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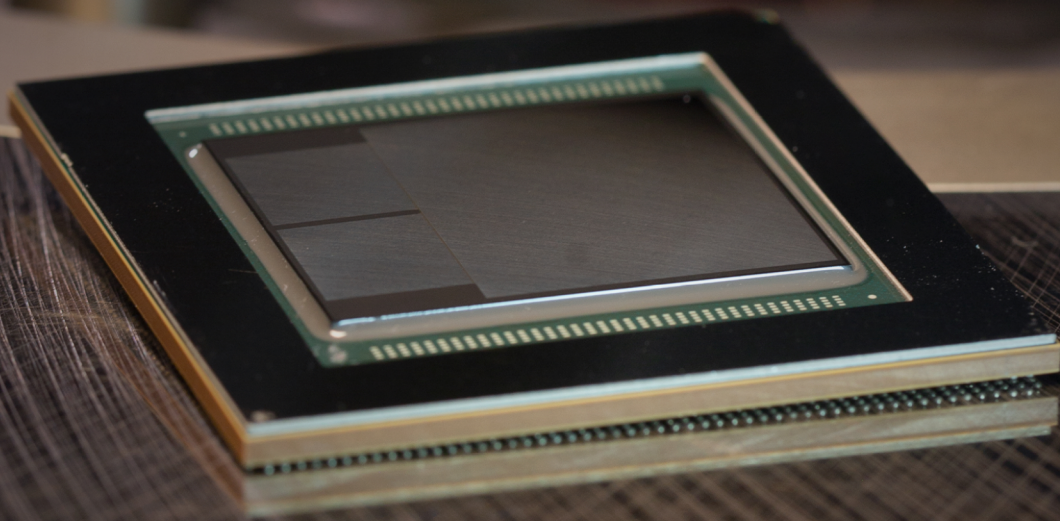
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Operating in the eye of the COVID-19 storm

By Asif R. Chowdhury [UTAC Group]

In these past 18 months or so, the semiconductor sector has been put to the test by unprecedented supply constraints and logistical disruption. This has been across the supply chain spectrum — from material shortages, to material cost increases, to significant increases in new equipment cycle time — all resulting in historic component shortages. Some industries, such as automotive, have suffered, and continue to suffer, the worst. The COVID-19 pandemic has meant that long-established methods of working are no longer applicable and need to be adapted accordingly. We are constantly looking at innovative ways to navigate through this crisis so that we can service all our customers' demands.

Further complicating the challenges noted above are the higher demands for semiconductor products that came about because of the pandemic, thereby placing the semiconductor manufacturing industry under extreme pressure. To meet this demand, we have been running at full capacity and managed to achieve an impressive 70% growth during 2021. In addition, for the first time in its history, the company reached the milestone of US\$1Bn in revenue in the third quarter of 2021.

The pandemic has also reinforced the importance of the well-being of our employees to the success of our company. At UTAC, we are taking this responsibility very seriously by making certain that our staff are safe and healthy. We continue to invest in employees by creating a safe environment that is conducive to business.

By observing strict guidelines about how members of our staff interact with one another, we have been able to work in a safe environment. The implementation of a system of safe management measures through the assignment of safety officers has proved itself to be highly effective.

The use of safety officers has provided the necessary structure for continued safe operation across the entire business—taking care of the workplace, the employees located there, and tending to the needs of those who become unwell. To enhance safety, new technology and processes have been installed at all UTAC facilities. These include thermal temperature scanning terminals (TTSTs), along with a regular antigen rapid test (ART) program. Safe distancing measures are implemented throughout each site, with check-in and check-out systems installed at all access points.

Some measures have included, where possible, letting a sizable portion of employees conduct their work from home. We have supplied them with the necessary IT support to enable this to be done, so that there has been no unwanted impact on the smooth running of the business. In most cases, meetings have been carried out via online conference platforms.

