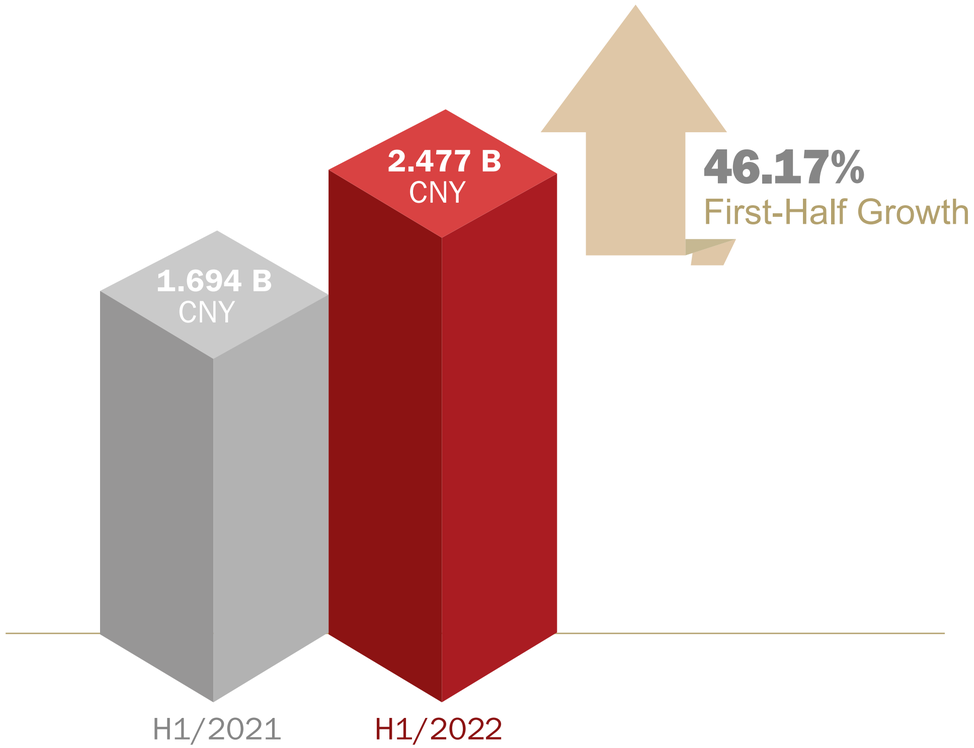


The Intelligent Future Is Written with ThunderSoft

2022 Mid-Year Report

Key Figures 2022 02
ThunderSoft - Who We Are 03
ThunderSoft Smart Software 05
ThunderSoft Smart Vehicle 06
ThunderSoft Smart IoT 09
Financial Statement 10
Additional Information 18

Our Key Figures – ThunderSoft at Mid-Year 2022



Smart Software

Revenue

CNY 0.910 B

24.86% Growth Relative To H1/2021

Smart Vehicle

Revenue

CNY 0.743 B

50.86% Growth Relative To H1/2021

Smart IoT

Revenue

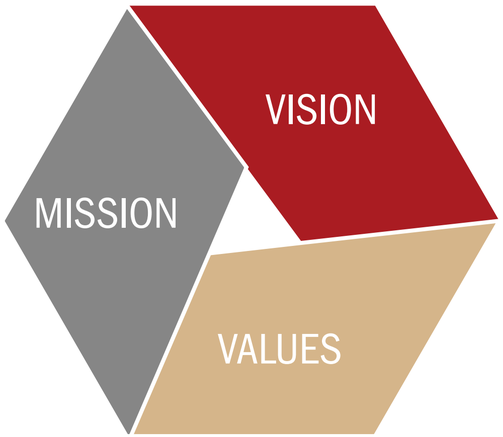
CNY 0.821 B

75.29% Growth Relative To H1/2021

ThunderSoft – Who We Are

ThunderSoft(trading as Thunder Software Technology Co., Ltd., Stock Code SZ.300496). is a world-leading provider of intelligent OS products and technologies, with valuable independent intellectual property rights at our operations' core. We focus on key AI-based technologies that support and accelerate productization, and we spearhead technological innovation through our three business groups: Smart Software, Smart Vehicle, and Smart IoT.

Our Culture



Mission

Enriching an Intelligent World

Vision

Empowering Every Device with Our Technology

Values

Customer Focus
Dedication As Essential
Technology-Drivenness

Our Strategies

Our main strategies are to keep technology at the core of all we do, use the ecosystem as the foundation, and maintain global focus.

