SINGAPORE
SEMICONDUCTOR VOICE
Volume 7
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COVID-19 OUTBREAK
CHALLENGES & OPPORTUNITIES

COVID-19 – A GLIMPSE OF SUTD'S BUSINESS CONTINUITY PLAN

KEEPING CUSTOMERS IN CHINA INFORMED

WISDOM OF A TRIATHLETE – INSIGHTS ON LEADERSHIP

SSIA
Singapore Semiconductor Industry Association

AUTOMATION SUPPLIER DAY

An online business matching platform for 2020

Submit your **problem statements** and we will find the best **solution providers** to showcase their solutions catered to your needs.

Theme:
Expanding Business Opportunities with Industry 4.0

Special focus on these areas:
- **Advanced manufacturing**
- **Energy and water savings solutions**

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Stay tune on our website for more updates, www.ssia.org.sg/automation-supplier-day

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SSIA
Singapore Semiconductor Industry Association

FOREWORD BY EXECUTIVE DIRECTOR

Covid-19 is on everybody's mind these days and it has impacted our lives and our businesses. It is a global pandemic and every country is addressing it in their own way. Singapore government has rolled out many initiatives to help support the local businesses, yet the ever-evolving situation of this global pandemic is making it harder for our business to sustain. By the time this publication is launched, the Singapore government will have announced a second stimulus package through a supplementary Budget, just five weeks after the main budget has been announced. This shows how much the COVID-19 situation has deteriorated since then, and it might get worse before it gets better.

At SSIA, we strive to continue supporting the industry, especially at times like this. We have shifted our focus towards helping bridge the government initiatives to the companies, and to support the workforce to upgrade and upskill continuously. Upgrading the workforce is important as companies can take advantage of the recovering market after this downturn faster and better than before. We have partnered with multiple institutions, such as Singapore Polytechnic, NTUC LearningHub and NUS SCALE to support the industry's workforce upgrading. Besides, we have also recently started working with Ngee Ann Polytechnic and Temasek Polytechnic to bring their offering of courses to the industry. Do consider these courses for your staff platforms. We will be publishing dates of these courses and will have the details emailed to you soon. You will also be able to look for more information on our website.

One area SSIA has always been focusing on is the development of industry leaders. Developing a pool of leaders is crucial to ensure the long term sustainability of this industry. SSIA, with the support from various companies in this industry, has developed and organized four runs of the Singapore Semiconductor Leadership Accelerator program. The fifth and final run for this program is scheduled in July this year, depending on the situation with Covid-19. Do sign up your organization leaders to participate in this program and expose them to the networking opportunities with other industry leaders.

Unfortunately, because of the Covid-19 situation, we have also decided to cancel or postpone most of our events for the next two quarters. That said, this cancellation does not mean that we will be giving up our focus to bring the business community together to network and facilitate business-matching. We are going to organize this year's Automation Supplier Day in mid of this year, riding mainly on online platforms. This month-long event will help match suppliers to companies who are seeking specific solutions, at the same time, we will organize webinars on trends that will drive industry 4.0 for our industry.

Besides Automation Supplier Day, we are going to proceed to plan for our annual

Summit and Semiconductor Dinner 2020 in October, subjected to the situation with Covid-19 when the time comes. This year's theme will be 'Digitalization on the Global Stage', and how the trend will help grow this industry in the coming years. We are also planning to have a more prominent presence at this year's Industry Transformation ASIA-PACIFIC 2020 (ITAP). ITAP is an event jointly organized by SingEx and Deutsche Messe, and is supported by Singapore government agencies such as EDB and ESG. It is the leading trade event for Industry 4.0 in Asia-Pacific. Stay tuned and. This is we will send you more information in the coming weeks.

Finally, I am happy to announce that SSIA Board has formed two committees to focus on two areas of our industry – R&D landscape and intelligent manufacturing. The R&D Committee will be chaired by our Secretary, Jerome Tjia, and is looking into the current R&D landscape and envision what the future landscape would be. The second committee is headed by Jonathan Chang from Vanguard and will focus on semiconductor advanced manufacturing framework. This committee will first define the overall framework of semiconductor advanced manufacturing in Singapore. After that, , the information will be shared with the local suppliers who will understand the requirement in supporting the semiconductor advance manufacturing here. This initiative will also directly help drive our companies towards the implementation of Industry 4.0 solutions.

This is going to be a tough year for our business and personal life. I hope everybody will stay safe and healthy. SSIA will evolve our methods to bring the member companies together, e.g. via webinars. We will share more information with you all in the future.

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INDUSTRY

PEOPLE

SSIA SEMICONDUCTOR LO HEI DINNER

Andrew Chong, Chairman of SSIA, giving the welcome speech

To mark the start of the new year, Singapore Semiconductor Industry Association (SSIA), with support from Workforce Singapore (WSG), organized the Semiconductor Lo Hei Dinner on 30 January 2020. The Minister for Manpower and Second Minister for Home Affairs, Mrs Josephine Teo, was the Guest of Honor. Over 200 industry leaders from 120 companies and organizations have come together to celebrate the Year of the Rat while having a good time catching up with old friends and making new ones.

Recognizing PCP Companies

Mrs Josephine Teo made the announcements about the new initiatives of the Professional Conversion Programme (PCP). It will allow participating employers to access a wider pool of talent and defray the training costs involved in reskilling and redeploying existing employees affected by business transformation into new or enhanced roles. Thirty companies under the PCP Programme have also been recognized at a trophy presentation held during the dinner. Launched in November 2016 under the Adapt and Grow initiative, around 900 mid-career PMETs have entered new careers in the semiconductor industry through the Electronics PCP. More than 30 multinational companies and small-and-medium enterprises have also benefited from an easier access to this alternative talent pool.

Andrew Chong, Chairman of SSIA said, "It is one of SSIA's mandates under the Industrial Transformation Map (ITM) to reshape the local manpower landscape to meet the industry's needs in talent development, and the Profession Conversion Programme is one of the successful initiatives. We are honoured to roll out this programme together with WSG."

