

【Samsung Electronics 1Q Earnings Call】

Byung-Hoon Ben Suh

Good morning.

This is Ben Suh, from investor relations. Thank you for joining our earnings call for the first quarter of 2020.

With me, Representing each of the business units, are

Mr. Jinman Han, Senior Vice President of the Memory Marketing Team,

Mr. Dongho Shin, Senior Vice President of the System LSI Marketing Team,

Mr. Shawn Han, Senior Vice President of the Foundry Marketing Team,

Mr. Kwonyoung Choi, Vice President of Samsung Display,

Mr. Jongmin Lee, Vice President of the IT and Mobile Business, and

Mr. Louis Kim, Vice President of the Visual Display Business.

In addition, Mr. Tae Gyu Kang from Investor Relations is present on this call as well

I would like to remind you that some of the statements we will be making today are forward-looking, based on the environment as we currently see it, and all such statements are subject to certain risks and uncertainties that may cause our actual results to be materially different from those expressed in today's discussion.

Before we start our normal review of quarterly results, I would like to address a topic on everybody's mind, the COVID-19 pandemic.

COVID-19 has created unprecedented challenges for the global community, and at this point, it is impossible to determine how big of an impact it will have, or how long it will affect our society and economy, leading to a period of extremely heightened uncertainty.

For our part, Samsung Electronics is doing everything we can to carry out our vital roles: taking care of our employees, supporting our customers, and helping affected communities at home and abroad.

First and foremost, the health and safety of our employees and their families is our top priority. We launched regional response teams around the globe to provide our workers with timely and up-to-date information and resources based on the latest guidelines from local health authorities. We have restricted business travel, have strongly advised global employees to work from home where possible and have closed some of our facilities to support social distancing efforts, where necessary. In our operating facilities, we have implemented additional safeguards by mandating health screenings and temperature checks to enter our offices or facilities, which are disinfected on a frequent and regular basis. Also we are providing masks to our employees at such facilities.

Next, we are closely collaborating and sharing information with our key partners to jointly address problems this crisis may bring; and we are doing our utmost to ensure that our customers have reliable access to our products and services by flexibly managing our operations across our global production and supply networks.

For the global community, we are actively supporting governments and communities around the world in their relief efforts through financial contributions and donations of medical supplies and electronic devices, including products to help facilitate online education. In Korea, we provided a facility for use as a treatment center, and offered the expertise of our engineers to improve the efficiency at mask manufacturing companies.

Also, all employees at Samsung Electronics, via a company-wide initiative, are exploring ideas on how we can use our technologies and capabilities to further support those affected by COVID-19.

In terms of financial performance, we delivered solid results in the first quarter despite this difficult environment. However, a surge in the number of cases of COVID-19 across the globe in March led to disruptions or shutdowns of our distribution and supply networks, offline stores, and manufacturing facilities, hurting production and sales amid lower demand. As a result, certain areas of the Company, mainly our set businesses, will be under stress in the second quarter; and we expect uncertainties to continue into the second half of the year.

We will keep monitoring the situation and, based on our technology leadership and product competitiveness, respond quickly and flexibly to new developments to minimize impacts on our business and customers.

In spite of the current challenges, we will continue to enhance the competitiveness of our core businesses and invest strategically in R&D, in order to emerge from the pandemic well positioned for future growth.

Finally, we would like to express gratitude and pay respect to everyone working to combat this crisis. From all of us at Samsung, we wish good health to you and all those close to you.

Now, let's move on to our first quarter results.

Total revenue in the first quarter was 55.3 trillion won, a decrease of 7.6% from the previous quarter mainly due to weak seasonality for our display business and CE division and partially due to effects of COVID-19.

Year-on-year, revenue increased by 5.6% due to higher demand for memory and other components related to mobile.

Gross profit fell 0.8 trillion won quarter-on-quarter to 20.5 trillion won, while gross margin was slightly higher at 37.1%.

SG&A expenses decreased by 0.1 trillion won quarter-on-quarter, led by a reduction in marketing costs. However, they increased as a percentage of sales.

Operating profit was lower by 0.7 trillion won quarter-on-quarter to 6.4 trillion won, affected by the same factors that weighed on revenue with a corresponding decrease in operating margin, even though memory earnings went up.

Year-on-year, operating profit increased by 0.2 trillion won with an improved product mix in the mobile business and additional diversification of our customer base in mobile OLED.

Foreign exchange movements had little effect on our overall operating profit in the quarter, as positives from a strong US dollar and euro against the won—felt mainly in the component business—were offset by weakness in currencies in major emerging markets.

I will now briefly review the performance of each business unit.

In the memory business,

profits improved sequentially amid solid demand primarily from server and PC as well as steady demand from mobile.

For system semiconductors, earnings rose due to an increased supply of mobile components to our major customers, while profits for Foundry declined slightly due to lower HPC demand from China.

In the display business,

Mobile panel earnings decreased quarter-on-quarter amid weak seasonality and a reduction in sales in China due to COVID-19 related shutdowns. The large panel business recorded a narrower loss as smaller declines in the market price were more than offset by other factors.

Mobile earnings grew quarter-on-quarter and year-on-year, despite weakening sales toward the end of the quarter related to COVID-19, due to an improved product mix with the launch of S20 flagship devices and efficient execution of marketing costs.

The CE Division recorded weaker results sequentially due to seasonality as well as early effects of COVID-19. Earnings in the TV business dipped year-on-year

amid aggressive price competition, but the home appliance business improved its performance backed by strong sales of new premium products.

Harman's results were affected by significant one-off costs related to the relocation of a European manufacturing plant.

Next, I would like to share our business outlook.

In the second quarter of 2020,

While we expect memory earnings to remain solid, our overall earnings are likely to fall quarter-on-quarter due to a sharp increase in the impact of COVID-19 that will affect demand for several of our core products.