1 **Technology strategy** forms the key to our competitiveness, through which we cultivate advantages offering markets a highly limited and valuable resource: ThunderSoft is uniquely capable of providing full-stack technology, extending from the chip layer, through the system layer, to the application layer and into the cloud.

2 **Ecosystem strategy** work entails close collaboration along the entire industry chain, with leading chipset vendors, OEM players, operators, software and Internet developers, and component manufacturers, to guarantee solid customer-centered development of our intelligent-OS technology while also enabling industrial connection and ecological empowerment across the intelligent-OS domain.

3 **Global-focus strategy** has encouraged us to sail into the deeper seas and empowered us to co-develop smart industries by establishing partnership with well-chosen industry entities for building close cooperation with global technology leaders. In addition, we focus on serving the major customers in each local market, to realize our value proposition and deliver on a win–win strategy.

Our Business Models

1 IP business model

In this software-licensing model, we license the technology and IP we have developed to our customers, mainly in line with a time- or royalty-based approach.

2 Service + Solutions business model

We execute software design and custom development in accordance with the customer's actual needs, and we deliver the final development outputs to customers by charging development fees. This model also includes providing corresponding technical personnel and supplying technical support, technical consultation, system maintenance, and other services.

3 Product Sales business model

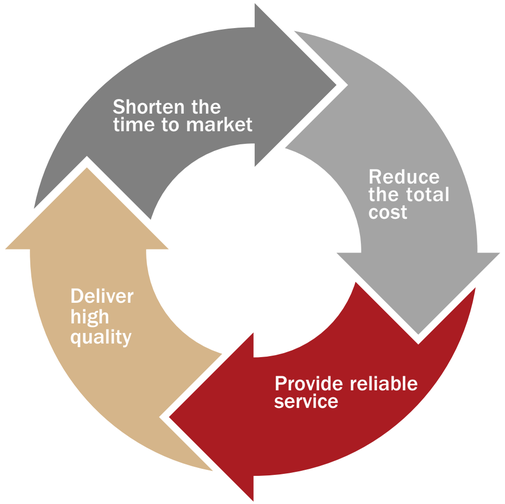
ThunderSoft sells comprehensive hardware–software integration products, which may include our IP, complemented with all the related product-design services.

Our Values

Our Value Proposition

A partner for value-added scaling, we bring our customers highly innovative, reliable, and commercial-application-ready products and solutions for smart software, smart vehicles, and the smart IoT of today and tomorrow.

Value for the Customer



Smart Software

Our Smart Software division provides software development and technical solutions for a broad range of smart devices, including tablet computers, smartphones, other mobile devices, laptops, and point-of-sale systems. Our smart operating systems support all popular mobile operating systems – Android and other Linux-based OSes, HarmonyOS, Windows operating systems, etc.

The products, covering the entire stack, encompass full driver development and integration, framework optimization, operator certification, security enhancements, UI design, and application customization. They come with comprehensive services for a broad range of satisfied customers. Among those customers are OEMs, ODMs, and various other brand manufacturers with OS-related technology and service requirements.

Over the last few years, the market structure of the smartphone industry has demonstrated a trend of further consolidation. With our product leadership and full-stack OS technology products for major global OEM players, ThunderSoft has always worked closely with customers in that arena, engaging in reliable project development, product delivery, verification testing, and collaborative research and development in joint laboratories.

Our full-stack core technologies and solutions

- *Strategic cooperation with providers of chip platforms*
- *Turnkey product solutions*
- *Product-differentiation solutions*
- *An operator-certification solution*
- *Solid system security*

Smart Software

Revenue

CNY **0.910 B**

24.86% **Growth Relative To H1/2021**



Smart Vehicle

Smart vehicles represent the synthesis of software in several rapidly developing fields, including AI, Big Data, and cloud computing. High-precision maps and positioning, perception of the environment, decision planning, and vehicle action control all can be accomplished via well-designed, carefully implemented, and properly integrated software. Applying the Software Is Redefining Vehicles concept and keenly aware of the complexity of operating-system development, our Smart Vehicle division continuously applies software-rooted values in its operations. This has brought the business group continuous growth. Furthermore, since the entire vehicle electrical/electronic (E/E) architecture is moving from a distributed process to domain concentration, and from there to deep integration of the central computing unit and related innovation, there is a nearly infinite expanse and ample room for ongoing software innovation, work with rich scenarios, and iterative upgrades.

