

# Project Zijing

## Industry Report

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## Emergence and Evolution of BIoT Industry

The Business Internet of Things (BIoT) refers to the integration of IoT technologies for commercial use. These solutions include terminal hardware equipped with an operating system, complemented by supporting software developed based on the hardware.

It empowers merchants to operate more efficiently, make data-driven decisions, and respond to consumer needs in real time through advanced technologies and smart products. In response to these developments, the BIoT industry has undergone three stages of evolution:

- BIoT 1.0 marked the beginning, with hardware and software developed for narrowly defined, single-function use cases. The focus was on building basic digital capabilities for specific commercial scenario.
- BIoT 2.0 is the stage where intelligent operating systems redefined the value of hardware to enable diverse applications. In this stage, BIoT terminals evolved from simple point-of-sale devices into smarter BIoT devices. This evolution laid the foundation for more adaptable and scalable business solutions.
- BIoT 3.0 characterized cloud-edge collaboration and AI-enabled low-code/no-code development, accelerates the digitalization of real-world business scenarios. Human-centric interfaces, seamless cross-scenario connectivity, and intelligent automation have emerged as key differentiators in this new landscape.

As the industry has evolved, the BIoT ecosystem has expanded to include players from different stages, ranging from BIoT 1.0 providers to BIoT 3.0 providers. BIoT 3.0 serves as a digital gateway for businesses by lowering the barriers to digital transformation through cost-effective and integrated solutions. It enables SMEs to access digital capabilities more efficiently, thereby broadening the adoption of business digitalization. BIoT 3.0 also promotes closer software-hardware integration, turning devices into ecosystem hubs within a more connected commercial ecosystem. Supported by lower development costs and broader scenario coverage, BIoT 3.0 players are expected to support the next stage of industry development.

	BIoT 1.0 and 2.0 Players	BIoT 3.0 Players
Technology used	OS-driven hardware operated with customized software with limited extensibility, provided by fragmented participants.	Integrated end-to-end solution based on unified infrastructure (hardware, OS, modularized PaaS, etc.).
Operating system used	Various systems.	Primarily Android-based.
Product offerings	Multifunctional all-in-one machines that are predominantly hardware-driven, without ecosystem integration.	Integrated hardware-software solution as an ecosystem. Hardware serves as the ecosystem hubs, hosting both software and data flow, collectively forming the complete ecosystem. The software enables edge-cloud coordination and low-code development capabilities, while the circulating data can be integrated and analyzed to empower commercial scenarios.
Target customers	Medium and large businesses.	Comprehensive coverage, including medium and large businesses, SMBs and merchants
Application scenarios	Limited scope with single-scenario focus.	Full-scenario support covering end-to-end business processes.
Estimated number of players	In terms of Android BIoT players, the number is approximately 2,500.	A few.

## Challenges in the Development of the BIoT Industry

As the BIoT industry continues to grow, it faces a range of challenges, including the following:

- **Prolonged Iteration and Digital Penetration Process.** The adoption cycle for new technologies and products is relatively long, as the pace of digitalization varies significantly across industries, business

functions and enterprise sizes. In general, leading enterprises tend to adopt new solutions first, while broader market penetration takes time. As a result, the iteration and penetration of BIoT solutions is typically gradual.

- **Highly Fragmented Demand and High Customization Costs.** BIoT hardware and software often need to serve diverse and non-standardized application scenarios, which increases development and maintenance costs under traditional customized models. For many SMEs with long-tail demand, such investment is often difficult to justify or sustain. This creates strong demand for more cost-effective, agile and scalable BIoT solutions.
- **Low Efficiency of Industry-Wide Collaboration.** The lack of uniform standards across BIoT hardware and software, together with fragmented interfaces among equipment, cloud services and business tools, often results in poor interoperability and limited cross-scenario collaboration. This drives demand for standardized and integration-capable hardware and PaaS solutions that can support a more open and collaborative digital ecosystem.

### Market Drivers of the BIoT Industry

The BIoT industry is supported by multiple structural drivers that collectively contribute to the increasing adoption of smart commercial devices and solutions across vertical industries.

- **Technological Advancements, Cost Efficiency and Ecosystem Expansion.** Advances in AI, cloud computing, edge computing and connectivity technologies, together with improvements in chips, networks and open-source platforms such as Android, have lowered the cost and complexity of BIoT deployment. At the same time, the expansion of open ecosystems, including operating systems, developer communities and PaaS toolkits, has accelerated application development and broadened adoption.
- **Digitalization Initiatives Across Vertical Industries.** The growing demand for digital and data-driven operations is accelerating the replacement of legacy systems with integrated smart devices and solutions across sectors such as retail, food service, logistics and manufacturing, thereby driving the adoption of BIoT terminals, platforms and services.
- **Policy Support.** Government policies in major markets continue to promote digitalisation and IoT adoption, supporting the deployment of BIoT devices, platforms and applications across industries.

### Opportunities Emerging with BIoT 3.0

BIoT 3.0 creates opportunities by promoting openness, strengthening software-hardware integration and improving the use of cloud-based intelligence. Through integrated hardware platforms, open-source PaaS components and development templates, it lowers development barriers, reduces costs and enables partners to build and customize solutions more efficiently. As the ecosystem expands, BIoT 3.0 is expected to support broader digital commerce adoption across industries.

Key opportunities include:

- **Smart Devices as Ecosystem Hubs.** With AI technologies becoming more widely used across industries, smart devices are emerging as ecosystem hubs. These devices can combine AI processing, edge computing, and sensor networks, allowing different systems to work together more seamlessly. This interconnectivity enables the development of more intelligent solutions and allows developers to adapt tools to a wider variety of industries and use cases.
- **PaaS and Software Integration.** BIoT 3.0 supports a modular PaaS structure that simplifies the development of applications. By offering reusable solution components, this approach helps developers to develop and launch software faster, especially for niche or long-tail business needs, without having to build everything from scratch.
- **Android-Based Open Architecture.** By predominantly building on the Android operating system, BIoT 3.0 offers a flexible and cost-effective alternative to more closed-source or expensive platforms like Windows or iOS. This open environment allows developers to create a broader range of applications while keeping development and maintenance costs lower.

- **Unified Cloud-Enabled Infrastructure.** With real-time cloud connectivity built into its architecture, BIoT 3.0 supports features like remote updates, cloud-based training, and functional expansion. This helps devices become smarter over time and gives businesses more agility in how they respond to changing needs or scenarios.
- **Continuous Data-Driven Improvement.** The data generated through BIoT deployments plays a vital role in improving commercial operations. Solution providers can use this data to refine AI models and enhance analytics capabilities, creating a self-reinforcing loop that continuously improves product performance and decision-making over time.

	SUNMI	Other BIoT 3.0 players
Product offering	All types of devices and accessories	Desktop digital terminals, handheld digital terminals, integrated cashier scales, self-service machines.
Price range (RMB)	0.4k-18.5k	1.1k-6.2k
Target Customers	Full-scenario coverage, including retail, catering, food & beverage (F&B), and chain stores.	Retails, Transportation and logistics, Accommodation and food, and Finance
Geographical area of operations	APMEA, Americas, Europe	Asia, North American states and Europe
Competitive advantages	<ul style="list-style-type: none"> <li>• Advanced smart capabilities with AI-driven automation</li> <li>• Self-developed operating system and PaaS platform</li> <li>• Robust ecosystem development with open APIs</li> </ul>	<ul style="list-style-type: none"> <li>• Unified platform for device management with global expansion</li> <li>• ISV supporting development platform</li> </ul>

### Global BIoT Solution Market Size

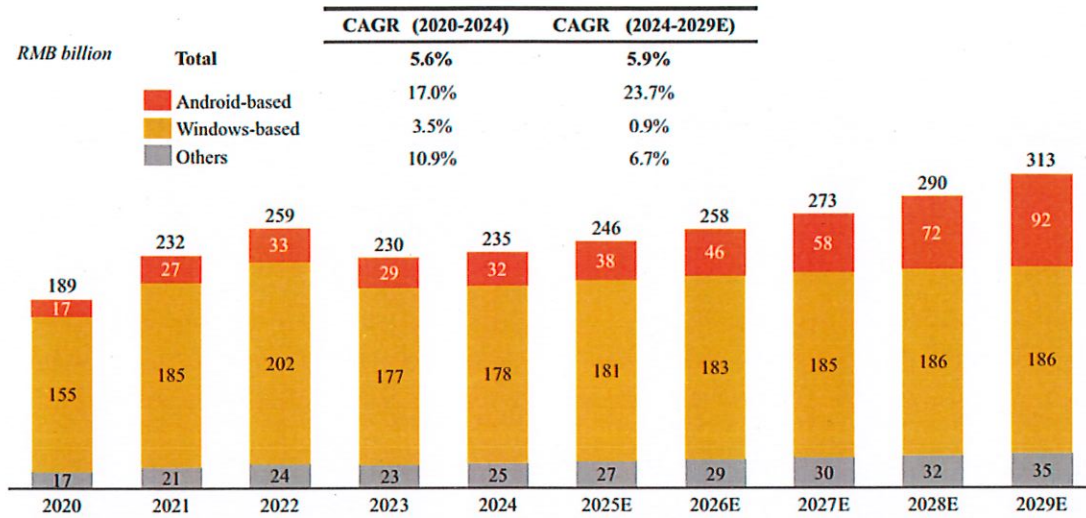
The global BIoT solution market has experienced steady growth, expanding from approximately RMB189 billion in 2020 to around RMB235 billion in 2024, representing a CAGR of approximately 5.6% over the period. BIoT solutions are widely used in high-frequency commercial sectors, such as retail and food services. As digital transformation gains momentum across more industries, such as healthcare, education, and tourism, BIoT adoption is expected to penetrate across a broader range of industry sectors. In addition, ongoing upgrades of existing devices and systems are expected to further drive market growth. The global BIoT solution market is projected to reach RMB313 billion by 2029 at a CAGR of approximately 5.9% from 2024 to 2029. This indicates continued demand and substantial room for continued development and adoption across industries worldwide.

From 2020 to 2022, the COVID-19 pandemic accelerated demand for contactless services. This shift led to rapid adoption of BIoT solutions in areas such as food delivery and self-service operations. By 2023, as the pandemic eased and economic activities normalized, the global BIoT solution market transitioned from rapid, pandemic-driven growth to a phase of steady, sustained development. The contraction of the global BIoT solutions market in 2023 was driven by several factors. First, although consumer activity gradually recovered, the lingering effects of the pandemic continued to weigh on brick-and-mortar merchants. Business closures and operational downsizing led to terminals being canceled or left idle, reducing the overall installed base. Second, the rapid adoption of mobile payment methods partially substituted for traditional card-based transactions, dampening demand for incremental POS hardware. In addition, based on publicly available shipment data, the global POS market experienced strong growth during 2020 to 2022, resulting in an industry-wide destocking phase in 2023, as elevated shipments from prior years required time to be absorbed by end users. This dynamic contributed to a temporary slowdown in new device procurement and deployment.

Windows-based solutions historically took a large share, and it was supported by earlier adoption in the market and the prevalence of desktop-oriented deployments at the early stage of commercial terminals. Going forward, Android-based solutions have a rising penetration rate, driven by its open-source nature, faster device-

side customization and iteration, and broader application support.

**Global BIoT Solution Market, 2020-2029E**



Source: Industry expert interviews, CIC

### The Value Chain of BIoT Industry

The BIoT industry can be broken down into three primary segments within the value chain: (i) component suppliers, including LCD screens, casings, chips, and electronic elements; (ii) BIoT industry participants, divided into three categories: providers of integrated hardware-software solutions, hardware-only, and software-only; (iii) the application of BIoT into specific industries, ranging from restaurants, food delivery, retail, transportation, logistics, hospitality to healthcare. BIoT industry participants typically adopt two business models: direct sales to end customers or collaboration with distributors for downstream delivery. SUNMI operates in the midstream of the BIoT value chain, providing end-to-end hardware-software integrated solutions that empower downstream enterprises to achieve digital transformation and intelligent upgrading.