For the component business,

Memory demand is forecast to remain solid for server and PC as more people work from home, but possibly slip for mobile.

OLED earnings are likely to be weaker due to a stagnant smartphone market.

In the set business,

Many of our key products are expected to see a significant drop in sales and profits due to shrinking demand related to COVID-19 and store and plant closures around the globe.

To address this, we will leverage our global production flexibility and supply networks while also strengthening our online sales capabilities.

Harman earnings will remain soft due to temporary shut downs of automotive plants globally, which are also due to COVID-19.

In the second half,

Uncertainty levels are expected to remain high, given the unknown duration of the pandemic and its effects.

Considering this, we will flexibly respond to changes in demand and focus on optimizing resource allocation in the short term, while continuing to strengthen semiconductor technology leadership and develop innovative set products for accelerated growth post-COVID-19.

For the component business,

In Memory, we will add to our technology leadership and cost competitiveness via node process migration while staying agile to changes in the market with flexible investments and product mix adjustments.

In OLED, we will actively address demand for new product releases and also expand our presence in new application areas such as foldables and IT devices.

For the set business,

We will continue to develop leading products that will take consumer experiences to the next level.

Mobile will strengthen its lineup by introducing new premium models and expanding offerings of 5G models for the mass market,

Network will focus on developing technologies and enhancing global competencies to reinforce the 5G business.

CE will efficiently execute marketing and promotional programs tailored to conditions in each country; and will work to expand sales of innovative products like MicroLED and 8K TVs along with our other new-Lifestyle offerings in the second half.

Now, I will address capital expenditures.

Capex in the first quarter was approximately 7.3 trillion won, with 6.0 trillion won allocated to semiconductor and 0.8 trillion won to display.

For memory, we are continuing expansion in our production sites and investment in node migrations as planned. In Foundry, investments are focused on expanding capacity of advanced EUV process nodes.

Finally, I would like to address the first quarter dividend.

Today, the Board of Directors approved a quarterly dividend of 354 won for both common and preferred stock.

Even though we expect to face a challenging business environment in the second quarter, mainly in the set businesses, as more effects of the COVID-19 pandemic take hold, first quarter dividends will continue to be based on our current dividend schedule.

I will now turn the conference call over to the gentlemen from each business unit to present first quarter performances and outlooks for their corresponding business segment. Thank you.

Good morning,

This is Han Jinman from the Memory Marketing Team.

In the first quarter, despite weak seasonality and effects of the spread of COVID-19, purchasing demand for overall applications remained solid backed by demand from cloud applications resulting from an increase in remote working and online education and continued investments in 5G infrastructure.

For DRAM, demand was solid from datacenters, centering on Cloud services, As the 'Stay at home Economy', has expanded usage online shopping and streaming services, among others.

For mobile, even though set demand decreased due to effects of COVID-19 and seasonality, related negatives were offset by rising demand from the ongoing trend toward high-density in new products at major customers and growing concerns over supply stability in the second half.

For PC, the closure of some manufacturing sites had an impact on Set builds, but overall demand remained steady thanks to a growing reliance on virtual meetings related to social-distancing policies and also because of the mentioned concerns over the stability of supply in the second half.

In the quarter, we used our product-mix flexibility to actively address upside to demand from major customers, such as PC and server, enabling us to exceed our previous bit-growth guidance, we have also increased our product competitiveness by expanding the proportion of high-density Server products

based on 16Gb and accelerating the conversion of 1y nano meter.

Next, I will talk about the NAND market.

For mobile, even though macro uncertainties weighed on demand, especially from set makers in China, demand for mobile memory overall was relatively solid due to wider adoption of high-density eStorage with more than 128GB in major customers' products.

For SSDs, demand for server SSD keeps growing, mainly for datacenters, alongside rising demand for high-volume content.

For Client SSD, although Set production at the beginning of the quarter was partially affected by a drop in utilization at ODMs due to COVID-19, utilization recovered at the end of the quarter and propped up purchasing demand to an extent.

We actively addressed demand for high-quality Server SSD centering on datacenters, and we also improved our profits by enhancing cost competitiveness via increased migration to fifth generation V-NAND.

Next, I'd like to talk about the second quarter outlook.

For DRAM, we expect demand to remain firm across all applications despite a likely continuation of weakened consumer confidence related to the worldwide pandemic.

Specifically, the rapid rise in the number of people working from home, relying on online education, and using streaming services is likely to create robust growth in demand from server, while that for PC is expected to remain steady.

For Mobile, however, we expect set demand to remain highly uncertain, as consumer confidence is expected to remain weak and considering characteristics of the mobile market, which include a high offline portion of sales.

We will flexibly manage our product mix to align with changes in demand, with a particular focus on growing demand from server. Also, we will strengthen our cost competitiveness by expanding technology migration.

In the NAND market, as is the case for DRAM there will be impacts from a decrease in smartphone Set demand. These effects, however, will be offset by growing demand for SSD, so we expect the overall NAND demand to continue to grow.

To add color, demand for video content has accelerated due to social-distancing policies; and demand for Server SSD is expected to keep rising as datacenters work to support various high-definition content more reliably.

We will focus on expanding demand for high-density, high-value-added Server SSD above 2TB, while continuing to extend migration to 5th generation V-NAND to secure cost competitiveness.

Next, I will talk about the prospects for the second half.

In the memory industry, mobile demand has been most affected by Covid-19, and any recovery will depend on factors such as the containment of the pandemic as well as the rate consumers in major countries regain confidence. Given the high uncertainties related to the virus and other macro factors, it is difficult to provide annual guidance at this time.

