REFINITIV STREETEVENTS

EDITED TRANSCRIPT

Q1 2021 Himax Technologies Inc Earnings Call

EVENT DATE/TIME: MAY 06, 2021 / 12:00PM GMT

CORPORATE PARTICIPANTS

Jordan Wu *Himax Technologies, Inc. - Founder, CEO, President & Director*
Eric Li *Himax Technologies, Inc. - Chief IR/PR Officer*

CONFERENCE CALL PARTICIPANTS

Donnie Teng *Nomura Securities Co. Ltd., Research Division - VP & Analyst of Greater China Semiconductor and Technology Research*
Jerry Su *Crédit Suisse AG, Research Division - Director*
Tristan Gerra *Robert W. Baird & Co. Incorporated, Research Division - MD & Senior Research Analyst*
Jonathan Lopez *Vertical Group - Analyst*
Mark Schwalenberg *MZ Group S.A. - Partner*

PRESENTATION

Operator

Ladies and gentlemen, welcome to the Himax Technologies, Inc. First Quarter 2021 Earnings Conference Call. (Operator Instructions) As a reminder, this conference call is being recorded.

I would now like to turn the conference over to your host, Mr. Mark Schwalenberg from MZ Group. Mark?

Mark Schwalenberg ***MZ Group S.A. - Partner***

Welcome, everyone, to Himax's first quarter 2021 earnings call. Joining us from the Company are Mr. Jordan Wu, President and Chief Executive Officer; Ms. Jessica Pan, Chief Financial Officer; and Mr. Eric Li, Chief IR/PR Officer.

After the Company's prepared comments, we have allocated time for questions in a Q&A session. If you have not yet received a copy of today's results release, please e-mail himx@mzgroup.us, access the press release on financial portals or download a copy from Himax's website at www.himax.com.tw.

Before we begin the formal remarks, I'd like to remind everyone that some of the statements in this conference call, including statements regarding expected future financial results and industry growth, are forward-looking statements that involve a number of risks and uncertainties that could cause actual events or results to differ materially from those described in this conference call.

Factors that could cause actual events or results to differ materially from those described in this conference call include, but are not limited to, the effect of the COVID-19 pandemic on the Company's business; general business and economic conditions and the state of the semiconductor industry; market acceptance and competitiveness of the driver and non-driver products developed by the Company; demand for end-use application products; reliance on a small group of principal customers; the uncertainty of continued success in technological innovations; our ability to develop and protect our intellectual property; pricing pressures, including declines in average selling prices; changes in customer order patterns; changes in estimated full year effective tax rate; shortage in supply of key components; changes in environmental laws and regulations; changes in export license regulated by Export Administration Regulations(EAR); exchange rate fluctuations; regulatory approvals for further investments in our subsidiaries; our ability to collect accounts receivables; and manage inventory and other risks described from time to time in the Company's SEC filings, including those risks identified in the section entitled "Risk Factors" in its Form 20-F for the year ended December 31, 2020, filed with the SEC, as may be amended.

Except for the Company's full year of 2020 financials, which were provided in the Company's 20-F and filed with the SEC on March 31, 2021, the financial information included in this conference call is unaudited and consolidated and prepared in accordance with IFRS accounting. Such financial information is generated internally and has not been subjected to the same review and scrutiny, including internal auditing procedures and external audits by an independent auditor to which we subject our annual consolidated financial statements, and may vary materially from the audited consolidated financial information for the same period. The Company undertakes no obligation to publicly update or revise any forward-looking statements whether as a result of new information, future events or otherwise.

I would now like to turn the call over to Mr. Eric Li. Eric, the floor is yours.

Q1 Results

Eric Li *Himax Technologies, Inc. - Chief IR/PR Officer*

Thank you, Mark, and thank you, everybody, for joining us. My name is Eric Li, and I'm the Chief IR/PR Officer. Joining me are Jordan Wu, our CEO; and Jessica Pan, our CFO.

On today's call, I'll first review the Himax consolidated financial performance for the first quarter 2021, followed by the second quarter 2021 outlook. Jordan will then give an update on the status of our business. After which, we will take questions. We will review our financials on both IFRS and non-IFRS basis. The non-IFRS financials exclude share-based compensation and acquisition-related charges.

We preannounced the preliminary key financial results for the first quarter 2021 on April 7 as revenue, gross margin and EPS all exceeded the guidance issued on February 4, 2021. Today, our reported results for the revenue, gross margin and EPS are all in line with preannounced result. Revenue, gross margin and EPS all reached all-time highs in the first quarter of 2021.

For the first quarter, we recorded net revenue of $309 million, an increase of 12.1% sequentially and an increase of 67.4% compared to the same period last year. The 12.1% sequential increase of revenue exceeded our guidance of an increase of around 5% to 10% quarter-over-quarter, with strong demand across all of our major business segments.

Gross margin was 40.2%, exceeding guidance of 37% to 38%, and significantly improved from 31.2% of the fourth quarter 2020. IFRS profit per diluted ADS was 38.3 cents, exceeding our guidance of 30.0 cents to 34.0 cents. Strong sales and improved gross margin contributed to the better-than-expected earnings result. Non-IFRS profit per diluted ADS was 38.4 cents, exceeding our guidance of 30.1 cents and 34.1 cents.

Revenue from large display driver was $69.9 million, up 8.8% sequentially and up 13.9% year-over-year. Notebook revenue increased more than 70% sequentially, driven by unceasing remote working and distance education demand. TV revenue was also up by around 8% quarter-over-quarter. Monitor IC sales, however, decreased sequentially due to foundry capacity shortage, as we predicted in the last earnings call. Large panel driver IC accounted for 22.6% of total revenue for this quarter compared to 23.3% in the fourth quarter of 2020 and 33.2% a year ago.

Small and medium-sized display driver continued to grow in the first quarter and came in better than expected, with revenue of $204.1 million, up 14.7% sequentially and up 133.3% year-over-year. TDDI for both smartphone and tablet saw robust growth in Q1, a continuation from high base in Q4 last year. From a year-over-year perspective, sales of both smartphone and tablet demonstrated massive growth. For automotive segment, we delivered a decent mid-teens sequential growth amidst a severe capacity shortage in automotive market worldwide. Small and medium-sized segment accounted for 66.1% of total sales for the quarter compared to 64.5% in the fourth quarter of 2020 and 47.4% a year ago.