Smart Vehicle

Revenue

CNY **0.743 B**

50.86% Growth Relative To H1/2021

The Smart E-Cockpit

ThunderSoft's latest cockpit solution harnesses powerful software adaptation capabilities, one of our core technology's competitive advantages, to obtain maximum performance from the chipset, the full "gear range" of CPU computing power, on-GPU graphics and image processing, and other benefits. The solution has enabled single-chip multiscreen smart cockpit functionality that includes digital instrumentation, centrally controlled integrated entertainment, copilot entertainment, dual-rear-seat entertainment, streaming media for rearview mirrors, heads-up displays (HUDs), and the industry's first one-stop screen-projection solution.

Through the Kanzi One integration suite's capabilities, it provides a rich palette of convenient programming tools and several coding languages, offering car-makers and developers extensive choice. A simple development process facilitates creating the ultimate user interface and, accordingly, ever more advanced smart cockpit products.

Cross-domain technologies offer a wealth of opportunities for combined e-cockpit and autonomous-driving advances. Integrated smart parking technology and solutions based on in-vehicle OS technologies are already actualizing this potential. With the redundant computing power from the e-cockpit domain put to full use, the development cost for the parking system is reduced, but also – thanks to a marriage of traditional ultrasonic radar ranging algorithms and AI-based intelligent vision technologies – the solution can adapt to more parking scenes, therefore exhibiting greatly enhanced judgment and processing ability in complex parking environments.

The division's smart e-cockpit solution showcases the competitive advantage arising from our core competence in the middleware field, along with ThunderSoft's profound expertise in hardware-virtualization software platforms, perception algorithms, and deep learning. At the same time, our software solutions and algorithms can be adapted to the market's mainstream platforms: Qualcomm, NVIDIA, NXP, TI, and other products. Extensive support for popular chip platforms can help customers quickly and efficiently realize mass production of smart e-cockpit solutions and smart parking products.





Autonomous Driving

As technologies mature and industry norms crystallize, autonomous driving is undergoing iterative upgrading from L2/L2.5 to L2.99. Autonomous driving will eventually become a landing scenario that users genuinely need. With this in mind, we focus on offering well-differentiated products and experiences aligned with the users' diverse demands. ThunderSoft takes the smart operating system as the core, focuses on scenario-based demands, and continues to deploy answers in the smart driving area.

In the field of low-speed autonomous driving too, we are harnessing the power of cross-domain innovation. With integrated smart e-cockpit innovations in this area, we continue building full-link products for around-view monitor (AVM) and automated valet parking (AVP) technology and solutions.

As an important active safety technology, AVM provides strong assurance of safe and convenient smart driving. Our AVM products present the surrounding environment in a truly different light, helping drivers gain clarity of insight into how things in the vehicle's vicinity are changing. The high-quality, rich-dimensional algorithms for AVM can correct for distortion and gap-stitching issues, thereby enabling functions such as dynamic attention to blind spots, real-time scaling of trajectory lines, and follow-up of viewing angles. This greatly improves the accuracy of the surround-view picture, helping the driver accurately grasp the specifics of the vehicle's position and the external environment. Therefore, driving is safer. Besides providing better protection for vehicle safety, our AVM products benefit from the industry-leading human–machine interface (HMI) toolchain Kanzi. The HMI tools facilitate creating a 3D car model and radar wall, dynamic 2D auxiliary lines, and rich mirror movement effects, which improve design sense and, thereby, enhance designers' approach to the user interface. The resulting UI content provides users with an advanced immersive experience.

In the DCU computing area, our products based on Qualcomm's Snapdragon Ride platform incorporate such functions as environment perception, information fusion, decision planning, and drive execution. With its properties of high reliability, low power consumption, and excellent real-time performance, this product range has carved out a space for itself in supporting the realization of advanced intelligent driving. It is an in-vehicle high-performance real-time computing platform that can genuinely aid in large-scale rapid mass production of high-end autonomous-driving systems.



Smart IoT

The IoT business has an immensely complex market, with many types of devices, multitudinous and highly varied customer needs related to each, and demands for rapid innovation. The entire IoT is transitioning toward intelligence, computing complexity, and eventual emergence of a new computing platform. At the same time, software in general is growing more complex, and only software can cope with the requirements of this infinite long-tail market, thus yielding huge differentiation advantages for proactive software vendors.