SSIA Exexutive Director introducing the updates of the Electronics PCP to Mrs Josephine Teo

Guests taking selfies with Mrs Josephine Teo

A great time catching up with old friends and making new ones

Thirty companies under the PCP Programme have been recognized

SSIA HR ROUNDTABLE

Workforce development for the semiconductor industry continues to be the top focus of Singapore Semiconductor Industry Association (SSIA) in 2020. SSIA HR Roundtable has become an important platform for us to understand the needs of the industry when it comes to topics on human capital for our industry, at the same time, communicate to the industry on initiatives and activities we are working on or are already in place.

Highlights of the 3rd SSIA HR Roundtable

Topic	Speaker
Opening speech and SSIA Updates	Ang Wee Seng SSIA Executive Director
Adapt & Grow Initiatives	Ashley Yap Senior Manager, Workforce Singapore
Manpower Support and Job Placement	Evangeline Tan Senior Specialist, Job Security Council, e2i
Enterprise Skills and Talent Development	Joseph Yap Manager,Industry Development Division 1, SkillsFuture Singapore
Future of AI in semi-conductor industry, staying ahead of the curve	Amirhassan Monajemi Senior Lecturer, NUS SCALE
Resources to meet your hiring needs	Caroline Tan Deputy Director, Admissions/Continuing Education, DigiPen Singapore
Industry 4.0 Human Capital Initiative	Kenneth Koh Associate Partner, McKinsey & Company

The 3rd SSIA Roundtable was held in M Hotel Singapore on 30 Jan 2020, with over 40 HR leaders from close to 30 companies and organisations participating. Topics discussed included SSIA updates and key initiatives on workforce development, Industry 4.0 and manpower strategies, manpower support and job placement as well as workforce upskilling and digital reskilling.

HR Issues Arose from COVID-19 Outbreak

The topic of how the companies were handling the HR issues that arose from the recent COVID-19 outbreak was also brought up. All companies agreed that they were following the guidelines from MOM. Participants also shared their HR practices on handling the leave of absence of the affected employees.

Survey on Talent Recruitment and Talent Development

An industry survey on talent recruitment and development was also conducted during the HR Roundtable. Over 60% of participating companies said they

Ang Wee Seng, SSIA Executive Director

Amirhassan Monajemi, Senior Lecturer, NUS SCALE

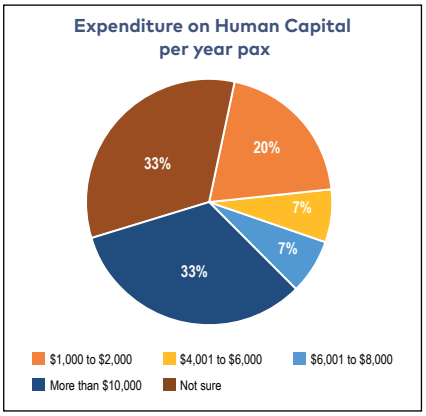
Caroline Tan, Deputy Director, Admissions/Continuing Education, DigiPen Singapore

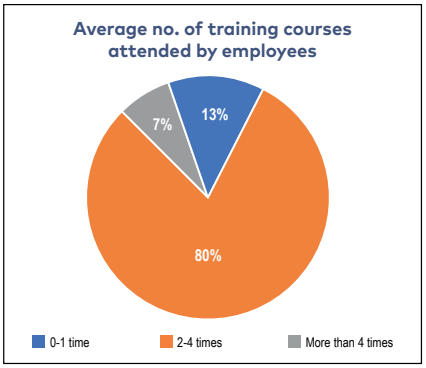
Ashley Yap, Senior Manager, Workforce Singapore

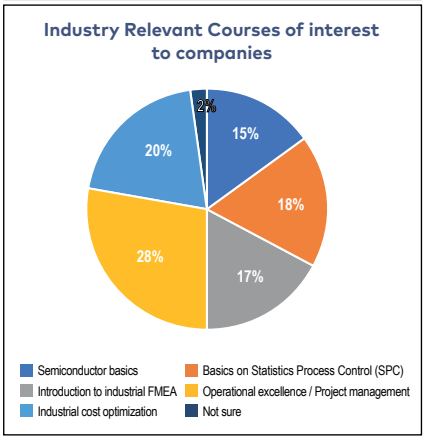
Kenneth Koh, Associate Partner, McKinsey & Company

Ashley Yap, Senior Manager, Workforce Singapore

Evangeline Tan , Senior Specialist, Job Security Council, e2i and (left) Karen Tan, Principal Specialist (Electronics and Transport Engineering), e2i







Findings of the industry survey done at the 3rd SSIA HR Roundtable

were hiring for expansion, and they are mainly looking for engineers, AEs and technicians. The majority spent more than $10,000 on human capital per year per pax, and their employees went for 2 to 4 training courses per year. Most companies have shown interest in sending their employees the leadership training programmes which will be organized by SSIA later this year. At the same time, most of them were interested in the courses related to Industry 4.0, data analytics and Robotic Process Automation, which are offered by NUS SCALE, Singapore Polytechnic and NTUC LearningHub.

RAISING AWARENESS
OF THE CHINESE MUSICAL HERITAGE

SSIA invited a special performing group, Singapore Polytechnic Chinese Orchestra, at the SSIA Lo Hei Dinner on 30 January and their fantastic performance were well received by the guests on that night. Established in 1994, Singapore Polytechnic Chinese Orchestra (SPCO) has grown to its current size of 80 members - comprising both students and alumni. SPCO is extensively involved in the promotion of Singapore's Chinese orchestral music scene, as well as its beauty - in culture and heritage - both internally and externally. Under the guidance of their conductor, Mr. Lee Heng Quee, SPCO has flourished into an orchestra that appreciates both traditional Chinese music, as well as various modern pop songs. Continuous nurture is provided to groom talents into successful musicians.

Mr. Lee Heng Quee, SPCO Conductor

Striving for Greater Success

SPCO boosts multiple awards under their belt due to its stellar performances and has never stopped striving for greater success. Furthermore, their dedication to their craft is reflected in the way SPCO is recognized as a renowned performing group, conducting international performances from Sabah to Hong Kong. SPCO takes on an active role in community service as well, performing and bringing joy for all ages, regardless of race or religion. SPCO also strives to build its member's values, and actively seeks chances to serve the community - such as performing at Swami Home during the Mid-Autumn Festival period. Building connections with Chinese Orchestras from other institutes is of utmost importance to SPCO. Hence, invitations for collaboration from other institutes are accepted as much as possible.