### Global Android-based BIoT Solution Market Overview

Android-based BIoT solutions refer to the integration of IoT, AI, and big data technologies into hardware and software systems for commercial use, based on Android's open-source nature. These solutions help businesses streamline operations, improve operational efficiency, and enhance user experience in day-to-day interactions. SUNMI developed the world's first Android-based POS terminal, and has built a full ecosystem that integrates intelligent operating systems, cloud-based services, with a developer platform tailored to its smart devices.

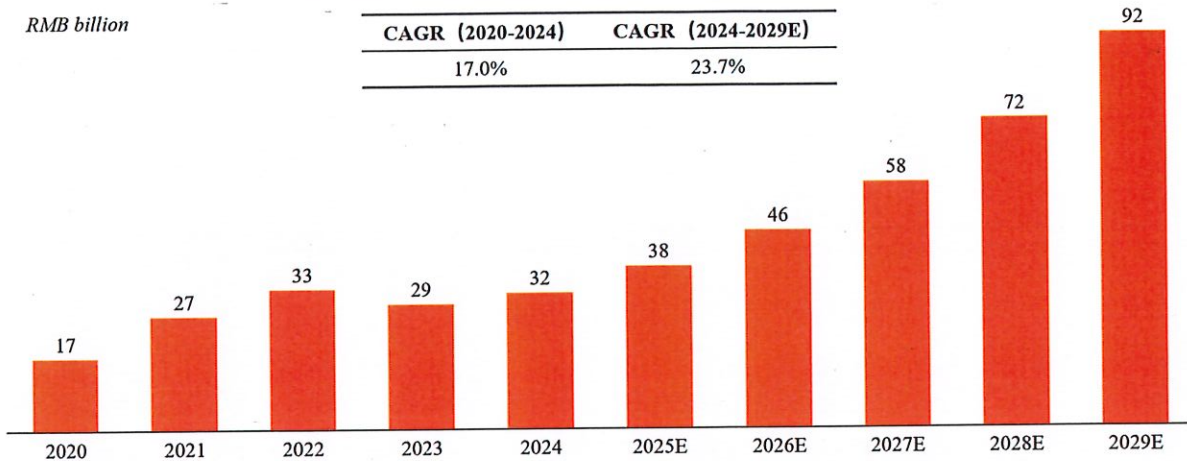
### Global Android-based BIoT Solution Market Size

The global market size of Android-based BIoT solutions was approximately RMB32 billion in 2024. It is projected to reach approximately RMB92 billion by 2029, at a CAGR of 23.7% from 2024 to 2029. Android's high level of compatibility supports a wide range of functions, which has helped speed up its use in many commercial settings. The penetration rate of Android-based BIoT solutions in the global market, measured by the global market size of Android-based BIoT solutions over the global market size of BIoT solutions, is expected to increase from approximately 14% in 2024 to around 29% by 2029. In APMEA, the total market size of Android-based solutions amounted to RMB14 billion in 2024, including RMB10 billion from China. In comparison, the market size in the Americas and Europe was RMB11 billion and RMB7 billion, respectively.

### Global Android-based BIoT Solution Market Size, 2020-2029E

RMB billion

CAGR (2020-2024)	CAGR (2024-2029E)
17.0%	23.7%

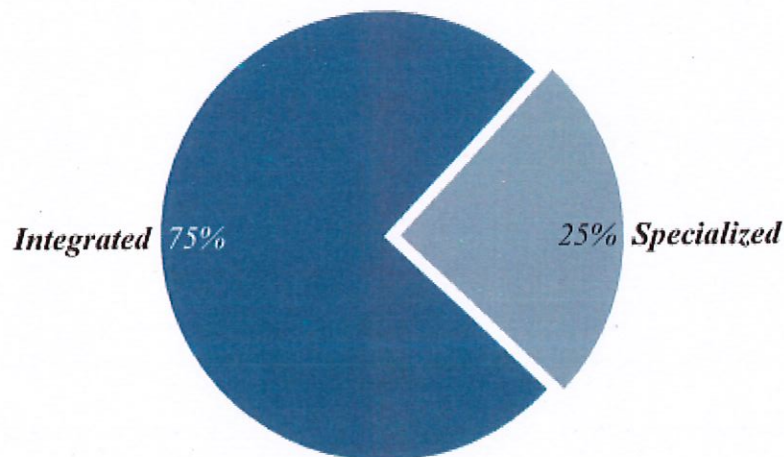


Source: Industry expert interviews, CIC

The Android-based BIoT Solution market is primarily composed of two types of providers, as further elaborated below. Customers with basic needs, such as small retail shops requiring only cashier functions, may opt to purchase hardware alone. In contrast, businesses with more sophisticated digital demands, such as chain grocery stores and restaurant brands, are more likely to invest in integrated software-and-hardware solutions.

- **Software-and-Hardware Integrated Solution Providers:** These providers dominate the market, collectively accounting for approximately 75% of the total market size in 2024. The prevailing trend in this space is the integration of IoT terminals with PaaS and other software services, and the leading players include the Company. However, there are notable differences in hardware and software capabilities among integrated solution providers. Only a select few can deliver both robust functionality and a seamless user experience.
- **Specialized Providers:** These players make up the remaining 25% of the market. These players typically specialize in only one part of the stack, either hardware or software, and purchase the other part from third-party vendors rather than developing it themselves, resulting in a lack of a fully integrated solution. The segment is more fragmented, with individual companies generally smaller in scale. Their limited scope often results in a weaker understanding of specific applications compared to integrated providers.

#### Market Share of Android-based BIoT Solution Providers by Provider Type, 2024



Source: CIC

With the adoption of Android-based BIoT solutions and AI technologies, smart devices have evolved

from basic execution tools into ecosystem hubs that support diverse applications, process data and improve operational efficiency. As a key gateway to business digitalization, BIoT 3.0 participants are leveraging such ecosystem hubs to help merchants improve operations and expand more efficiently across verticals and markets. The total global addressable market for Android-based BIoT solution providers, including software subscriptions, acquiring services and business intelligence solutions, is estimated at approximately RMB3.4 trillion.

The global market for non-Android BIoT solutions expanded from RMB172 billion in 2020 to RMB203 billion in 2024, reflecting a CAGR of 4.2%. It is estimated that the global market size of non-Android BIoT solutions will from RMB203 billion in 2024 to RMB221 billion in 2029, representing a CAGR of 1.7%. Among them, the market size of Windows-based BIoT solution amounted to RMB178 billion in 2024, according to CIC.

	Android-based BIoT Solution	Non-Android-based BIoT Solution
Technology used	<ul style="list-style-type: none"> <li>Mostly based on ARM architecture.</li> <li>Android OS (often with custom UI)</li> <li>Lightweight, modular design</li> <li>Deep cloud-native integration (IoT, remote updates)</li> </ul>	<ul style="list-style-type: none"> <li>Mostly based on x86 architecture</li> <li>Windows Embedded OS</li> <li>Heavyweight systems with high compatibility</li> <li>Non-modular apps integration</li> </ul>
Product/service offering	Forms vary, including handheld terminals, tablets, desktops, and more. Integrated with cloud platforms.	Primarily desktop AIOs or detachable tablets. Tailored for integration with existing systems.
Functionalities	Touch-optimized UI. Suitable for mobile operations and remote maintenance. App-based architecture allows modular functions.	Robust support for complex applications. High degree of customization for enterprise needs.
Pricing	A wide range of pricing options.	Usually higher upfront and maintenance costs compared to Android-based solutions.
Downstream application scenarios	Full-scenario compatibility, widely adopted in retail, F&B, logistics, education, healthcare and other industries with high demands for mobility, cost-effectiveness and cloud access.	Primarily deployed in manufacturing, transportation, government, and energy sectors where high system stability and legacy software compatibility are critical requirements.
Growth rates	Rapid growth with 24% CAGR projected over the next five years.	Moderate growth with 2% CAGR projected over the next five years, primarily in existing markets.
Strength and weakness	<ol style="list-style-type: none"> <li>Advancing device-cloud integration</li> <li>Broad product portfolio</li> <li>Real-time iteration</li> <li>Expanding scenarios</li> </ol>	<ol style="list-style-type: none"> <li>Enterprise-grade security</li> <li>High compatibility with legacy systems</li> <li>Trusted in traditional IT governance</li> <li>Higher cost and complexity</li> <li>Less agile in cloud scenarios</li> </ol>
Source code accessibility	Built on Android (often AOSP-based), leveraging its open-source nature to enable deeper OS-level customization and faster device-side capability integration	Typically based on non-Android OS platforms (e.g., Windows ecosystem), which are typically not open-source at the OS level; OS-level customization is generally more constrained.

## Competitive Landscape

### Competitive Landscape of Global BIoT Solution Market

#### Competitive Landscape of Global BIoT Solution Providers, 2024

Ranking	Player	Founding year	Revenue in 2024 (RMB in billions)	Market share in terms of revenue (%)
1	Company E Toshiba Tec Corporation	1950	~15.7	~7%
2	Company C Fiserv, Inc.	1984	~15.1	~6%
3	Company F Worldline S.A.	1972	~13.2	~6%
4	Company B Zebra Technologies	1969	~11.6	~5%
5	Company D Ingenico	1980	~6.9	~3%
			...	
10	The Company	2013	~3.5	~1%

Note:

- (1) Company E is a leading global provider of retail and payment technology solutions that offers a wide range of point-of-sale systems, electronic cash registers, and auto-identification equipment. Company E, established in 1950 and headquartered in Tokyo, Japan, is listed on the Tokyo Stock Exchange.
- (2) Company F is a global payments and transactional services provider that delivers comprehensive solutions covering payment terminals, merchant acquiring, and digital payment processing. Company F, established in 1972 and headquartered in Paris, France, is listed on Euronext Paris.

### Competitive Landscape of Global Android-based BIoT Solution Market

The global Android-based BIoT solution market remains at an early stage of digital transformation, with players spanning different stages of BIoT development. Many providers still operate at the BIoT 1.0 or 2.0 stage and focus on single-function use cases such as card payments, with Android adoption often limited to specific functions rather than broader business operation scenarios. By contrast, BIoT 3.0 players address more complex and fragmented digitalization needs through more open ecosystems and software-hardware integrated solutions, positioning them to support broader business operations and expand across digital application scenarios more effectively.

SUNMI is the world's largest Android-based BIoT solution provider in terms of revenue in 2024. According to CIC, SUNMI also has the broadest coverage of application verticals, the widest range of sub-verticals, and the most extensive global presence. Furthermore, SUNMI has launched a series of innovative products that have accelerated the evolution of the industry. SUNMI achieved market leadership within a relatively short period, surpassing competitors that have operated in the industry for decades.

The global market landscape is expected to gradually consolidate, with players capable of scaling across multiple verticals and geographies expected to gain a lasting competitive edge.