ThunderSoft's smart IoT operations give OEM/ODM players, other enterprise customers, and developers genuine one-stop solutions. The company's solid expertise extends all the way from the chip layer, driver, OS, and algorithm through to specific applications. By integrating advanced technologies in such realms as artificial intelligence, 5G, the full spectrum of Internet of Things activities, and cloud computing, we provide answers.

The TurboX Smart Core Platforms, which include the "brains" of intelligent products in the IoT setting, and the TurboX Smart IoT cloud platform both are open platforms established by ThunderSoft to accelerate and enable IoT and smart devices' prototype-to-product journey. The platform constitutes a one-stop solution that includes the core OS, SoM, SDK, and algorithm components while also making development-board and community services available. The TurboX Smart Core Platforms have been designed to draw the industry chain – content, applications, cloud services, and other resources – together to form an industry platform for enterprises and all makers involved with IoT and smart devices. The core platforms have already entered widespread use in an extensive range of products: robots, intelligent vision, videoconferencing systems, AR/VR, wearable devices, smart speakers, handheld terminals, ARM-based cluster servers, and various other arenas.

Smart IoT **75.29%** Growth Relative To H1/2021

Revenue

CNY **0.821 B**



▲ Thundercomm wearables support: the Louis Vuitton Tambour Horizon Light Up Connected Watch



▲ Thundercomm's cooperation with Qualcomm, including launch of the RB6 platform



▲ TurboX intelligent vision - the core solution in the DingTalk F2 all-in-one videoconferencing machine



2022 Mid-Year Financial performance

Key Financial Indicators

Millions of CNY	H1/2022	H1/2021	Change
Operating revenue	**2,477**	**1,694**	**46.17%**
Net profit attributable to shareholders of listed companies	393	277	**41.69%**
Net profit attributable to shareholders of the listed company after deduction non-recurring gains and losses	363	256	**41.83%**
Net cash flow from operating activities	67	24	**178.67%**
Basic earnings per share	0.9239	0.6500	**42.14%**
Diluted earnings per share	0.9109	0.6500	**40.14%**
Weighted average return on equity	7.40%	6.20%	**1.20%**

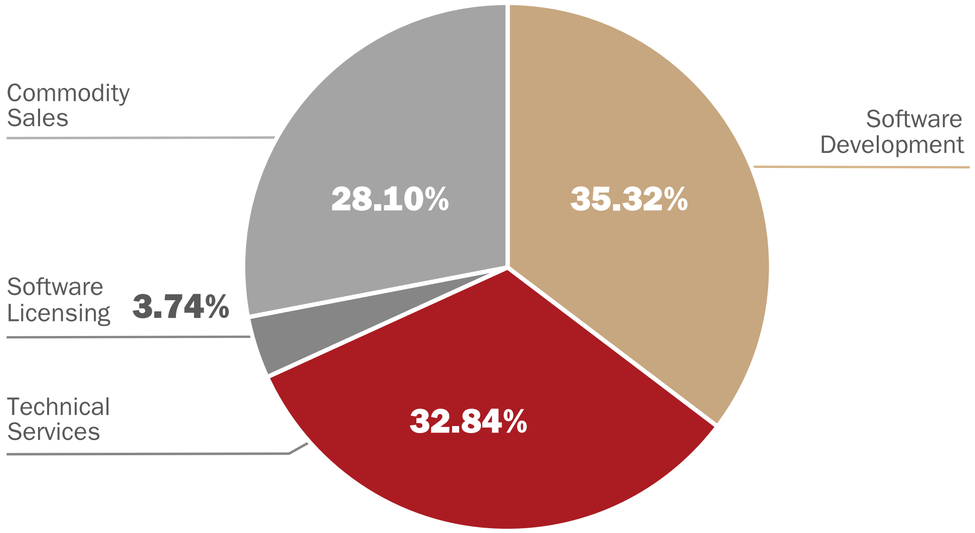
Millions of CNY	2022/06/30	2021/12/31	Change
Total assets	**7,676**	**7,239**	**6.04%**
Net assets attributable to shareholders of listed companies	5,411	5,189	**4.28%**