However, even as such uncertainties persist, overall conditions in the memory industry are likely to be favorable due to Server and PC demand for a faster and more reliable Cloud service experience.

If COVID-19 continues persists in the longer term, there are risks of further declines in demand for overall applications, including server. However, even in this case, the possibility of sudden fluctuations in market are likely to be limited by possible impact on supply due to factors, such as delays in equipment procurement.

Despite these unexpected challenges, the recent digital transformation trend is likely to accelerate further in the mid to long term as a new Lifestyle based on online services quickens its spread throughout people's daily lives. As a result, demand for high-end, high-performance memory will continue to grow.

We will maintain a flexible product mix and investment approach based on market changes. While focusing on increasing sales our differentiated products such as mobile LPDDR5, GDDR6, and high-density server SSD along with accelerating the conversion to cutting-edge products such as 1Z nano DRAM

and 6th generation V-NAND.

Additionally, the recent two to three years have highlighted that rapid price fluctuations in the short term can result in significant, negative effects on the stability of growth, not only for memory suppliers but also for the IT industry as a whole.

Thus, we will be prepared for numerous scenarios, including ones where the COVID-19 crisis is prolonged or ends early, and actively utilize the preceding market sensing and SCM strength to satisfy the customers' demand which could rapidly change in an uncertain environment.

Moreover, as we announced in March, we are actively expanding our use of EUV and preparing to adopt the process in earnest for 1a nano DRAM in the low 14 nano range as planned. We believe the adoption of EUV is not just another means to reduce size, but rather a critical transition to break through technological barriers.

Despite these unprecedented uncertainties in the market, we, as a leading company, will do our best to contribute to stable growth of our customers and the IT industry as a whole by continuous development and innovation of new technology alongside timely and sustainable investments with a view to the mid to long term.

Thank you.

Good morning, this is Dongho Shin from the System LSI Business.

In the first quarter, S.LSI earnings increased quarter-over-quarter, a result of rising supply of 5G mobile processors and ultra-high-resolution image sensors on launches of new flagship and high-end smartphones by domestic and Chinese customers.

In particular, we continued to lead technology in image sensors, with the launch of a new product featuring Nonacell, a complementary technology for low-light performance, to our ultra-high, 108-mega pixel chips. In addition, we diversified our product portfolio by launching a security chip that protects personal information on mobile devices, and a power management chip for TWS earphones, which have been rapidly gaining popularity.

In the second quarter of this year, we expect overall demand to contract due to fading effects of launches of flagship smartphones, production disruptions at global manufacturers, and soft consumer sentiment due to COVID-19.

We will monitor fluctuations in market and customer demand while focusing on minimizing impacts by maximizing the supply of high-pixel image sensors and expanding 5G one-chip SoC market.

In the second half of this year, we expect to see an increase in the number of 5G subscribers and launches of low- to mid-priced 5G smartphones, mainly in China. In addition, demand for 5G SoCs and premium image sensors is forecast to remain solid due to the trends toward adopting high-pixel sensors in mobile cameras and increasing multiple cameras to triple or quad.

However, COVID-19 has greatly increased market uncertainties, and it is difficult to determine the timing or shape of an economic recovery.

Therefore, we will closely monitor the market and secure solid SCM as well as respond flexibly to any changes, while also seeking to enter new applications through highly competitive new products.

Thank you.

Good morning, this is Shawn Han from the Foundry Business.

In the first quarter, even though demand for 5G and image sensor chips increased thanks to launches of 5G smartphones at major customers and the increasing trend toward higher camera specs, overall earnings decreased slightly compared to the previous quarter due to a decrease in demand for HPC chips from China. Revenue in quarter, however, grew in the double digits compared to the same period last year.

We responded in a timely manner to customer demand with the operation of the EUV-dedicated V1-line and stable mass production of EUV 6nm products. We also added to our foundation for growth by preparing to mass produce computing chips for major customers, completing the design of HPC products, as well as by expanding orders from large companies for chips used in consumer applications.

In the second quarter, we expect earnings to improve sequentially, but we must be mindful of uncertainties caused by COVID-19. We plan to closely monitor the situation and keep diversifying our products' customer base and end-use applications in line with changes in mobile demand.

This quarter, we aim to expand leadership in EUV processes with the start of mass production of 5nm products alongside our efforts to keep promoting and securing orders for 5nm and below processes. In addition, we will endeavor to further stabilize our base for future business by completing the design of computing and EUV products for Auto and Mobile applications.

In the second half of this year, to address current COVID-19 uncertainties, we plan to focus on diversifying applications beyond mobile to include areas such as consumer and computing applications.

In addition, we will continue investing in advanced process nodes and start mass-producing 5nm products this year as mentioned; and we will also continuously improve 5nm derivative FinFET processes to enhance price/performance competitiveness, and also focus on the development of the GAA 3nm process.

Thank you.

Good Morning.

I'm Kwonyoung Choi from the business planning department of Samsung Display.

First of all,

Considering the worsening profitability in the LCD business, we have decided to halt production of LCD panels at the end of this year, and focus on reorganizing our business portfolio to center on differentiated QD displays.

We plan to deliver all of our customers' outstanding orders by the end of the year without fail. And we will do our utmost to successfully commercialize QD Display on schedule.

Now, let me turn to our first-quarter results.

Overall, Display earnings decreased quarter-on-quarter, due to reduced shipments of both OLED and LCD panels.

To be more specific, mobile display earnings were lower quarter-on-quarter as shipments and utilization declined amid low seasonality.

Meanwhile, in the large display business, losses narrowed slightly quarter-on-quarter thanks to short-term market factors, such as movements in ASP and foreign exchange rate

Looking ahead to the second quarter, the mobile display business expects its earnings to decrease due to falling demand in developed regions, such as the

U.S. and Europe, caused by the COVID-19 pandemic.

