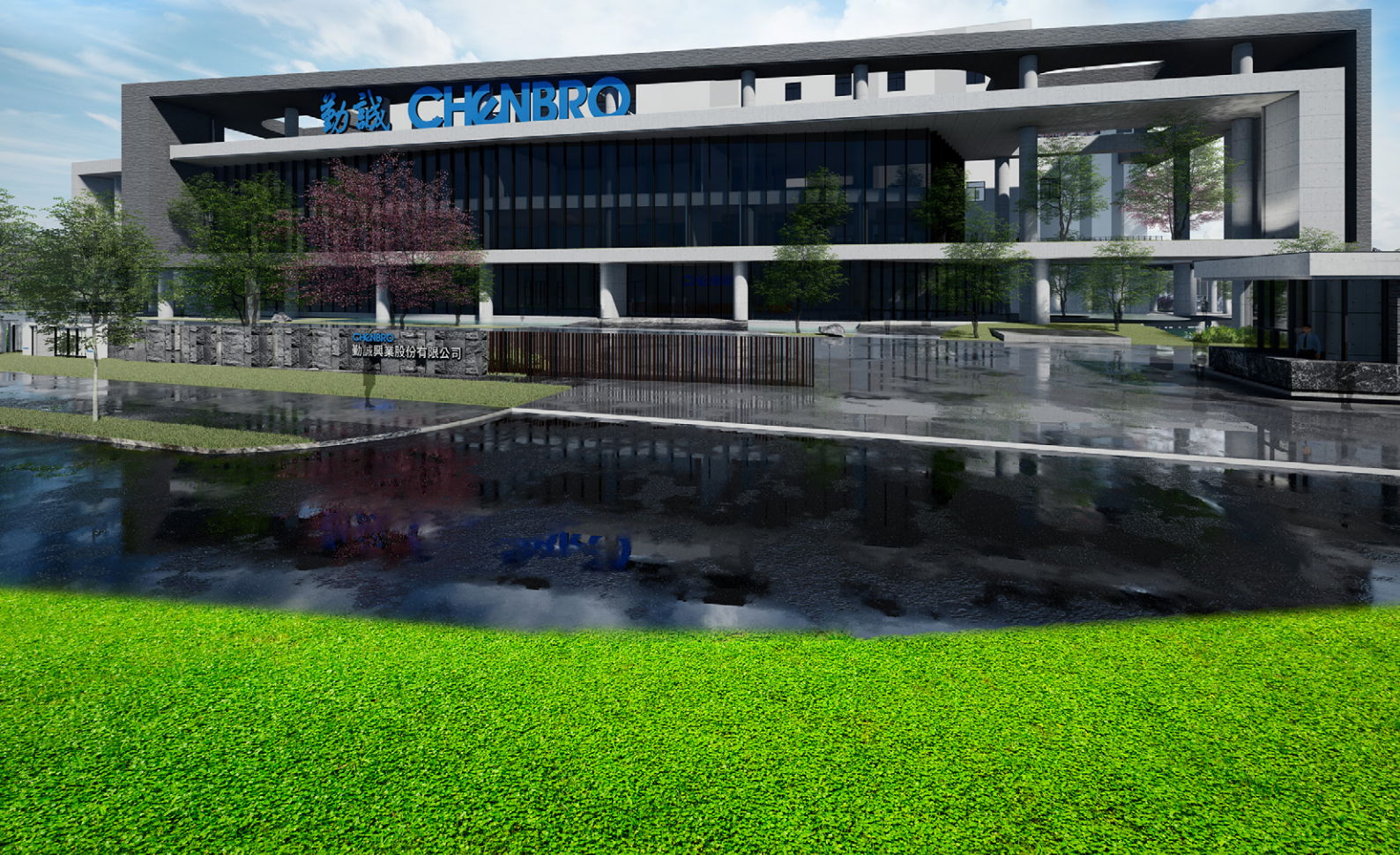


# CHENBRO

2021-2022

## Embracing Business Growth with Chenbro



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**Chairwoman's Message**

# Never Disappoint The Past, Never Fear The Future

Over the last two years, the outbreak of COVID-19 has brought many challenges to the technology industry. During this time, Chenbro Micom Co., Ltd. has overcome the challenges of the pandemic through employee teamwork and close cooperation with global partners. Also, we have achieved many milestones, including building the Wugu NCT factory, moving HQ, and investing in our new Chiayi factory in response to the soaring demands from the market. With fearless drive and determination, we have demonstrated our perseverance in overcoming these pandemic difficulties and assured success by investing in the future.

