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Investor Relations Associate Director

Xueji Wang
Founder, CEO & Director

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Yang Liu
Morgan Stanley, Research Division

Liping Zhao
CICC, Research Division

Presentation

Operator

Good morning, and good evening, ladies and gentlemen. Thank you for standing by, and welcome to Tuya Inc.'s Fourth Quarter 2021 Earnings Conference Call. [Operator Instructions]

I will now turn the call over to the first speaker today, Mr. Reg Chai, Investor Relations Associate Director of Tuya. Please go ahead, sir.

Reg Chai

Thank you. Hello, everyone. Welcome to our fourth quarter 2021 earnings call. Joining us today are founder and CEO of Tuya, Mr.Jerry Wang and our CFO, Ms. Jessie Liu. The fourth quarter 2021 financial results and webcast of this conference call are available at ir.tuya.com. A replay of this call will also be available on our website in a few hours.

Before we continue, I refer you to our Safe Harbor statement in our earnings press release, which applies to this call as we will make forward-looking statements.

With that, I will now turn the call to our founder and CEO, Mr. Jerry Wang. Jerry will deliver his remarks in Chinese which will be followed by corresponding English translations.

Xueji Wang
Founder, CEO & Director

Hello everyone. 2021 was a remarkable and critical year for Tuya. In March, we completed our IPO and our shares started trading on the New York stock exchange. We achieved over $300 million in annual revenue for the first time, representing an increase of approximately 68% year over year. Notably, we continued to leverage our leading technology and service offerings to support the business growth of our customers. For example, a well-known international brand with 50 years of operating history, one of our customers since 2018, became our first brand customer whose annual deployment of Tuya IoT PaaS exceeded over 10 million units! They achieved this impressive sales performance with 52 IoT SKUs powered by Tuya. Our SaaS and others business segment achieved year-over-year growth of more than 170% for 4 consecutive quarters. Our total number of customers increased from approximately 5,000 in 2020 to approximately 8,400 in 2021. In particular, IoT PaaS premium customers with revenue contributions of more than $100,000 increased from 188 to 311, around 50 of which are Fortune500 companies. The annual retention rate of premium customers remained higher than 99% and the annual retention rate of our top 100 IoT PaaS brand customers reached 99% as well.

In 2021, for the first time, we experienced challenges in supply chain, international logistics disruptions, and high global inflation not seen in decades. However, we still further expanded our gross profit margin from 34% in 2020 to 42% in 2021, while our gross profits increased 106% year over year. The world's top technology research organization, Gartner, cited Tuya as an example of a successful global IoT technology company in 12 IoT research reports published in 2021. In 2021, we organized flagship events, such as the Bluetooth Developer Conference and the Cellular Communication Developer Conference which also served as a press conference for our outdoor travel IoT products. We also continued to partner with global leaders such as Google, Microsoft, Amazon, and the Matter Project organization to promote the rapid development of the IoT industry. Looking back on 2021, I would like to take this opportunity to thank our investors, employees, customers, partners, and everyone who had supported us.

Now, let's talk about business developments in the fourth quarter.

For the full year of 2021, our IoT PaaS business had a DBNER of 153%, a leading level in the "Cloud PaaS and SaaS" industry. Our IoT PaaS business acquired nearly 1,000 new customers in the fourth quarter and the total number of customers served increased by 41% year over year.

We continue to attract well-known and high-quality companies around the world and turn them into IoT PaaS customers. One of these new customers, for example, is "Trust", headquartered in the Netherlands. With a history of 40 years of operations, Trust is a leading brand of consumer electronics accessories in Europe. Other new customers include Sunny, a top 3 Turkish home appliance brand, and the Schneider Consumer Group, a well-known European home appliance company. In Asia, we helped our new customer Commax, a global smart home brand founded in South Korea, develop visual doorbells and IoT sensing products. Other Asian customers we acquired during 2021 include ACE, a leading robot vacuum cleaner brand in Korea; Crompton Greaves, a leading manufacturers of consumer electronics with 75 years of history in India; Usha International, with 80 years of history, that manages over 60 exhibition centers and 12 hundred stores in India; and Bajaj Electricals, the diversified consumer electronics arm of the Indian leading business conglomerate "Bajaj Group", with a market value of about $1.5 billion. In South America, we helped our new customer Coppel, one of the largest department store chains in Mexico, build their own smart home ecosystem in small home appliances, safety, and wearable devices. We also worked with Serves Entel SA, the largest telecom operator in Chile. In the UAS, our service offerings enabled Powerology, the leading consumer electronics distributor and brand in the region to develop a series of IoT products such as smart cameras, robot cleaners, car refrigerators, body fat scales, and ambient lights. In North America, we acquired several new customers during the fourth quarter, such as a top outdoor travel brand, the largest vacuum cleaner brand, a leading kitchen appliance brand and a Fortune 500 air conditioner brand.

