

YOUNG SOHN | Chairman of the Board, HARMAN International. Former Corporate President and Chief Strategy Officer, Samsung

Digital transformation is empowering a data explosion. The pandemic in particular accelerated digital transformation of the economy everywhere. Data is expanding by nearly double every two years. Yet only 2% of data is currently processed. 80% of data is unstructured. Turning data into insight through AI is very compute intensive. Silicon and software are critical endeavors. New compute architecture innovation is needed for higher bandwidth and energy efficiency. Therefore, the infrastructure for how data is created, stored and analyzed is critical. Generational trends like 5G, autonomous driving, industrial IoT and hyperscale computing are powering the use of AI. The future of the economy and the semiconductor industry are extremely positive and strategic. Applied Materials has exciting opportunities for enabling the future of computing with materials engineering.

DR. MARK LIU | Chairman, TSMC

Thank you, Gary, for inviting TSMC to this event.

It has been a great journey to walk along with Applied Materials over the past 30 some years. I remember vividly working with Applied Materials to introduce the first ion implantation tool when I was building TSMC's first 8-inch fab. Years passed and our partnership grew stronger than ever before. We advanced semiconductor technology frontiers together. Our innovations continued.

Today, the role of the semiconductor industry as a foundational technology is more important than ever. More than half of the world's population is online. There are more than 3.6 billion social media users and 2.63 billion people stream videos with it. Clearly, semiconductor innovation is at the heart of modern technology advancement. All kinds of innovation ideas are being realized one by one – from human genome deciphering, drug discovery, disease treatment with AI and autonomous driving – to all kinds of digital transformations. We continuously rewrite our vision for the future and enrich people's lives.

There may be doubters suggesting semiconductor technology advancement is slowing down. Our product data shows otherwise. The power reduction at the same speed or speed gain at the same power, and logic circuit density are still on track to sustain the historical rate for the past 5 generations. That is "power efficiency doubles every two years." Our coming 3nm will be another full node stride to fulfill this trend.

Beyond 3nm, to sustain this rate of improvement, and I believe we will, we need to work together closer than ever before. We need to innovate in new transistor structures, in new materials, in new system architectures and in new 3D integration. It is an exciting time. We look forward to working with Applied Materials to discover future semiconductor innovations.

SANJAY MEHROTRA | President & Chief Executive Officer, Micron

ESG

Micron is highly committed to reducing our environmental impact. We appreciate how Applied Materials has embraced similar goals and made strong commitments to increase the eco-efficiency of its manufacturing systems.

SHAHEEN DAYAL | Vice President, Intel

At Intel, one of our key initiatives is improving diversity and inclusion throughout the supply chain and I am very happy to say as one of Intel's strategic suppliers, Applied Materials has really embraced this commitment. Applied is an industry leader, driving change through investments in unique supplier diversity programs. Supplier diversity and inclusion programs provide new perspectives, expand access to competitive innovation and create a connection with a critical portion of the customer base. On behalf of Intel, I would like to thank the entire Applied Materials team and look forward to continuing our efforts together to create a more inclusive supply chain.

DR. THOMAS CAULFIELD | Chief Executive Officer, GLOBALFOUNDRIES

As you all know, GF is the world's premiere pure-play foundry and we're focused on a broad, important part of the market for semiconductors in the world. We are one of five foundries of any scale, now six if you include Intel's announcement last week. To put GF's partnership with Applied into perspective, I need to first offer some thoughts from the pivot our semiconductor industry made and that has been in the making for over a decade and a half. Our industry began a fundamental shift with the emergence of the smart phone, which brought new and exciting features into a device we each carry in our pocket. It had a camera, it had power management chips, it had touch screen display, it had great audio capability. These are all chips, by the way, that GF produces for its customers. And so the industry made a shift from a compute-centric focus to pervasive deployment of semiconductors – that's semiconductors everywhere. In fact, in many ways the smart phone led not only to pervasive semiconductors, but it led to the Internet of Things that's now moving from All Things Connected to All Things Intelligent. As a result, our \$80 billion foundry semiconductor industry is now dominated by 70% of that industry for pervasive tech devices. So what does this have to do with Applied Materials? Well Gary Dickerson and team saw this trend early on and created a group dedicated to innovation on adding features to semiconductor products on all nodes. He didn't limit Applied's innovation to just transistor scaling. He created the ICAPS team to deliver on this mission. Today at GF, we leverage much of Applied's capabilities for the technologies we innovate and manufacture. Things like embedded memory for secure transactions, and microcontrollers world-class RF technology for connectivity, high-voltage devices for electrification of vehicles, low-power consumption devices for

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untethered Internet of Things devices – the technology list is endless. So thank you for a great partnership Applied Materials.

