INNOVATION

with a Purpose
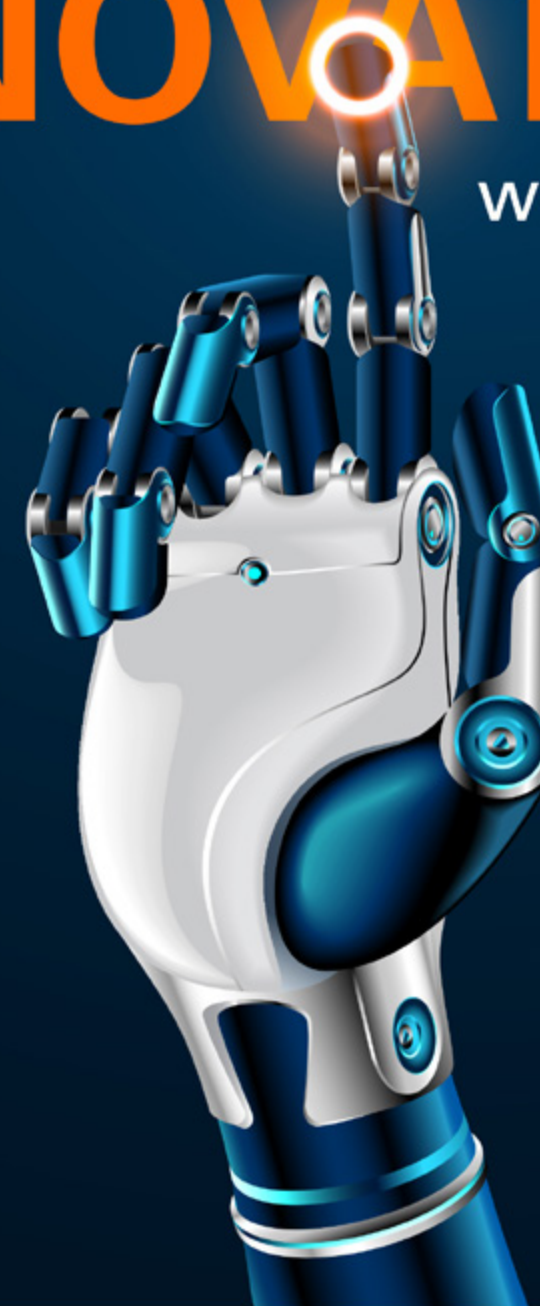
Alibaba Cloud

2022 Edition 8

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Keep on Innovating

We have seen 2021 as a year of transitional metamorphosis towards digitization. The year 2022 will continue toward a staggering technological evolution powering massive opportunities for enterprises to achieve digital transformation.

Alibaba Cloud is constantly innovating at the forefront of business intelligence that promotes resilience and sustainability, helping businesses navigate their digital transformation journey. We are increasing our efforts to build and foster an open, collaborative environment for innovation. Alibaba Cloud continues to develop at scale to design a new way ahead in the digital age and drive cloud-native transformation. We have been at the helm of several technological breakthroughs, from delivering unique solutions for the next-generation workforce to technologically supporting the Tokyo 2020 Summer Olympics.

Alibaba Cloud has introduced new solutions to continually improve the technological experience in the digital age. Alibaba Cloud and our practices aim to bring significant benefits such as cost savings, increased efficiency, and multi-dimensional data analysis to our own organization and empower many of our customers worldwide. This year we have unveiled a new in-house processor Yitian 710, and accelerated innovation through collaboration by making XuanTie RISC-V series processors open-source. It will assist global software developers in developing the core ability, including chips, allowing the entire RISC-V ecosystem to benefit from more innovation. We have also been working on new ways to meet the demands of the next generation of workers, such as launching Tingwu, an AI-powered meeting assistant that translates virtual meeting audio into transcripts in real-time. In addition, we have launched Lingjie, our latest integrated AI platform, capable of providing real-time data analytics with millisecond delay and various out-of-the-box services.

We also witnessed a greener and more efficient 11.11 Global Shopping Festival this year, thanks to innovative green technologies such as liquid cooling and wind energy being applied at our hyper-scale data centers which can reduce the average PUE to as low as 1.09. By running 100% on the Alibaba Cloud for the first time, the 11.11 event saw computing resources reduced by half for every 10,000 transactions compared to last year.

As Socrates said, "The secret of change is not to fight the old, but to focus on building the new." We make joint efforts with our clients and partners to innovate constantly in this digital era.

Let us keep on experiencing innovation on this incredible digital journey with Alibaba Cloud.