### Competitive Landscape of Global Android-based BIoT Solution Providers, 2024

Player	Founding year	Revenue in 2024 (RMB in billions)	Market share in terms of revenue (%)	Geographical coverage	Vertical coverage	Geographical regions of sales	Price range(RMB)	Product types	Technical Capabilities
The Company	2013	~3.5	~11%	over 200 countries and regions	15	APMEA, Americas, Europe	0.4k-18.5k	All types of devices and accessories	<ul style="list-style-type: none"> <li>Advanced WiFi technology.</li> <li>DMP system.</li> <li>Device-cloud integration.</li> <li>Open source and modular solution.</li> <li>Developer supporting services.</li> <li>"Plug-and-Play" applications.</li> <li>AI algorithms.</li> <li>Proprietary app store</li> </ul>
Company A Pax Global Technology	2000	~3.2	~10%	~120 countries and regions	4	Asia, North American states and Europe	1.1k-6.2k	Desktop digital terminals, handheld digital terminals, integrated cashier scales, self-service machines	<ul style="list-style-type: none"> <li>Lightweight proprietary OS for low-end devices.</li> <li>Unified peripheral API &amp; consistent UI.</li> <li>Proprietary app store.</li> <li>ISV development supporting platform</li> </ul>
Company B Zebra Technologies	1969	~2.4	~8%	~170 countries and regions	6	North America and Europe,	5k-14.3k	Handheld digital terminals and tablets	<ul style="list-style-type: none"> <li>Self-developing scanning engine.</li> <li>RFID enabled.</li> <li>Data capture technologies.</li> <li>Data analytics technologies.</li> <li>Voice and video collaboration tools</li> </ul>
Company C Fiserv, Inc.	1984	~2.0	~6%	~11 countries and regions	2	APMEA, Americas, Europe	2.5k-13.5k	Desktop digital terminals, handheld digital terminals, integrated cashier scales, self-service machines	<ul style="list-style-type: none"> <li>Integration with the back-end financial technology.</li> <li>End-to-end encryption.</li> <li>Vertical software solutions.</li> <li>Proprietary app store</li> </ul>
Company D Ingenico	1980	~1.4	~4%	~120 countries and regions	6	North American states and Europe	2.3k-6.3k	Handheld financial digital terminals, handheld retail terminals, self-service machines	<ul style="list-style-type: none"> <li>Cloud estate and key management.</li> <li>Security with PCI PTS v6.</li> <li>Proprietary app store.</li> </ul>

Source: Annual reports, industry expert interviews, CIC

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1. The specific shipment data has not been publicly disclosed by companies, making it difficult to obtain comprehensive shipment figures. Given the broad range of product lines, estimating shipment volumes based solely on price ranges could lead to substantial inaccuracies.
2. Price range information is obtained from sources such as companies' disclosure, official websites, annual reports, investor materials and procurement websites like Amazon, POSGuys, Barcode Inc.

Note:

- (1) Company A is a leading global E-payment terminal solutions provider that provides a wide range of payment terminals, PIN pads, and point-of-sale hardware and software, generating over 90% of its revenue from card payment solutions. Company A, established in 2000 and headquartered in China, is listed on the Hong Kong Stock Exchange.
- (2) Company B is a global leader in the automatic identification and data capture industry, focusing on the design, production and sales of AIDC offerings. Company B, established in 1969 and headquartered in the U.S., is listed on the NASDAQ Stock Exchange.
- (3) Company C is a global fintech and payments company with solutions for banking, merchant acquiring, global commerce, billing and payments, and point-of-sale. Company C, established in 1984 and headquartered in the U.S., is listed on the New York Stock Exchange.
- (4) Company D is a merchant services technology company with expertise in secure payment solutions. Company D is a private company established in 1980 and headquartered in France.

### Historical Prices of Main Materials

The core components of BIOT devices primarily include LCD screens, casings, and a range of chips and electronic elements that enable device functionality. Due to differences in design among industry participants, the specific components used in devices may vary. Overall, the prices of LCD screens and DRAM memory in BIOT devices are relatively comparable across the industry. Prices of LCD screens vary by size and fluctuate in response to supply and demand dynamics. Since 2020, the unit price of 11.6-inch LCD screens has ranged between RMB150 and RMB300, while that of 17.3-inch LCD screens has ranged between RMB250 and RMB400. Due to capacity expansion, the price of 11.6-inch LCD screens is forecast to decrease to the range of RMB135 to RMB150 by 2029, while the price of 17.3-inch screens will decline to the range of RMB 200 to RMB 230. Similarly, DRAM

memory prices vary depending on capacity and are affected by factors, such as supply and demand and the semiconductor industry cycle. For example, since 2020, the price of DDR4 (8Gb (1Gx8), 2133Mbps, 8G capacity) has fluctuated between RMB10 and RMB26 per unit.

## Competitive Advantages of SUNMI

### SUNMI's Company Profile

The Founder, Mr. Lin developed the world's first PC-based POS terminal in 1999, and in 2011, he foresaw the mobile internet trend and launched the world's first Android-based POS terminal. SUNMI is one of the first Chinese IoT companies to establish a substantial global presence, with its founding team venturing into international markets as early as 2003. SUNMI had their first online store on Tmall and JD.com in 2017. SUNMI is the industry-first company that has commercialized BIoT-centric data solutions. SUNMI is the largest Android-based BIoT solution provider in the world in terms of revenue in 2024, with a market share of over 10%, and the market for Android-based BIoT solutions is expected to experience explosive growth over the next five years. SUNMI covers more than 100 industry sub-verticals, such as restaurant, supermarket, sport & fitness, clinic and delivery, making it the most diversified BIoT solution provider globally. SUNMI APP Store covers a vast majority of major on-demand delivery apps and payment apps across their key geographic markets. As of December 31, 2024, SUNMI's solutions were deployed in over 200 countries and geographic regions, covering more than 90% of the world's markets, including all G20 countries. According to CIC, SUNMI has served over 70% of the world's top 50 food and beverage enterprises. In China, SUNMI has achieved over 70% coverage among top 100 food and beverage enterprises and over 60% coverage among top 100 chain stores. SUNMI has nurtured the world's largest developer ecosystem dedicated for commercial scenarios, attracting over 39,000 developers and supporting approximately 28,000 downloadable applications with over 0.2 billion downloads as of December 31, 2024.

SUNMI has redefined industrial design standards in commercial hardware, earning more top-tier design awards than any of other industry peers. SUNMI has redefined the standards for BIoT terminals and devices in commercial application scenarios. SUNMI is pioneering the BIoT industry with a track record of product and technology innovations in smart device design and engineering, PaaS platform and software technologies, and AI-driven data analytics. Since SUNMI first launched the V1, the world's first all-in-one BIoT terminal, this continuum of innovations has propelled SUNMI to surpass US\$100 million in global revenue within just three years, establishing the company as a clear industry leader and the youngest company among the top ten industry players.

The following is a summary of SUNMI's key business development milestones since the commencement of its business:

Time	Milestone
2013	SUNMI Company was established in Shanghai, PRC.  SUNMI introduced Yes, I Deliver (我有外賣) as the first on-demand delivery POS solution in the world.
2016	SUNMI announced the official global debut of its flagship product, V Series.  SUNMI introduced the world's first all-in-one BIoT terminal and developed the world's first omnipresent BIoT platform supported by SUNMI OS and SUNMI APP Store for merchants and software developers, empowering merchants to embrace the mobile Internet era.
2017	The number of applications in the Sunmi App Store exceeded 1,000.

- 2018 SUNMI released the industry's first facial recognition payment cashier product that supports financial level payment.
- SUNMI's products are sold to 100 countries and regions with overseas shipments accounting for nearly half of the total sales.
- 2019 SUNMI's valuation exceeded US\$1 billion with shareholder basis including investment entities of Ant Group Co., Ltd., Xiaomi Corporation and Meituan.
- SUNMI released SUNMI OS 3.0, with more than 10,000 platform software developers.
- Opening of Beijing SUNMI Home, providing localized services to merchants offline.
- 2020 SUNMI achieved more than 1.9 million monthly active devices in 200 countries and regions.
- 2021 SUNMI upgraded Sunmi's BIoT strategy and were dedicated to creating an interconnected full-scene digitalization.
- SUNMI launched the industry's first self-developed AI product identification technology and barcode deep learning algorithms, which received widespread acclaim in the industry.
- 2022 SUNMI upgraded its products with enhanced device cloud management, online diagnostics and OTA while providing three cloud development options (global cloud, local cloud and private cloud) to ensure data security and compliance.
- 2023 SUNMI launched SUNMI OS 4.0.
- SUNMI launched the industry's first hardware and software platform architecture for full-scene interconnection, and successively launched SUNMI Third-Generation Products.
- SUNMI products were sold to over two hundred countries around the world.
- 2024 SUNMI organized the first developer conference with developers.
- SUNMI Hyper WiFi was officially launched.

SUNMI is the first to develop a global BIoT cloud ecosystem with high concurrency. SUNMI is the only BIoT solution provider with self-developed proprietary automatic product recognition among global top five Android-based BIoT solution players. To address the challenges faced by businesses worldwide, including prolonged iteration and digital penetration process, highly fragmented demand and high customization costs, as well as low efficiency of industry-wide collaboration, SUNMI has developed a low-code, modular BIoT PaaS platform based on their rich experience across geographies and commercial scenarios. SUNMI is among the first to promote the adoption of digital currency and accelerate the internationalization of digital RMB. Launched in 2015, SUNMI APP Store has been the world's 1st and largest Smart application marketplace for businesses since 2019, and has maintained consistently high levels of activities thereafter. Among SUNMI's direct competitors, SUNMI is only BIoT solution provider for businesses that has self-developed Automated Goods Recognition. SUNMI launched the industry's first self-developed AI product identification technology and barcode deep learning algorithms, which received widespread acclaim in the industry.

With large-scale OTA deployments, SUNMI's smart devices outperform the industry average in critical performance metrics such as scanning speed, motion tolerance, and reading distance. SUNMI is the first to develop a global BIoT cloud ecosystem with high concurrency. SUNMI is one of the industries' first to integrate AI capabilities into BIoT solutions. Its AI-powered scanners deliver industry-equivalent performance at over approximately 15% to 25% lower costs per barcode algorithm and scanner compared to traditional solutions. A majority of its second-generation devices have a mean time between failures (MTBF) of more than 70,000 hours

while certain third generation devices (i.e. D3 Pro and T3 Pro) have an MTBF of more than 80,000 hours, based on our lab test results. Both figures are significantly higher both far higher than the industry standard of 50,000 hours. SUNMI's PaaS platform improves developer efficiency by over 30% and enhances external device integration by up to 60%, compared to traditional development without the adoption of the PaaS platform.

Leveraging China's OEM/ODMs for scalable production, SUNMI collaborated with top-tier China's OEM/ODM during the Track Record Period to manage their products quality effectively and efficiently.

Below table sets forth the comparison between standard Android operating system and SUNMI OS.

<b>SUNMI OS vs standard Android operating system</b>	
<b><i>Computing performance optimization</i></b>	<ul style="list-style-type: none"> <li>- Application start speed increased more than 10%</li> <li>- Application page switching speed increased more than 30%</li> <li>- Overall system fluency increased more than 10%</li> <li>- Under the same frequency band, the throughput is increased by more than 80%</li> </ul>
<b><i>Communication capability improvements</i></b>	<ul style="list-style-type: none"> <li>- Adjusting the roaming threshold can effectively reduce the average delay, enhance the average signal strength and reduce the packet loss rate, according to our internal test data, the packet loss rate is reduced from 0.23% to 0.03% after the adjustment</li> <li>- Communication delay is reduced by more than 70%</li> </ul>
<b><i>Fault repair system</i></b>	<ul style="list-style-type: none"> <li>- Supports functional testing for various devices and accessories</li> <li>- Automatically analyzes and repairs real-time abnormal logs from devices</li> </ul>
<b><i>Cloud-based collaborative management configuration capability</i></b>	<ul style="list-style-type: none"> <li>- A globally deployed web platform compliant with regional data privacy regulations, allowing immediate operation upon user login</li> <li>- Over 300 flexible configuration options to enable customized automation for different users</li> <li>- Large-scale operational capability, management of millions of devices</li> <li>- Comprehensive functionality: Includes 13 core modules and 325 standardized interfaces, covering the entire lifecycle management of device information, device management, software management, system management, and more.</li> </ul>
<b><i>Unified SDK</i></b>	<ul style="list-style-type: none"> <li>- High compatibility: Developers only need to adapt the interface once to seamlessly support all SUNMI smart devices, reducing development costs.</li> <li>- Cross-version compatibility: Even if the Android system undergoes major version changes, the unified SDK remains fully functional without disruption.</li> <li>- Extensive Peripheral Support- Integrates seven types of peripheral modules (printing, scanning, self-service card issuing, etc.), offering 131 standardized APIs to meet diverse business needs.</li> </ul>
<b><i>Peripheral SDK</i></b>	<ul style="list-style-type: none"> <li>- Optimized Design- Features business-action-abstracted interfaces, freeing developers from deep protocol-level research.</li> <li>- Long-Term Compatibility- Single adaptation ensures seamless support across all</li> </ul>

SUNMI device generations.