Smartphone sales continued growing in the first quarter, with revenue reaching $80.2 million, up 20.6% sequentially and up 256.4% year-over-year. The smartphone segment represented 26% of our total sales in Q1. Our smartphone TDDI sales increased more than 30% sequentially and up five times compared to the same period last year, indicating strong market demand and our market share gains. Sales of traditional smartphone DDICs continued to decline as expected. As previously mentioned, traditional smartphone DDICs are quickly being replaced by TDDI and AMOLED.

Our tablet revenue reached another record high of $73 million in the first quarter. Q1 sales of tablet drivers grew 8.3% sequentially and were up more than 150% year-over-year as strong demand for home working and online learning continued. The tablet revenue accounted for more than 23% of our total sales in the first quarter. The tablet TDDI revenue increased 10% sequentially, the fourth consecutive quarter of growth since its initial mass production in the first quarter of 2020. The sequential growth was due to the accelerated penetration of our leading tablet TDDI in the Android market where we are main or sole source supplier to major end

customers. Revenue of traditional discrete driver IC for tablet increased 5.9% sequentially and grew 58.9% year-over-year in the first quarter.

Our first quarter driver IC revenue for automotive amounted to $43.7 million, up 16.4% sequentially and up 44.3% year-over-year. Automotive driver IC business accounted for more than 14% of total revenue in this quarter. Notwithstanding the decent growth, we are still suffering from severe foundry capacity shortage for automotive applications. While the shortage is expected to persist, as indicated in the last earnings call, we do expect to enlarge our shipment quarter-by-quarter this year and beyond into next year. Jordan will elaborate on this in a few minutes.

First quarter revenue from our non-driver business was $35 million, up 4% sequentially but down 2% year-over-year. The sequential increase was mainly due to the increase of WLO shipment to an anchor customer for continuous legacy product demand as well as more Tcon shipments. The year-over-year decrease was due mainly to the decrease of WLO shipments. However, Tcon and the CMOS image sensor segments both registered an impressive year-over-year growth, up by more than 50% and 70%, respectively. Non-driver IC products accounted for 11.3% of total revenue as compared to 12.2% in the fourth quarter of 2020 and 19.4% a year ago.

Gross margin for the first quarter was 40.2%, up 9 percentage points sequentially and up 17.5 percentage points from same period last year. As the capacity shortage in the semiconductor industry intensified across foundry, packaging and testing, we further optimized our product mix by strategically favoring more high margin product, while pricing our products higher to reflect rising costs among all product segments. However, on a year-over-year basis, the leap of gross margin was somewhat offset by the decline in WLO shipment as the legacy product to an anchor customer gradually decreased.

Our IFRS operating expenses were $39.5 million in the first quarter, down 9.9% from preceding quarter but up 5.9% from a year ago. The operating expenses decreased sequentially because of a one-time cash bonus issued to the team in the fourth quarter 2020. The year-over-year increase was mainly a result of increased salary. Non-IFRS operating expenses for the first quarter were $39.2 million, down 9.9% from the previous quarter and up 6.9% from the same quarter in 2020.

Reflecting higher sales and better gross margin, IFRS operating income was $84.8 million for the first quarter, with operating margin of 27.4%, up from 15.3% in prior quarter and up from 2.5% in the same quarter last year. First quarter non-IFRS operating income was $85.1 million or 27.5% of sales, higher from $42.5 million or 15.4% of sales last quarter and up from $5.3 million or 2.9% of sales for the same period last year. Both operating income and operating margin reached record highs.

IFRS after-tax profit for the first quarter reached a historical high of $66.9 million or 38.3 cents per diluted ADS compared to $34 million or 19.5 cents per diluted ADS in previous quarter and $3.3 million or 1.9 cents per diluted ADS a year ago. First quarter non-IFRS profit was $67.1 million or 38.4 cents per diluted ADS compared to non-IFRS profit of $34.2 million or 19.7 cents per diluted ADS last quarter and non-IFRS profit of $3.8 million or 2.2 cents per diluted ADS for the same period last year.

Turning to the balance sheet. We had $245.8 million of cash, cash equivalents and other financial assets as of March 31, 2021, compared to $126.6 million at the same time last year and $201.4 million a quarter ago. The higher cash balance was derived mainly from $60.3 million of operating cash inflow during the quarter. Restricted cash was $114.8 million at the end of Q1 compared to $104 million a quarter ago and $164 million a year ago. The restricted cash was mainly used to guarantee the short-term secured borrowings for the same amount. We had $57.0 million of long-term unsecured loans as of the end of Q1, of which $6.0 million was current portion.

Our quarter end inventories as of March 31, 2021, were $114.9 million, up from $108.7 million last quarter and down from $148.4 million a year ago. The year-over-year decrease was a reflection of the severe supply-demand imbalance. To be more precise, the vast majority of our inventory position now is comprised of work-in-process goods, while finished goods are mostly taken up by customers as soon as they are available to meet the customer's immediate production needs. As highlighted in the last earnings call, given the foundry and back-end capacity shortage, our inventory level may still stay at a relatively low level in the quarters to come. Accounts receivable at the end of March 2021 was $289.1 million, up from $243.6 million last quarter and up from $186.7 million a year ago due to higher sales. DSO was 84 days at the quarter end as compared to 92 days a year ago and 100 days at the end of last quarter.

Net cash inflow from operating activities for the first quarter amounted to $60.3 million as compared to an inflow of $67.7 million last quarter and an inflow of $10.6 million for the same period last year. First quarter capital expenditures was $2.0 million versus $0.8 million last quarter and $3.1 million a year ago. The first quarter CapEx was mainly for R&D-related equipment of our IC design business.

As of March 31, 2021, Himax had 174.3 million ADS outstanding, little changed from last quarter. On a fully diluted basis, the total number of ADS outstanding was 174.7 million.

Q2 2021 Guidance

Now turning to our second quarter 2021 guidance. For the second quarter, we expect further revenue growth from the already high level of Q1 2021 in most of our business sectors. Gross margin shall see another uptick and could reach another quarterly high.