SOURCE OF CONTENTS

Singapore Polytechnic
Chinese Orchestra
Email: spco@cca.sg

SPCO seeks chances to serve the community.

SPCO has grown to it's current size of 80 members - comprising both students and alumni.

SSIA INDUSTRY RELEVANT COURSES

Industrial Cost Optimisation

The first class of Industrial Cost Optimisation was held on 9-10 January 2020, with close to 10 companies representatives participating. During the course, Mr Chung Ching Thiam, who has had 35 years of experience in the semiconductor industry, has introduced how companies can optimise its materials spending, equipment maintenance spending as well as the energy required for production. Cost optimisation methodologies used by great companies were also shared with the participants.

These days, many companies are moving away from the traditional cost-cutting and cost reduction measures during a market downturn. Such "desperate and urgent" measures will generally have a long-term negative impact to businesses. Instead, great companies are putting in place cost optimisation methodologies into their businesses, and this will be more systematic, holistic, sustainable and effective, with long term positive impact on the business. The SSIA Cost Optimisation course has helped participants understand the importance of reducing necessary spending and systematically eliminating unnecessary expenditures. They also learnt different cost-saving measures based on technical engineering data analysis, as well as, statistical evidence.

Semiconductor Fundamentals

The second run of Semiconductor Fundamentals course was launched on 16-17 January 2020 due to popular demand. The lecturer, Mr Sandeep Kulkarni, has introduced around 20 participants, including Director-level leaders, to the essential foundations required to understand the electronics eco-system. Participants have learnt the origins of silicon, where silicon ingots are made, the processes to make tiny circuits on the wafers and the quality control management in a wafer fab.

Although the participants came from different sectors of the industry, they have found the course useful to help them understand the various roles they play in this industry. The course has also provided them with a networking opportunity to know other people in the industry.

Class of Industrial Cost Optimisation

Class of 2nd Run of Semiconductor Fundamentals

Testimonials

Industrial Cost Optimisation

Informative session! The instructor is very experienced and shares ideas openly. Even when some projects were not successful, he still managed to give good ideas on possible improvements.
Lin Mu, *Micron*

True cases and good actual data. Good course, should advertise to companies to join!
Jo Ann Lee, *Micron*

Very good course structure and would like to see a deeper dive into opportunities
Wilson Benett, *EcoStruxure Power Lab*

Semiconductor Fundamentals

Very well structured explanations and the processes were mentioned in detail. The sessions had in-depth information. The stories and experience sharing made learning very interactive and fun!
Avni Agrawal, *SixSense*

Good material presentation and delivery!
Eric Cheng, *Swagelok Singapore*

Very good course, case studies from day 2 were very insightful!
Himanshu, *SixSense*

COVID-19: CHALLENGES VS OPPORTUNITIES

In December 2019, the World Semiconductor Trade Statistics organization projected annual global chip sales would increase by 5.9% in 2020 and 6.3% in 2021. However, the COVID-19 outbreak, which started from China and now becomes a pandemic, has already caused widespread impact throughout the tech industry, with the semiconductor industry not spared as electronics production in China and the global supply chain have been heavily disrupted.

According to the latest investigations by TrendForce on the foundry industry in mid-March 2020, as the COVID-19 pandemic causes repercussions in global markets, and the economy enters corresponding slowdown, the foundry industry now faces major uncertainties on the demand side, possibly slowing there industry's future growth momentum. Impact of the COVID-19 on the industry will likely surface in 2Q20.

That said, with the strong demand for semiconductor chips with pressure coming from technologies in the 5G, automotive as well as AI arenas, the sentiment is that the sector will recover once the outbreak is over.

The COVID-19 outbreak is a challenge, at the same time, an opportunity for some businesses. It is a good chance to build contingency planning into the company's culture, and a good time to upskill the workforce in order to prepare for an eventual recovery. It's time for us to get prepared for an increasingly unpredictable world.

BUDGET DEBATE 2020: MAKE EVERY JOB COUNT WITH THE NTUC JOB SECURITY COUNCIL

NTUC Secretary-General Ng Chee Meng says the initiative will help in placing workers from 'releasing' to 'receiving' companies.

Every job counts. And to do that, Singapore has to enhance job security for workers as it is the umbrella that protects workers in an uncertain economic climate.

This was NTUC Secretary-General Ng Chee Meng's message as he announced the new NTUC Job Security Council in his Budget Debate speech on 26 February 2020 in Parliament.

The NTUC Job Security Council will improve the matching of at risk PMEs and workers into jobs, even before they become displaced.

According to Mr Ng, 3 NTUC will create an ecosystem of 'releasing' companies and 'receiving' companies, where the receiving companies will absorb displaced skilled workers from releasing companies.

"The Job Security Council will work with companies to gather information on their job vacancies, including jobs that will be phased out and jobs that could be redesigned for workers and PMEs. The Job Security Council will then match these PMEs and workers to vacancies within the network, identify the skillsets required and top up workers' skills through training where necessary," explained Mr Ng.

The Council can also help companies access Government schemes announced at this year's Budget, such as the new SkillsFuture Mid-Career Support Package.

The pilot currently has more than 4,000 companies from diverse industries on-board, said Mr Ng. Together, these companies cover 500,000 workers.

NTUC Secretary-General Ng Chee Meng

"Through the Job Security Council, we want to create a win-win for companies and workers. We hope to lessen the anxiety for PMEs and workers and assure them that the Labour Movement is doing what we can to help find good jobs. We look forward to taking this pilot further, and we call on companies who have not yet joined us to contact NTUC and come onboard," he added.

Company Training Committees Update

Mr Ng's Budget Debate speech also saw him give an update to the company training committee (CTC) initiative that began in 2019.

CTCs see union leaders and management partners work together in a company's drive towards transformation.