Statement of Operating Revenue

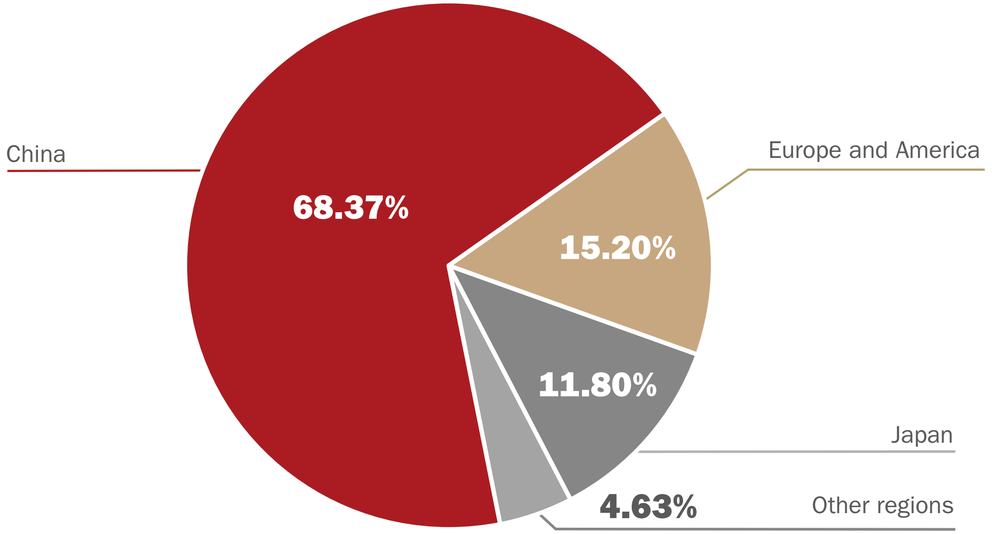
Millions of CNY	H1/2022	H1/2021	Change
Total operating revenue	**2,477**	**1,694**	**46.17%**
By Product Type			
Software development	875	584	**49.87%**
Technical service	813	576	**41.21%**
Software licensing	93	83	**12.09%**
Commodity Sales	696	452	**53.97%**
By Region			
China	1,693	953	**77.74%**
Europe and America	376	304	**24.01%**
Japan	292	267	**9.47%**
Other	115	171	**-32.98%**