When the pandemic broke, we were faced with serious disruption from two of our factories, potential supply chain shortages, and delayed deliveries resulting from blocked logistics; as well as business downturn due to lockdowns in America, Europe and elsewhere. However, thanks to the steady leadership of the management team, all employees kept their cool and they followed all epidemic prevention rules. With the solid foundation we built up over the past 38 years, inventory was renewed and deliveries resumed. Dealing with the pandemic meant teamwork and Chenbro kept improving operations despite the disadvantageous situation. All this has meant Chenbro has moved even closer to becoming a top global leader in mechatronics solutions for the cloud computing industry.

Frontline workers put a lot of effort into ensuring manufacturing, customer services, and employees

at our headquarters building all transferred seamlessly to their new office. With various creative design teams in place, we combined technology and aesthetics to create a friendly working environment, hoping that employees will be happier and healthier working there. Another exciting prospect is that the construction of our Chiayi factory is almost complete with finished production line, IT infrastructure, and staff deployment. Due in early 2022, the Chiayi factory is expected to join our other production lines to boost business and create new growth.

Being able to get through this difficult time is down to the effort of all our employees, so in the future, we will encourage all our employees to increase their efforts to overcome the challenges related to the pandemic. In this era of volatility, uncertainty, complexity, and ambiguity (VUCA), the international situation is unstable and difficult to control. The pandemic will not be going away soon and the prices of materials will soar, and logistics will be challenging, which means costs will increase. Therefore, the competitive landscape of VUCA will continue to pose challenges to company operations.

Looking to the future, we will reorganize our infrastructure and let our employees cooperate in our success by following our core values of "diligence and integrity". Together we will become a stronger team that will surmount all difficulties and forge ahead courageously, collaborating with partners as we go, and building success in these challenging times. ■

**Maggi Chen, Co-Founder & Chairwoman, Chenbro**



# Driven by Three Innovative Strategies, Chenbro Co-Creates Business Growth Momentum with Customers

In response to the soaring demand for cloud computing, Chenbro Micom Co., Ltd. (Chenbro) has become the world's leading integrated server enclosure solution provider by promoting product innovation with its R&D and product design capabilities. To keep competitive, Chenbro stimulates new business growth by constantly strengthening its R&D capabilities, improving operational efficiency, and seeking new business opportunities derived from 5G and AIoT.

■ Interview with Ms. Corona Chen, President, Chenbro Micom Co., Ltd.

Facing uncertainties in the global economy and a fiercely competitive market, Chenbro, a leader in integrated server enclosure solutions, has continuously pushed business growth, resulting in its revenue hitting new highs year on year. Corona Chen, President of Chenbro pointed out that, starting in 2021, to achieve the goal of ten billion TWD of revenue by 2022, Chenbro launched three innovative strategies: reinforcing the company's core values, improving operational efficiency, and accurately winning new business opportunities.

## **Innovation viewpoint: reinforcing core values**

"Unlike most server case manufacturers having OEM production as their main business activity, Chenbro has actively practiced competitive differentiation since its establishment and has always considered R&D innovation as a core value of the company," said Corona. Server chassis carry various components such as motherboards, heat dissipation systems, power supplies and more. The chassis must allow all the various mechanical parts inside to operate without interfering with each other and maximize overall system efficiency. To achieve this, manufacturers need to constantly innovate. That's why Chenbro is committed to cultivating new

product design and R&D talent, deepening their know-how in electromechanical integration, and understanding customer needs so they can provide innovative customized mechanical engineering solutions.

Backed by its electromechanical integration capabilities, Chenbro adopts innovative and diversified service models to fully develop the market. In the Joint Design Manufacturing (JDM) service model dedicated to data center customers, which represents a significant portion of the company's revenue, Chenbro co-designs products with customers and provides customized mechanical engineering solutions. Through their "OEM Plus" service model, Chenbro assists customers in analyzing production results, and integrates shared molding tools and components to produce high-quality products with competitive prices. Lastly, Chenbro develops a marketing blueprint according to market demand, and designs bespoke modular, as well as "Off-The-Shelf" standard products. The three service models meet the needs of all types of customers, increases revenue and profits, and supports the company's competitive differentiation.