To date, NTUC-affiliated unions and management partners have formed 352 CTCs.

The Labour Movement had last year set a target to form 1,000 CTCs within three years.

"These CTCs enable companies to refresh and deepen workers' skillsets in line with new technologies, and importantly, tap on Government resources such as the new SkillsFuture Enterprise Credit to aid with training," he said.

Mr Ng gave the example Wildlife Reserves Singapore, which manages Singapore Zoo and Jurong Bird Park, among other attractions.

The company recently formed a CTC to train and future-proof its 1,100 workers with the help of training providers such as NTUC Learning Hub.

Covid-19 Situation

The Coronavirus 2019 (Covid-19) situation has also negatively impacted sectors such as tourism and transport – hotel occupancy rates have dropped to about 35 per cent, taxi and private hire drivers have seen their income drop by 40 per cent, and attractions have seen visitorship drop by 90 per cent.

Mr Ng said that he is heartened that the Budget 2020 has addressed these issues.

"So let us be mentally prepared and importantly, ready ourselves, stay strong, and overcome any challenges that come our way ... The Labour Movement will continue to work with the Government and employers to improve the social and economic well-being of Singapore and Singaporeans. To this end, we will strengthen and adapt the uniquely Singapore social compact, so that it will stand the test of time," he said.

ABOUT THE AUTHOR

Fawwaz Baktee

SOURCE OF CONTENTS:

National Trades Union Congress

NTUC Secretary-General Ng Chee Meng at a recent Jurong Bird Park visit to meet workers.

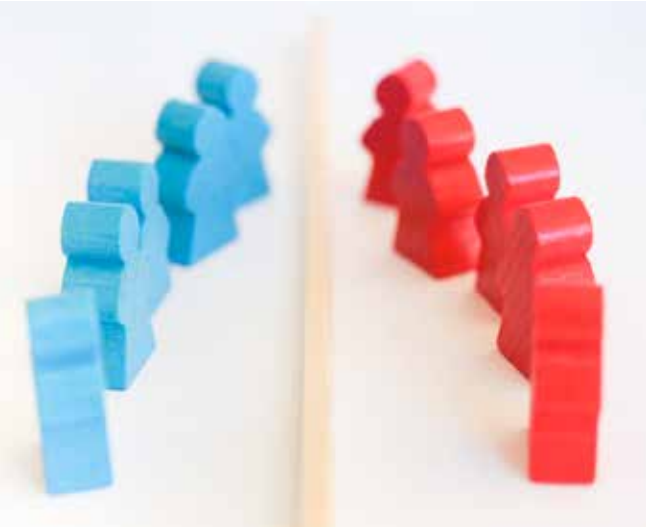
GUIDE ON BUSINESS CONTINUITY PLANNING FOR COVID-19

Enterprise Singapore has launched a guide to help enterprises, especially for the small and medium sized enterprises in Singapore, in their business continuity planning in response to the COVID-19. It is guided by the Singapore Standard for Business Continuity Management System – Requirements (SS ISO 22301), and relevant advisories issued by MOH and other government agencies. It covers key business operational risks. including human resource management, processes and business functions, supplier and customer management as well as communications, both internal and external. Enterprises are encouraged to plan and implement business continuity plans to minimise disruption to their operations and ensure that business remains viable during the virus outbreak. Enterprises can take the following steps to ensure adequate preparation for business continuity.

Human Resource Management

a. A Business Continuity Manager should be appointed to ensure that employees are familiar with the business continuity plans and comply with them during this period.
b. Develop a plan for the continuity of leadership in the event of absence of key decision makers and executives
c. Consider flexible work arrangements for the high-risk employees, as well as employees who need to stay at home due to other reasons relating to the COVID-19
d. Review employee management policies such as leave of absence, absenteeism, sick leave, overseas travel, workplace closure and recall of non-critical employees and their families from affected countries
e. Adhere to all travel and health advisories issued by MOH, MOM and other government agencies.
f. Obtain a health and travel declaration from employees who have travelled to China recently, or who have any upcoming plans to travel to China during the virus outbreak
g. Comply with all quarantine orders issued by MOH, MOM and other government agencies.
h. Adhere to all leave of absence advisories issued by MOH, MOM and other government agencies.
i. Include provision of accommodation in Singapore for foreign workers during the virus outbreak.
j. Check the MOH, MOM and other government agencies' websites, implement public health response measures, and review health insurance policies for workers

Process and Business Functions



a. Identify critical business functions (prioritised activities) and essential employees. Enterprises should consider setting up of alternate teams and execute team segregation. Companies should cross-train employees and establish covering arrangements to minimise disruptions
b. Educate employees on infection control and good personal hygiene
c. Develop plans related to visitor and employee screening and follow-up actions
d. Develop a robust employee sickness surveillance process to identify and manage unwell employees
e. Ensure adequate supply of appropriate Personal Protection Equipment (PPE) and medical equipment and undertake training to familiarise employees on their usage
f. Clean and disinfect companies' premises exposed to suspected or confirmed case(s) of the COVID-19

Supplier and Customer Management

a. Identify essential suppliers and service providers, and discuss and prepare business continuity measures

b. Identify essential customers and ensure that plans are in place to meet customer needs

c. Develop a plan on how and when to activate alternative suppliers and alternative delivery means to customers

Communications

a. Begin by identifying a communications coordinator who will disseminate your communications plan in line with your business needs and business continuity plans
b. Ensure that employees have a clear understanding of their roles and responsibilities before the virus outbreak occurs
c. Identify the relevant stakeholders such as suppliers, service providers and customers, and key messages for each stakeholder group; and begin a dialogue with them on potential contingency measures during a virus outbreak

For the complete Guide on Business Continuity Planning for COVID-19, please scan the QR code:

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Enterprise Singapore

Xilinx showed their appreciation to healthcare workers in the frontline by sending gift packs to Changi General Hospital

JUST WANT TO SAY "THANK YOU"

As Singapore battles the Covid-19 outbreak, community groups and companies are keen to show their appreciation to the healthcare workers who have been working round-the-clock at the frontlines.