The display industry, by nature, offers customized products, catering to each customer's specifications, so it is inevitable that profits will suffer from a significant drop in customer demand.

To combat this issue, we will strive to secure profitability by enhancing sales based on the outstanding performance and designs of our mobile panels.

For the large display business, earnings are likely to remain weak under risks of an accelerated market slowdown in the wake of the postponement of mega sporting events such as the Tokyo Olympics.

In response, we will endeavor to raise profitability, by focusing our business on high-value-added panels for TVs and monitors that offer features such as high resolution, a large screen, and curved design.

Next, I would like to share our outlook for the display market and on our core strategies for the second half of this year.

In the mobile display business, uncertainties are forecast to linger Due to the spread and effects of COVID-19.

Accordingly, we will prepare for various scenarios by building a structure that helps us respond swiftly to market changes.

In particular, we are determined to secure leadership in the OLED market by

exploring new applications including Foldables and other IT devices to actively address our customers' needs in various smart devices after the COVID-19 crisis.

A global economic downturn combined with intensified competition will lead to unfavorable business conditions, but we will keep investing to improve our technology capabilities and cost competitiveness.

For the large display business, we will seamlessly handle our customers' demands amid the scaling down of the LCD business, and we will expedite the development of large displays Equipped with new technologies.

Thank you

Good morning.

I am Jongmin Lee from the Mobile Communications Business.

I would like to share our 1st quarter results and outlook for the IM Division.

In the 1st quarter, overall market demand significantly decreased QoQ as a result of supply chain issues in China caused by the COVID-19 outbreak early in the quarter and travel restrictions in the last few weeks of the quarter following the global spread of the pandemic.

As impact of COVID-19, including those on logistics, began to take effect in March, our smartphone shipments also decreased QoQ.

However, we maintained sound profitability QoQ by efficiently deploying marketing investments and improving overall product mix while increasing the sales portion of premium and 5G models.

In particular, flagship ASP rose compared to previous years thanks to a higher-than-expected sales portion of the S20 Ultra and solid sales trends of our new foldable, Z Flip.

The Galaxy S20 series, released in February, provides our customers with new and more innovative mobile experiences by offering a fully enhanced, AI-powered camera and 5G availability in all three S20 variants.

The newly launched Galaxy Z Flip, our second foldable after Galaxy Fold last year, is highly acclaimed among millennials and female customers because of

its stylish and compact design as well as the Flex Mode, which helps to fully enjoy the new form factor.

For the Network Business, our performance improved QoQ as 5G commercialization expanded in Korea as well as abroad.

Now, let me move onto the outlook for the 2nd quarter.

With the global spread of COVID-19, demand is expected to drop sharply in most regions due to the economic downturn caused by lockdown across the globe and a corresponding deterioration in consumer sentiment.

As the market shrinks and effects of store closures continue to have direct impacts, a drop in sales of our major products and overall performance seems inevitable.

Although market uncertainty is higher than ever, we will focus on improving cost-effectiveness and strengthening online and B2B channels.

In case there are additional disruptions at our production sites, we will respond by flexibly utilizing our diversified manufacturing capabilities around the globe.

Above all, we are committed to protecting the health and safety of our employees as well as preventing community spread. We have been thoroughly implementing disinfection and prevention measures in our offices and production facilities in all regions.

For the Network Business, it is possible that investments in 5G network will be reduced or delayed domestically and internationally as more effects of COVID-19 unfold.

Finally, I will share our outlook for the second half.

In the midst of uncertainties such as the possibility of a prolonged pandemic and the timing of a market recovery, we expect competition to intensify further as companies strive to recover from weakness in the 1st half.

For the Mobile Business, while continuing to offer differentiation in the premium segment with new foldable and Note model launches, we plan to widen the range of choices for our customers and enhance competitiveness within each price range by introducing 5G models to our mass-market lineup.

In addition, we will also improve operational efficiency across all areas, throughout R&D, production, supply, channel, and marketing.

For the Network Business, despite uncertainties around the 5G investment plans we will continue to strengthen our technological competitiveness while improving our 5G business capabilities globally for the mid to long term.

Thank you.

Good Morning. I am Louis Kim, Vice President of Visual Display Sales and Marketing Team at Samsung Electronics.

First of all, I would like to review the market condition and our performance for the first quarter of 2020.

In Q1, TV demand declined both quarter-on-quarter and year-on-year as the market entered low season following end-year peak seasonality as well as due to a decline in global demand starting in March.

For Samsung, our earnings declined y-y due to a sharp downturn in market conditions. Despite the difficulties, we continued to solidify our leadership by increasing our market share not only in the total TV market but also in the \$2,500 and above premium segment, mostly driven by increased sales of QLED, super large screen TVs, and Lifestyle TVs.

For digital appliances, despite a reduction in consumer confidence, our results slightly improved year-on-year, largely due to growing sales of premium products, which include those for the Grande AI Washing machine and Dryer.

Next, let me share our market outlook for the second quarter and the second half of 2020.

The TV market in Q2 is projected to decline both quarter-on-quarter and year-on-year, mostly due to deteriorating market conditions overall and the postponement of major sporting events such as Euro 2020 and the Summer Olympics Games.

Under such circumstances, we will focus our efforts on maintaining sales, identifying new sales opportunities in each country—mainly online—and concentrating on risk management.

Although our total sales are decreasing due to the shutdown of offline stores in multiple countries, the online portion is increasing.

We will actively address growing online demand by strengthening our efforts in target marketing while also expanding our online product line-up and promotional offerings.

Moreover, we will work to satisfy the needs of consumers related to lifestyle changes, such as increased use of IT devices, caused by prolonged stays at home.