### **Operations viewpoint: improving operational efficiency**

To maximize the value of R&D, it is necessary to optimize operational efficiency. Chenbro constantly strives for operational improvements in lean production management, smart manufacturing, and six sigma statistical process control to improve quality and manufacturing processes. The establishment of TFSS strengthens product verification, reduces the usage of defective components in production lines, and avoids the production of poor-quality products. Also, by leveraging external consultants and IT resources, lean production management was established to boost efficiency, shorten lead times, reduce labor costs, and lower work-in-process inventory.

Chenbro implements lean production management in its two factories in China. The new Chiayi factory, which is expected to be put into operation in early 2022, is a highly intelligent automated smart factory. It will help lean production management and will be the key base of the company's operational efficiency optimization.

### **Business viewpoint: winning over new business opportunities**

"By establishing innovative product design and conceptual engineering, we have also deepened customer relationship management and created a win-win situation for embracing the future." explained Corona. Chenbro has turned "Me-Too" branded products into "Me-Better" products and developed its "Me-First" solutions to enhance competitiveness. This is the result of conducting in-depth interviews with system integrators and end users in different vertical markets, understanding the server enclosure design needs of end customers, and creating a product development model based on user journey maps.

Focused on exploring the myriad business opportunities of AIoT and 5G applications, Chenbro extends OTS product innovations and supports

*We are full of gratitude and full of confidence for the future. We will grow together with our customers and supply chain partners moving forward, maximizing the value of Chenbro and advancing towards sustainable growth.*

SI and channel customers to quickly develop corresponding solutions, which made Chenbro a leader in the white-label server enclosure market. In addition, the company constantly strengthens its joint product development with renowned brands to expand its JDM business, as well as provides customers with the best "OEM Plus" services by leveraging its fast, high-mix-low-volume production advantage. Chenbro believes that by exploring different market applications and establishing a shared and altruistic partnership with customers, the company will join hands with customers to ignite new business growth in the future.

### **Going beyond the present to co-create the future**

Corona said with confidence, "I cherish every day that I work with all team members, and every opportunity to grow with customers and supply chain partners. We look forward to maximizing the value of the company and pushing forward towards sustainable business growth." We must overcome two big barriers, the US-China trade war and the COVID-19 pandemic. We are full of gratitude and full of confidence for the future. Looking to the future, Chenbro will continue to pursue innovative strategies, embrace excellence and mutual prosperity, and join hands with partners to co-create the future. ■

# Dual Strategies – Product Development Innovation and Industry Integration, Chenbro Locks in New Business Opportunities in 5G and AIoT

With 38 years of accumulated R&D strength and production experience, Chenbro Micom Co., Ltd. (Chenbro) has refined its internal and external strategies to welcome the new growth era of smart applications. Internally, Chenbro has created innovative product development and business practices that satisfy its customers' diverse needs. Externally, it has integrated industry partners' resources to promote diversity and innovation.

■ Interview with Mr. Eric Hui, Vice President of Global Sales and Marketing, Chenbro Micom Co., Ltd.

In recent years, cloud computing has driven the rapid growth of data centers globally. Chenbro, the leading server enclosure solution provider, energetically won business opportunities in the cloud server case market through innovative and forward-looking products and business models. As 5G, AI and edge computing technologies propelled the development of the tech industry, Chenbro has been constantly developing products with partners based on years of R&D and production experience. Moreover, the company not only created a diversified service model to meet customer needs, but also established competitive differentiation to fuel its growth or the next decade.

## **Focused on customer requirements and product innovation**

“In order to meet the needs of different customers, Chenbro developed three service models: OTS products, OEM Plus, and JDM/ODM. Our product innovation strengths are based on them.”, said Eric. According to market demands, Chenbro designs its products with modular concepts, produces OTS standard products, and

seeks joint product development with renowned brands to create continuous innovation. Different from general OEM production, Chenbro “OEM Plus” helps customers review the production results of their product designs, then optimizes products and reduces production costs by using its years of accumulated R&D and production experience. In addition, with strong electromechanical integration capabilities, Chenbro’s JDM/ODM service model offers customized services to system integrators, so that they can provide diversified solutions to cloud service providers and meet the various needs of different data centers.