For the second quarter, we expect revenues to increase by 15% to 20% sequentially. Gross margin is expected to be 45.5% to 47.5%, depending on the final product mix.

With the increase of both revenue and margin, net profit shall increase substantially in second quarter. IFRS profit attributable to shareholders is expected to be in the range of 54.0 to 60.0 cents per fully diluted ADS. Non-IFRS profit attributable to shareholders is expected to be in the range of 54.2 to 60.2 cents per fully diluted ADS.

I will now turn the call over to Jordan. Jordan, the floor is yours.

Q2 2021 Outlook

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

Thank you, Eric. We are still seeing a serious supply-demand imbalance where demand far outpaces supply despite foundries running at more than 100% capacity. Accompanying the rapid growth of 5G and high-performance computing, there's a noticeable increase in demand for semiconductor for advanced processes. The trend towards an ever more connected digital world also drives higher needs for mature nodes, notably demands from display driver IC, power management IC, CMOS image sensor, automotive industry and various AIoT devices that are already all around us and still increasing rapidly in number. Adding these all up, what we have is a structural shift in demand and supply dynamics, especially for the mature nodes, which have lacked meaningful capacity expansion for many years.

As I mentioned on our last earnings call, we have managed to secure more capacity for this year compared to last year, with accessible capacity expected to grow quarter-by-quarter during 2021. Looking further ahead, we are taking measures to work with our strategic foundry partners to further enlarge our long-term capacity pool. We'll give more details as they come about.

Separately, taking advantage of the current favorable environment, we are also making efforts to reposition ourselves towards higher-end and higher value-added products by working more directly and closely with select leading end customers. We have made tremendous progress across various industries that we serve. For large display areas, we are pleased with the results so far in switching our focus more towards high-resolution TV, high-performance monitor and low-power notebook. For smartphone, wearable and tablet, we are gearing up for the AMOLED driver IC development in partnership with strategic customers and foundry providers. For automotive market where we are already the leader in display driver IC, we are deepening our working relationships with Tier 1 players and end customers across all major markets.

Last but not least, in our non-driver areas, we are pushing hard for the promotion of WiseEye ultralow power AI sensing solution, which have been -- which have seen a widespread adoption for numerous AIoT applications. Our 3D decoder IC is also already ramping in volume. I will elaborate on this in a few minutes.

Display Driver IC Businesses

LDDIC

Now let us start with an update on the large panel driver IC business. For the second quarter, we expect large display driver IC revenue to increase by around 20% sequentially, with the 3 major product lines all set for further growth. We expect decent increase in both monitor and notebook IC sales in Q2, thanks to persisting work-from-home and learn-from-home demands. For the TV IC segment, we anticipate an impressive quarterly growth in Q2, mainly due to shipments of high-end TV products going into a world-leading end customer, an illustration of the strategy towards high-end products and leading end customers that I just mentioned. Nevertheless, our shipping quantity is constrained by capacity shortage for the large panel display driver IC business during the second quarter.

Recently, we saw strong customer demand for high-end monitors unfolding post pandemic. When people work, study and play games at home, which they do much more than before, they are demanding higher resolution, higher frame rate, ultrawide aspect, curved view and even multiple monitors sometimes. Himax continues to lead the high-end monitor market by providing advanced driver ICs and Tcons in partnership with leading panel makers and end customers.

SMDDIC

Now let's turn to the small and medium-sized display driver IC business. In the second quarter, we see continuous strong demand for all 3 segments, namely smartphone, tablet and automotive. Again, we are unable to meet all customer demands due to tight foundry capacity. As the leading supplier for the Android tablet market, we are strategically allocating capacity in favor of tablet over smartphone to support the needs for home working and remote learning. For the second quarter, we expect tablet sales to grow by mid-teens and smartphone sales to be flattish compared to the previous quarter, reflecting our capacity allocation decision. With enlarged capacity as we indicated in the last earnings call, automotive driver IC business is expected to grow by more than 20%, the highest among the 3 segments in the small and medium-sized driver IC business.

Tablet, already among our top sales contributors since 2020, continues to grow with accelerated TDDI penetration among leading Android names as well as strong demand driven by the stay-at-home economy. For the second quarter, we expect tablet TDDI sales to grow by more than 20% as our tablet customers are accelerating adoption of TDDI. TDDI for high-end tablet enjoys particularly good momentum as people crave for more advanced features such as higher frame rate, higher resolution, larger screen size and active stylus for better-quality handwriting and drawing. All these trends benefit us for higher ASP and growing market share. Again, tablet TDDI enjoys better margin, and its rapid growth helps enhance our overall gross margin. Finally, for tablet product, revenue of traditional DDIC is expected to remain flat sequentially during the second quarter.

Next a quick update on smartphone products, while customers are demanding more shipments, limited by severe capacity constraints, our smartphone TDDI sales are expected to be flat from last quarter. Discrete drivers for smartphone, running at relatively low volume, are expected to grow strongly with seasonal demand for the second quarter. As we have mentioned, DDIC of both smartphone and tablet are in a downward trend as they are being replaced by TDDI.

Turning to the automotive sector. It's been well reported that the automotive industry worldwide has recovered strongly and abruptly from its earlier slump starting later last year but also suffered from severe shortage of semiconductor supply. We have been experiencing the same for the display driver ICs we provide for automotive applications where we command a world-leading market share of well more than 30%. As the ongoing capacity shortage continues to intensify, panel makers, Tier 1 suppliers and end customers seek out Himax for more supply of automotive display driver ICs. Having foreseen the growing automotive display demand and the capacity shortage, we engaged early and have secured a meaningful increase in capacity for this year and longer term. We expect the Q2 sales into automotive industry to grow more than 20% sequentially, which would represent more than 100% growth year-over-year. Notwithstanding the impressive growth, the demand still far outpaces the foundry capacity accessible to us.

Along with the fast-growing electric vehicles and autonomous driving that is deemed to be the next big thing, car interior is catering to better human vehicle interaction with ever more stylish designs, made possible with increasing number of panels equipped with advanced display technologies such as TDDI and local dimming. As the market leader in automotive display driver business, we are leading the charge in answering to such demands. For instance, we dominate the design-in and design-win of automotive TDDI with direct and indirect customers across the continents for a technology that is essential for very large-sized, stylish and free-formed

automotive displays.