For those who enjoy content such as movies, sports, and gaming, we will boost sales of super large screen TVs, including our QLED 8K models that deliver immersive experiences based on best picture quality and dynamic sounds.

Furthermore, we will provide a diverse range of beneficial features to consumers by addressing various use-case scenarios, which include home schooling and remote working, with our Smart TV features.

In response to the growing trend of working remotely, utilizing video conferencing, and a subsequent increases in PC screen time, we aim to expand sales of signage that can be used for video conferences as well as sales of gaming and curved monitors.

We will continue to maintain our leadership despite the dynamic changes that are taking place.

For the Digital Appliance business, we will prepare for peak summer demand for air conditioners and continue to improve our online sales amidst the Covid-19 pandemic. We will also do our best to strengthen our response to the crisis by cooperating with our channel partners to optimize marketing strategies.

In the second half of the year, both the TV and digital appliance markets may not be able to avoid contractions due to the current uncertainties and risks of an economic downturn. We are closely monitoring the market situation and will continue to focus on minimizing negative impacts by investing in efficient marketing and promotions tailored to each region and by optimizing our logistics. We will also continue to lead the industry with innovations such as QLED 8K, Micro LED and Bespoke.

Thank you.

Thank you. That sums up the first quarter results presentations. Before we move on to the Q&A session, I would like to share several data points in key business areas. Considering the heightened COVID-19 related uncertainties, we will not be providing any annual guidance this time.

For DRAM, in the first quarter of 2020, our bit growth decreased a mid-single-digit but ASP rose in the low-single-digits. For the second quarter, we expect bit growth to stay flat for the market as well as for us.

For NAND, in 1Q, our bit growth saw a low-single-digit decline but ASP went up a mid-single-digit. For the current quarter, the bit growth of the market is likely to reach the low- to mid-single-digits; and our bit growth is forecast to come in slightly below that of the market.

For the Display Panel business in 1Q, the OLED portion of sales was in the low 80s. Sales volume declined in the high 20% range.

In wireless, in 1Q, sales volume was 64 million units for handsets and 5 million for tablets. The blended ASP, including tablets, was USD 266; and the smartphone portion of handset sales volume was in the low 90s.

In 2Q, we expect shipments to decline q-q for handsets but rise for tablets; and blended ASP is forecast to decline q-q. The smartphone portion of handset sales should stay similar in the low 90% range.

In the TV business, sales volume of LCD TVs experienced a decline in the high 20% range. In the second quarter, we expect shipments to decline in the low 10% range.

Q&A

<Q – Nicolas Gaudois >:

- First of all, on memory, data center demand appears to have remained strong year-to-date. Could you help us understand what is, in your view, temporary in nature, for instance, a hyperscale customer responding to a spike in mobile or gaming application usage due to lockdowns? And what could be more structural such as server demand coming from cloud services? How do you translate this altogether in your production for server DRAM bit demand growth in 2020 and 2021?

- And secondly, for smartphones, how have you seen COVID-19 impacting sell-through so far by regions? Which measures can you take to mitigate the impact on IM's bottom line whilst also being ready to catch up demand when it ultimately comes back? And briefly, could you explain the H2 product launching plans for Fold and Note and whether there are any possibilities of delays of product launches due to COVID-19?

<A>:

- To answer your first question about the data center demand, if we look at the data center demand that we saw last quarter, there was some demand that was for inventory. But there is clearly a fundamental demand for data center customers as more and more people stay at home and there are more usage of online shopping, teleconferencing and online gaming, so this has translated into a solid demand base.

Now the question is whether the solid server demand will continue and be sustained over the long term, that we think will depend on 2 major factors.

One is how the COVID-19 situation unfolds going forward and whether data center companies would change their CapEx plans. As we see it up until now, we think that there will be a continuous solid server demand given the fact that -- especially around cloud services given the fact there are needs for various online platforms.

If we broaden the horizon towards the mid- to long-term implications, I think one of the unexpected effects brought about by COVID-19 is that actually what people thought was the way of the future, people spending more time working and learning online. That has become the new normal for many people as a result of COVID-19.

And so given this new lifestyle that people are getting used to, we believe that there will be continuous need to build out larger online infrastructures by our customers in order to provide a wide variety of services in the mid to long term in a stable manner. And so we expect there to be even a faster pace of growth, which will naturally lead to a solid demand for servers.

- Your second question was about COVID-19 and the impact to the mobile side. Since the COVID-19 was declared as a pandemic, as you know, many countries went into lockdown. This led to retail stores being closed down and also some logistics disruptions in some parts. And so there was a significant decrease in smartphone demand in most of the regions. Even though this -- the pace of the spread seems to be slowing down somewhat in North America or Europe, I think it is too early to be sure. Also, there will be some time needed for the real economy to actually recover, so we -- it's difficult still for us to predict how much of a decrease we will see in demand during second quarter.

So while we are focusing on online sales to counter retail sale closures, we're preparing our supply as well as channels so that we are able to immediately respond to recovery in demand by region by closely monitoring the market

situation.

You've also asked about our second half new product launch schedules. We are preparing our new Note as well as the foldable launch as scheduled, and we will -- we are looking forward to providing the market with even a more competitive product.

<Q – Kyung Min Kim >:

I have 2 questions.

- The first question is about the memory side. Second is about the Foundry business. Actually, recently, YMTC has started mass production of NAND as well as DRAM and started to move into the market. I'm wondering whether, Samsung, you're already starting to feel the threat from this new competitor. And given the new competitor, how are you planning to maintain your leadership in this market?

- Second question is about Foundry. Recently, ASML, in its conference call, mentioned that there are some delays in litho equipment setup. I was wondering, given the fact that Samsung Electronics has a lot of EUV expansions going on, on both 5- and 7-nano, whether you are experiencing any impact due to these equipment setup delays.