We have also implemented a complete range of measures that rigorously follow official COVID-19 guidelines. By doing so, we have been able to maintain continued operations at our sites across Asia—in Singapore, Malaysia, Indonesia, Thailand, and China. Despite all the precautions, some of our facilities, unfortunately, had to face dealing with

the pandemic. But because of our stringent mitigation plan, we have been able to recover in a short period of time. Where possible, we have been actively working with local governments and the private sector to provide free COVID vaccinations to our employees. This has meant that business continuity has been upheld, and we are now reaping the rewards.

Although it may be too early to see the full impact of the COVID-19 crisis



Figure 1: UTAC smart factory summary.

on long-term trends, projections from leading market analysts, such as Gartner, WSTS and IC Insights, all anticipate double-digit year-on-year (YoY) growth to be experienced in both 2021 and 2022. The momentum surge in 5G mobile connectivity, artificial intelligence (AI), virtual reality (VR), data and cloud computing servers, plus advances in industrial and automotive technologies, all seem certain to continue.

To take advantage of these trends there will be a need to continue increasing the degrees of automation incorporated into our test and assembly operations.

Figure 1 shows a summary of UTAC's automation project, which utilizes key technologies such as robotics, artificial intelligence, augmented reality (AR)/VR technology and application specific softwares. Almost 100% of assembly and test for automotive products are utilizing these automation technologies. These technologies, combined with a highly trained and up-skilled local workforce, along with continued access to a robust supply chain, have improved overall factory productivity and efficiency. We have invested in state-of-the-art industry 4.0 Internet of Things (IoT) devices and robotic systems, as well as leveraged the latest AI technology, in order to increase the levels of automation at our facilities. **Figure 2** shows the increase of overall CapEx spent by UTAC in the last three years as a percentage of revenue, which includes CapEx spent for factory automation. These expenditures have resulted in heightened machine efficiencies, greater throughput, improved cycle time, reduced cost and most importantly, improved quality. All these initiatives have significantly enhanced our quality, which is currently in the low single-digit parts-per-billion (PPB) with automotive products at a high single-digit PPB level.

Though business conditions are starting to improve, it would be unwise for our industry to assume that we are now fully through the storm. There may yet be further problems ahead. All the indicators and forecasts-to-date suggest that 2022 should be a good year for the semiconductor industry, with demand driving strong revenue growth. But it is too early to tell. If indeed demand

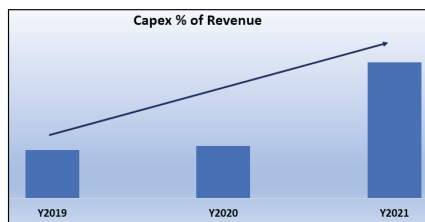


Figure 2: CapEx spent by UTAC as a percentage of revenue.

remains strong, it will be of paramount importance that we remain vigilant, and mitigate any remaining threat posed by COVID-19. If demand starts to weaken, which, invariably it will at some point due to the cyclic nature of the semiconductor market, that will add another layer of complexity with which to be reckoned.

Despite all the challenges that the pandemic has presented, and the repercussions that we are facing in its aftermath, UTAC is in a very strong position moving forward. At the same

time, we are vigilant and looking at all options to ensure our future success.

Acknowledgment

This article originally appeared in the *SSIA VOICE* magazine and was updated and edited for *Chip Scale Review*.

Biography

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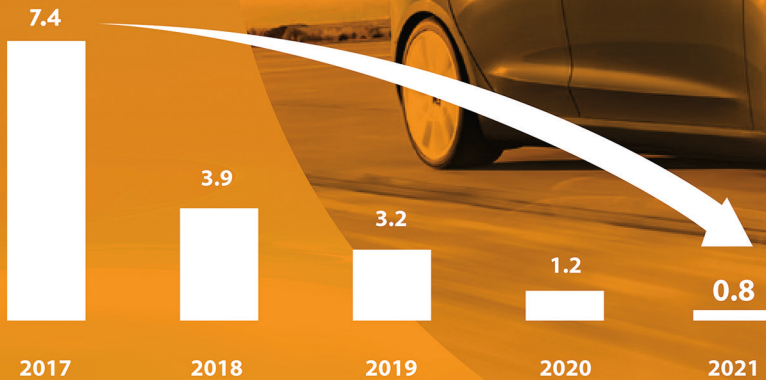
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