We are also leading in the up-and-coming local dimming technology, which not only provides effective power saving, critical for EVs, but also enhances display contrast for better viewing under bright daylight. In addition, our high-speed point-to-point bridge and LTDI solutions are specially designed for very large panels up to a pillar-to-pillar display size. With these new demands unleashed for advanced display technologies, we expect exponential sales growth of automotive sector in the years to come.

Next, an update on AMOLED. As AMOLED offers better display quality, lower power consumption and plastic free form design, the technology has gained traction in the high-end market. As stated before, Himax is highly committed to AMOLED technology where our development started from smartphone and has extended to wearable, tablet and automotive. In March, we teamed up with BOE Varitronix, or BOEVx, a world-leading supplier of automotive display products, and succeeded in securing an AMOLED display design-win with a leading EV maker for its upcoming flagship model. Armed with Himax AMOLED driver IC and timing controller solution, Himax and BOEVx partnered to offer flexible AMOLED automotive display, firstly, over a 12.8-inch Center Information Display product. Small volume shipment is anticipated starting in the fourth quarter of 2021.

For other AMOLED applications, we are continuing our development efforts by proactively working with leading Chinese panel makers and strategic foundry partners. We will report further progress in due course. We believe AMOLED driver IC will soon become one of the major growth drivers for our small and medium-sized panel driver IC business.

For the second quarter, revenue for the small and medium-sized driver IC business is expected to increase by low teens sequentially, with demand much higher than supply. Capacity shortage is expected to continue across all business segments in this area.

Non-Driver Product Categories

Now let me share some of the progress we made on the non-driver IC businesses in the last quarter.

TCON

First on timing controller. For the second quarter, we expect Tcon sales to increase more than 60% sequentially as we successfully acquired more capacity for both foundry and back end. Backed by several recent major Tcon design-wins from leading end customers for gaming monitor, low power notebook and 8K/4K TVs, our Tcon product line is on track for further growth. It is worth mentioning that we have a dominant global market share for 8K TV Tcon with adoption from literally all major TV brands. With better ASP and margin than those of display drivers, Tcon is expected to be an extensive long-term growth area and contribute more to the top and bottom line growth going forward. Similar to all display driver IC businesses, our Tcon volume is already capped by capacity shortage, both from foundry and back-end packaging.

WLO

Next is a quick update on WLO. WLO revenue increased substantially in the first quarter, thanks to resumed orders from an anchor customer for its legacy products. In the second quarter of 2021, WLO sales are expected to remain flat quarter-over-quarter, which will help sustain WLO factory utilization.

Meanwhile, we continue to collaborate with key customers and partners for new applications such as ToF 3D sensing, AR/VR gadgets, biomedical devices and others, targeting their future generation products.

Himax is a pioneer in high-precision diffraction optics technology with 15 years of experience under our belt, having worked on very different designs over a variety of applications with some of the world's most heavyweight tech names. The diffractive optical element, or DOE, enables the manipulation of phase, shape, direction and even power of incident laser light for the output of specific, pre-designed optical pattern and functions that are not feasible in standard refractive optics.

The diffraction optics technology is now well adopted in 3D sensing, AR/VR devices, holographic display, biomedical inspection, optical communication, et cetera. We are seeing DOE plays an even more decisive role for the next-generation optical technology in light of its high-precision and lightweight characteristics.

In addition to WLO that is suitable for small electronic devices such as wearable and portable products, we have extended our reach in diffraction optics technology to cover large-sized applications. In October 2020, we made a strategic cash investment and became the controlling shareholder of CM Visual Technology Corp., or CMVT, which is specialized in microstructure optical film design and manufacturing and is a world leader in its area. CMVT offers proprietary microstructure optical design expertise, nano-scale mold engraving capability as well as roll-to-roll nanoimprinting manufacturing capacity. CMVT's roller type nanoimprinting can support the production of large-sized film with superior production efficiency at competitive costs. This is a complementary technology to our WLO technology and by having both teams work together, we can now deliver cutting-edge solutions for different applications covering all sizes of optics.

Omniwide Film, which is CMVT's microstructure optical film, is the best answer to various types of optical challenges such as gray level inversion, color washout and light leakage under oblique viewing angles for better visual experience. The Omniwide Film solution can support different types of display, including TN, VA, IPS types of TFT-LCD displays and AMOLED display. These solutions are all available to the market right now.

3D Sensing

Next on 3D sensing update for our non-smartphone segment. As reported in previous earnings call, our proprietary 3D decoder IC provides superior 3D depth map decoding for best-in-class secure face recognition and has been widely adopted by leading Chinese customers for e-payment device. We started volume shipments of the 3D decoder in the fourth quarter of 2020 and expect continuous growth in 2021.

Ultralow power smart sensing

Now switching gears to the WiseEye smart sensing solution. To maximize market visibility and explore potential applications, we continue to push forward with 2 WiseEye business models, namely total solution and discrete component.

For the WiseEye total solution model where we are the owner of the solution, we integrate our proprietary AI processor and CMOS image sensor, both with an outstanding ultralow power characteristic with AI algorithms from multiple third-party software partners. These algorithm partners, which include our subsidiary Emza, come from different countries and many have special domain know-how catering for the needs of specific markets.

We mentioned notebook, TV and air conditioner in the last earnings call as early examples of our total solution approach. I am pleased to report that recently, we were officially awarded a sizable purchase order from a top-tier household name for a mainstream application with mass production scheduled to commence at the fourth quarter of this year. This early success marked a major milestone for our WiseEye product line, which we believe will be a major growth engine for our business for many years.

We are also encouraged by the progress of customer engagements for the new applications we launched, covering automotive, panoramic videoconferencing, utilities meter, QR code reader, doorbell and door lock. All these applications offer always-on and/or ultralow power AI visual sensing that are made possible by our WiseEye technology. The list of applications for our WiseEye total solution will continue to expand as we continue to reach out to key players in various industries who are working closely with our algorithm partners.