#### *AI Framework*

- Integrates SUNMI’s self-developed HCI algorithms (human-computer interaction) and general-purpose scenario algorithms.
- Gradually opening to third-party algorithm developers for ecosystem expansion.

### **SUNMI’s Partners**

#### **Food Delivery**

The SUNMI V Series and L Series empower the world’s largest coffee chain to tackle challenges in delivery operation efficiency.

By integrating order system and store management system, our devices enable real-time synchronization of full-chain data from order reception, production scheduling, to meal delivery. Through an intuitive interface, store employees can quickly process orders and allocate resources flexibly. Combined with the system’s automated data analysis capabilities, they can accurately track sales trends and inventory dynamics. This efficient operation continuously enhances the customer experience and solidifies the brand’s leading position in the delivery market.

#### **Retail**

##### KK Group

KK Group is a leading trendy retail enterprise in China, widely recognized for its high-end and fashionable brand image. SUNMI provides KK Group with a complete IoT solution that integrates cash registers, barcode scanners, cash drawers, and other accessories, flexibly meeting the diverse needs of its retail scenarios. At the same time, SUNMI’s unified product design style aligns perfectly with KK Group’s premium and trendy image. In the initial phase of the partnership, nearly 500 SUNMI smart IoT devices were deployed, significantly enhancing business processing capabilities with their reliable performance and ensuring stable operations. Moreover, the implementation of these devices has effectively helped KK Group improve the digital operational efficiency and brand appeal of its stores.

##### HotMaxx

HotMaxx is a leading national discount retail brand, HotMaxx has established a strong presence in the retail industry through its distinct business model and precise market positioning. Since its inception, HotMaxx has achieved remarkable growth, expanding to over 800 stores across more than 100 cities by December 31, 2024. With a product portfolio exceeding 20,000 SKUs and partnerships with over 3,000 brands, HotMaxx plans to surpass 5,000 stores within the next three years.

SUNMI also is partnering with Mi Home, a Swedish furniture giant, and a Japan-originated global convenience store chain to deploy our smart devices, streamlining inventory and sales workflows across all stages, from order placement, shelf stocking, and stocktaking to expiry tracking, checkout, and payment.

#### **Restaurants and Beverage**

##### Good me:

Originating in Zhejiang and expanding across China, Good Me has become a leading brand in the country's freshly made tea beverage market. This success is driven by its precise market positioning, robust supply chain management, and relentless product innovation. Since its founding, Good Me has maintained steady growth in market share. As of September 30, 2024, the brand has opened over 9,700 franchise stores in more than 200 cities nationwide.

In the fast-growing new tea beverage industry, the pace of consumption upgrades is fueling rapid expansion, with surging store numbers and increasing order volumes. SUNMI is leveraging cutting-edge IoT smart devices to optimize the user experience, ensuring every transaction is smooth, efficient, and reliable.

#### Xibei:

Xibei is a brand in China's full-service dining industry, widely recognized for its commitment to brand revitalization, product innovation, and a strong supply chain system. These strengths have helped Xibei maintain steady market performance. As of December 31, 2024, the brand operates nearly 400 stores across China.

#### **Finance**

SUNMI's collaboration with Asia's leading acquirer integrates AI capabilities like object recognition and voice interaction, extending mobile payment infrastructure to rural communities. Internationally, SUNMI's BloT solutions power leading fintech players - including top payment platforms in Korea and India - enabling diverse transaction methods from QR codes to contactless NFC.

#### VNPAY:

VNPAY, a leader in Vietnam's electronic payment industry, provides payment services and solutions to over 350,000 businesses. Addressing the needs of Vietnam's local payment ecosystem, VNPAY has partnered with SUNMI to launch the VNPAY-SmartPOS solution, focusing on "technology integration + scenario coverage." This solution has achieved extensive application across various scenarios, including taxis, retail, and convenience services.

Moreover, leveraging SUNMI's smart IoT solution technology, VNPAY can efficiently develop, deploy, and manage payment solutions that are deeply integrated with specific scenarios. This enables VNPAY to offer customers end-to-end digital solutions, from payment processing to business workflows, enhancing customer loyalty and solution competitiveness. Notably, VNPAY's taxi payment solution ranks top in market coverage in Vietnam.

#### **SUNMI's Customers**

SUNMI's largest five customers in 2022 included a leading hybrid distributor listed on NASDAQ, a business logistics and management solutions provider, a multinational online food ordering and food delivery company, a multinational online food delivery platform, as well as a leading company in the field of coding, numbering and pricing systems in the Egyptian market.

SUNMI's largest five customers in 2023 included a business logistics and management solutions provider, a multinational online food ordering and food delivery company, a fintech company operating in middle east, a mobile payment application provider in South Korea, as well as an artificial intelligence company focused on the big health industry.

SUNMI's largest five customers in 2024 included a business logistics and management solutions provider, a restaurant SaaS product and fintech solutions provider in North America, a mobile payment application provider in South Korea, a company focused on medical insurance and innovative application services, as well as a leading global on-demand delivery company.

### SUNMI's Innovations and Leading Position

SUNMI is the world's only BIoT solution provider that integrates hardware, software, and data solutions with the broadest geographic and industry coverages in 2023, according to CIC. It is also the largest Android-based BIoT solution provider for businesses in the worlds in 2023 in terms of revenue, with a market share of over 10%.

As an enabler of global digital transformation, SUNMI has developed and commercialized:

- 1999 – China's 1<sup>st</sup> PC-based Point-of-Sale ("POS") terminal with a leading market share;
- 2011 – the world's 1<sup>st</sup> Android-based Point-of-Sale ("POS") terminal;
- 2013 – the world's 1<sup>st</sup> on-demand delivery POS solution in 2013, having served seven of the world's ten largest on-demand delivery platforms as of 2024;
- 2016 – the world's 1<sup>st</sup> omnipresent Android-based IoT platform for businesses, and the world's 1<sup>st</sup> operating system and app store designed for merchant business operations;
- 2022 – the world's 1<sup>st</sup> IoT PaaS platform that offers a common software infrastructure to enable merchants and/or developers to develop, manage, and upgrade their IoT software applications; and
- 2024 – the world's 1<sup>st</sup> commercial IoT terminal with an ARM-based structure<sup>1</sup> that supports both Android and Windows operating systems.

### Competition Analysis between SUNMI and peers

SUNMI's peers include Ingenico, Zebra, Meituan, Elo and HiStone. The following table sets forth a comparison with a selected group of major IoT solution providers globally:

	Headquarter	Core Business	Status	Type	Market Share <sup>1</sup>
SUNMI	China	SUNMI is a global leading IoT solution provider for businesses that integrates hardware, software, and data solutions.	Unlisted	Software-and-hardware integrated solution provider	over 10%
Ingenico	France	Ingenico is a European company that primarily focuses on IoT payment solutions for businesses. Historically, Ingenico specialized in IoT payment solutions with traditional Linux devices but has been steadily increasing its share of Android-based IoT solutions.	Unlisted	Software-and-hardware integrated solution provider	~6%
Zebra	U.S.	Zebra's core business focuses on the provision of Automatic Identification and Data Capture (AIDC) products	U.S. listed	Software-and-hardware	~5%

<sup>1</sup> ARM-based architecture refers to systems that use processors designed by ARM Holdings, a British semiconductor and software design company.

	Headquarter	Core Business	Status	Type	Market Share <sup>1</sup>
		globally. Some of Zebra's mobile data terminals fall within the intelligent IoT terminal market, targeting sectors such as retail, logistics, and hospitality.		integrated solution providers	
<b>Meituan</b>	China	Meituan is a leading enterprise primarily engaged in online marketplaces and food delivery services in China. With a large number of merchants on its platform, Meituan provides them with Android-based IoT terminals to foster synergistic effects, and its merchant base for these terminals has also grown substantially. As a result, Meituan's business customers are mostly F&B and other merchants that operate on its platform.	HK listed	Software-and-hardware integrated solution provider	~4%
<b>Elo</b>	U.S.	Elo is a leading provider of touchscreens, interactive displays, and related solutions globally.	Unlisted	Specialized provider (hardware only)	~1%
<b>HiStone</b>	China	Histone is a leading Chinese player in IoT solutions for businesses and was among the earliest entrants into this market in China. Historically, Histone specialized in industrial control motherboard-based terminals but has recently shifted its focus toward Android-based IoT terminals.	Unlisted	Software-and-hardware integrated solution provider	~2%

Source: CIC

Note:

1. Market share refers to the percentage of revenue each company generated from its Android-based IoT solution for businesses within the global Android-based IoT solution for businesses market in 2023, excluding revenue from payment services, SaaS subscriptions, and license procurement.

The table below sets forth a comparison of the solution offerings of SUNMI and its peers:

Players	Number of IoT Terminals	Number of Vertical Coverage	Vertical Coverage	Cumulative Active Android-based Terminals <sup>1</sup>	Number of countries and regions covered <sup>2</sup>
<b>SUNMI</b>	More than 60	15 (with 100+ sub-verticals)	<ul style="list-style-type: none"> <li>• Electricity and gas</li> <li>• Water and waste management</li> <li>• Retails</li> <li>• Transportation and logistics</li> <li>• Accommodation and food</li> <li>• Information</li> <li>• Finance</li> <li>• Real estate</li> <li>• Education</li> <li>• Tourism</li> <li>• Public service</li> <li>• Science and technology</li> <li>• Healthcare</li> <li>• Entertainment</li> <li>• Households</li> </ul>	>15 million	200+ countries and regions
<b>Ingenico</b>	31	6	<ul style="list-style-type: none"> <li>• Electricity and gas</li> <li>• Retails</li> <li>• Transportation and logistics</li> </ul>	<10 million	120+ countries and regions

Players	Number of IoT Terminals	Number of Vertical Coverage	Vertical Coverage	Cumulative Active Android-based Terminals <sup>1</sup>	Number of countries and regions covered <sup>2</sup>
			<ul style="list-style-type: none"> <li>· Accommodation and food</li> <li>· Financial</li> <li>· Households</li> </ul>		
Zebra	25	6	<ul style="list-style-type: none"> <li>· Manufacturing</li> <li>· Retails</li> <li>· Transportation and logistics</li> <li>· Accommodation and food</li> <li>· Healthcare</li> <li>· Entertainment</li> </ul>	<5 million	170+ countries and regions
Meituan	14	1	<ul style="list-style-type: none"> <li>· Accommodation and food</li> </ul>	<3 million	Only covers mainland China
Elo	28	5	<ul style="list-style-type: none"> <li>· Manufacturing</li> <li>· Retails</li> <li>· Accommodation and food</li> <li>· Healthcare</li> <li>· Entertainment</li> </ul>	<10 million	80+ countries and regions
HiStone	21	6	<ul style="list-style-type: none"> <li>· Retails</li> <li>· Transportation and logistics</li> <li>· Accommodation and food</li> <li>· Public service</li> <li>· Entertainment</li> <li>· Households</li> </ul>	<0.5 million	40+ countries and regions

Source: CIC

Note:

1. Cumulative active Android-based terminals refer to the total number of devices that have been active at any point up to December 31, 2023, including those no longer in use and those still actively used by merchants.
2. Number of countries and regions was determined based on the use of BIoT device Management Platform ( "DMP" ) by businesses and merchants in the relevant countries and regions.

**Growth potential of the Android-based IoT solution for businesses market.** According to CIC, the global market size of Android-based IoT solutions for businesses increased from RMB 11 billion in 2019 to RMB 29 billion in 2023 with a CAGR of 27.1% from 2019 to 2023, and is expected to reach RMB 64 billion in 2028 with a CAGR of 16.9% from 2023 to 2028.

**Innovation and product excellence as growth foundations.** In 2024, SUNMI introduced the world's 1st and only IoT terminal with an ARM-based architecture, which is capable of supporting both Android and Windows operating systems, according to CIC.

#### How SUNMI Addresses These Customer Pain Points?

**All-in-one smart terminals:** SUNMI introduced the world's 1st all-in-one BIoT terminal that integrates a smart device, a printer and scanner in 2016 with integrated functionalities, according to CIC.