Starting from February 2020, North East Community Development Council (NECDC) has called for donations for preparing "Thank You" hampers to be gifted to medical staff in both Sengkang General Hospital and Changi General Hospital. This initiative is done with the intention to show their collective appreciation as well as to encourage healthcare workers of their unwavering frontline contribution during this challenging period.

Inside each hamper, it will contain Heart Bakers' cookies and other food necessities. This is also a platform, which allows the stay-home mothers to earn some income through the baking of cookies via the North East Heart Bakers programme. They are aiming to give out $6,000 worth of hampers, and would like to invite companies to contribute towards this cause. Interested companies can contact Nicholas Khoo from NECDC at Nicholas_KHOO@pa.gov.sg.

Staff of Xinlix packing and sending the gift packs to the frontline medical staff at Changi General Hospital

Meanwhile, Xilinx has raised about $5,500 from their staff and packed around 500 "goodie bags" with hand sanitizers and energy bars for the frontline medical staff at Changi General Hospital. "Our staff felt good to be able to help and share appreciation even in such a modest way," said David Ferguson, Vice President of Production Operations and Site Director of Xilinx Asia Pacific.

MANUFACTURING, SERVICES SECTORS TO BE ALLOWED TO HIRE WORK PERMIT HOLDERS FROM MAINLAND CHINA ALREADY IN SINGAPORE

The Ministry of Manpower (MOM) has partnered with the Singapore Business Federation (SBF) to introduce a temporary scheme to help companies in the manufacturing and services sectors better manage their manpower needs in view of the COVID-19 situation.

For a period of six months starting from 2 March 2020, companies in these sectors will be allowed to hire existing PRC Work Permit holders (WPH) who are in Singapore, with the agreement of their current employers. Currently, these companies can only hire PRC WPHs after they have exited Singapore.

The scheme will give companies more flexibility to manage their manpower needs. Companies facing a shortage of manpower can save on search and recruitment expenses. At the same time, companies that have excess manpower can provide their workers with an opportunity to continue working in Singapore and save on repatriation costs.

This is an existing scheme for the construction, process and marine sectors. The decision to extend the scheme to the manufacturing and services sector was taken by MOM, together with the Ministry of Trade and Industry, SBF, the Singapore National Employers' Federation, and the National Trades Union Congress (NTUC).

Facilitating the Transfer of Existing PRC WPHs

MOM will work with SBF to facilitate the transfer of PRC WPHs between companies in the same sector. Employers who wish to hire existing PRC WPHs or transfer their PRC WPHs to another employer can contact SBF at manpowerconnect@sbf.org.sg. All other prevailing work permit criteria apply for new applications.

Mr Ho Meng Kit, Chief Executive Officer of SBF, said, "This is a practical and timely initiative to help our Manufacturing and Services companies that are facing manpower challenges as a result of the COVID-19 outbreak. This initiative will benefit all parties - companies that require additional workers to meet their business needs, companies that are looking to release their workers, and workers who find themselves displaced due to COVID-19 situation. As the apex business chamber, the SBF is glad that we can play our part to help link up the firms and facilitate the transfer of their workers."

Mr Yeo Guat Kwang, Assistant Director-General of NTUC and Director of U SME (Small & Medium Enterprises), said, "This temporary measure by MOM and MTI will be welcomed by our SMEs whose businesses have been affected by COVID-19. We know of SMEs that now have a surplus of manpower and at the same time, there are SMEs whose workers are unable to return to China. We are also mindful that some of these workers may still be paying off their loans, so this move would give them a chance to continue to work. The flexibility of this temporary measure will therefore help our companies manage their cost and manpower issues."

Process for Companies Interested to Participate in the Scheme

Companies can only hire or transfer existing PRC WPHs within the same sector. This is based on industry feedback that the skillset and experience of workers would be more transferable within the same sector. Interested companies can approach SBF who will help connect employers who are looking to release their PRC workers to those who are experiencing a shortage of manpower. Upon a successful connection, SBF will inform MOM and the hiring company can submit a work permit application to MOM via Work Permit Online (WPOL).

Scan QR code to know more:

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The Ministry of Manpower

COVID-19 - A GLIMPSE OF SUTD'S BUSINESS CONTINUITY PLAN (BCP)

The fearful Coronavirus Disease 2019 (COVID-19) first emerged in December 2019. Swiftly, it invaded across countries and continents worldwide.

By mid-March 2020, about 175,000 people have been infected and more than 6,600 have succumbed to the disease globally, surpassing the fatality rate of previous two coronavirus outbreaks - Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS).

The unanticipated COVID-19 outbreak has been declared a Public Health Emergency of International Concern (PHEIC) and pandemic by the World Health Organization (WHO) on 30 January 2020 and 11 March 2020 respectively. In the same vein, Singapore has raised the Disease Outbreak Response System Condition (DORSCON) level from "yellow" to "orange" on 7 February 2020.

The rapidly evolving COVID-19 has certainly elevated the need for Business Continuity Plan (BCP) in all sectors from private companies to government agencies to universities to schools to shopping malls.

SUTD's BCP

Without a doubt, the well-being, health and safety of the Singapore University of Technology & Design (SUTD) community remains our top priority. With the "orange" DORSCON level, SUTD's Incident Management Team (IMT) and taskforce swung into action to implement BCP consistent with the Singapore government's directions and advisories. Key personnel from Human Resource, Information Technology, Student Affairs, Communications as well as Security and Facility departments are involved too. Our risk assessment is constantly updated with latest developments on the COVID-19 so that relevant measures and mitigating strategies can be taken and our business operations are managed well.

SUTD has deployed various precautionary measures which include twice-daily temperature taking (morning and afternoon) for all SUTD staff and students as well as health and travel declaration in the online system. All visitors to SUTD must go through temperature screening prior to entry to any SUTD facility. They have to make mandatory health and travel declaration online as well. Thermal scanners have been placed at SUTD's campus centre for temperature screening. Those who are unwell are advised to consult a doctor. Adequate supplies of hygiene products are made available. Care packs comprising sanitizers are given to staff. Masks are readily provided to anyone who needs them. Stepped-up cleaning of campus with disinfectant in high traffic areas and workspaces, too. Quarantine, Leave of Absence (LOA)/Stay-Home Notice (SHN) protocols are observed for those in high-risk groups as stipulated by the Ministry of Health (MOH).