In China, we have also continued to win new customers. For example, we partnered with Xpeng Motors to create in-vehicle intelligent consumer electronics products for them. We also helped Qianjiang Motorcycle, a subsidiary of Geely Group to make their independently designed models and products "smart". We worked with Mercury Home Textile, a well-known Chinese brand to upgrade its plumbing blanket products with IoT capabilities. In 2022, we will expand our partnership with Mercury in bedding products, such as pillows, sleep belts, aromatherapy machines, and others. Another example is Deli Group, a leading stationery and office supplies company in China, that utilized our services to upgrade a variety of its best-selling consumer products. We also partnered with China's leading door lock company Kaadas, and China's famous commercial lighting brand Sanxiong Aurora for IoT implementation.

In 2021, our IoT PaaS segment has maintained its solid growth trajectory in all regions around the world. We are excited to see that the growth rate of IoT businesses powered by Tuya in emerging markets, such as China and other Asian regions, South America, and Central America has significantly exceeded that of developed markets. This trend is line with our strategy of building a more balanced global business. The accelerating IoT penetration has further demonstrated the inevitability of IoT technologies. As consumers in developed markets fall in love with IoT products, more in emerging markets are quickly following suit. Additionally, we further expanded our categories and empowered new IoT products, while striving to gain substantial worldwide market share in each new category. According to IoT industry data from influential professional statistic research institutions such as Euro Monitor, we estimate that we have achieved more than 25% of global market shares in IoT lighting and electrical since entering in 2015. In 2017, we began to focus on home safety related products (like sensors, Locks etc.) and we now have a market share of about 15%. In 2018, we expanded into home appliances, and now have a market share of about 10%. In the robot vacuum cleaner vertical, in particular, we have a market share of about 20%. Since 2020, we have expanded into digital entertainment and consumer energy related products. For 2022, we will focus on outdoor categories growth. For every new category we enter, our goal is to achieve a considerable market.

Next, I would like to share some updates on our SaaS and others segment, which delivered robust performance in the fourth quarter with revenue increasing 205% year over year, about US$19 million in 2021.

For value-added services, monthly subscription revenue of end customers more than tripled in 2021. Demand was strong for services such as cloud storage for IoT devices and message pushing service that provide real value to end customers. We believe that there is still a lot of headroom for value-added services to grow in the long term.

We further expanded our customer base for SaaS solutions during the quarter. For example, we provided smart SaaS solutions for its industrial park and offices through hybrid cloud to one of China's top 5 power generators which is also a fortune 500 company. In addition, Zhongliang Holdings Group, a large-scale real estate developer listed in Hong Kong, integrated our IoT platform as well as our smart SaaS solutions for community and industrial park into its newly updated product concepts to build up their smart scene offerings which will be regarded as the core system for its next generation residential products. Moreover, we provided smart hotel SaaS and smart apartment SaaS solutions to Grupo Moraval, a well-known real estate developer in Spain operating office buildings, hotels, and student apartments. We also partnered with Core System, a well-known hotel system integrator in Malaysia, to provide solutions for the first smart hotel powered by Tuya in the country. Through our smart commercial lighting SaaS solution, we enabled Suzhou

Bilinwei Intelligent Technology, an industrial lighting leader who help to renovate the maintenance hangar of Changzhou Benniu International Airport and successfully achieved an almost 55% power saving in the second quarter, upgraded the factory lighting system of Fuxing New Materials, which will reduce its lighting power consumption by 65% and its carbon emissions by 270 tons in each year.

There are many similar customers that leverage our solutions to strengthen their business. We believe that our IoT SaaS business has immense growth potential. In combination with the massive Powered-by-Tuya IoT hardware ecosystem, our SaaS solutions can enable a huge number of enterprise customers with smart capabilities, improve their efficiency, reduce power consumption, and gain in-depth business insights through data-based system management.