DR. KIHYUN HWANG | Executive Vice President, Samsung

At Samsung, we see a long path ahead for continued performance and cost scaling of our devices. We will take advantage of certain technologies in the years ahead using new 3D techniques, new materials and materials removal technologies, and we look forward to working with Applied Materials as we invent the future at Samsung.

SANJAY MEHROTRA | President & Chief Executive Officer, Micron

TECHNOLOGY

As we continue to scale our technology to smaller dimensions, we find that many materials and process technologies that we used in the past are no longer viable. We appreciate how Applied Materials has been working with us to invent new film technologies that are co-optimized with etch technologies, which allows us to speed-up development.

DR. SANJAY NATARAJAN | Senior Vice President, Co-General Manager, Intel

Intel's improving our focus on process technology execution to accelerate our product leadership. We look forward to seeing the superior performance and the validation acceleration that comes from in-vacuum step integration. This is what Integrated Materials Solutions promises to provide as Intel continues to drive new ways to move forward on Moore's Law. We look forward to working with you Prabu.

BABAK SABI | Corporate Vice President, Intel

Intel continues to drive advances in heterogenous integration and advanced packaging architectures to deliver ever-growing product design flexibility, power efficiency and overall device performance. With Ponte Vecchio, an exascale GPU, we have brought together our Foveros 3D packaging technology and our Embedded Multi-Die Interconnect Bridge or EMIB 2.5D solution in a product for the first time. These technologies enable the package-level integration of leading-edge xPU silicon, application accelerators, I/O components and High Bandwidth Memory, demonstrating the system-on-a-substrate capabilities required by high-performance compute applications. Applied Materials is and will remain a key partner for Intel in continuing to drive technology advancements in advanced packaging.

SEOK-HEE LEE | Chief Executive Officer & President, SK hynix

It's hard to simply put a number on it, but we all know that improving the process margin is the key to enable technology node migration. In many cases, it not only requires the adoption of advanced new technologies in a number of areas including materials, process and equipment, but it also requires all those factors to be optimized for the integration of multiple process steps. Each change in process variables affects others at multiple levels, so accelerating the cycle of learning to come up with the optimal solution is crucial. If Applied Materials develops new process technologies which are already co-optimized with adjacent process steps, it will help reduce development complexity for chipmakers. I think our development activities can move at a fast pace if we work together to harness the power of sensors, big data and AI to map and predict the effect of many process variables.

JOEL HARTMANN | Executive Vice President, STMicroelectronics

ST needs to be able to react very quickly to market demands and to our customer expectations in terms of new products and new technology availability. We adopted this strategy a few years ago in Crolles at our 300mm fab in France to grow in several phases in order to build additional extensions very quickly, ordering and installing equipment very fast and also going very fast on startup, hookup and qualification to reach the highest level of production as soon as possible. We have been working with Applied Materials for many years, but a few years ago in this context, we extended our partnership with Applied for the ability to bring full support to our ramp up and to our technology development needs. For example, full gen development programs. These include qualified resources, fast escalation, support of the factories, speed of logistics and parts supply capability, and also for the technology part, strong support on technology and our differentiated technology program. We also work with Applied Materials on advanced data analytics to improve the performance and stability of the tools and to improve the fab output. These include high-level of equipment data being collected both using ST's IT systems and Applied Materials specific analytics systems. And we're beginning to use some of these solutions, for example exploring predictive maintenance improvement. The data collection systems gives Applied Materials the ability to analyze rapidly offline and to bring solutions to some of the corrective maintenance that we have to deal with. So in a nutshell, I would say that for all these programs we are enjoying this collaboration and we see great promise on working with Applied Materials in the future on these advanced data analytics systems. And we thank them for that.

BUDDY NICOSON | Senior Vice President, Micron

We've been delighted with the support from Applied Materials in our multiple fab ramps and max out initiatives. The dedicated Applied Materials team with cross-fab matching services has enabled us to accelerate, transfer, ramp and output at our high-volume manufacturing sites. Given the complexity and speed of our product development, Applied's long-term partnership and services continue to be

important for the success of our fabs. Applied Materials' resources and supply chain assurance performance has been strong throughout the COVID-19 crisis. Thank you.