The split team arrangement for staff was embarked on 17 February 2020 for viability, operational efficiency and cross-contamination prevention between our teams should any infection occur. Staff seamlessly transit to working from home and provided with the necessary equipment and support for telecommuting.

Collaboration platforms, such as Skype for Business, Zoom and video chat apps, are used extensively for meetings and presentations involving team members and/or external parties in different locations.

The following guidelines have been applied for effective segregation of teams in SUTD:

a) Designating every staff and faculty members to Team A and Team B, including external vendors, suppliers, contractors, consultants and support teams that we need to meet up frequently for work. For e.g. if a consultant is designated as Team A, only Team A staff members can have contact with the consultant.

b) Setting up of two teams (Team A and Team B) in each department on one-week alternative schedule, i.e. Team A to work one week from home and Team B to work one week in the office.

c) Composition of team should take job functions into account.

d) Physical segregation of Team A and Team B to avoid the risk of infection between teams.

e) Placement of teams in two different office locations on campus for the split teams should both teams (i.e. Team A and Team B) need to be in the office due to crucial functions.

f) Practising of social distancing.

g) Avoiding close physical contact with those on the opposite team, e.g. not seated in the same office, not attending the same meetings and events as well as not having lunch together, etc.

h) No swapping of team members throughout the duration of the segregation once designated.

i) Identification of different teams by coloured stickers, i.e. Team A - yellow, Team B - orange.

Please refer to Table 1 for the illustration of segregation of both teams under Plan 1 where teams are on alternative schedule and Plan 2 where both teams are working in office.

Classes in SUTD continue with the arrangement for e-learning/online delivery for the larger class size (i.e. more than 50 students). To facilitate students' work, wider spacing between project groups has been arranged.

Similarly, our faculty members' teaching schedules are not affected. To prevent the spread of infection, if faculty members are in Team A, and this is the week where Team B faculty are working on site, Team A faculty should not go into their office where their Team B faculty are working. To minimize disruption to research work, researchers and graduate students are in the same team as their faculty supervisors.

All overseas student exchange and summer programmes to high-risk countries have been cancelled. As these programmes are not credit-bearing, it will not affect our students' graduation.

For ease of contact tracing, it is a requirement for attendance taking for all classes and meetings.

Large scale events and activities are cancelled or suspended. SUTD Open House has gone digital too! For those who have missed it on 22 February 2020, do experience it via https://openhouse.sutd.edu.sg/.

Last but not least, we believe that communication is the key to diffusing panic and fear during this challenging time. Updates and necessary precautions are shared with all SUTD staff and students regularly. SUTD underscores the importance of exercising personal responsibility and good personal hygiene. For example, if anyone in the office is not well, he/she should immediately seek medical attention and stay at home to recover. Hearing of accurate news from official sources and not spreading unverified information or false news which can cause unnecessary panic have been reinforced to all.

As we continue with our untiring efforts to conquer the coronavirus, let's remain vigilant, practise good hygiene, be socially responsible, stay safe and healthy!

Table 1: Effective Segregation of Teams

	Week 1 - Team A Week (Odd Number Week)	Week 2 - Team B Week (Even Number Week)
Plan 1 Team A and Team B on alternate work at office and work at home schedule	**All Team A members work at office (Week 1).** All Team B members work at home (Week 1).	All Team A members work at home (Week 2). **All Team B members work at office (Week 2).**
Plan 2 Both Team A and Team B work at office	**All Team A in Office A** No physical contact with Team B of same department who are on campus. Can have physical contact with rest of the university colleagues who are in Team A. **All Team B in Office B** No physical contact with the rest of the university colleagues (including meetings and lunches). Online contact via digital platforms continues.	**All Team A in Office A** No physical contact with the rest of the university colleagues (including meetings and lunches). Online contact via digital platforms continues. **All Team B in Office B** No physical contact with Team A of same department who are on campus. Can have physical contact with rest of the university colleagues who are in Team B.

ABOUT THE AUTHORS

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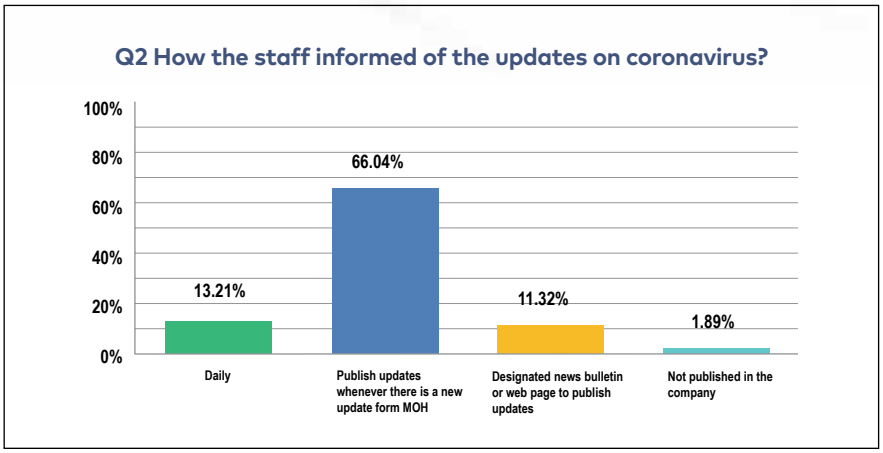
Lynn Chew
Assistant Director, Research & International Relations, SUTD