**Software integration:** By integrating hardware and software solutions with cloud-based architecture, SUNMI developed the world's 1st omnipresent BIoT platform (supported by SUNMI OS, SUNMI APP Store and SUNMI Max Program) for merchants and software developers in 2016, according to CIC.

- SUNMI OS. SUNMI offers the most active business application developer ecosystem in 2023, according to CIC.

- SUNMI App Store. Launched in 2016, the SUNMI App Store has been **the world's 1st and largest IoT application marketplace for businesses since 2019**, and had maintained consistently high levels of activities thereafter, according to CIC.
- SUNMI Max Program. SUNMI has pioneered and developed **the industry's first IoT PaaS platform**—the SUNMI Max Program—a low-code, modular-based platform that enables businesses and developers to efficiently build, manage, and upgrade software applications for use on their BIoT devices based on their own needs, according to CIC. Compared to traditional application development methods, low-code PaaS platforms offer substantial benefits by reducing project development costs by over 70% and shortening project timelines by more than 80%, according to CIC. According to CIC, SUNMI Max Program is the **world's 1st IoT PaaS platform** that offers a common software infrastructure to enable merchants and/or developers to develop, management and upgrade their IoT software applications. It is also the **only** company that has self-developed a low-code PaaS platform among SUNMI and the Peers.

**Cross-border adaptability:**

- Early-mover advantages. SUNMI was China's 1st BIoT solution provider to expand into overseas markets in 2003, according to CIC.

**SUNMI is Well Ahead of Its Peers**

According to CIC, it theoretically takes at least 3 years for a IoT hardware specialist to integrate software applications developed by third-party software developers, and theoretically takes approximately additional 5 years to develop a proprietary IoT PaaS platform that enables businesses to customize software applications for use on their IoT devices.

	Why Not Others?
<b>SUNMI v. Ingenico</b>	<p>Ingenico has historically specialized in IoT payment devices running on Linux-based systems, which present compatibility challenges when integrating with modern cloud architectures and third-party software applications. This makes it difficult for Ingenico to develop all-in-one smart IoT devices that seamlessly integrate hardware, software, and data capabilities.</p> <p>According to CIC, Linux-focused IoT companies like Ingenico theoretically require at least 2 years of R&amp;D and significant technological breakthroughs to develop a software-hardware integrated smart IoT devices (i.e. reaching phase II-A).</p>
<b>SUNMI v. Zebra</b>	<p>Zebra's IoT solutions are primarily centered around barcode scanning, which serves as their key technological advantage. However, this specialization significantly limits Zebra's application scenarios, as its solutions are predominantly tailored for barcode-dependent industries such as logistics and retail.</p> <ul style="list-style-type: none"> <li>• A truly full-scenario IoT PaaS platform requires cross-industry software integration. For example, industries (such as healthcare and financial services) involve entirely different application scenarios that are associated with different software modules. Zebra's solutions are highly optimized for barcode-centric use cases but lack the adaptability to support diverse industry requirements such as real-time patient monitoring in healthcare or secure payment processing in financial services.</li> <li>• To serve multiple industries, a PaaS platform must support a modular approach, allowing businesses to customize and deploy industry-specific functionalities effortlessly. Zebra's solutions are traditionally designed for barcode workflows rather than modular, industry-agnostic frameworks, limiting its ability to offer a broad range of plug-and-play software modules.</li> </ul> <p>According to CIC, barcode-centered IoT companies like Zebra theoretically require at least 5 years of R&amp;D and significant technological breakthroughs to develop a proprietary PaaS platform (i.e. reaching phase II-B).</p>
<b>SUNMI v. Meituan</b>	<p>As a leading food delivery platform in China, Meituan's IoT devices are primarily designed for the F&amp;B industry, optimizing processes such as order management, delivery tracking, and restaurant automation. However, different industries demand highly specialized software solutions tailored to their unique operational or transaction needs.</p>

Why Not Others?	
	<ul style="list-style-type: none"> <li>A truly full-scenario IoT PaaS platform requires cross-industry software integration. For instance, the healthcare sector requires software applications that support integrated patient management systems, medical billing solutions, and pharmacy inventory tracking, which go far beyond the capabilities of an F&amp;B-focused IoT solution provider.</li> <li>To serve multiple industries, a PaaS platform must support a modular approach, allowing businesses to customize and deploy industry-specific functionalities effortlessly. Meituan's solutions are traditionally designed for the F&amp;B industry rather than modular, industry-agnostic frameworks, limiting its ability to offer a broader range of plug-and-play software modules.</li> </ul> <p>According to CIC, industry-specific IoT companies like Meituan theoretically require at least 3 years of R&amp;D and significant technological breakthroughs to develop a proprietary PaaS platform (i.e. reaching phase II-B).</p>
<b>SUNMI v. Elo</b>	<p>Elo is a specialized IoT hardware provider, lacking the ability to deliver an integrated hardware-software solution. Without the essential supporting software, Elo's offerings are limited to hardware deployment, requiring customers to seek third-party software solutions for full functionality.</p> <p>According to CIC, specialized IoT hardware providers like Elo theoretically require at least 2 years of R&amp;D and significant technological breakthroughs to develop software-hardware integrated smart IoT devices (i.e. reaching phase II-A).</p>
<b>SUNMI v. HiStone</b>	<p>Historically, HiStone specialized in industrial control motherboard-based terminals. However, in response to evolving market demands, SUNMI has recently shifted its focus toward Android-based IoT terminals, aiming to enhance flexibility, connectivity, and user experience across a broader range of applications.</p> <p>Despite this transition, developing a fully integrated software-hardware smart IoT devices requires deep expertise in software-hardware integration, cloud computing and network connectivity—capabilities that take years to master. According to CIC, IoT solution providers like HiStone theoretically require at least 2 years of R&amp;D and significant technological breakthroughs to develop software-hardware integrated smart IoT devices (i.e. reaching phase II-A).</p>

Please see below the comparison of R&D expenses of SUNMI and the Peers for the periods indicated.

	R&D Expenses (RMB in millions)			R&D Expenses as a Percentage of Revenue (%)			R&D Expenses as a Percentage of Operating Expenses (%)		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
<b>SUNMI</b>	279	371	326	8	11	11	39	45	43
<b>Ingenico<sup>1</sup></b>	1,925	/	/	7	/	/	14	/	/
<b>Zebra<sup>2</sup></b>	4,031	4,054	3,690	10	10	11	34	27	32
<b>Meituan<sup>2</sup></b>	16,677	20,741	21,201	9	9	8	25	30	24
<b>HiStone<sup>3</sup></b>	418	410	298	13	16	11	21	25	17
<b>Elo<sup>4</sup></b>	/	/	/	/	/	/	/	/	/

Source: CIC and Peers' public filings

Notes:

- Ingenico is a non-listed company and does not disclose R&D expenses or other information. The data listed in the table pertains to Worldline, which acquired Ingenico in 2020 and completed the divestment of the Terminals, Solutions & Services (TSS) business inherited from Ingenico.
- Both Zebra and Meituan are publicly listed companies with multiple business operations. The data provided in the table reflects the overall R&D expenses of each company and is not exclusively related to IoT solution expenses.

3. HiStone is a non-listed company and does not disclose R&D expenses or other information. The data listed in the table pertains to Shiji Group, which directly holds 25% and indirectly holds 62.65% of HiStone's equity. In 2023, HiStone contributed to approximately 18% of Shiji Group's total revenue.
4. Elo is a non-listed company and does not disclose R&D expenses or other information.

The table below sets forth a comparison with the Peers with respect to the number of research and development employees as of the dates indicated.

Players	Number of R&D employees as of December 31, 2023
SUNMI	550
HiStone <sup>1</sup>	2,187
Zebra <sup>2</sup>	/
Meituan <sup>2</sup>	/
Ingenico <sup>3</sup>	/
Elo <sup>3</sup>	/

Source: CIC and Peers' public filings

Notes:

1. HiStone is a non-listed company and does not disclose the number of R&D employees. The data listed in the table pertains to Shiji Group, which directly holds 25% and indirectly holds 62.65% of HiStone's equity. In 2023, HiStone contributed to approximately 18% of Shiji Group's total revenue.
2. Zebra and Meituan are publicly listed companies but do not disclose the number of R&D employees.
3. Ingenico and Elo are non-listed companies and do not disclose the number of R&D employees.

## Continued Innovation in Business Model and Solution Offerings

### Phase I: Where the Journey Began – Pioneer in POS Technology

#### *China's 1st PC-based POS Terminal*

To address these industry challenges, SUNMI took a groundbreaking step in 1999 by designing and launching China's 1st POS terminal with PC-based systems. Since then, SUNMI had accumulatively sold more than 100,000 units of PC-based POS terminal and was among the best-selling POS terminals in China in 1999 and 2000, according to CIC.

*Industry Impacts:*

According to CIC, SUNMI's pioneering PC-based POS was introduced at a time when China's internet penetration rate was only 0.1%. This innovation liberated merchants from the high costs associated with imported industrial control motherboard POS systems, making digital business terminals accessible and affordable to a wider range of merchants. This marked the true beginning of China's digital transformation in business operations.

The table below sets forth a comparison with the Peers with respect to the launch of PC-based POS terminals.

Players	Launch Time
SUNMI	1999

Players	Launch Time
Ingenico	/
Zebra	/
Meituan	/
Elo	/
HiStone	/

Source: CIC

Note:

\*HiStone focuses on implementing POS products through custom industrial control motherboards, a traditional method that is significantly heavier than SUNMI's approach.

### World's 1st Android-based POS Terminal

In the 2000s, while the advent of iPhone that transformed how individual users connect and communicate with each other, the benefits of digitalization were not as widespread in the business environment. Historically, merchants in China and around the world still relied on a multitude of bulky devices to process transactions, with very limited functionality and connectivity that were later proven critical to consumer engagement and informed decision making. This gap in product design and business models further motivated SUNMI to innovate and create the **world's 1st Android-based POS terminal** in 2011, predating the popularity of Android-based smartphones.

#### Industry Impacts:

As a result of the introduction of Android-based POS terminals, the digitalization penetration rate in the service industry in the world rose to over 15%, surpassing the penetration rates in other industries, according to CIC.

The table below sets forth a comparison with the Peers with respect to the launch of the Android-based business POS terminals.

Players	Year of Launch
SUNMI	2011
Ingenico	2016
Zebra	2016
Meituan	2016
Elo	2016
HiStone	2016

Source: CIC

## Phase II: Game Changers – On-demand Delivery and Mobile Payments

### World's 1st On-demand Delivery POS Solution

According to CIC, SUNMI's *Yes, I Deliver* (我有外卖) was introduced as the **1<sup>st</sup> on-demand delivery POS solution** in the world. By integrating multiple delivery platforms, *Yes, I Deliver* (我有外卖) also provided merchants with valuable insights into their sales trends and customer preferences. As illustrated below, its user-friendly interface allowed for seamless navigation, enabling staff to handle high order volumes during peak times with ease.

#### Industry Impacts:

This innovation also unlocked new opportunities for revenue generation and market differentiation by providing value-added services for merchants, such as real-time analytics. According to CIC, SUNMI's pioneering on-demand delivery solution significantly contributed to the growth of the on-demand delivery and restaurant industries. According to CIC, the global food delivery industry achieved a penetration rate exceeding 15% in 2023, measured by its revenue as a proportion of the global catering market size.

The table below sets forth a comparison with the Peers with respect to the launch of on-demand delivery POS solutions.

Players	Year of Launch
SUNMI	2013
Ingenico	/
Zebra	/
Meituan	2016
Elo	/
HiStone	/

Source: CIC

Note:

- Ingenico's on-demand delivery POS terminal is tailored-made for specific clients (as opposed to a large-scale, mass-distribution product).

