logistics in China.” said Gu Xuemei, Cainiao’s chief technology officer.⁸ Apart from partners, Cainiao Network has partnered with 500 global brands, including Mondelez International and Colgate-Palmolive, to establish the “Green Brand Alliance” that commits to using “green packaging”. The goal is to replace 50 percent of all packaging materials on Alibaba related platforms with 100% eco-friendly or biodegradable packaging materials.⁵

Green / Smart Warehouses

Alibaba’s data-driven logistics affiliate includes the usage of 20 “green warehouses” across China, where all parcels will be packaged with renewable materials before shipping, according to the company.⁷ Additionally, green warehouses are powered by solar panels and use green energy vehicles. The company integrates **green building features** into its logistics centers by using energy-saving materials to reduce energy consumption and greenhouse gas emissions.⁵

‘Green Packaging’ System

Cainiao Network also launched the “green packaging” system, which optimizes a packing algorithm that will reduce the volume of packaging material used per parcel and utilizes biodegradable courier bags, tape-free (e-shipping labels) boxes and package recycling bins for delivery parcels and storage.^{9,1}

Package Recycling Points

Cainiao run its first Green Logistics City initiative in Xiamen city. A pilot program started in late 2017 based on it, over a hundred package recycling points located in the city. Customers could leave their useless shipping boxes at this point and Cainiao will collect them and will either reuse them or make new ones by recycling. ^{7,8}



Figure 1: **Ant Forest**'s program afforestation area. Retrieved from ⁵

C] ANT FOREST APP

Ant Forest is a program included within the Alipay app that combines green lifestyle with users' daily consumption activities. The program encourages users to choose green lifestyles through sixteen low-carbon options in their daily lives, such as using e-payments instead of paper invoices and choosing public transportation, biking or walking instead of driving to reduce vehicle emissions. Another sustainable strategy this program enables includes rewarding users for making environmentally friendly decisions in their daily lives through a points system, "green energy points" while booking a ticket online.^{10,11} These points can then be used to water and grow their own virtual trees on Ant Forest.¹⁴

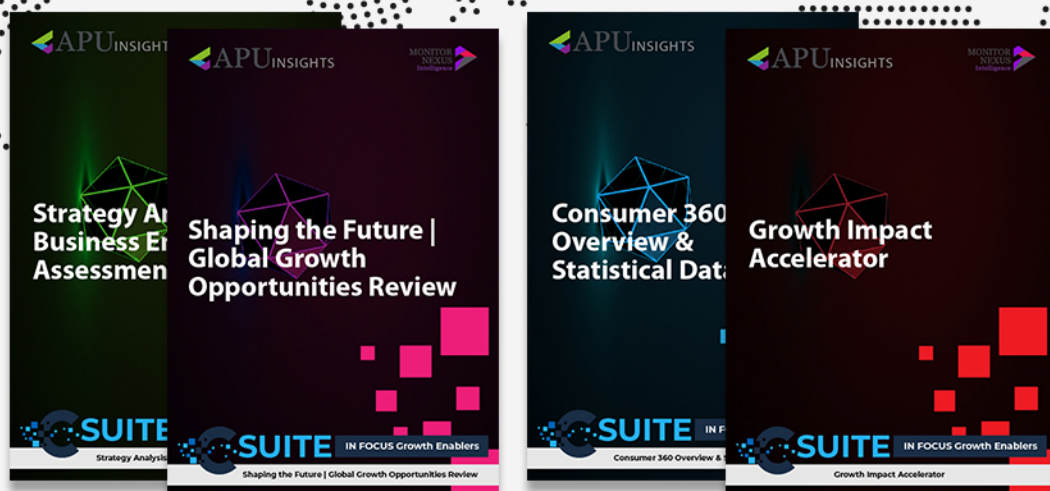
With the introduction of advanced technologies, such as artificial intelligence, drones and remote sensing satellites, users can now see directly the real impact of their actions¹⁴ using their apps while they are enabling to share their progress via social media.⁵ Since its launch in August 2016, 350 million users participated. Ant Forest and its non-government organizations (NGO) partners have planted around 122 million trees in some of China's driest areas (accounting for 112,000 hectares). The project has become China's largest private sector tree-planting initiative.¹² Alipay Ant Forest has also helped generate around 400,000 job opportunities and approximately USD 8.4 million in income across the entire endeavour, by working with farmers to plant trees, develop organic agricultural products, and connect them with e-commerce platforms.¹³

In addition to this environmental action, Ant Forest is exploring other creative and user-friendly ~~Social~~ Corporate Social Responsibility (CSR) models. Back in September 2017, the company launched a '**land protection project**', through which users can 'adopt' or virtually claim five square meters of forestland and protect it with the help of NGOs.¹⁴

Alibaba is keen to show a commitment to sustainability and CSR. The ecommerce giant states: "Since our founding, we have been highly committed to supporting and participating in charitable and socially responsible projects that align with our core values and mission, and to establishing a technology-driven charitable ecosystem to extend the benefits of our technological capabilities to the community at large."¹¹ The Alipay Ant Forest app presents a very promising opportunity for further development as it suggests a new way to mobilize people, especially young adults, who are typically most concerned by the impact of climate change, and get them further engaged in devising solutions for local and global problems.¹³ Ant Forest is planning to invest more in this area. According to Jing Xiandong, CEO of Ant Financial, the Company estimates that if its 300 million Ant Forest app users continue to actively participate in such endeavors, then the next five years will see afforestation achieved across an area of 4000 km², five times the size of New York City.¹⁴

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