For the key component business model where we offer AI processor and/or always-on CMOS image sensors but without AI algorithm, we continue to collaborate with global AI and cloud service partners by proactively participating in their ecosystems and infrastructures. Following the successful adoption of our WE-I Plus AI processor in the Google TensorFlow Lite for Microcontrollers framework in March 2021, our WE-I Plus AIoT platform was endorsed by Microsoft and was awarded the Azure IoT PnP certificate.

Our WE-I Plus AIoT platform brings reliable, secure and long battery life edge AI to the IoT connected cloud market. WE-I Plus AIoT platform can conduct person, face or object detection computer vision functions and then output only secured metadata over NB-IoT protocol to the Azure IoT cloud for further statistical data processing and analysis. In most cases, the WE-I Plus AIoT platform can operate with just 4 AA batteries for more than 1 year lifetime. WE-I Plus is the best ultralow power battery powered edge AIoT platform solution in the Azure IoT, which targets ever-growing cloud service markets in smart buildings, manufacturing, retail, agriculture, et cetera. Implementing AI everywhere is made possible with our WE-I Plus.

In the meantime, we continued to showcase our WE-I Plus-enabled systems jointly with our ecosystem partners such as SparkFun and Edge Impulse in various webinar and marketing events to illustrate more AI use cases. People from different industries and countries approached us and applied our solutions to many applications that never occurred to us before. We are encouraged by the enthusiastic market feedback, along with streams of end customers' inquiries. In return, we provide AI developers with comprehensive supporting service, where they can easily access open source codes from Google TensorFlow Lite For Microcontrollers framework, WE-I Plus EVK and sensor accessories from SparkFun and development tools from Edge Impulse. We are delighted to bridge AI developers over the hurdles they encounter in developing their AI solutions and move with AI developers together towards an upcoming edge AI decade.

CMOS Image Sensor

Now turning to our CMOS image sensor business update. In the second quarter, the CIS revenue is expected to be flattish sequentially. Our shipment has been badly capped by the foundry capacity available to us despite surging customer demand for CMOS image sensors for web camera and notebooks. Nevertheless, we expect a decent growth in the second half of 2021, thanks to a major engagement from a major existing customer.

Our industry first 2-in-1 CMOS image sensor supporting videoconferencing and AI facial recognition on ultralow power has been designed into some of the most stylish slim bezel notebook models of certain major notebook names. Small volume production has started in the fourth quarter of last year. Meaningful ramp-up volume is expected for the upcoming quarters.

Regarding our ultralow power always-on CMOS image sensor that targets always-on AI applications, we are getting growing feedback and design adoptions from customers globally for various markets such as car recorders, surveillance, smart electric meters, drones, smart home applications and consumer electronics. We'll report progress in due course.

LCoS

Last on the update of LCoS microdisplay. In the first quarter of 2021, our proprietary front-lit LCoS microdisplay, an integrated solution covering LCoS microdisplay, lightguide and front-lit LED, had a successful design-win with a world-leading player for a rugged headset for industrial working environment. It is an assisted-reality type hand-free head-mounted device where our front-lit LCoS microdisplay module provides a 7-inch display view below line of sight to assist workers to access real-time working information. Our front-lit LCoS microdisplay demonstrated a perfect match with the customers' application in compact form factor, low power consumption and higher brightness. We are collaborating closely with the customer for the strict industrial level qualification and expect substantial volume shipment starting from the third quarter of this year.

For non-driver IC business, we expect revenue to increase around 40% sequentially in the second quarter.

That concludes my report for this quarter. Thank you for your interest in Himax. We appreciate you joining today's call, and we are now ready to take questions.

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) And our first question comes from the line of Tristan Gerra from Baird.

Tristan Gerra ***Robert W. Baird & Co. Incorporated, Research Division - MD & Senior Research Analyst***

Could you quantify the price increases that you've been able to implement so far maybe on a year-over-year basis? And you expect to raise pricing further? Or do you think you're set basically with earlier year price changes?

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

It's a simple question. And yes, if I have to answer it like with good confidence, then I think it's a tricky question because across different applications, the price increase, especially you're asking about year-over-year actually varies by a lot. So I am afraid, I probably have to revert back to you after this about this question.

But on your second part of the question, whether we think there will be further price increases from here, I think the answer is most likely yes. On the supply side, the foundry and even the back end, I think our costs still continue to be on its way up. So I think we certainly do have to transfer the cost to our customers. And I think the reception for such proposed price increases from our customer has been okay in a sense that customers right now, actually, they are hoping for more delivery. And as long as we can make the delivery, price can always be discussed. So I think at least for the foreseeable future, we have good confidence that we should be able to transfer our costs to the customers. And the fact is that costs, I think for Q3, will still be rising from somewhat from Q2.

Tristan Gerra ***Robert W. Baird & Co. Incorporated, Research Division - MD & Senior Research Analyst***

Great. That's very useful. And then the microdisplay -- LCoS microdisplay design-win that you've mentioned, are you expanding your customer base from the traction you had back from a few years ago? Or is that a renewed program at an existing customer?

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

No. It's more of a new customer. It's the world's leading customer in this area, and it's pure industrial and business application. And we talked about in our prepared remarks is kind of designed for a very rugged robust kind of device to be used in a harsh environment. So it's a new program. We are pleased that our technology fits their needs very well, and this will be a pretty sizable volume of this kind in this market, I mean, head-mounted device.

Operator

And our next question comes from the line of Jerry Su of Crédit Suisse.

Jerry Su ***Crédit Suisse AG, Research Division - Director***

I think my first question is regarding the guidance for the second quarter. I think you guided a large size driver IC to grow 20% and then overall smartphone is growing at about low teens sequentially. So can you quantify how much is coming from unit shipment growth? And how should we think about your capacity in the second half of the year and also 2022?

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

I will be a little bit reluctant to give you a simple and straight answer because we discussed earlier, we are limited by capacity. So we have to allocate our products in 2 areas that we think are most needed by the customer for Himax to supply and also represent a favorable product mix for us. So we are actually shipping more towards higher-end higher price customers, with some of those customers are very receptive to higher prices. So I think to give you an exact quantity, percentage increase versus revenue percentage increase, I think it could be misleading in the sense that actually, the product mix is different, and we are more towards higher-end products and to where the customers' demands are most needed, and therefore, we can, in some cases, charge higher for those customers. So we are only now prepared to disclose revenue increase rather than quantity because that could be rather misleading -- quantity could be rather misleading.