In summary, we are proud of our performance in our first year as a public company, especially considering the significant economic disruptions caused by the COVID pandemic, global inflation supply chain constraints and logistics disruptions. Our key operating metrics, such as number of active customers and number of registered developers on our platform, grew substantially. We also deepened our collaboration with customers. As the revenue contribution from our domestic business continued to grow, our global business is more balanced than ever before.

As we look ahead into 2022, the uncertainty of geopolitical conflicts and the high global inflation will likely continue to suppress consumer purchasing power. While we expect 2022 to be a challenging year for the IoT consumer electronics industry, we have also seen a significant improvement in upstream supply chain and logistics. Additionally, certain e-commerce customers affected by store closures in the third quarter are also showing signs of recovery. Our plan is to navigate the challenges in the macro environment through the three growth drivers: the private cloud solution, cost-effective smart lite IoT solutions, and our industry SaaS. At the same time, we will focus on the optimization of our organizational structure and operating efficiency as we aim to better balance our business growth and timeline to profitability.

Even after seven years of rapid growth, we believe our TAM remains significantly underpenetrated. There are thousands of product categories that can be made 'smart' with connectivity. According to various industry research, while there are tens of billions of consumer electronic products sold in the world every year, the penetration rate of IoT solutions remains low at 3%-5%, where we can see a dramatic and exciting future growth potential of the IoT market. To capitalize on the opportunities presented by the massive TAM, we intend to continue to invest in research and development for the foreseeable future. We believe the global IoT sector is at a "land-and-expand" stage, and we aspire to become as an industry giant who sets the standards for the industry and connects devices globally.

That concludes my remarks. I will now turn the call over to Jessie, our CFO, to review the financial details.

Yao Liu
CFO & Director

I will provide a closer look into our financial results. Before I begin, please note that all amounts are in US dollars and all comparisons are on a year-over-year basis unless otherwise stated.

As mentioned earlier, we faced a number of industry-wide challenges in the fourth quarter. Nonetheless, we have achieved a total revenue of 75.0 million in the quarter, around the mid-point of our previous guidance range. Our IoT PaaS revenue for the quarter grew by 13.9% year over year to 62.1 million. For the full year of 2021, total revenue was 302.1 million, up 67.9% year over year, and IoT PaaS revenue was 261.4 million, up 72.3% year over year.

We had 311 Premium IoT PaaS customers for the trailing 12 months ended December 31, 2021, up 65.4% from 188 a year ago. During the quarter, premium customers accounted for approximately 87.3% of our IoT PaaS revenue. Our dollar-based net expansion rate for IoT PaaS segment was 153% for the trailing 12 months ended December 31, 2021. This is a testament to our ability to expand our platform usage over time and grow revenues from existing customers. During 2021, among all the categories supported by our IoT PaaS solutions, home safety sensors, home appliances, and entertainment and energy saving grew at a significantly faster pace than electrical and lighting. In 2021, the electrical lighting category contributed to about half of IoT PaaS revenue, and the contribution of other categories continued to increase in the past few years, reflecting the success of our category expansion strategy. As for our customer base, we classify our top 200 brand customers into four groups: 1) well-known multinational brands, 2) regional brands with local influence in all continents and countries, 3) self-owned brands of large regional retail channels and telecom operators, and 4) China's cross-border e-commerce brands. In 2021, China's cross-border e-commerce brands accounted for around 30% of the sales of products powered by Tuya.

During 2021, brands and business operators are increasingly recognizing the value of pre-packaged industry-specific solutions, which enables them to focus on their own key points of differentiation while not wasting resources re-inventing industry standard functionality. As a result, our revenue generated from SaaS and others more than tripled to 7.3 million in the fourth quarter and 18.6 million in the full year.

At the end of 2021, our smart hotel and apartment SaaS cumulatively supported the IoT upgrade of more than 40,000 hotel rooms in China, 9 times that at the end of 2020, and the customer repurchase rate exceeded 85%. Our smart commercial lighting SaaS supported nearly 300 commercial lighting projects in 12 countries and regions including China, Singapore, Germany, the Netherlands, the United Kingdom, and Canada in office buildings, sports clubs, gas stations, shopping malls and other use cases. These projects also included more than 100 schools, providing students with lighting for improved eye protection. Our community/real estate SaaS was adopted by more than 100 real estate / community projects in 2021 to help real estate developers manage their properties more efficiently through IOT capabilities and bring comfort and convenience to the residents.