Selina Yuan

General Manager, Alibaba Cloud
Intelligence International Business Unit

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Innovation with a Purpose: Toward a More Sustainable and Inclusive Future

The staggering technological advancements have created massive opportunities for enterprises to achieve digital transformation, gain a competitive advantage, and accelerate business growth. Companies across the globe are now turning their focus toward leveraging the transformative power of technology to deal with challenging social issues of the world and make a global impact. At Alibaba Cloud, the digital technology and intelligence backbone of Alibaba Group, sustainability and inclusiveness lie at the heart of our innovation and business goals. We are continually stepping up the efforts to look beyond commercial business challenges, answer society's call, and cultivate an open, collaborative space for innovation.

Cloud-Native Technology

From supporting the Tokyo 2020 Summer Olympics to releasing new solutions for the next-generation workforce, Alibaba Cloud continues to innovate at scale to shape a new way forward in the digital age and boost cloud-native transformation. Outlined below are some of the innovation initiatives by Alibaba Cloud:

■ Cloud Computing

Alibaba Cloud's new in-house processor named Yitian 710 is one of the most advanced processors from China that has entered mass production. We also recently announced the development of cloud-native proprietary servers, called Panjiu, equipped with the self-developed server chip Yitian 710. Both innovations will deliver outstanding performance and boost overall computing efficiency. Another key technology by Alibaba Cloud is Apsara Luoshen, the high-performance network engine powering Alibaba Cloud. In this issue, we discuss the Apsara Luoshen Cloud Network Technology and its future outlook in detail.

■ 2021 11.11 Global Shopping Festival

Alibaba Cloud leveraged powerful cloud infrastructure and AI technology throughout the 2021 11.11 sales event. Our self-developed AI inference chip, Hanguang 800, **improved the performance of Taobao's search algorithm by a whopping 200%.**

■ Hybrid Future

We have also been innovating to address the needs of the next-gen workforce. Our AI-powered meeting assistant, Tingwu, **converts the audio of virtual meetings into transcripts in real-time with close to 98% accuracy.** Likewise, we recently launched an all-in-one PC and "Cloud Workplace" solution to enable people to work remotely.

■ Digital Sports Experience

Alibaba Cloud has released new solutions to continue transforming the sports experience in the digital age and will be providing support during the upcoming Beijing 2022 Winter Olympics and the 2022 Asian Games in Hangzhou. We rolled out the Premium DingTalk for Sports Games solution to enable seamless collaboration and communication among organizations during large-scale sports events.

Sustainable Green Technology

At Alibaba Cloud, we have pulled out all the stops to reduce our carbon footprints and boost sustainability using green data centers. To create an environment-friendly experience for our customers, we used a rare 'liquid cooling technology' deployed at our Hangzhou hyperscale data center. The liquid cooling technology by Alibaba Cloud saves **70 million kilowatt-hours (kWh) electricity consumption every year** compared to traditional data centers. Similarly, our data center in Zhangbei County in Northwestern China helped to **reduce 26,000 tonnes of carbon dioxide emission** by leveraging clean, renewable energy. Moreover, our Inner Mongolia data center **increased the consumption of wind and photovoltaic power to 45% of its energy mix in 2021 vs. 38% in 2020**.

Open-Source Initiatives and Accessible Technology

To encourage more innovation through collaboration and accelerate technological development, we made our XuanTie RISC-V series processors open-source. It will help the global software developers build their own cost-efficient RISC-V-based chips and bring more innovation benefits to the entire RISC-V ecosystem. Alibaba Group has also been leveraging a slew of open-source technologies to develop its technical systems.

To name a few, Alibaba Cloud uses Flink, Hadoop, Kubernetes based technology, and open-source deep learning frameworks like TensorFlow.

In addition to our open-source initiatives, we have also doubled down on our efforts in promoting inclusivity through accessible technologies. To make shopping accessible for everyone during the 2021 11.11 sales event, we leveraged Alibaba DAMO's speech recognition technology to make it easier for the elderly population in China to get accustomed to the digital space. A smart voice assistant 'Taoxiaobao' avoids the need for older adults to type on mobile devices by enabling voice search. Other accessibility initiatives include an "image search for medicine" feature on the Taobao app.

Summing it up, modern technologies carry the vast potential to enable enterprises to conduct business to benefit all and create a big difference globally. Alibaba Cloud is continually exploring ways to serve our customers, optimize our existing technologies, and unlock massive value for society.

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Decrypting Alibaba Cloud's Self-Developed Server Chip - Yitian 710

Alibaba Cloud recently unveiled a new processor design for its data centers, Yitian 710. The development of our proprietary cloud-native server series, called Panjiu, is also powered by this chip. With the advent of Yitian and Panjiu, Alibaba Cloud emphasized the fusion and optimization of software and hardware. The move helps improve the final process of the full-stack cloud infrastructure and realize technology and architecture innovation and self-development, from chips and components to the whole cabinet.

"Customizing our own server chips is consistent with our ongoing efforts toward boosting our computing capabilities with better performance and improved energy efficiency."

Jeff Zhang, President of Alibaba Cloud Intelligence and Head of Alibaba DAMO Academy during the 2021 Apsara Conference