Jerry Su ***Crédit Suisse AG, Research Division - Director***

Okay. And then how about your planning for the capacity in second half and also next year?

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

Capacity increase for second half or even into next year will only be marginal because, guess what, there is simply no major addition of capacity around in the industry. So we are happy that we'll be able to keep the capacity already available to us. And also, there will be

some marginal increases here and there from even different foundry suppliers. But overall, I would say it will only be marginal increase until we see, like, more structural addition of foundry capacity from cases where actually foundry partners are building new fabs. And in fact, there will be such additional foundry capacity, meaning building construction of new fabs. But if you take that into our already available foundry capacity pool, it will only still be kind of a marginal increase only.

Jerry Su ***Crédit Suisse AG, Research Division - Director***

Okay. Got it. And then next question is regarding the end demand environment. Can you give us a sense on how do you see end demand for IT, monitor, notebook, TV? And also, are you seeing any impact coming from a smartphone, tablet given the rising issue of the pandemic inside emerging markets like India or other regions?

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

Actually, I will start with automotive, which I believe you forgot to mention, not that you intend to ignore it. I think COVID certainly changed the dynamics altogether. And how COVID is going to end, I mean, it's really nobody knows, right? But we all know, COVID certainly has triggered the surging demand, and therefore, the current imbalance of supply and demand that the industry is suffering from. So when COVID, one way or the other, kind of end, certainly, we believe there will be some implication for the IT, monitor, notebook, et cetera, right, even cellphone and tablet.

Now having said that, I think we also have to recognize the fact that after this long period of staying at home, people are kind of getting more used to working at home and being educated at home, right? So when COVID is over, it's not going to be like people will just forget about their demand by staying at home. I think this will continue. But how this is going to change and how this is going to evolve, I think, certainly, we don't know. We don't have a very good answer. We just have to watch very closely. But our customers are telling us that this COVID situation and by staying at home for so long, people are getting used to it, and that does drive the behavior. And some change of behavior may be here to stay for long or even for good.

For example, monitors, people used to prefer a notebook rather than monitor, but now they have to like work or have to participate in conference for so long or being educated, right? So monitor becomes a very important tool. And people not only demand for higher-quality monitor, they actually demand for multiple monitors. And I think this kind of behavior change is likely to stay for good.

However, having said that, how the COVID is going to end and when it is going to end, certainly, it's going to impact the industry somewhat. But certainly, I don't have the answer. Automotive, however, in our view, we really are talking about a paradigm shift in terms of the demand for more displays and higher displays and larger display for automotive with or without COVID. Actually, if you think about it over the world, there are still many, many places, which are under lockdown or semi lockdown. And yet, the automotive demand is already fast increasing. And as we all know, right, I mean, these shortage semiconductor products here and there, all over the place.

So I think this new demand of automotive driven by EVs first and the autonomous driving in the future, I think, is here to stay for a very, very long time. And all these new trends are going to accelerate the other demand for display and display driver IC. And not just the volume, also the features, people will be demanding higher end features. And that is very, very good news for us, right? So like TDDI and the local dimming, as we highlighted in our prepared remarks.

So in summary, my point is that we are super confident about the upside potential for automotive even way before the Covid situation unfolds. And that is why we were actually engaged very early on, and we were very prepared. And if you look at the revenue upside, if you look at the first half, you take our midpoint for second quarter guidance and you compare year-over-year, you're talking about 80% or 90% kind of growth. And I think you'll probably see even higher growth for the second half. So for the whole year, we are shooting for like double the revenue year-over-year for this year. And I think we have good confidence that the growth is going to continue.

Bear in mind, I mean, for example, smartphone is not increasing in size. Tablet, slightly, but not very, very much, ditto for TV and notebook, right? But automotive is really growing in size and also growing in number and growing in features. If you look at the TDDI and AMOLED contribution for display driver IC industry, overall, over the past few years for smartphone and tablet, right, and you kind of apply that to the potential upside for automotive by adopting TDDI and advanced features like local dimming, I think the upside potential for us will be tremendous. So we are very excited about automotive.

And then for other applications, certainly, how COVID is going to play out, I think, will play some factor. But I think fundamentally, however, I think we are really dealing with a structural imbalance of supply and demand, especially for mature technology nodes, where semiconductor industries didn't want to under invest in their capacity expansion for the past. And new applications keep coming up, and this Covid situation just triggered for it to happen more quickly and in a more dramatic way. But I think the demand and supply imbalance is really a fundamental issue that the industry needs to try and get resolved, right?

So the Covid situation is certainly going to change the dynamics of demand and supply. But I think, importantly, for mature technology nodes, even when the Covid ends, I think for the industry to resolve the supply and demand imbalance, I think we still have a long way to go because of the structural imbalance situation.

Operator

And our next question comes from the line of Donnie Teng of Nomura Securities.

Donnie Teng ***Nomura Securities Co. Ltd., Research Division - VP & Analyst of Greater China Semiconductor and Technology Research***

Congrats on the good results. The first question is also regarding to capacity. So I remember maybe last month, I discussed with management about the capacity outlook into second half. And the answer previously I had is like the second half capacity is getting even tighter. So there could be some more severe shortage. But today's prepared remarks said that Himax has secured more capacity for this year and will grow quarter-by-quarter during 2021. So just wondering if you have secured some more foundry capacity, in the past month or is there anything changed in terms of our foundry capacity plan?

And also another frequently asked question is that, as you know, foundry, they are also raising their wafer price for different kinds of ICs. I think driver ICs price has been raised a lot. So theoretically speaking, foundries driver IC wafer price has been raised a lot as well. But it seems like some foundries still diversify away from driver IC to other products such as like maybe power or memory products. So just wondering, in terms of foundry's cost structure, why driver IC has been always the one who cannot get enough capacity? This is the first question.

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

Okay. So shall I start with your first question, i.e., your understanding from management about a month ago about the industry's second half outlook for tighter capacity versus our remarks about our ability to enlarge our capacity.