Our gross profit in the quarter increased by 34.1% to 32.4 million, while gross margin improved to 43.2% from 38.3%. IoT PaaS gross margin continued its increase to 42.5% from 40.1% a year ago, primarily due to our increased economies of scale, improved efficiency for IoT PaaS deployment achieved through effective R&D, and expansion into higher-margin IoT PaaS product lines. We believe our increased IoT PaaS gross margin is a testament to the strong values that we deliver to the industry chains.

Now, turning to our operating expenses. Please note that we are presenting our operating expenses on a non-GAAP basis by excluding share-based compensation expenses from our non-GAAP numbers to provide greater clarity on the trends of our actual operating-based expenses, so that you can review performance in the same way as our management.

During the quarter, our non-GAAP total operating expenses were 66.3 million. Specifically, non-GAAP R&D expenses grew to 42.1 million, non-GAAP sales and marketing expenses increased to 16.8 million, non-GAAP G&A expenses increased 9.1 million, and other operating income, net, was 1.7 million compared to 0.7 million a year ago. The increase in the non-GAAP total operating expenses was mainly due to the increase in employee-related costs. Our research and development employee headcount, for example, increased by 56% year over year by the end of 2021.

We are committed to building a sufficient reserve of talents which we believe is an integral part of our efforts to navigate external challenges and achieve sustained long-term growth. We are also executing a series of initiatives to optimize our organizational structure and streamline our operating procedures in order to ensure our operating efficiency. As such, we are constantly evaluating our personnel structure to maintain a workforce size that is appropriate to our business scale and long-term growth strategy.

Our non-GAAP loss from operations was 33.9 million in the fourth quarter and 117.5 million in the full year. Our non-GAAP net loss was 31.2 million in the fourth quarter and 109.3 million in the full year.

Net cash used in operating activities in the fourth quarter of 2021 was 53.2 million, or 71.0% of total revenue, compared to 9.0 million net cash used or 14.3% of revenue in the same period of last year. The increase was mainly a result of higher employee-related expenses and changes in our working capital.

Moving on to the balance sheet. As of December 31, 2021, our cash, cash equivalents, and short-term investments increased to 1.07 billion. We believe this balance is sufficient to meet our current liquidity and working capital needs.

Finally, turning to the share repurchase. During the fourth quarter, we repurchased approximately 4.3 million ADSs from the open market for a total consideration of approximately US$25.1 million pursuant to the share repurchase program, representing around 12.5% of the 200 million authorization announced pursuant to the share repurchase program. This shows our strong confidence in the Company's long-term growth prospects.

Now turning to outlook, for the first quarter of 2022, we expect total revenue to be in the range of $50 million to $57 million. As you can see, this is a rather large range considering that we are two weeks from the end of the quarter, and certainly wider than the ranges we have given in previous earnings reports. So let me explain. Historically, majority of our revenue for the first quarter of the year was recognized in March due to the Chinese New Year holidays. As of today, we have a good visibility on demand and there is a substantial volume of IoT PaaS to be delivered in coming weeks till

March end. But the sudden severe COVID outbreak is casting uncertainty onto revenue recognition because we cannot recognize revenue until our products are delivered and confirmed the receipt by our customers. This is clearly a challenge. As a number of cities, including Shenzhen, Shanghai and Hangzhou, are implementing preventive measures while people remain staying at home or pause business activities, we may experience practical logistics difficulties. Depending on how things unfold in the next couple weeks, we could have substantial delivery in some stage of delay. Having said that, we fully expect orders placed and paid for to eventually make it to our customers and be recognized – either in Q1 or Q2. Nonetheless, we are very cautious at the moment. That's why we have provided our outlook in a relatively wider range. We plan to provide an updated guidance for our total revenue for the first quarter of 2022 around end of March when we have more clarity regarding the severity of the above-mentioned logistics challenges.

This concludes our prepared remarks for today. Operator, we are now ready to take questions. Thank you.

Question and Answer

Operator

[Operator Instructions] Your first question comes from the line of Yang Liu with Morgan Stanley.

Yang Liu
Morgan Stanley

[Foreign Language] The first question is on IoT PaaS growth also from multinational customers for the global brands. After the Ukraine war, was there any meaningful change for the full-year outlook? The second one is the SaaS and VAS part. We saw very strong revenue growth in the last year. And going into 2022, what should be the growth strategy here and which vertical we expect to see a lot of growth potential in addition to Hotel and the Commercial Lighting? And the third question is the gross margin outlook in the current improving environment of supply chain? Thank you.