Subsequently in 2016, SUNMI introduced SUNMI V Series, the world's **1<sup>st</sup> all-in-one IoT terminal that integrates a smart device, printer, and scanner**, to serve merchants mainly in the F&B and retail industries. V Series, the Company's flagship product, is the world's first smart device designed for mobile internet application scenarios, marking a transformative step beyond traditional mobile POS devices that were limited to card payment functions. Since product launch, V Series served seven of the world's top 10 food delivery platforms as of the Latest Practicable Date, demonstrating strong market validation to more than 200 countries and regions.

As of June 30, 2024, SUNMI had accumulatively sold more than five million units of SUNMI V series devices to merchants in more than 200 countries and regions, representing a **market share of approximately 60%**<sup>2</sup> globally, according to CIC. As of the date of this document, SUNMI's on-demand delivery IoT terminals have **served seven of the world's ten largest on-demand delivery platforms**, according to CIC.

The table below sets forth a comparison with the Peers with respect to the development of all-in-one IoT terminal.

Players	Year of Launch
SUNMI	2015
Ingenico	/
Zebra	/

<sup>2</sup> On-demand delivery IoT terminals are designed primarily for merchants registered on on-demand delivery platforms, enabling them to respond to and fulfill orders efficiently. When choosing these solutions, merchants tend to focus on two key factors: (a) seamless compatibility and ease of integration between the IoT terminals and the platform they are registered on, and (b) a streamlined selection and procurement process with enhanced efficiency and convenience. As a result, merchants typically prefer IoT terminals provided directly by the platforms they use. Additionally, many merchants register on multiple platforms. In such cases, they are more likely to choose IoT terminals offered by larger platforms, as these are often perceived as more reliable and superior. As of 2024, SUNMI has served **seven of the world's ten largest on-demand food delivery platforms**, effectively reaching a vast network of merchants registered on these platforms. Given the high market concentration of on-demand delivery platforms, the Group's SUNMI V series devices are estimated to represent a global market share of at least 60%.

Meituan	2019
Elo	/
HiStone	2022

Source: CIC

**World's 1st Omnipresent Android-based IoT Platform for Merchants & SUNMI App Store**

Launched in 2016, the *SUNMI App Store* has been the world's 1st and largest IoT application marketplace for businesses since 2019, and had maintained consistently high levels of activities thereafter, according to CIC.

*Industry Impacts:*

According to CIC, SUNMI's Android-based IoT platform enhances merchants' operational efficiency by over 30%<sup>3</sup>.

According to CIC, driven by IoT platforms like those provided by SUNMI, global small and medium-sized business ("SMBs") have increased their technology-related investments (covering areas such as hardware and software procurement) by 3% to optimize operations and explore new growth opportunities.

According to CIC, SUNMI achieved a market share of over 10% in the global Android-based IoT solution for businesses market in 2023 in terms of revenue. The table below sets forth a comparison with the Peers with respect to the development of Android-based IoT platform that supports free registration and application publication for business application developers.

Players	Year of Launch
SUNMI	2016
Ingenico	/
Zebra <sup>1</sup>	/
Meituan <sup>1</sup>	/
Elo <sup>1</sup>	/
HiStone	/

Source: CIC

*Note:*

1. HiStone restricts developers from freely registering and releasing application, while Ingenico requires developers to purchase an Ingenico developer kit for app development and distribution. Zebra, Meituan and Elo do not have open Android-based IoT platforms that support free registration and application publication for business application developers. As a result, none of these Peers offer an Android-based IoT platform.

<sup>3</sup> SUNMI's Android-based IoT platform is widely utilized across various scenarios, including queue management, warehouse management, and on-demand delivery. In queue management, merchants using the platform enable

s to take queue numbers, track queue progress, and plan their visit times more effectively through their mobile devices. This reduces the average waiting time from over 30 minutes to less than 20 minutes, improving overall efficiency by more than 33%. In warehouse management, the platform allows merchants to predict sales based on order volume, facilitating accurate restocking. As a result, inventory turnover rates can improve by approximately 30%, while stockout rates decrease by over 30%. For on-demand delivery, the platform enhances operational efficiency across all stages, including order processing, delivery, and merchant operations. It shortens order acceptance time from 3-5 minutes to under 1 minute and reduces rider-matching time from 3-

minutes to just 2 seconds. Furthermore, it cuts labor costs for on-demand delivery operations by nearly 40%.

The table below sets forth a comparison with the Peers with respect to the development of IoT-centric App stores.

	SUNMI	Ingenico	Zebra	Meituan	Elo	HiStone
Whether app store is provided	✓	✓	–	–	–	✓
Number of app developers	35,000+ (as of October 31, 2024)	1,000+	–	–	–	–
Number of apps listed in the app store	23,000+ (as of October 31, 2024)	2,500+	–	–	–	Mostly public apps
Number of covered sub-industries (by primary categories)	15 (with 100+ sub-verticals)	6	6	1	5	5

Source: CIC

### Phase III: Constant, Consumer-centric Innovation

#### *World's 1st IoT Terminal with an ARM-based Structure Supporting Both Android and Windows Operating Systems*

In 2024, SUNMI recently introduced the world's 1<sup>st</sup> and only IoT terminal with an ARM-based architecture (SUNMI SuperPOS), which is capable of supporting both Android and Windows operating systems, according to CIC.

#### *Industry Impacts:*

SUNMI's innovative commercial IoT terminal, which features an ARM-based architecture, is anticipated to accelerate the adoption of Android-based IoT systems in business operations. As a result, the penetration rate of Android-based IoT terminals for businesses is expected to increase to 15% in IoT terminals and 40% in intelligent IoT terminals in 2028 worldwide, according to CIC.

### Detailed Discussion of SUNMI's Core Technologies

#### Layer One – IoT Hardware

##### *Robust Network Connections and Transmissions*


The table below provides a comparison of network communication capabilities among SUNMI and the Peers.

	SUNMI	Ingenico	Zebra	Meituan	Elo	HiStone
Wi-Fi Band Settings	✓	–	✓	–	–	✓
Wi-Fi Protocol Mode Settings	✓	–	–	–	–	–
Power Saving Mode	✓	–	–	–	✓	–
Roaming Sensitivity Settings	✓	–	–	–	✓	–
Roaming Switch Threshold Settings	✓	–	–	–	✓	–
Wi-Fi Channel Competition Priority Settings	✓	–	–	–	–	–
Whitelist/Blacklist Filtering Mechanism	✓	–	–	–	–	–


	SUNMI	Ingenico	Zebra	Meituan	Elo	HiStone
Wi-Fi Country Code Settings	✓	–	✓	–	–	–
Average WLAN Access Time	6.41 second	15.71 second	13.67 second	14.43 second	14.90 second	21.09 second
Multi-Link Hot Backup	✓	–	–	–	–	–

Source: CIC

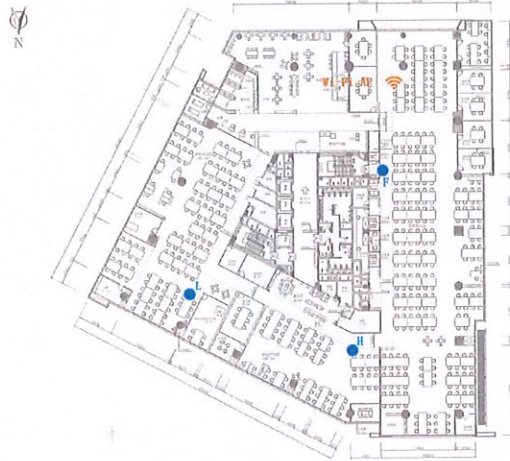
The table below provides a comparison of Wi-Fi technology capabilities among SUNMI and the Peers in various scenarios (as indicated below).

	Testing Point	SUNMI	Ingenico	Zebra	Meituan	Elo	HiStone
<b>Test 1 – Data Latency Performance:</b> An access point (AP) was established in one corner of a building approximately 3,000 square meters in size, testing coverage at varying distances. Given the circular nature of the signal, this is equivalent to testing results across 3,000 square meters multiplied by 4. The unit of measurement is milliseconds (ms), with lower values indicating better and more stable performance.							
	A	5.5	14.1	15	259	3.9	368
	B	9.3	1605	45.5	307	4.6	800
	C	12.7	44.7	18.2	610	13	1332
	D	15.1	92.3	22.5	663	7.8	–*
	E	17.5	78.7	27.5	–*	11.1	–*
	F	7.9	178.5	18.5	139	4.5	465
	G	10.1	49.3	17.5	438	4.7	1432
	H	75	125.9	232.3	–*	73.4	–*
	I	57.5	–*	–*	–*	–	–*
	J	69	–*	–*	–*	–	–*
	K	86	–*	–*	–*	–	–*
	L	76.2	–*	178.3	–*	85.1	–*
	M	46.5	50.6	133.2	–*	58.9	–*
	N	43.5	46.1	25.6	–*	53.8	–*
	O	37.8	50.8	18.5	–*	16.2	–*
	P	7.5	35.3	15.7	968	12.8	434
	Q	35.3	36.8	26.3	–*	26.6	1161
	R	39.1	30.7	17.4	–*	12.4	914
<b>Test 2 – Packet Loss Rate<sup>4</sup>:</b> A lower value is preferable, with rates exceeding 5% progressively impacting the user experience.							
	A	0%	0%	0%	0%	0%	0%
	B	0%	33%	10%	5%	0%	0%
	C	3%	0%	0%	25%	0%	30%
	D	0%	1%	6%	86%	0%	–*
	E	0%	7%	1%	–*	0%	–*
	F	0%	0%	0%	23%	0%	0%
	G	0%	0%	0%	43%	0%	43%
	H	1%	42%	85%	–*	25%	–*
	I	0%	–*	–*	–*	–*	–*
	J	0%	–*	–*	–*	–*	–*
	K	3%	–*	–*	–*	–*	–*
	L	0%	–*	71%	–*	36%	–*
	M	0%	13%	18%	–*	18%	–*
	N	1%	25%	3%	–*	13%	–*

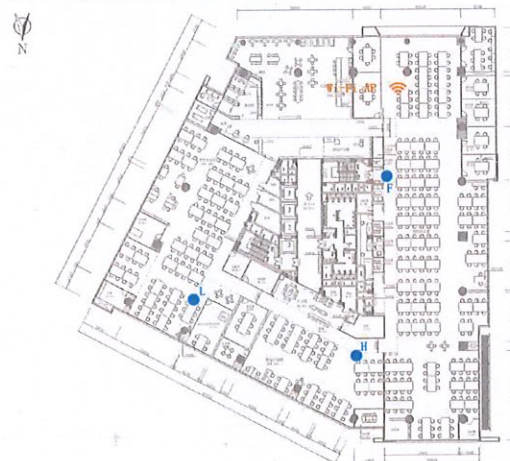
<sup>4</sup> Packet loss rate refers to the probability that a data packet is lost during transmission due to various communication instabilities, resulting in the data not being received by the recipient. Packet loss rate is typically measured as a percentage. When packet loss occurs, the application layer will attempt to retransmit the lost data packet until it is successfully delivered. However, if the packet loss rate in the communication link is excessively high, it can significantly lead to application stuttering or even crashes, causing business operations to fail.

	Testing Point	SUN MI	Ingenico	Zebra	Meituan	Elo	HiStone
	O	0%	3%	1%	—*	1%	—*
	P	0%	0%	0%	33%	0%	1%
	Q	0%	18%	1%	—*	1%	25%
	R	6%	0%	0%	—*	0%	11%

**Test 3 – Average Latency Data over 5 Hours:** Measured in milliseconds (ms), with smaller values being better.

	F	11	28	18	85	4	446
	H	25	70	32	—*	15	—*
	L	67	—*	—*	—*	—*	—*

**Test 4 – Cumulative Packet Loss Rate over 5 Hours:** A lower value is desirable, as rates exceeding 5% can adversely affect the user experience.

	F	0.00%	0.03%	0.18%	19.00%	0.00%	1.00%
	H	0.32%	98.14%	18.47%	—*	11.34%	—*
	L	3.53%	—*	—*	—*	—*	—*

	Testing Point	SUNMI	Ingenico	Zebra	Meituan	Elo	HiStone
<i>Note:</i> * The dash (-) in the table indicates that the connection at this testing point is unavailable.							