Statement of Operating Revenue

Revenue by Product Type, H1/2022

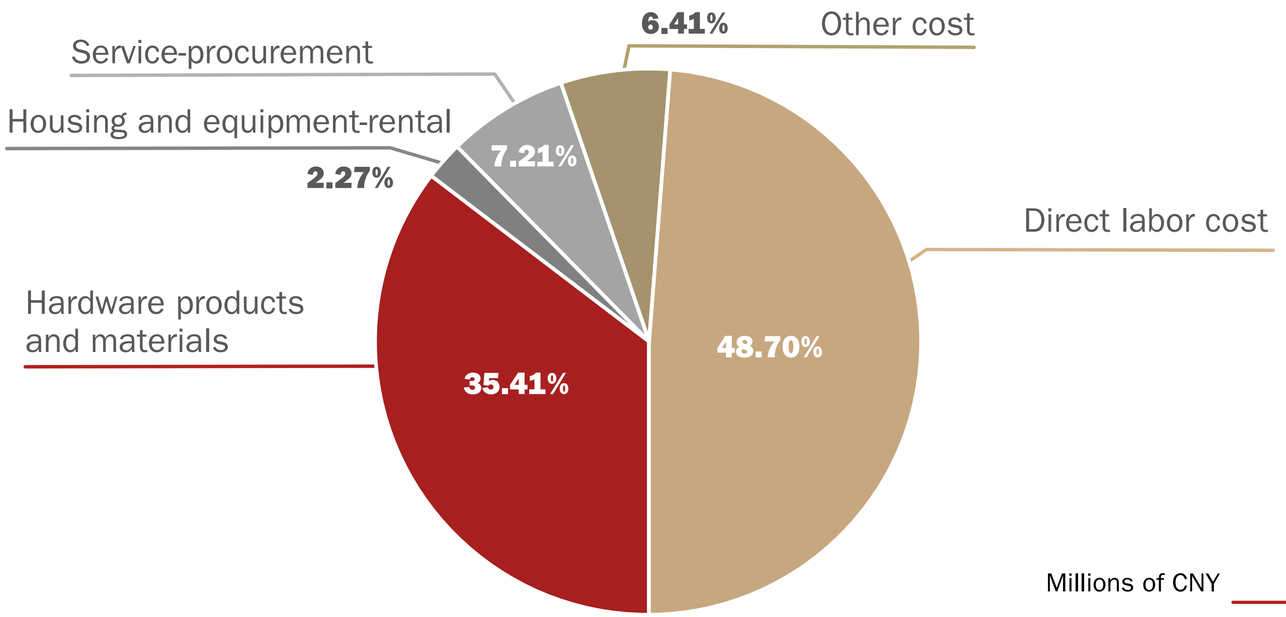


Revenue by Region, H1/2022



Statement of Operating Costs

H1/2022

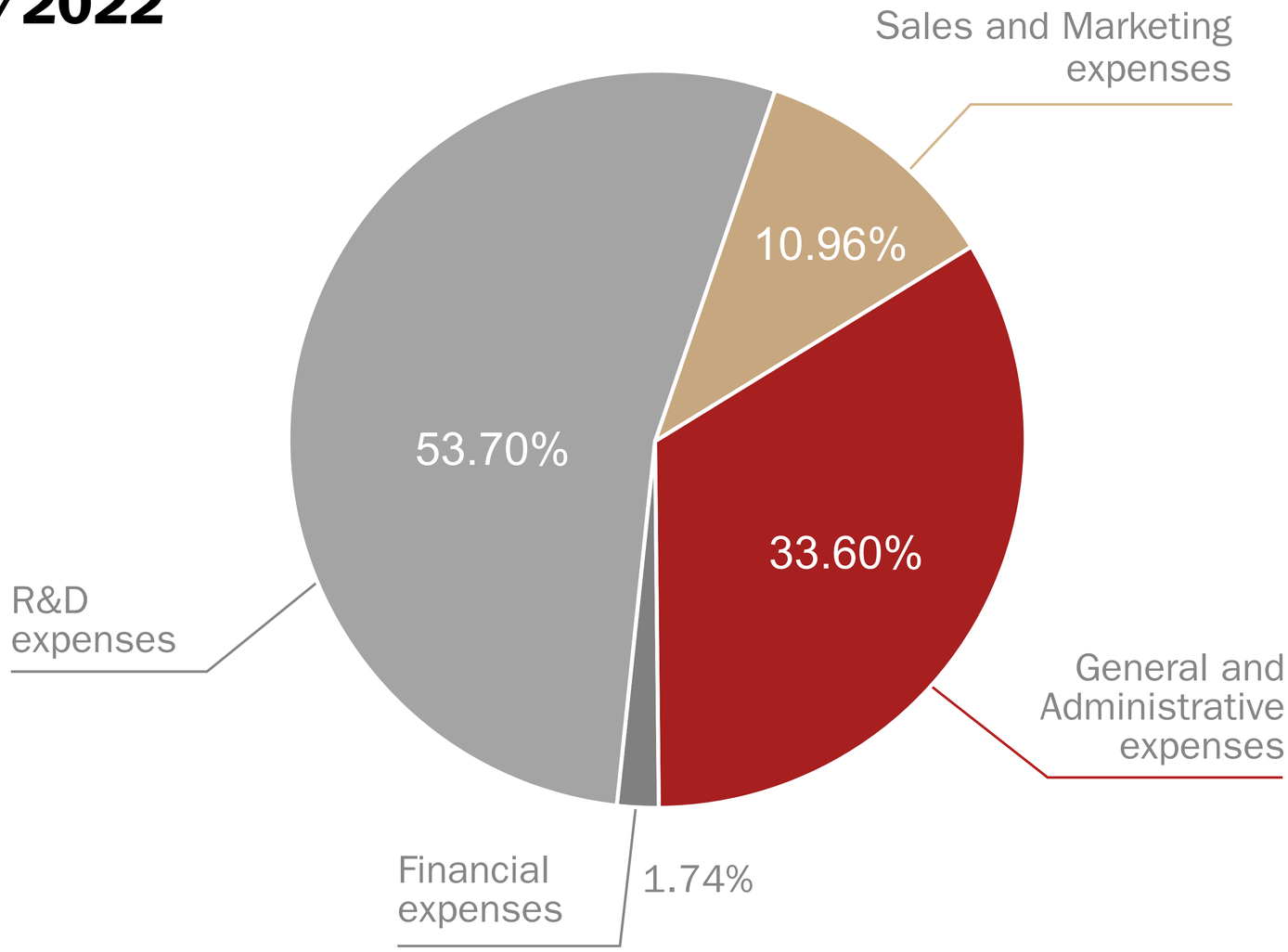


Millions of CNY	H1/2022	H1/2021	Change
Direct labour costs	683	457	49.36%
Procurement costs for hardware-products and materials	496	353	40.56%
Housing and equipment-rental costs	32	24	31.98%
Service-procurement costs	101	99	1.82%
Other costs	90	45	99.50%
Total	**1402**	**979**	**43.24%**