Eric emphasized, “Although the three service models are different, the experience and knowledge accumulated from each service will eventually converge. We learned the data center's server requirements from the JDM service model, and then applied relevant experience on the development of OTS standard products. The value of OTS products was also extended to OEM Plus and JDM services. Eventually, we formed a sustainable cycle, in order to keep up with the ever-changing market demands and constantly innovate

our products and services.”

### **Focused on the integration of supply chain partners for a mutually prosperous ecosystem**

Server enclosures carry various components such as CPUs, GPUs, motherboards, heat dissipation systems, power supplies, and many other parts, hence the enclosure and all parts inside it must be perfectly integrated. In this regard, Chenbro’s external strategy focuses on the integration of supply chain partners. The company dedicates itself to mutual prosperity within the industry ecosystem and providing the most innovative products to customers.

### **Joining forces with major CPU/GPU manufacturers to co-create product development**

CPUs and GPUs are the core of the server and key drivers of market trends. Therefore, Chenbro continuously strengthens its cooperation with major CPU/GPU manufacturers, such as Intel, AMD and NVIDIA. Chenbro designs products based on those product development blueprints, which helps develop server enclosures compatible with the next-generation CPU/GPU platforms and optimizes product performance based on these leading brands.

### **Connecting with motherboard manufacturers to co-create an open ecosystem**

Server motherboards must pass many verifications before they are accepted by the market, and this process requires a tremendous amount of time and labor costs. To reduce these, Chenbro initiated the “Reference Motherboard Program” which provides motherboard manufacturers with a series of pre-test options, such as mechanical design compatibility, functional tests, heat resistance, and many more. Additionally, by providing samples of motherboards embedded in server enclosures in advance, this program speeds up market expansion for motherboard manufacturers and allows end customers to have

more diverse and flexible choices when deploying servers.

### **Integrating part suppliers to co-create a value chain in the industry**

All servers need to be equipped with efficient heat dissipation systems and power supplies, so Chenbro not only collaborates with part manufacturers in product development, but also carries out joint marketing and introduces customers to each other. For example, Chenbro formed an alliance with ADLINK Technology, FSP Group, JPC Connectivity and Coretronic, to explore the huge business opportunities together in the 5G and AI era.

### **Infinite internal innovation momentum**

The root of Chenbro’s ability to meet customers’ demands and integrate the supply chain is its infinite innovation momentum program within R&D. Apart from establishing a number of special R&D projects, Chenbro encourages innovative thinking internally by promoting conceptual engineering, and conducting internal and external POC cooperation, in order to find innovations that can be commercialized. Additionally, a sharing platform was set up to give R&D engineers opportunities to exchange ideas and thoughts with each other. Finally, Eric commented, “The winner is the person who can keep up with the pace of customers’ R&D; hence server enclosures must evolve constantly in terms of structure, product materials, and manufacturing procedures. From a customer service perspective, from ecosystem collaboration to internal R&D, we have always upheld the spirit of diversity and innovation and achieved business growth together with suppliers and customers.” ■



# Chenbro Launches 1U and 2U Barebone Servers with New Ice Lake Processor Support

In response to the launch of Intel's new-generation Ice Lake server processor and Whitley platform, Chenbro launched the RB151 and RB251 series products to provide highly reliable barebone servers for data centers, the cloud, and high-performance computing applications.

With the thriving development of 5G and AIoT applications, the demand for constructing data centers is increasing and the need for vast storage capacity has grown exponentially due to the accelerated digital transformation of enterprises. To address this, Chenbro, a leading cloud server chassis manufacturer, has launched RB151 and RB251 series 1U and 2U barebones servers. These products are based on a new generation of modular design concepts that Chenbro has incorporated at the core of their research and development strategy. This new series is equipped with M50CYP2SBSTD server motherboards, which support Intel's Ice Lake Xeon CPUs—providing a vital boost for cloud service providers or enterprise data center upgrades.

Ramble Zhang, Director of Product Development Management at Chenbro, pointed out that for more than 38 years, Chenbro has always tried to innovate from the perspective of the customers and end-users, pushing all the components in the server chassis to achieve maximum performance.