Source: CIC

**Proprietary Operating System (“SUNMI OS”)**

The table below sets forth a comparison with the Peers with respect to the development of operating systems.

	SUNMI	Ingenico	Zebra	Meituan	Elo	HiStone
<b>OS Scheduling engine</b>	✓  Hyper Engine, which is the strategy center for scheduling hardware resources such as CPU, GPU, and I/O in SUNMI OS. It dynamically allocates subsystem resources for specific application scenarios, such as device boot-up, clicks, and front-end and back-end management, enhancing the overall smoothness of applications and the system.	-	-	-	-	-
<b>Whether there is public information with concrete data to substantiate OS optimization results</b>	✓  Publicly available data highlights that these optimizations lead to a 10% increase in app installation speed, a 15% acceleration in app launch, a 10% enhancement in app page response, and a 5% reduction in system storage utilization.	-	-	-  The official website mentions system performance optimizations but does not disclose specific performance improvement data.	-	-  The official website mentions system performance optimizations but does not disclose specific performance improvement data.
<b>Whether there is a unified programming interface for peripheral management</b>	✓	-	-	-	-	-

Source: CIC

**SUNMI DMP**

The table below sets forth a comparison with the Peers with respect to the development of IoT DMP.

	SUNMI	Ingenico	Zebra	Meituan	Elo	HiStone
<b>Whether there is a declaration of compliance with privacy data regulations in North American states, the European Union</b>	✓  <i>SUNMI has data centers in the U.S., EU, and China, and they comply with data security</i>	-  <i>Business covers North American states and Europe, but does not have data centers</i>	-  <i>Business covers North America and Europe, but does not have data</i>	-  <i>Proprietary products and services are only available in China, with leased data</i>	-  <i>Business covers North American states and Europe, but does not have a declaration</i>	✓

	SUNMI	Ingenico	Zebra	Meituan	Elo	HiStone
and the mainland China	<i>laws in the respective regions.</i>	<i>complying with Chinese data regulations. POS-related business is not conducted in China.</i>	<i>centers in China.</i>	<i>centers in China.</i>	<i>of privacy protection declaration.</i>	
Number of countries and regions covered by DMP functions	200+ countries and regions	120+ countries and regions	170+ countries and regions	Only covers China	80+ countries and regions	40+ countries and regions
Types and configurations of management devices	Covers all types of devices and accessories	Handheld financial digital terminals, handheld retail terminals, self-service machines	Handheld digital terminals and tablets	Desktop digital terminals, integrated cashier scales, handheld retail terminals	Desktop digital terminals, touch integrated machines, handheld digital terminals	Desktop digital terminals, split terminals, self-checkout terminals, integrated cashier scales, handheld mobile POS, large-screen touch integrated machines

Source: CIC

Note:

\* A data center is a facility that houses servers, storage systems, networking equipment, and other computing resources used to store, manage, and process data.

## Layer Two – IoT PaaS Platform and Software Application

### Module-based PaaS Platform

SUNMI's SUNMI Max Program is the industry's only PaaS platform that features a variety of modules specifically designed for offline business scenarios, according to CIC. The table below sets forth a comparison of SUNMI's PaaS platform with Peers in terms of technological advancement in low-code PaaS platforms.

	SUNMI	Zebra	Ingenico	Meituan	Elo	HiStone
PaaS Platform	Self-developed	Third-party	None Ingenico hasn't not developed a self-developed PaaS platform, nor cooperated with any third-party PaaS platform.	None Meituan has developed a code repository platform to enhance development efficiency for its internal research and development. However, it does not offer a PaaS platform specifically designed to support Android-based	None Elo hasn't not developed a self-developed PaaS platform, nor cooperated with any third-party PaaS platform.	None HiStone hasn't not developed a self-developed PaaS platform, nor cooperated with any third-party PaaS platform.

	SUNMI	Zebra	Ingenico	Meituan	Elo	HiStone
				IoT terminals for businesses.		
<b>Component Elements for Application Development<sup>(1)</sup></b>	Available	Available, however, certain platforms, such as SAP Mobile Development Kit (MDK), require developers to have professional JavaScript skills for advanced development.	N/A	N/A	N/A	N/A
<b>Peripheral Hardware Adaptation</b>	Printers, scanning devices, NFC devices	Printers, scanning devices, NFC devices	N/A	N/A	N/A	N/A
<b>Business Module Templates<sup>(2)</sup></b>	Available (including orders, takeout, registration, membership, payment, etc.)	Not available	N/A	N/A	N/A	N/A
<b>Cloud Computing Environment<sup>(3)</sup></b>	Available	Not available in most of the platforms	N/A	N/A	N/A	N/A
<b>Global SaaS Deployment</b>	Supporting automatic tax rate calculations across countries and complies with regional data privacy and storage regulations	Not available	N/A	N/A	N/A	N/A

Source: CIC

Note:

1. Application component elements are interactive units presented to end users in app development, such as labels, text boxes, and buttons.
2. A business module consists of a series of component elements, execution logic, and a data model of the business unit, ensuring strong adaptability to various industry scenarios.
3. It includes cloud computing containers and cloud service resources integrated with the application, which are essential for building a fully SaaS-enabled application.

Since SUNMI's peers either do not have a module-based PaaS platform or rely on third-party providers, several leading module-based PaaS platforms have been selected for comparison. The table below sets forth a comparison of SUNMI's platform with Astra Zero (formerly AppCube, developed by Huawei), DingTalk's Yida, and Tencent Cloud's Weida, focusing on the functions and capabilities of their respective module-based PaaS platforms.

	SUNMI	Astra Zero (developed by Huawei)	Yida (developed by DingTalk)	Weida (developed by Tencent Cloud)
Niche market	Commercial, medical, and other fields.	Park, city, energy, education, transportation, marketing, e-commerce, government, manufacturing, etc.	Manufacturing, construction materials, services, internet, education, healthcare, government, retail, logistics, etc.	Government, real estate, education, cultural tourism, transportation, finance, travel, healthcare, industry, e-commerce, retail, etc.
Whether it supports one-time multi-end development for Web, PC, tablet, and mobile applications	Yes, development can be done once and applied to Web (PC and mobile), and app applications (PC and Mobile).	Yes, but with conditions, app publishing function is only available for users of paid professional version.	No	No
Whether it supports global deployment capabilities	Yes	No	No	No
Whether it solves the integration and compatibility issues of commercial peripherals (printers, barcode scanners, NFC, etc.)	Yes	Yes, but with conditions, IoT integration function is only available for users of paid professional version.	Yes, but with conditions, IoT integration function is only available for users of paid professional version.	Yes

Source: CIC

### Application of Artificial Intelligence

According to CIC, among its direct competitors, SUNMI is the only IoT service and product provider for businesses that has self-developed Automated Goods Recognition.

Players	Packaging Bag	Number of Sample Images	Recall@1*	Recall@1* Hit Rate	Recall@2*	Recall@2* Hit Rate	Recall@3*	Recall@3* Hit Rate	Average Processing Time
Sunmi	No	4426	4352	0.983	4394	0.992	4404	0.995	<=200ms
	Yes	2892	2586	0.894	2735	0.945	2759	0.954	
Shifang Technology	No	4426	3894	0.879	3939	0.889	3957	0.894	~250ms
	Yes	2892	2332	0.806	2621	0.906	2706	0.935	

Source: CIC

Note:

\* Recall@N percentage is defined as the ratio of relevant items retrieved within the top N results to the total number of relevant items present in the dataset.

Barcode Scanning Algorithms. The table below sets forth a comparison with one of SUNMI's Peers, Zebra, in terms of barcode scanning algorithms. This algorithm is a crucial component within the core module of digital terminal devices. According to CIC, Zebra is the only company, among SUNMI's Peers, that actively develops and offers such algorithm.

Players	Sample Recognition	Accuracy Test	Color Sample Test	Grayscale Sample Test	Depth of Field Test	Continuous Depth of Field Test	Motion Test	Maximum Motion Speed Test	Fixed Speed	Comprehensive Batch Scanning Duration
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Sunmi	8.5	8.4	9	6	8.7 (Near point)	9.8 (Near point)	9.9	6.8	7.9	9.1
					8.6 (Far point)	10 (Far point)				
Zebra	7.8	7.5	9	7	7.1 (Near point)	9.4 (Near point)	7.2	2.2	1.6	4
					8.1 (Far point)	5.9 (Far point)				

Source: CIC

**Layer Three – the IoT-centric Data Solutions that Empower Exchanges of Data Assets**

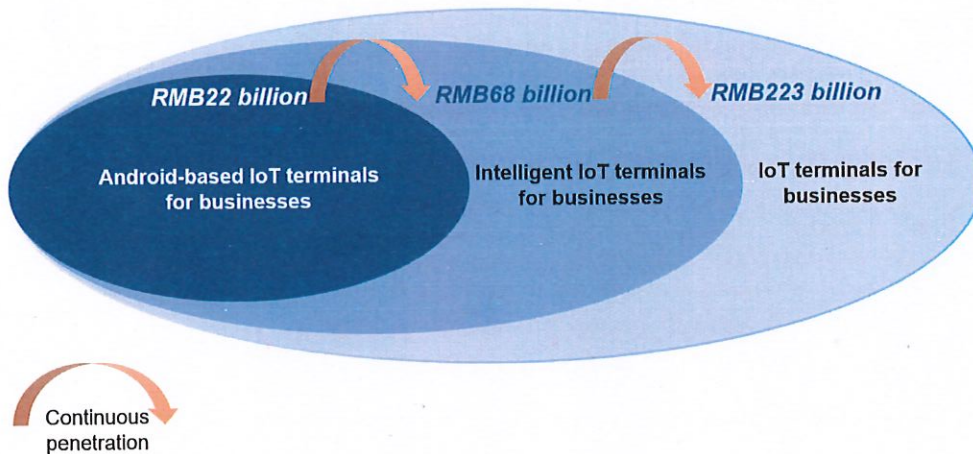
The table below provides a comparison of the development and commercialization of IoT-centric data solutions that applies blockchain technology among SUNMI and the Peers.

	SUNMI	Ingenico	Zebra	Meituan	Elo	HiStone
Whether it develops IoT-centric data solutions that applies blockchain technology	✓	-	-	-	-	-
Whether it commercializes IoT-centric data solutions	✓	-	-	-	-	-

Source: CIC

**SUNMI’s Growth Opportunities**

**The Market Size of IoT Terminals for Businesses, Global, 2023**



Source: CIC

IoT terminals can be broadly categorized into two types: intelligent IoT terminals for businesses and traditional IoT terminals. Among these, Android-based IoT terminals for businesses represent a critical category due to their advanced operating system. Mainly attributable to their strong compatibility and extensive

functionality, Android-based IoT terminals use customized hardware designs to integrate accessories through highly expandable interfaces. This adaptability enables robust application support, positioning Android-based IoT terminals as a driving force in advancing IoT technology toward greater intelligence, user-friendliness, and personalization.

The numerous advantages of Android-based IoT terminals, such as cost-effectiveness, diverse functionalities, user-friendly design, and a well-developed, active ecosystem, have made them the preferred choice for businesses across industries. As a result, their penetration rate in the intelligent IoT terminal category for businesses grew from 24% in 2018 to 33% in 2023 worldwide, with projections of rising to 40% by 2028. Similarly, their penetration rate in the broader IoT terminal category for businesses increased from 6% in 2019 to 10% in 2023 worldwide, with expectations of reaching 15% by 2028.

### Market Outlook and Competitive Landscape for Android-based IoT Solution for Businesses

SUNMI operates in the **Android-based IoT solution segment** within the broader IoT solution for businesses market. This segment is divided into two major categories: (i) Android-based IoT terminals and (ii) the essential supporting software, including operating systems (OS), device management platforms (DMPs), remote key injection (RKI) solutions, and low-code PaaS platforms. In 2023, the market size for Android-based IoT terminals and supporting software were RMB68 billion and RMB7 billion, respectively.