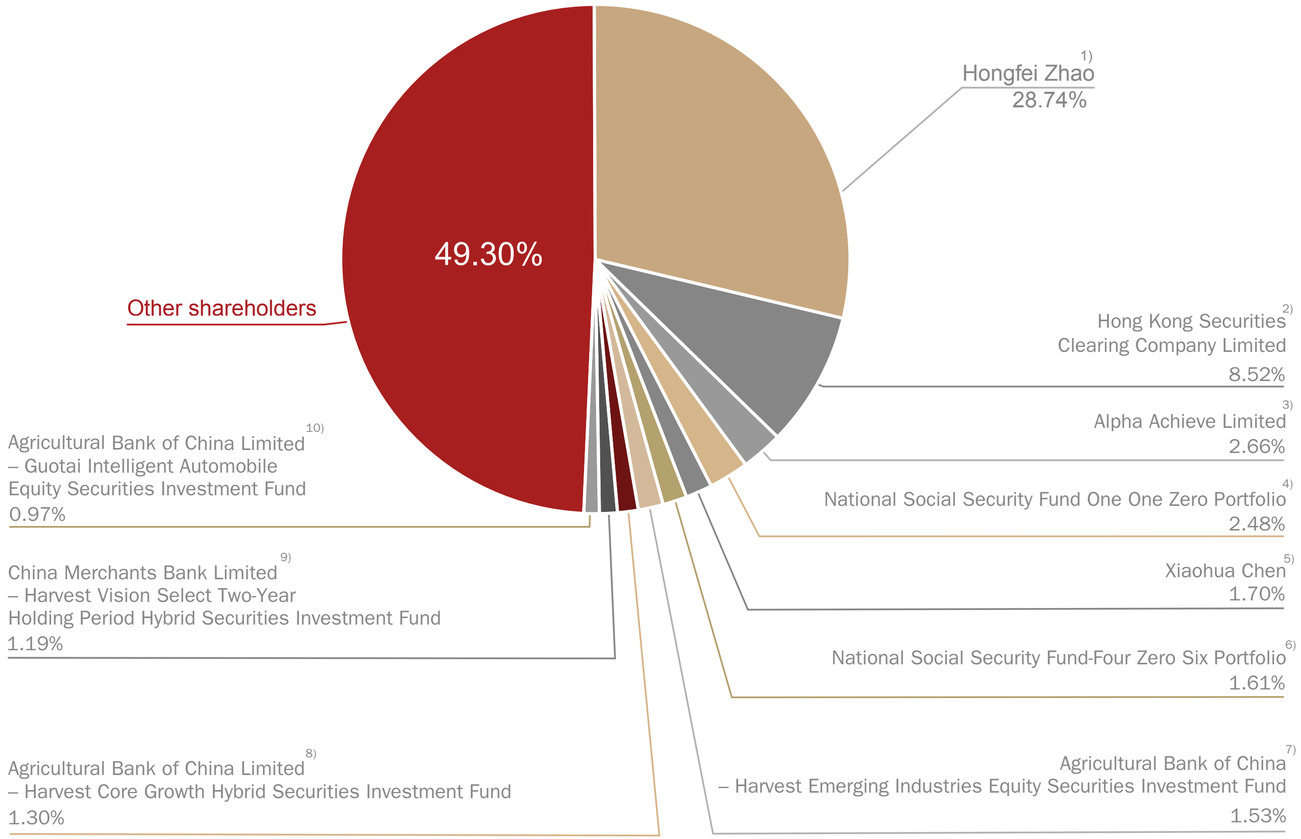
Statement of Cash Flow

Millions of CNY	H1/2022	H1/2021
Net cash flow from operating activities	67	24
Net cash flow from investing activities	-249	-81
Net cash flow from financing activities	-40	74
Net Increase in cash and cash equivalents	-197	38

Breakdown of Expenses H1/2022



Main Shareholders – Top 10 shareholders



1) 赵鸿飞
2) 香港中央结算有限公司
3) 越超有限公司
4) 全国社保基金一一零组合
5) 陈晓华
6) 全国社保基金四零六组合
7) 中国农业银行股份有限公司－嘉实新兴产业股票型证券投资基金
8) 中国农业银行股份有限公司－嘉实核心成长混合型证券投资基金
9) 招商银行股份有限公司－嘉实远见精选两年持有期混合型证券投资基金
10) 中国农业银行股份有限公司－国泰智能汽车股票型证券投资基金