Donnie Teng ***Nomura Securities Co. Ltd., Research Division - VP & Analyst of Greater China Semiconductor and Technology Research***

Yes, yes. Because previously, it sounds like -- yes. Please.

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

Okay, okay. I think -- my guess is there could be understanding. Actually, if you look at our last quarter's earnings call, in our prepared remarks, we actually have already announced that we feel confident that our accessible capacity over this year will increase quarter-over-quarter, and we are sticking to that view. So we are actually repeating that in this quarter's prepared remarks.

I guess the management's reference for a tighter capacity situation for the second half, I think, I guess, that probably is about the situation of the industry overall. I think across different segments for foundry, talking about large panel and, certainly, smartphone and automotive, all pretty serious. Actually, we are seeing capacity shortage all across all our major applications, and in some cases, even packaging, especially for logic devices, such as our Tcon.

So I think we are staying with our view that this year, our prediction is accessible foundry capacity to increase quarter-over-quarter, and there was no surprise taking place over last month or something. We always feel we are prepared for that, and that has been our view since last quarter.

And your second question about foundry's capacity tightness, resulting price hikes, and yet they are still diversifying away from driver IC and how it started, what is the implication. I think, unfortunately, that is probably true. And if you ask me, I would say that is because with driver ICs, we are all using what they call mature nodes, right? And mature nodes over the years have lacked enough application to fill up their demand. And driver IC happens to be an application, which brings very big volume and also very predictable and steady volume to foundry for them to rely upon as a very solid filler for the long term. So in return, we ask for very demanding price because that's what our customers ask for.

Now over time, over these years, again, there was a significant lack of investment for capacity expansion for mature nodes because we have something called Moore's law, as we all know, and when people invest, they invest in advanced nodes. So for mature nodes, there's lack of investment. And yet, they are collecting more and more demand. So to start with, probably our margin historically has been low for them, but we provide the volume. And this time around is a good opportunity for them to raise the overall margin by lowering their allocation to driver IC, right?

And secondly, guess what, it's always a good thing for them to diversify anyway and given that driver IC really historically has accounted for a very big chunk of their total output. So it's a good timing, good opportunity for them to diversify, right? So we are actually trying to convince our foundry partners to support us more because the characteristics of display driver IC or the demand for panel hasn't changed. We are very steady, and the demand is always there. And we can provide the volume. And certainly, when the industry is so tight, that puts us in a disadvantageous situation. But overall, in the long term, I think driver IC will still be needed to be the filler.

So it's a double-edged sword for us, right? On the one hand, the tightness enables us to allocate our capacity in a way that is more favorable to us, and our product becomes more sought after and therefore, our pricing power is enhanced. On the other hand, we are suffering from capacity shortage. And I'm just afraid, while as hard as we try to convince our foundry partners to enlarge their support for display driver, I think there is indeed admittedly a limitation. So in the foreseeable future, we are still seeing mature nodes, especially for driver IC being in a tight situation. I hope that answers your question, Donnie.

Donnie Teng ***Nomura Securities Co. Ltd., Research Division - VP & Analyst of Greater China Semiconductor and Technology Research***

And the last one is when entering into the second half, based on current visibility, wondering if you could just rank the supply tightness by different kind of driver ICs as well as different kind of technology nodes, like 12 inch or 8 inch per your perspective.

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

Good question. I think 8 inch in the long-term will be more severe than 12 inch. I'm not sure -- well, firstly, I have to admit, there's got to be some overbooking from our customers, right? However, I mean and it's very difficult for one to gauge how much is there exactly for the so-called overbooking portion. What we know is that even if we take all of that overbooking away, their "actual demand," we are still far from being able to meet them all, right? So , it is therefore, the customer knows even if they give us just the actual demand, we cannot meet the demand, and therefore, that kind of encourages them to give us more forecast.

So when we talk about the degree of shortage, we have to be slightly careful because in different sectors, people do behave slightly different, and overbooking here may play a part. But I think whether it's the second half or longer term, I think 8 inch will be more serious than 12 inch because, I mean, who is really building a new 8-inch tools? It's very difficult to even get new tools, and it's equally difficult to get secondhand tools. And people have little incentive to build new 8-inch tools, right? So I think there's a structural fundamental issue here.

And for that reason, I think automotive, which for traditional DDIC is entirely 8 inch, not just Himax, but across the whole industry, right? So I think the situation is pretty severe over there. And that is why we are encouraging our customers, including end customers, to accelerate and accelerate the adoption and mass production of TDDI because, guess what, for TDDI, we are switching to mature nodes of 12 inch. And we are going to replace or occupy some of the capacity that is being occupied right now by smartphone, which is going to migrate further into more advanced nodes, right? So for example, 80 nanometer into 50 nanometer, when the TDDI for smartphone right now is primarily 55 and will be migrating to 40 and so on, right? And there'll be a bigger chunk of AMOLED for smartphone, which is primarily 40 right now, will be migrated to 28, et cetera, right?

So there will be a certain portion of TDDI, which are now being used by smartphone and tablet being likely tight. So I think it is a good idea for automotive to go and pick it up. So we have actually secured a very good long-term capacity commitment for TDDI 12 inch for the next few years, Although TDDI today for smartphone is already so full, but we have got a very good strong commitment from our foundry partners for the rationale I just tried to explain, right? So therefore, we can offer with good confidence to our customers that if you switch to TDDI, that is going to help alleviate the serious shortage of 8 inch DDIC for automotive, which is really badly in shortage right now.

And then if you talk about others, we are certainly suffering from a very big shortage gap for smartphone/tablet. For 2 of those areas, we share the same capacity pool. And as we repeat it again and again, we are allocating our capacity in favor of table because that is our stronghold. And also, we feel that is where people need the device to work and get educated, right, versus smartphone, which is probably less urgent. So we kind of make that decision. But our shortage for smartphone is very, very severe and also shortage for TDDI as well.