SUNMI distinguishes itself as the only player offering comprehensive coverage across terminals, software, and data services. A key differentiator is its self-developed Android-based OS and app store, which set it apart from other market participants.

The Android-based IoT Solution market is primarily composed of two types of providers, as further elaborated below. Customers with basic needs, such as small retail shops requiring only cashier functions, may opt to purchase IoT hardware alone. In contrast, businesses with more sophisticated digital demands, such as chain grocery stores and restaurant brands, are more likely to invest in integrated software-and-hardware solutions.

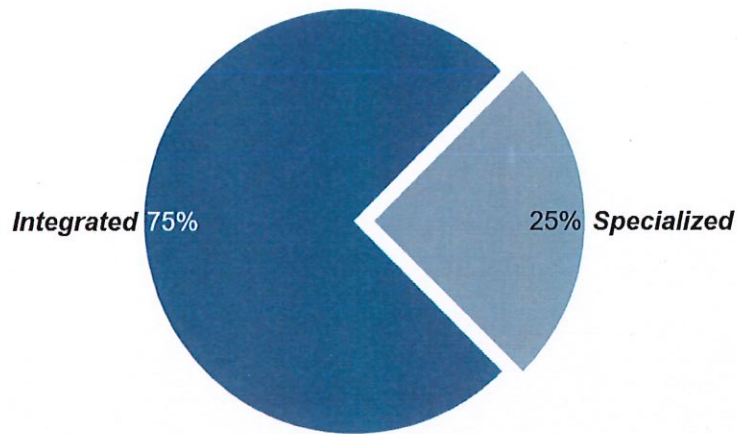
- **Software-and-Hardware Integrated Solution Providers:** These providers dominate the market, collectively accounting for **approximately 75% of the total market size in 2024**. The prevailing trend in this space is the integration of IoT terminals with PaaS and other software services, and the leading players include SUNMI, Ingenico, Zebra, Meituan, and HiStone.

However, there are notable differences in hardware and software capabilities among integrated solution providers. Only a select few can deliver both robust functionality and a seamless user experience—among them, SUNMI stands out as a key leader in the space.

- **Specialized Providers:** These players make up the **remaining 25%** of the market, focusing exclusively on either hardware or software without offering fully integrated solutions. Their limited scope often results in a weaker understanding of specific applications compared to integrated providers.
  - **Software-only providers** account for **around 20%** of the market and operate in a highly fragmented landscape.
  - **Hardware-only providers** represent approximately **5%** of the market, with key players such as Elo, which specializes in display devices of various forms.

The below pie chart shows the breakdown of the Android-based IoT Solution market by software-and-hardware integrated solution providers and specialized providers:

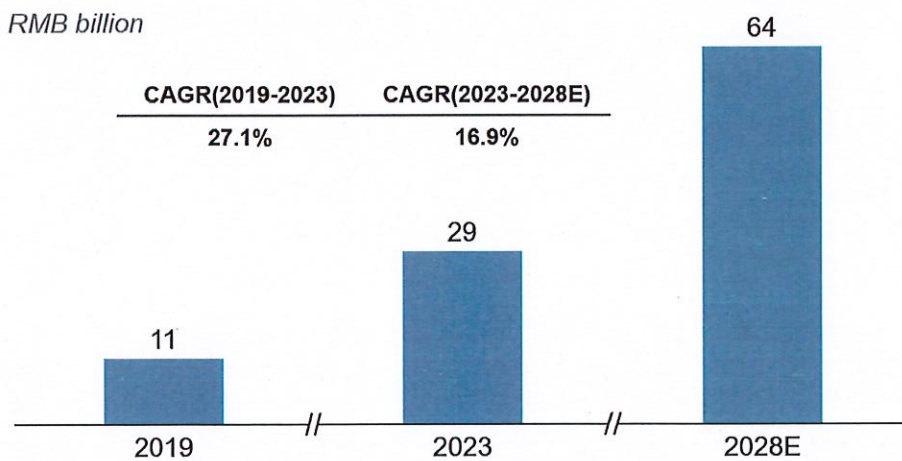
#### The Market Share of Different Providers, Global, by Provider Types, 2024



Source: CIC

Android-based IoT solutions enable the digital and intelligent transformation of business operations mainly through integration of hardware and software. It encompasses Android-operated terminals, such as mobile terminals, desktop terminals, and tablets, as well as the essential supporting software, excluding payment services, SaaS subscription services, and license procurement.

**The Market Size of Android-based IoT Solution for Businesses, Global, 2019-2028E**



Source: CIC

The global market size of Android-based IoT solution for businesses increased from RMB 11 billion in 2019 to RMB 29 billion in 2023 with a CAGR of 27.1% from 2019 to 2023, and is expected to reach RMB 64 billion in 2028 with a CAGR of 16.9% from 2023 to 2028.

The overall market size was estimated by the Industry Consultant through a combination of secondary information research and interviews with industry experts. This analysis included a detailed evaluation of the revenue generated by leading global Android-based IoT solution providers for businesses in the respective markets. Globally, there are approximately 2,500 Android-based IoT solution providers for businesses. In China, there are approximately 1,700 Android-based IoT solution providers for businesses.

SUNMI's Peers represent five leading IoT solution providers for businesses, which include both industry-leading companies specializing in Android-based IoT solutions, as well other market leaders with broader business coverage, as further illustrated below:

	Justification
<b>Ingenico</b>	Ingenico is a European company that primarily focuses on IoT payment solutions for businesses. Historically, Ingenico specialized in IoT payment solutions with traditional Linux devices but has been steadily increasing its share of Android-based IoT solutions. Ingenico's Android-based IoT terminals are directly comparable to SUNMI's products in this market segment. Overall, Ingenico operates within the broader IoT terminal market for businesses, which also encompasses SUNMI's offerings.
<b>Zebra</b>	Zebra's core business focuses on the provision of Automatic Identification and Data Capture (AIDC) products globally. Some of Zebra's mobile data terminals fall within the intelligent IoT terminal market, targeting sectors such as retail, logistics, and hospitality. This segment of Zebra's business overlaps and is comparable to SUNMI's IoT terminal offerings.
<b>Meituan</b>	Meituan is a leading enterprise primarily engaged in online marketplaces and food delivery services in China. With its large number of merchants on platform, Meituan provides them with Android-based IoT terminals to foster synergistic effects, and its merchant base for these terminals has also grown substantially. As a result, Meituan's business customers are mostly F&B and other merchants that operate on its platform. The Android-based IoT terminals business of Meituan is fully comparable to SUNMI's offerings in the Android-based IoT terminals market.
<b>Elo</b>	Elo is a leading provider of touchscreens, interactive displays, and related solutions globally. While Elo focuses on offering IoT terminals, it does not provide the essential supporting software that SUNMI offers. Elo's Android-based IoT terminals are comparable to SUNMI's products.
<b>HiStone</b>	Histone is a leading Chinese player in IoT solutions for businesses and was among the earliest entrants into this market in China. Historically, Histone specialized in industrial control motherboard-based terminals but has recently shifted its focus toward Android-based IoT terminals. Histone's Android-based IoT terminals are fully comparable to SUNMI's offerings in the Android-based IoT terminals market.

SUNMI ranked first in the global Android-based IoT solution for businesses market in terms of revenue for 2023, with a market share of over 10% (based on its revenue generated globally). The below table sets forth a comparison with the Peers in terms of the global market share for Android-based IoT solution for businesses based on revenue.

	Market Share in the Global Android-based IoT Solution for Businesses Market in 2023
<b>SUNMI</b>	over 10%
<b>Ingenico</b>	~6%
<b>Zebra</b>	~5%
<b>Meituan</b>	~4%
<b>Elo</b>	~1%
<b>HiStone</b>	~2%

Source: CIC

Note:

Market share refers to the percentage of revenue each company generated from its Android-based IoT solution for businesses within the global Android-based IoT solution for businesses market in 2023, excluding revenue from payment services, SaaS subscriptions, and license procurement.

SUNMI also ranked first in the Android-based IoT solution for businesses market in China in terms of revenue for 2023, with a market share of approximately 5% (based on its revenue generated from China), according to CIC.

#### The Pain Point Solution Comparison between SUNMI and Industry Peers

Pain Points	SUNMI's Solutions	Peers' Status			
		Company A	Company B	Company C	Company D
Multiple-function devices	All-in-one smart devices (first among the peers)	✓	-	✓	✓
Software integration	SUNMI OS (i.e. proprietary operating system)	✓	-	-	-
	SUNMI APP Store (i.e. open platform for software developers)	✓ Over 2,700 app developers and over 8,000 published apps	-	✓ 66 published apps	✓ Around 1,000 app developers and over 2,500 published apps
	SUNMI Max Program (i.e. proprietary modular PaaS platform)	- Third-party low-code platform or no disclosed self-developed platform	- Third-party low-code platform or no disclosed self-developed platform	- Third-party low-code platform or no disclosed self-developed platform	- Third-party low-code platform or no disclosed self-developed platform
Cross-vertical applications	15 verticals (with 100+ sub-verticals)	4 verticals	6 verticals	2 verticals	6 verticals
Cross-border adaptability	200+ countries and regions	~120 countries and regions	170+ countries and regions	~13 countries and regions	120+ countries and regions
Data ecosystem	SUNMI DMP and Hyper-Wi-Fi	-	-	-	-

Note: "-" stands for "Not officially disclosed"  
Source: CIC

A: Pax Global Technologies, B: Zebra Technologies, C: Fiserv, Inc., D: Ingenico, E: Toshiba Tec Corporation, F: Worldline S.A.

#### Comparison of Key Innovative Technology Features between SUNMI and Competitors

Tech Categories	SUNMI	Company A	Company B	Company C	Company D
IoT Hardware and Operating System	✓	-	-	-	-
Enhanced communication technology (Hyper Wi-Fi)	✓	-	-	-	-
Optimization of general communication technology (Wi-Fi optimization)	✓	No OS-level optimization disclosed	-	No OS-level optimization disclosed	-
OS optimization	✓	-	-	-	-
Global data compliance	✓	-	-	-	-

Tech Categories		SUNMI	Company A	Company B	Company C	Company D
PaaS and Software Applications	Low-code PaaS platform designed for commercial applications	✓	–	Third-party	–	–
	Self-developed AI algorithms for businesses	✓	–	Bar codes recognition	–	–

Note: “–” stands for “Not officially disclosed”

Source: CIC

A: Pax Global Technologies, B: Zebra Technologies, C: Fiserv, Inc. , D: Ingenico.

#### BIoT Solution Provider Benchmark Between SUNMI and Competitors

Players	Number of IoT Terminals	Number of Vertical Coverage	Cumulative Active Android-based Terminals <sup>1</sup>	Number of countries and regions covered <sup>2</sup>
<b>SUNMI</b>	more than 60	15 (with 100+ sub-verticals)	>15 million	200+ countries and regions
<b>Company A</b>	24	4	~19 million	~120 countries and regions
<b>Company B</b>	25	6	<5 million	170+ countries and regions
<b>Company C</b>	15	2	~3.5 million	~13 countries and regions
<b>Company D</b>	31	6	<10 million	120+ countries and regions

Notes:

1. Cumulative active Android-based terminals refer to the total number of devices that have been active at any point up to September 30, 2025, including those no longer in use and those still actively used by merchants.
2. Number of countries and regions was determined based on the use of BIoT device Management Platform (“DMP”) by businesses and merchants in the relevant countries and regions as of September 30, 2025.

Source: CIC

A: Pax Global Technologies, B: Zebra Technologies, C: Fiserv, Inc. , D: Ingenico.

#### Industry Norms

- The Company’s business seasonality is consistent with that of the BIoT industry.
- In light of the abundance of OEMs and ODMs in China, the Company can identify and engage alternative OEMs and ODMs of comparable service quality and under similar terms without material difficulties.
- The global smart terminal market is expected to grow rapidly to a trillion-dollar scale driven by AI, big data, and IoT applications;
- The Company nurtured the world’s most active developer ecosystem dedicated for commercial scenarios.
- The Company provides the widest range of smart terminal models among the top 10 industry players.

(The End)