<A>:

- Through media reports, we've also recently heard that Chinese suppliers have started to enter the memory market, but we think that given that today's memory market is a place where the customers are demanding to a higher bar, a higher level of technical difficulty in the memory and also, it's a market where features such as high density, high quality and low power are very

important, and so today's memory market is a place where rather than the timing of mass production, supplying customers, these high-end products also in a stable manner is a much more important factor.

Of course, the entry of Chinese companies into the memory market is a factor that would change the market momentum. And so we are continuously monitoring the situation. But our top priority is to continue our technical advantage and leadership based on our high-quality and high-performance products and also continue our node, especially the cutting node migration so that we're able to maintain and even further widen the technology leadership we have.

EUV was a very good example of how our preemptive and active pursuit of innovation provide support to not only existing but also new customers and also creates a win-win relationship. We will continue to do these pursuit of innovation efforts, and also, we will focus on developing products for new growth areas at the right time so that we're able to contribute to the growth of the overall IT industry while maintaining our market leadership.

- To answer your second question about the litho equipment, it is true that due to the uncertainty brought about by COVID-19 that there is a concern of potential disruptions happening in the sourcing of equipment or raw materials, but our current plan is to continue our expansion as scheduled on target and carefully analyze and monitor market situation and customer demand so that we're able to respond to customer demands without issues..

<Q – S. K. Kim >:

Yes. I have 2 questions.

- First question is about the Memory business. I think we are only recently

starting the mobile customers starting to reduce their orders as an impact of COVID-19. Especially in the second quarter, we are expecting demand to be weak for not only Chinese customers but also the captive customer. In that context, do you think that this could actually impact the overall mobile memory demand and supply situation, including prices? Also, on the other hand, looking towards the second half of this year with the major strategic customer launching 5G phones, some are expecting that there will be an increase in 6-gigabyte adoption on the mobile side. So given all of that into -- taking all of that into account, can you share with us your second half 5G mobile demand-related outlook?

- Second question is for the TV business. As you mentioned during your presentation, due to the cancellation of major global sports events, including the Olympics, second quarter TV demand is going to be very weak. Would that have any impact on the launch schedules of your new products? On the other hand, do you think that there's a possibility of results rebounding quite strongly when there is, for example, a pent-up demand coming online in the second half.

<A>:

- To answer your first question about mobile demand, the mobile handset market itself, as you know, has a very high reliance on off-line sales channels. And so in today's situation where people are not going out and don't have much outdoor activity, mobile handset demand has -- inevitably will be impacted, and so we think that set demand decrease would be somewhat inevitable.

However, fortunately, some regions have started to resume their economic activities as the spread of the virus slows down especially starting from the

greater Chinese area. Also, the 5G rollout continues, so that is also a positive signal. As you mentioned during your question, 5G is being enrolled out even to the mid-end segments of the handsets, also of high-density products such as the 6-gigabyte is being adopted on more models. So once the situation stabilizes after COVID-19, there is definitely an upside point for mobile DRAM demand.

- Regarding the TV, as you mentioned, we also agree that due to COVID-19 and its impact, the demand second quarter inevitably will decrease, and so we are inevitably adjusting our sales plans that we had originally had planned out. We are adjusting, for example, the rollout or the sales timing of our new models by country. That's by country depending on the situation locally. And also, we are revisiting both our promotion plans and also marketing investments so that we are able to have a more efficient operation of the business.

Regarding the second half, because COVID-19 is continuing to spread globally and the negative impact that it brings to the real economy is also expanding, it's difficult to exactly forecast whether market demand would recover.

So given that outlook, our current focus is on risk management of the market situation and also, at the same time, thoroughly preparing our plans post -- for post-COVID-19 so that we're able to preemptively respond to changes in the market.

<Q – Dongwon Kim >:

I have 2 questions.

- First question is about the display. Second question is about CE. First question is the recent decision to pull out, exit from the LCD business. Some of -- some people have interpreted that as a signal that the QD-Display business will be

actually rolled out earlier than originally scheduled. What is your view regarding that interpretation? Also, can you give us an update on the LCD fab situation for both Asan and the Chinese LCD fab in Suzhou and the status of the government approvals?

- Second question is on the CE, consumer electronics side. Once SDC pulls out of the LCD business, some are concerned that, for you, sourcing of the LCD panels may become an issue. What alternatives or what countermeasures do you have?

<A>:

- Regarding your first question about people connecting the exit of our LCD business with an early rollout of our QD-Display business, actually, we are -- it is true that we are gradually reducing the size of the LCD business, but that does not necessarily mean that the QD-Display business will be expanding faster. We have a time line for our QD-Display business, and we are pursuing that time line as originally planned. For the time being, before it becomes a commercial business, we are focusing with priority on building up our product competitiveness and also product capabilities and productivity. Also, at the same time, we are working, collaborating with set makers in order to develop the right product for us, and also, we will be focusing on securing a stable customer base before launching the business. On the other hand, while we scale down our LCD business, we're also, at the same time, focusing so that our customers for the LCD business are not unnecessarily disrupted.

You've also asked about the LCD lines, what we plan to do with the fabs. For the Asan plant, our plan is to use that -- convert that to new product productions, for example, for the QD and other new products. For our Suzhou, our Chinese Suzhou fab, we are currently considering various options and once

direction is decided, we will carry out that direction according to due procedures.

- Second question, you've asked about the LCD sourcing side. As you know, we have been continuing to expand our sourcing from several panel suppliers in order to diversify our sources, and we have been maintaining a balanced relationship with multiple suppliers and not dependent on a few. Also, with a few of these panel suppliers, we have been building a long-term cooperative relationship to provide a stable supply, and so we have not been experiencing any issues in terms of LCD panel supply.