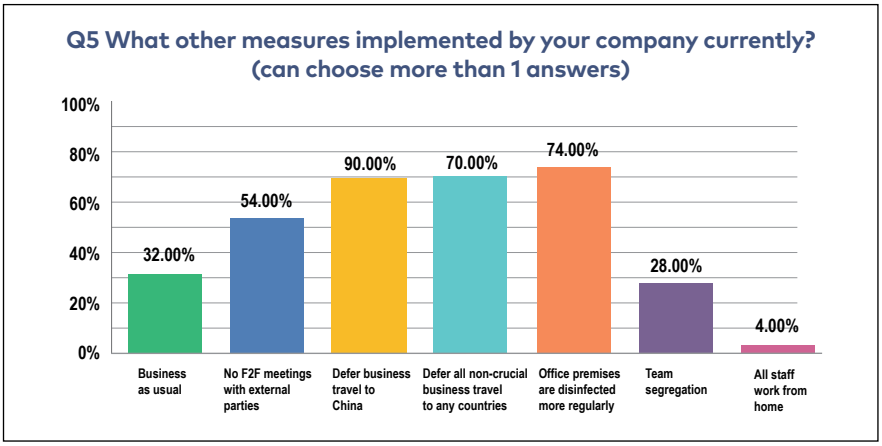
INDUSTRY PULSE SURVEY ON COMPANIES' BCP AND PRECAUTIONARY MEASURES

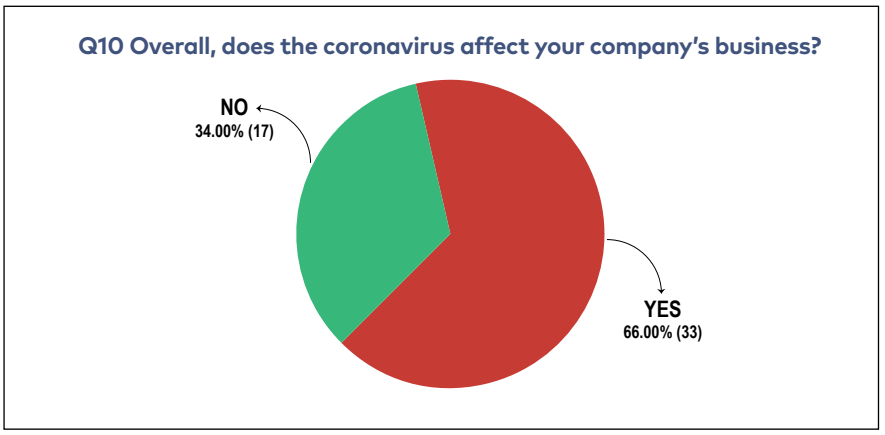
SIA has conducted an Industry Pulse Survey in February 2020 on the precautionary measures taken by companies in this industry amidst the COVID-19 outbreak. More than fifty companies representing both multinational companies (MNCs) and small and medium-sized enterprises (SMEs) in the semiconductor space in Singapore have participated. The results of the survey have been shared with interested news media and government agencies. Questions of the survey covered the business continuity plans (BCP) and preventive measures taken by the companies (e.g. how often the staff are informed of the updates on novel coronavirus, implementation of daily temperature, deferring travel plans, execution of team segregation, etc.) and the impact of the COVID-19 outbreak on business.

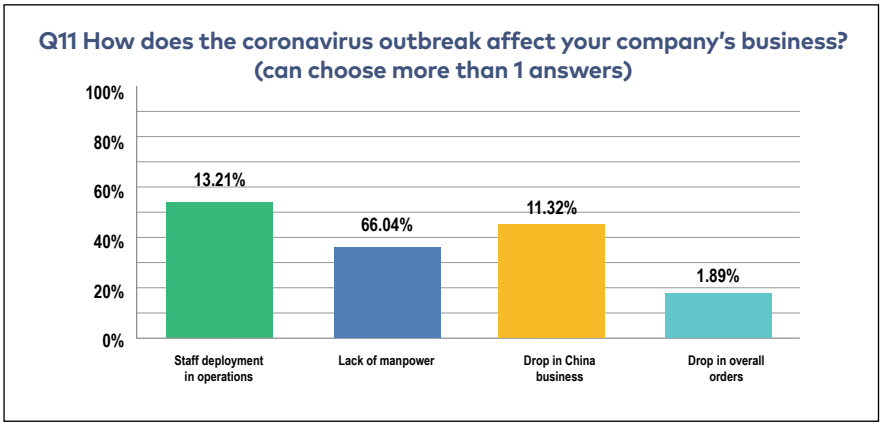
Topline Findings of the Survey

1. Almost all companies participating in the pulse survey have put up different precautionary measures e.g. daily temperature checks, deferring travel plans and even team segregation. Most









to understand to what degree the impact could be to their business.

"SSIA encourages companies who have not activated their BCP to start planning for it before the situation gets out of control. Companies could follow the BCP guide published by Enterprise Singapore and supported by Singapore Business Federation," said Ang Wee Seng, SSIA Executive Director.

importantly, they have mostly kept their staff informed on the COVID-19 situation, activated their BCP, and were managing their daily operations the best they could.

2. Close to 70% of the respondent said that this outbreak affected their business, mainly in the areas of staff deployment in operations and drop in business related to China.

3. Around 10% said there is an impact on the supply chain from China, mainly due to concern on supply shortage or delivery delay from China suppliers.

4. Most companies agree that it is too early to assess the impact, and will need to wait and see the situation in the coming weeks, and finally

SOURCE OF CONTENTS

SSIA
Singapore Semiconductor Industry Association

SEMICONDUCTOR TRADEWINDS – JANUARY AND FEBRUARY 2020

Impact of Covid-19 and Travel Ban

After a challenging 2019, 2020 started with a lot of optimism backed up by positive indicators from most sectors in the 4th quarter. IC Insights 2020 edition of The McClean Report predicted that 26 out of the 33 IC product categories would show positive growth in 2020 with 5 products categories, NAND, Automotive special-purpose IC, DRAM, display drivers and embedded MPU expected to have double-digit growth.

However, by the end of January, a "black swan" event had occurred and the COVID-19 outbreak, as it is now known, had hit China and would soon spread to the rest of the world. The first case was reported in Wuhan China on 31 Dec. Still, it was not until almost a month later that the outbreak was officially declared a Public Health Emergency by the World Health Organisation. The initial reaction by the Chinese government was to extend the traditional Chinese New Year holiday by 1 week, which prevented companies from opening until at least 10 February. In addition, many cities were quarantined, and travel was shut down across much of China which prevented workers from returning to their workplaces. This immediately started to cause supply chain problems as companies did not start shipping as expected after the Chinese New Year Holiday.