Yao Liu
CFO & Director

We are keeping a close eye on inflation and economic conditions, since they directly impact consumer demand, and thus indirectly impact us. Inflation has been accelerating since the third quarter of last year. We have all seen the recent numbers so I'm not going to repeat. In Europe, the market is increasingly pessimistic about economic growth expectations, and also in the U.S.

We think inflation is suppressing consumption, and non-essential consumer goods will be affected the most. We can see that retail channels and brand owners have become cautiously pessimistic since the third quarter of last year. This sentiment is gradually increasing and we haven't seen signs of recovery yet. The recent geopolitical conflict, the Russia and Ukraine war, further intensified inflation, especially in Europe, which escalated the situation.

Recently, we collected some feedback from downstream brand customers in Europe and the United States. In Europe, for example, the sales of IoT lighting products were worse than that of traditional lighting products. Against the backdrop of high inflation, this is a common trend. When consumers are under financial constraints, cheaper, traditional products are more attractive. Another obstacle is that a lot of brands are struggling to make a profit, due to the high inflation of the upstream cost since last year. The sharp increases in transportation costs since summer of last year also pressured their margins. They can't really raise their selling prices in the retail channel because retail channels are facing the pressure of consumers not buying more products. In that case, even when shelves and inventories are close to empty, brands are reluctant to produce their products anymore. They would rather wait for the upstream costs to drop significantly before placing other orders.

As a result, we believe that consumption will only improve after inflation has moderated and the costs for the upstream supply chain and logistics decrease significantly close to or back to a normal level.

We have noticed that sales channels for IoT products powered by Tuya, including BestBuy has already given 2022 revenue guidance for negative growth.

As such, we remain cautious towards 2022 of the challenging macro environment. We will prioritize categories where IoT products are not too expansive than traditional products, such as home safety sensor products, home appliance products, entertainment products, and outdoor transportation products. We also will help some IoT products to reduce the costs by adopting Bluetooth smart solutions that are more cost-effective. Our SaaS business is conducted in China, and it is still expanding rapidly, which we aim to sustain this high growth in 2022. We will also focus on the optimization of our operational efficiency in 2022 to accelerate our breakeven timeline.

For question two about SaaS. We are mainly focused on developing our SaaS business in China. The focus has yielded encouraging results in 2021, so we will continue this focus, although we do receive revenue outside of China for SaaS products as well, our focus will remain in China in 2022. With tailored strategies for each SaaS segment is quite different as well as our extensive hardware ecosystem and software experience, we expect all of our SaaS segments to continue to post robust growth in 2022.

First one, the hotel SaaS, for this segment, we already covered over 2,000 hotels. After two years of development, we already proven the market success of our SaaS products. The development strategy in 2022 is to focus on three initiatives.

First, expand our coverage to build our competitive moat, enhance our industry influence and profit margins, solidify the foundation of recurring revenues. Specifically, we plan to build standard SaaS solutions and increase our penetration into mid-to-long-tail markets by expanding our sales channels in the hotel and apartment verticals. Second, we also plan to focus on acquiring the big clients, the famous hotel chains and key account customers. By giving our key customers access to our IoT core, Tuya cube, and industry SaaS services we will build out our industry PaaS and privatized products. Thirdly, we aim to increase our software subscription revenue by developing hotel solutions. As we continue to power more hotel rooms, we will be able to generate additional subscription revenue on top of the hotel SaaS.

The second one is the real estate and community SaaS. The business line achieved solid progress in 2021, with the largest revenue and growth among three businesses. As we further strengthened our community and residential SaaS products, we have become the preferred IoT platform in China for top real estate and property management firms. Last year over 150 real estate and community projects were built on our real estate community SaaS. Our real estate SaaS covered more than 70,000 households last year. Currently, we have dozens of large-scale community projects in hand, including a number of projects with a value over one million RMB.

The strategic focus of our real estate and community SaaS business in 2022 will be developing the major and large Chinese customers, deepening the collaboration with city partners, and expanding into industry PaaS categories. We will re-align our products with IoT foundation, the PaaS, and the real estate community SaaS. As we support several collaboration models, such as out-of-the-box solutions, integrated solutions, developer capability tools, to separate applications, platforms, hardware, and software. This will allow large-scale customers to pick and choose flexible products based on their needs and quickly achieve their business goals.