<Q – Peter Lee >:

I have 2 questions.

- First question is about the memory side. Can you share us what you sense in terms of the inventory level at major customers as well as the memory vendors? And if the inventory is high right now, do you think that going forward or currently this high inventory may actually trigger a possible rapid decline in prices again?

- Second question is about the IM, the mobile side. As you know, there were some component or component supply disruptions from China and also the plants in India have shut down, and some are concerned that this will have a disruption in the smartphone production side. Can you give us some of your insight into the situation in terms of the production on smartphones? And also, do you have any plans of responding, for example, if another production site goes into lockdown in the future?

<A>:

- To answer your first question, I think we can answer your question by first sharing the inventory that we sense at the server customer's level, then our inventory as well as the pricing outlook that we have. It's difficult for us to give you a specific number as to where customer inventories stand, but I think we can say for sure that at least compared to, for example, late 2018, when we entered this inventory adjustment cycle, customers' inventory overall is low.

And as we have mentioned during the past several conference calls, even though server demand was growing throughout last year second half, as we mentioned, part of that, we already knew, was a bit -- was part of that was to build up inventory. And even though in first quarter we saw solid demand, part of that, once again, was perhaps a demand for inventory in order to prepare for possible supply disruptions in the second half.

To give you an update on our inventory levels, as we mentioned, our NAND inventory reached normal levels at the end of 2019, and it's currently staying at that normal level. For DRAM, we are planning that to reach normal levels in the second quarter as we mentioned during the previous conference call.

We do understand that there is still concerns that perhaps another price fluctuation may reoccur as customers continue to build inventory and then another inventory adjustment cycle starts. But even though it is true that part of the demand that we've been seeing for the past several quarters, part of that demand is for inventory, at least the customers' inventory levels are definitely lower than when we started the past inventory adjustments cycle. Also, our inventory levels are currently very stable, which is a large difference compared to what we saw before. And so as of now, we do think -- we think that the possibility of a large price adjustment happening due to an inventory adjustment as we saw at the late part of 2018 is limited.

- To answer your second question about the smartphone production disruptions, as you mentioned during the early days of COVID-19 outbreak, there were some temporary supply disruptions regarding components that we source from China, but because we basically have a dual-sourcing strategy for our key components, we are able to respond to that flexibly.

To give you an update on the production side, our Brazil plant actually has resumed operation, is currently stabilizing. In the case of the India plant lockdown, it's under -- there's a lockdown going on in India, and so we're expecting production to resume after May 3.

And we have been responding by leveraging our global production network so that if there's a lockdown in a certain country, we could transfer the volume to another site in order to minimize any impact to supply.

And while we operate our production sites, we place top priority on maintaining the health of our employees as well as preventing spread within the community, and so we have very thorough disease control measures and prevention measures being practiced in the production sites, which will we -- which we will continue.

<Q – J.J. Park >:

I have 2 questions.

- First is about the NAND side. I think there's still some concern that in the second half, NAND supply -- demand-supply situation may deteriorate even though, yes, there's growth especially driven by enterprise SSD demand. There is concerns about a decrease in mobile SSD demand, which mobile accounts for a large share of SSD demand. And also, considering that there's a shortage of supply of PC CPUs, that is tying into some concerns that maybe we'll see an

oversupply in the NAND market in the second half. So given that concern, we would like to hear the company's outlook for supply and demand situation in NAND in the second half.

- Second question is about the mobile side. We think that the mid- to low-end segments, the mass segment is probably going to be where competition further worsens given the fact that, for example, Apple has launched a \$350 phone in this segment and also the Chinese companies are launching a lot of new models here. So can we hear some of the company strategies in the mass segment?

<A>:

- To answer your first question about the NAND situation outlook for the second half, this may sound very similar to what we said about DRAMs, but it is because, ultimately, the supply and demand for even NAND in the second half would depend on many of the same factors of how long COVID-19 will continue and also how much of an economic recovery we will see by country and application and also how the consumers' consumption sentiment would recover as well as whether companies will change their investment plans.

But if we look at some of what we experienced in the first quarter, with a lot of companies doing social distancing and the increase of a stay-at-home economy, the related applications have increased quite a lot in terms of demand. And also, we think that in this process, this strong demand, especially around server demand, will continue in the second half. Well, for example, the media streaming service was already growing at very fast pace even before COVID-19. It has gotten a big boost through this situation we've recently gone through, and we think that this will actually stick as a new lifestyle for many consumers. So considering those examples, we think that the server demand growth that

we're seeing is not a temporary nature, but it's more of a structural nature that would actually drive demand growth across all memory.

Of course, we cannot completely rule out, for example, a scenario where COVID-19 prolongs longer than what we expect. That would actually bring about -- or take the market to a totally different direction. But even under that scenario, as we previously mentioned, a prolonged COVID-19 situation will impact not only the demand side but also will have some supply implications. So when we weigh the uncertainty around the mobile demand side versus the upside on the server side, we do think that the demand, especially related with the stay-at-home economy around servers, would be able to offset any uncertainty coming from the mobile side of the market so that currently, we sense -- think that the second half NAND market supply and demand situation would be favorable.

- To answer your second question about our mass segment mobile strategy, as you know, we -- in order to provide innovative experiences across many price segments, we have been very quickly adopting the latest technologies on our A Series as well as M Series, which helped enhance the product competitiveness in these segments and also give us a very rich portfolio across different price segments. This year, with the introduction or the wider rollout of 5G technology, we are planning to launch 5G new models in the mass segment that would feature large screens, multi-cameras, high pixel selfie cameras and also high-capacity battery so that users will be able to take full advantage of multimedia and new social networking experiences that are implemented with 5G technology.

So our strategy in the mass segment is to drive up our sales in the mass segment by introducing products that satisfy customers' various needs and also giving customers a wider range of choice.