Disclaimers

Forward-looking statements

Certain portions of this publication may contain “forward-looking information”, referred to below as forward-looking statements. Apart from statements of historical fact, the information contained herein constitutes forward-looking statements. These include, but are not limited to, statements on (1) the projected financial performance of the company; (2) completion of, and the use of proceeds from, the sale of the shares being offered shares offered in conjunction with this publication; (3) the expected development of the company’s business, projects, and joint ventures; 4) execution of the company’s vision and growth strategy, including matters related to future merger and acquisition activity and global growth; (5) sources and availability of third-party financing for the company’s projects; (6) completion of any company’s projects that are currently underway, in development, or otherwise under consideration; (7) renewal of the company’s current customer, supplier, and other material agreements; and (8) future liquidity, working capital, and capital requirements. Forward-looking statements are provided to allow potential investors the opportunity to understand the management’s beliefs and opinions in respect of the future so that they may use such beliefs and opinions as one factor in evaluating a potential investment.

These statements are not guarantees of future performance, so undue reliance should not be placed on them. Such forward-looking statements necessarily involve risks and uncertainties, both known and unknown, which may cause performance and financial results in future periods to differ materially from any projections of future performance or results expressed or implied by such forward-looking statements.

Although the forward-looking statements contained in this presentation are based on what the company’s management believes to be reasonable assumptions, there can be no assurance of forward-looking statements proving to be accurate, since actual results and future events could deviate materially from those anticipated under such statements. The company undertakes no obligation to update forward-looking statements if circumstances or management estimates/opinions should change, except as required by applicable securities laws. The reader is cautioned once more not to place undue reliance on forward-looking statements.

Validity of the material provided

All opinions and estimates provided, irrespective of their source, are offered in good faith and may be deemed valid only as of the stated date of this report. They are subject to change without notice, accordingly. They do not constitute guidance on individual investments or tax advice.
This publication is intended only to provide general, preliminary-level information to investors and other stakeholders, and it is not to be construed as the basis for any investment decision. The publication has been prepared by ThunderSoft’s executive team as general information for the private use of investors and other stakeholders to whom the publication has been distributed, but it is not intended as a personal recommendation of particular financial instruments or strategies. Therefore, it does not provide individual-tailored investment advice and does not take into account the individual investor’s particular financial situation, existing holdings or liabilities, investment knowledge and experience, investment objective and horizon, or risk profile and preferences. Every investor must guarantee the suitability of an investment with regard to his or her financial and fiscal situation and in light of his or her investment objectives. The investor bears all risk of losses in connection with an investment.

It is recommended to consult one’s financial adviser before acting on any information provided here.

The information contained herein does not constitute advice on the tax consequences of making any particular investment decision. Each investor must make his or her own appraisal of the tax and other financial consequences of any given investment.

Sources

This publication and its reporting may be based on or contain information – such as opinions, recommendations, estimates, price targets, and valuations – from other, named sources.

To the extent that it is based on or contains information with external origins, ThunderSoft has determined its sources to be reliable but does not guarantee the accuracy, adequacy, or completeness of the externally originating information.

Limitation of liability

Neither ThunderSoft nor its associated or affiliated companies assume any liability with regard to any investment, divestment, or retention decision made by the investor on the basis of this publication herein. In no event shall entities that are part of ThunderSoft or other, associated and affiliated companies be held liable for direct, indirect or incidental, special, or consequential damages resulting from the information in this publication cited here.

Risk information

The risk of investing in certain financial instruments, including those mentioned in this document, is generally high, because their market value is exposed to many factors, among them factors connected with the operations-related and financial conditions of the relevant company, growth prospects, change in interest rates, the economic and political environment, foreign-exchange rates, and shifts in market sentiments. Where an investment or security is denominated in a currency different from the investor’s currency of reference, changes in rates of exchange may have an adverse effect on the value of, price of, or income from that investment for the investor. Past performance is not a guide to future performance. All estimates projecting performance in the future are based on assumptions that may not be realized. When investing in individual shares, the investor may lose some or all of the investment.

Contact Information

Investor Relations: ir@thundersoft.com

Business Enquiries: biz@thundersoft.com