In addition, we also want to continue the expansion of applications' new use cases, the development of online capabilities such as online ordering, and the open framework that supports third-party applications will enable our real estate and community SaaS products to interface with third-party hardware as an ecosystem. This will be our core competitive strength and the key factor to influence a customer's purchase decision.

And for the commercial lighting segment, we completed the business goals of our commercial lighting SaaS segment in 2021, in terms of product iteration, customer acquisition, completing landmark projects, and scaling up our use cases. In 2021, we served approximately more than 180 commercial lighting SaaS customers. In the fourth quarter, we launched our first smart building SaaS project based on the newly developed smart building SaaS on the foundation of our smart commercial lighting solutions.

In 2022, we have three major growth strategies for our commercial lighting SaaS segment.

First, we will focus on penetrating large customers as well as building and commercial lighting brand owners. By forging partnerships with system integrators and Independent Software Vendors with resources, we will launch more landmark projects. Second, we will develop value-added services, such as human-centric lighting, energy-saving solutions, provide the cloud edge, cloud services to certain customers with a private cloud need. Lastly, we plan to improve our integrated hardware and software solutions for each use case to accelerate their deployment at a large scale.

We believe that IoT SaaS has solid market demand and long-term growth prospects. So in 2022 we will continue to invest in this area.

For the third question regarding gross margin. Regarding the pricing of IoT PaaS, our committee always focused on a few standards. It's the industry environment, the upstream and downstream operating conditions The second one is our costs. And thirdly, we also consider the end product sales price. Our pricing strategy always focus on mutual benefit along the value chain and also our own health growth.

The expansion of our gross profit margin in the past few years comes from three aspects. First, our R&D efforts helped us optimize and control our costs. Secondly, revenues generated from segments with higher margins, such as home appliances, home safety and sensors, entertainment, and energy-saving, those have rapidly grew to almost 50% of revenues. Thirdly, we are benefiting from increasing economies of scale.

Looking forward to 2022, supply chain costs we believe it's stabilized, although it hasn't dropped. However, high inflation could create significant sales pressures downstream. As such, we plan to keep the price of IoT PaaS stable. We will continue to improve our cost structures through our R&D efforts and continue to increase the revenue contribution of our complex products, as we mentioned earlier, which have higher margins. For the company as a whole, the revenue contribution of the SaaS segment will further increase this year. So, all these will also help us expand our gross profit margins.

However, to cope with high inflation this year, we will focus on promoting the cost-effective Bluetooth Beacon products. The IoT products cost has a higher price or obviously higher price percentage than the traditional products. So, those Bluetooth Beacon products have a lower gross margin versus other IoT PaaS like Wi-Fi or Zigbee, etc. As such, as a mixed result, we expect our overall gross profit margin to be flat or slightly higher than last year. But of course, our goal is to try our best to increase our gross profit margin.

Yang Liu
Morgan Stanley

Thank you.

Operator

Your next question comes from the line of Liping Zhao with CICC.

Liping Zhao
CICC

Thanks, Jerry and Jessie for taking my questions. I have two questions here. First is related to Matter. Could management share a view of Matter, any impacts on your overall business? And second is about the business adjustment. Looking ahead in 2022, customer demand and supply chain are still under pressure due to the macroeconomic environment, do you have any adjustment as business operation to mitigate these risks? Thanks.

Xueji Wang
Founder, CEO & Director

Let me address the question by first clarifying what Matter is. It is an IoT protocol formed by integrating the technical characteristics of Homekit, OpenThread, and Zigbee3.0. The integrated protocol focuses on the field of smart homes and local interconnections. Having multiple influential enterprises developing the protocol together in an open-source format will accelerate its adoption, which in turn, will help improve the low penetration rate of IoT in home appliances. There are five key limitations Matter is facing currently. First, Matter does not cover cloud connection protocols. Second, it only supports narrowband data transmission. Third, Matter may experience problems with Zigbee’s fragmented protocols. Fourth, Matter will be challenged by other network protocols, such as BLE Mesh. And finally, chips that can meet Matter’s requirements are more expensive.

Our full suite of solutions excels at solving fragmentation problems at all levels through a platform-oriented approach. We unified our solutions across different systems, chips, network protocols, and IoT models, to provide connections from terminals to the cloud and Apps. Our joint development with Matter will definitely accelerate the connection across different brands. Meanwhile, we will also address the inability to connect due to Matter's fragmented protocols as well as building connections between Matter and other protocols. These initiatives will improve the differentiation and the overall capabilities of IoT products on the market.