## **Intel's third-generation Ice Lake processor empowers a new generation of cloud computing**

According to Matt Tsai, Project Manager at Chenbro, the Whitley platform is a big leap forward in Intel's product blueprint. In terms of hardware specifications, the Whitley platform has three major

highlights. First, the number of cores of a single Ice Lake processor has increased, driving the overall CPU execution efficiency up by 1.46 times. Second, the Whitley platform supports up to 64 x PCIe Gen 4 channels, significantly improving the server's communication, storage, and I/O capabilities. Third, the amount of memory supported by a single system increased, providing greater network data transmission bandwidth and accelerating the speed of network response.

In response to the Ice Lake processor's improvements in features and specifications, Chenbro also made three breakthrough designs while cooperating with Intel in product development. These breakthroughs allowed the Ice Lake processor to release its full potential in performance.

### **Breakthrough 1: increased space to accommodate more components**

To meet the new demands brought by the increase in PCIe Gen 4 channels and memory of the Ice Lake processor, Chenbro has adjusted the chassis' internal space configuration to improve the expansion flexibility of internal components. For example, the 1U chassis can support 12 x hard drives and 3 x PCIe cards. Chenbro has had to overcome the limitation of small spaces to make the system integrate perfectly and allow CPU





performance to be fully utilized.

### **Breakthrough 2: enhanced heat dissipation design to ensure operational stability**

While Ice Lake Processor has significantly increased its computing power, the power consumption has also increased to more than 250 watts, which poses various challenges to the system's heat dissipation design. Although RB151 and RB251 use air-cooling technology to achieve the best heat dissipation, Chenbro made three adjustments in product design. First, enhanced vents to ensure that sufficient cool air can be drawn into the system. Second, in cooperation with fan suppliers they developed highly efficient high-speed fans and reinforced the internal structure of the chassis to ensure operational stability of the CPU. Third, they optimized the design of airflow, fan blades, and other design details.

### **Breakthrough 3: implementing embossing process to effectively reinforce the structure of the chassis**

Server chassis are typically made of stamped steel material and the more components it has, the heavier load it bears, which means the more likely it is to put the chassis at risk of deformation. Even if the deformation is minor, it may still affect the adjacent chassis and make it difficult to remove from a rack. Therefore, Chenbro made a

bold move in introducing an embossing process when designing RB151 and RB251 to minimize the possibility of chassis' deformation, avoiding chassis assembly interference, and the risk of chassis being jammed and unable to be removed from the rack.

### **Persistency in optimizing customer's user-experience**

According to Ramble, although Chenbro's customers are mostly B2B customers, when designing products, the company emphasizes the user experience in an attempt to make the end-user feel that the products are easy to use. Therefore, many designs are made to optimize the customer's user experience before the final designs are chosen or determined.

For example, during the development of RB151 and RB251, the design of the hard disk bracket was changed with a small opening in the front end. End-users can install or replace hard disks without using any tools, significantly reducing time and convenience.

Ramble emphasized that to meet the needs of the end-users, Chenbro is constantly pursuing innovative designs features for its products. Looking forward, Chenbro will learn from its experience of developing RB151 and RB251 and apply the experience to more products so they can thrive in the global cloud server market. ■



### Harvard Business Review | 2021 Taiwan's Top 20 Female CEOs

The Harvard Business Review has conducted its first survey of Taiwan's top female CEOs. Maggi Chen, Chairwoman of Chenbro, was listed among the top 20 female CEOs in the survey.



### New H3C Technologies | 2020 Excellent Quality Award

With excellent supply chain management, Chenbro stood out among suppliers of New H3C Technologies, which presented Chenbro with the Excellent Quality Award.



### Dahua Technology | 2020 Excellent Technology Cooperation Award

Chenbro was recognized by Dahua Technology, winning the 2020 Excellent Technology Cooperation Award for the support in Hygon project.



### Inspur Group | 2020 Outstanding Partner Award

Inspur Group presented Chenbro with the 2020 Outstanding Partner Award, conveying its appreciation for Chenbro's cooperation and support for numerous projects.



### CommonWealth Magazine | 2021 Taiwan's Excellence in CSR Award

In the 2021 Taiwan's Excellence in Corporate Social Responsibility Award organized by CommonWealth Magazine, Chenbro came in sixth place among backbone enterprises. This recognition will further encourage Chenbro to advance sustainable operations.

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