I would say probably less so for large panel, although I have to say, I mean, my large panel customers hear about this, they'll be upset, right, because what they are seeing is also pretty bad shortage as well. So it's slightly difficult to quantify, but I would say automotive, long term, looks difficult to resolve, unless people switch faster to TDDI. And for smartphone and tablet, foundries are building new 28 nanometers, but that is not going to come along until probably 2 or 3 years later. And that will help resolve some of the pressure. And before then, we are seeing this fundamental structural shortage still being very difficult to get resolved.

Operator

And our next question comes from the line of John Lopez.

Jonathan Lopez ***Vertical Group - Analyst***

My first question is, I guess I want to come back to the calendar Q2 guidance and perhaps ask you this way. Across the board, most, not all, but most semiconductor companies are guiding kind of flattish. And those companies have pretty reasonable exposure to market like TVs and PCs and automotive. You guys are guiding your display driver IC sales, if we take the other category out, you're guiding your DDIC sales up about 15% roughly, give or take, quarter-to-quarter. Is that mostly price? I know you don't want to get into specifics and it sounds like there's some competition, but is it mostly price? Or are you also growing units at a time when it doesn't appear like others are?

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

I think, Jonathan, yes, you're right, I don't want to get into specifics. But to give you a sense of -- I mean simple mathematics, right? If you look at our gross margin, right, we are guiding for increase from 40% to 46%, 47%, right? There's 6, 7 percentage points increase. And yet for our revenue is 15% to 20%. And the cost increase, I can assure you, is not really that much, meaning the growth is still primarily driven by quantity rather than price. But yes, definitely, there's an element of price. But I mean, if it's all about price, then you would expect our margin will grow accordingly, right?

Jonathan Lopez ***Vertical Group - Analyst***

Got you. Okay. That helps. And actually, you're hitting on the second topic I wanted to try and get out a little bit, which is if we look at the last couple of quarters, let's say, from the middle of last year until right now, you guys have talked and others have talked about this very acute tightness and the ability or the requirement for foundry prices to go up. So over these last couple of quarters, the foundries have increased their gross margins. And by foundries, I mean, 200-millimeter heavy foundries, by maybe 5, 6 percentage points. Your gross margin is up by 2,000 basis points. So how do we think about the difference between those 2? In other words, why is your gross margin increasing so much faster than, say, the rate of change of the supplier?

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

I really can't talk on behalf of my suppliers, and I think that is just the reality. And certainly, I mean, there is -- from taking the goods from foundry to our output, right, there's a time difference. That probably partially explained it, but I don't know. Honestly, I don't know, but that is just a fact. I think certainly, panel industry is also enjoying good margin expansion and profit expansion. And they are in desperate need for display driver IC, which is really their major, major bottleneck for them to produce more panels, right?

And if you look at the display driver IC, notwithstanding the recent price hikes, driver IC still represents a relatively small portion of their bill of material. Let alone, if you take into account their depreciation costs and utilities and overhead, right, that is a lot, meaning for a relatively small portion of their cost, if they don't get their IC support, they can't make the shipment. So meaning they are probably more eager than a lot of other industries because their overhead being so heavy, right? And the market is still pretty healthy to "bid up" the driver IC price.

And yes, so I think there's a fundamental difference in the sense that foundries -- not foundries -- sorry, panel makers, when they make the new fab, these days, you're talking about, I don't know, close to $10 billion dollars, right? So they are not going to wait and sit around empty idle with their $10 billion investment because they are not willing to pay 20% or 10% more for driver IC. I think that is probably a good explanation.

Jonathan Lopez ***Vertical Group - Analyst***

Sure. And that makes sense. And sorry, just one last one, if I could. I want to talk about automotive for a second, and maybe I want to frame it this way. If we forget last year, if we forget Covid 2020 and go back to 2019, at that point, your automotive -- if our numbers are right, your automotive revenue was around $115 million, give or take, and actually had declined a bit. And my recollection at that time was there was some discussion about maturity, sort of maturity of the automotive industry and maybe some penetration thresholds. So now if we kind of fast forward to this year, it sounds like you're going to, I don't know, maybe not double, but come pretty close to doubling. So you're going to be about double versus what you were in 2019. Can you just help us understand the factors there? Is it all sort of a resurgence of demand? Or what are maybe the other variables that maybe bridges from 2019 to today?

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

I think it's primarily because in -- especially the first half of 2020, the Covid situation really drove the auto industry way down, and they are actually laying off their workers and shutting down their factories and suspended their purchase orders for semiconductor parts. And then towards the end of last year, they kind of all of a sudden wake up, and ever since, they've been playing catch up, right? So on a year-over-year basis, you are talking about a particularly bad year last year, which was actually unusual.

So if you extend the time frame a little bit longer to cover the few years earlier than last year, then you'll see our display driver business for automotive have been growing very, very steadily and nicely almost quarter after quarter. And that is simply because in everybody's cars, the new models have more panels and larger panels and high resolution panels than older models, and that's just a simple effect. It's a very, very long growing trend. And I will see last year, especially the the first 3 quarters of last year as an exception, driven by COVID.

Now from here and going forward, as I mentioned, right, with the EV really coming into mainstream, when your passenger room becomes larger and people demand for better quality display, larger display, even more displays, I think in terms of volume and complexity of display, meaning display demanding higher-end features, I think this is a very, very long-term growth opportunity for us. So this year, I think 2 factors. This is kind of a turning point, right? One is the Covid, and now it's recovery and catching up in terms of volume; and two, the adoption of EV. And therefore, more advanced panels and more panels. I think they kind of hit at the same point, start -- pretty much starting from this year, being the turning point. So that is why we are very excited about automotive, and that is why we actually -- we prepared pretty early, as I mentioned earlier, before even Covid where we didn't know Covid is going to have such a big impact for the automotive industry, but we will gear up pretty aggressively in terms of getting ourselves ready for more capacity.

Operator

And at this time, I would like to turn it back to our President, CEO and Director, Mr. Jordan Wu, for the closing remarks.

Jordan Wu ***Himax Technologies, Inc. - Founder, CEO, President & Director***

As a final note, Eric Li, our Chief IR/PR Officer, will maintain investor marketing activities and continue to attend investor conferences. So we will announce the details as they come about. Thank you, and have a nice day.

Operator

Ladies and gentlemen, thank you for participating in today's conference. This concludes the program. You may now disconnect.