Tuya will be compatible with the Matter protocol, just like we are compatible with multiple other network protocols. In an article about the progress of Matter published by The Wall Street Journal on February 22, the only app demo displayed was Tuya's, which not only showcased our extensive influence in the IoT PaaS field but also highlighted the synergies between Tuya and Matter.

Yao Liu
CFO & Director

For the second question, before I dive into specific strategies for 2022, I want to reiterate that Tuya always focused on the fundamentals of the business, that is first forming overwhelming competitive advantage. Second, gaining unrivaled market share.

With an challenging macro environment, our focus is on strengthening the core value proposition of our products, improving customer satisfaction, and enhancing our operational efficiency. During a period of consolidation, the weak will be eliminated and the industry leaders will gain more market share. With $1 billion cash on hand, we are well positioned to weather the temporary storm and capitalize on strategic opportunities that are set to emerge.

So, come to 2022. So, first, let me talk about the key strategies for our supply chain in 2022. In 2021, we have accumulated extensive experience in managing the supply chain crisis. We forged close partnerships with core upstream suppliers and earned their trust. This enabled us to secure the necessary production capacity ahead of time. Now in 2022 so far, the supply chain crisis is easing. Although there are still partial shortages, we have solutions in place as we already expanded and refined our list of suppliers in the second half of last year.

Come to the revenue strategy in 2022, we have three main strategies to cope with a difficult environment. First, China. we are increasing the revenue contribution of China. Although China also has macro challenges, our IoT PaaS business in China is still in its early stage and has huge headroom for growth. Take last year for example, our domestic IoT PaaS business grew at a much faster pace than the Europe and the U.S. Also, more than 90% of our fast-growing SaaS business revenue was from China, and we will continue to invest in China's IoT PaaS and SaaS business in 2022.

Second is the Tuya Cube, the private cloud product. We launched our private cloud product, Tuya Cube, last November. This product is designed for brands and enterprises that can only adopt private clouds to leverage our IoT capabilities. Tuya Cube is capable of fulfilling customers' needs for local IoT deployment as it enables enterprises to quickly build their own private IoT platforms with differentiated services, high efficiency, and stability while keeping their data completely private. Through the hardware interconnection standards built by Tuya, Cube can seamlessly access Tuya's extensive hardware product ecosystem.

So, Tuya Cube will mainly serve customers that have already developed their in-house IoT platform or are planning to do so. We can also provide hybrid cloud and edge computing products. We have completed almost 10 private cloud, edge computing and hybrid cloud projects so far. We have more contracted projects waiting for delivery from telecom giants in China and telecom giants in Southeast Asia as well as well-known domestic and overseas brands. In the IoT sector, 30% of customers use third-party platforms like Tuya, while about 70% of them develop their platforms in house. We believe that Tuya Cube will enable us to penetrate the 70% of the in-house market.

The third one is on the product lines of the PaaS products. We have gained a market share of over 10% in every product category that we have operated in, as Jerry just talked about in his script. The dominance of our products has formed a solid foundation for us to further expand our market share in every major category to a point that no one can challenge Tuya. This year, we will focus more on household appliances, outdoor appliance, and home safety and sensors products. Since the start of inflation in Q3, we have observed that these categories have shown a faster growth rate than lighting and electrical products.

Given the current level of inflation, we will implement cost-effective lite smart solutions to products that are more price-sensitive. These improvements should enable us to deliver superior customer experience at a lower cost to boost our sales. Our unique ability to integrate software and hardware since our inception can help brand customers equip their products with IoT capabilities at lower costs. Facing an inflation crisis, we believe this will be a core value for enterprise customers.

We are both in awe and wonder of 2022. We might be at the dawn of a global economic recession, but winter will eventually pass, and spring is sure to come. We will be ready for the eventual opportunities. Thank you for the questions.

Operator

There are no further questions at this time. I'd like to hand the conference back to our management for closing remarks.

Yao Liu
CFO & Director

OK. Thank you again for our call. If you have any further questions, please feel free to contact us or request through our IR website. We look forward to speaking with everyone in our next earnings call. Thank you.

Operator

This concludes today's conference call. Thank you for participating. You may now disconnect.