<Q – Jong Woo Yoo >:

I have 2 questions.

- First question is about the memory side, whereas China shutdown situations are now being rolled -- is being resolved, other countries are actually still under lockdown or shutdown, so there seems to be a country-by-country difference. In that context, we are wondering whether there will be any changes or disruptions to your second half ramp-up plan for memory, for example, especially in the Xi'an plant. Would the ramp-up be carried out as scheduled? Can you give us an update on that situation? And also in that context, can you share with us some details about your CapEx plans for this year for NAND?

- Second question is about the 5G network business. If we look at the network business, whereas in China, actually, the Chinese government is planning to push ahead base station installations or invest that earlier to bring ahead base station investments. The 5G rollout in other countries such as the U.S. and Europe is probably going to be delayed. So we are wondering, from your perspective, how do you sense the 5G rollout plans by region this year? And in line with that, how are your business expectations this year?

<A>:

- To answer your first question, our Xi'an Phase 2 mass production is currently going through a ramp-up as originally planned, but we have room to respond flexibly depending on how the demand outlook looks in the future. Given the very high level of uncertainty in the market, we do understand that there are many questions about our CapEx plans. But our CapEx has always been according to our principle of executing optimal investments to support our sustained long-term growth, and so we are currently analyzing a wide variety of scenarios that assumes, for example, on one extreme, COVID-19 prolonging

in the long term, versus the other extreme, for example, this situation actually ending earlier than expected. And under these scenarios, we have plans being prepared. We, at the same time, are very carefully sensing the demand situation so that we are able to respond flexibly even in terms of our investment plans by having a quarterly review of our investment plans.

- To answer your question about the 5G network business, our understanding of the 5G rollout plans by region, first of all, is that, as you mentioned, yes, it seems that the Chinese government is looking at accelerating the 5G rollout as a way of stimulating its domestic economy. But on the other hand, in countries such as the U.S. and India due to especially the lockdown brought on by COVID-19, installation of 5G base stations as well as auctioning of 5G frequencies are being delayed. And also, Europe is also seeing a delay in terms of the 5G frequency auctions and commercialization schedules.

Japan, even though the Tokyo Olympics has been postponed, it seems that they will start 5G rollout as originally planned.

To give you the outlook on our 5G network business, during the first half, the Korean carriers have continued to expand their 5G network nationwide. Also, the key overseas carriers have started to commercialize 5G service at a larger scale. However, I think it's difficult to rule out that if, for example, the COVID-19 impact expands or becomes more prolonged, carriers both in Korea and overseas may decide to delay some of their 5G investments, which may have a negative impact on our business.

<Q – Hyunwoo Doh >:

I have 2 questions.

- First question is about the DRAM memory side. It appears that this year's

DRAM tech migration plan may be quite slow. On the other hand, you've said that the EUV-based 1z nano DRAM production will be carried out as originally scheduled. Despite the fact that it appears difficult to actually gain enough cost savings versus the amount of investment that this will require, can you explain us a bit more in detail what is the reason for adopting EUV despite the uncertainties that still surround the demand side?

- Second question is about the System LSI image sensor business. Despite the weak -- the weakness in the smartphone handset market, it appears that, globally, image sensor capacity may increase by more than 40%. So given these 2 factors, do you see a possibility of the image sensor market becoming an oversupply situation? And in that context, what is your outlook for the demand and supply in the future?

<A>:

- Well, to answer your question about the tech migration for DRAM, I think I can first answer that question by giving you an update on our node migrations and then following with our EUV adoption. First of all, about the node migrations, our node migration, to give you an update, is going ahead. It's being carried out according to plan without issues. We do understand that perhaps it may appear that the Qual process is taking longer than before the previous migrations. This is mainly because of a different approach being used for the DRAM migration currently. In the past, the node migrations were done across all applications at the same time, but now actually, the migration schedules are planned out differently depending on applications or our customers, and that is resulting in what appears to be a longer time for Qual. Regarding the adoption of EUV, I think an important significance that we place on EUV adoption is the fact that, as the technology leader of this area, we want

to be the company that actually overcomes the technical limitations of node migration. So under that premise, we have been trying to find the area where EUV adoption will be most effective, and we believe that it's the area of the 14-nano, the low 14-nano area, where we will be able to most effectively adopt EUV. Even though, yes, EUV equipment has matured a lot compared to before, there are still many unexpected problems that will happen as we use EUV in actual production. Also, in addition to the EUV equipment, in order to actually produce with EUV, there has to be development, for example, of high-sensitive, high-performance photoresist. And so there are many factors that need to be taken into account, which we are doing in determining the EUV, which products to use EUV for development and also the timing of when that EUV adoption would be.

And so as we mentioned through press releases last March, by leveraging our, for example, know-how, actual EUV know-how that the foundry side has built up through mass production and our continuous study in research of these multiple factors in using EUV for production, we have supplied more than 1 million pieces of D1x-based DDR4 DRAM modules to customers using EUV and also have completed global customer evaluations, so we have already established an EUV-based mass production system. We are already using EUV, partially in the D1z process, but we will be starting EUV application for production starting from the D1a DRAM, which is the lower side of the 14-nano in order to establish our -- and further our technology leadership.

- To answer your last question about the image sensor supply-and-demand outlook, we think that actually smartphone companies, in order to make up for the difficulties that they had in the first half, will focus on launching products with high-end specifications in the second half, for example, with higher pixel resolution and multiple cameras. And so even though, as you mentioned, the

image sensor industry as a whole has been increasing their production capacity in order to make up for a supply shortage, even counting in possible contraction of market demand due to COVID-19, I think the market will be more of a supply-demand balance rather than an oversupply situation.

That completes our conference call. Thank you very much.