In early February, western semiconductor companies started to scramble to get clarity on when shipments would resume from China since so many companies rely on China for materials, components and finished goods. However, with many Chinese companies still closed or working with skeleton workforces, the picture was very unclear. At the same time, many companies were imposing travel restrictions on travelling to China and worldwide travel. In addition, many trade conferences were being cancelled or postponed. SEMICON Korea, SEMICON China and the Mobile World Congress in Barcelona were all cancelled as exhibitors and attendees cancelled their trips.

Workforce and Supply Chain Challenges

Even after 10 February, the reopening of companies in China was slow as companies had to get permission to reopen from local government authorities, and there was a queue to get approved. Staff from out of state were not allowed to return or had to undergo 14 days quarantine before being allowed to go back to work. This meant that the start-up was very slow since many companies were with less than 50% workforce.

Singapore was also impacted as the Singapore government raised the Dorscon level to orange on 8 February after new cases with no clear link to China were being reported. This impacted the way of life of many companies with team segregation being implemented, and precautionary measures such as daily temperature checks have become the norm to prevent the spread of the virus. Home quarantine was imposed on people returning from China and work pass holders with recent travel history to China were not allowed to return without government approval.

By late February, the picture in China was becoming clearer with wafer manufacturers being less affected and running near to full capacity. It is because they typically do not shut down over Chinese New Year and therefore were not impacted by the restrictions to reopen. Besides, their manufacturing lines are less labour-intensive with a higher level of automation. The main impact is being seen downstream in assembly and other components like optics and sensor manufacturing sites where due to the labour-intensive nature of the manufacturing. Besides, a lot of these factories closed over Chinese New Year and therefore were not allowed to restart until 10 Feb or even later whilst they were waiting for approval from the local government. Moreover, even when they could restart, many companies struggled to get back their full workforce with many people having to undergo the 14-day quarantine. It was reported that a third of all workers are still not allowed to return to work. Another sector impacting the supply chain was the logistics of shipping products, with many transport links shut down or severely reduced. Therefore, even if products could be produced, getting them to reach their customers is a major challenge.

Impact on the Whole World

All these meant that factory activity in China fell at a record rate in February, with the manufacturing purchasing managers' index (PMI), a key measure of the manufacturing activity, dropping to 35.7 from 50 in January (any value below 50 indicates contraction in the economy). With China being responsible for a third of worldwide manufacturing, this drop is sure to have an impact on the rest of the world. Here in Singapore, February's PMI fell to 48.7 in February, the biggest decline in 6 years and the lowest level since February 2016.

In February, Apple issued a rare revenue warning that the March quarter would

be lower than previous guidance due to the impact of COVID-19 on their manufacturing lines. However, Apple did not give a revised guidance. It is also expected other Chinese phone companies like Huawei, Oppo and Xiaomi who mainly produce in China as well as suppliers like Foxconn, will be impacted.

In late February, South Korea became one of the largest hotspots outside China as Samsung confirmed one case of coronavirus infection at its mobile device factory in the southeastern city of Gumi, South Korea. The entire facility has been shut down for 4 days. Colleagues were placed in self-quarantine and the worker's floor was shut down. The plant produces only a small proportion of Samsung's phones, mainly the Galazy Z fold phone, while the flagship S20 phones are made in Vietnam. Elsewhere in South Korea, semiconductor manufacturers were putting in strict measures to prevent factories from being shut down, which may cause many hundreds of employees to be in quarantine.

Even assembly in Vietnam is reported to be impacted by the COVID-19 as Vietnam's industry agency announced that it was experiencing supply chain problems with getting enough components from China required for production schedules.
Besides the direct impact on supply chains, the travel restrictions put in place by most semiconductor companies are starting to have an impact on new projects and developments with many projects being delayed as workers cannot travel to discuss project details.

By the beginning of March, there were over 80,000 confirmed cases reported in China, with almost 2,800 deaths, the majority in Wuhan and the surrounding Hubei province area. In addition, over 10,000 people were confirmed infected outside of China from 72 countries with major clusters in South Korea, Italy, and Iran. The number of new cases reported outside China has exceeded those inside the country for the first time. This situation is very worrying since if the outbreak spreads to the rest of the world as it has in China, there will be a further economic impact.

Revised Forecasts

With such widespread impact of COVID-19, market research companies have started revising their forecasts for 2020. They now see the semiconductor market growing anywhere from 5% to 12.5% in 2020 with the median value at 7.95%, while they see the semiconductor capex growth anywhere from growing +4.7% to declining -6%. All these forecasts are down compared to a quarter ago.

Also, according to IDC, the smartphone market is now expected to decline by around 2% in 2020. Shipments expected to be significantly lower in 1H 2020 before starting to grow in 2H 2020 and 2021 driven by demand 5G phones. Similarly, sales of personal computing devices are expected to decline 9% overall in 2020, with shipments dropping up to 25% year on year in Q1 due to material shortages, workforce shortages and logistics issues.

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SINGAPORE SEMICONDUCTOR LEADERSHIP ACCELERATOR PROGRAMME

Senior Leadership Training Program For Semiconductor Industry

Dates:
Module 1 – 29 Jun to 2 Jul 2020
Module 2 – 17 Aug to 20 Aug 2020

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KEEPING CUSTOMERS IN CHINA INFORMED

The COVID-19 is obviously hitting China and the global tech supply chain hard. Factories are reopening slowly, and when they can reopen, they have a shortage of parts or raw materials due to travel restrictions and workers and transporters not able to get back to their working cities. Although the situation seems contained and improving in China, the spread of the virus in the rest of the world is worsening. Confinement measures such as quarantines in Italy, for example, and company-wide travel ban measures taken by companies, including tech, globally, mean the way we work will be impacted durably.

Besides the scale of the economic impact, it is clear that the next few months will be dominated by uncertainty, and companies' stakeholders (clients, suppliers, employees, investors, etc.) will be looking more closely at any information, or lack thereof, given during that period. The uncertainty will make transparency and public activity important to reassure stakeholders. Lack of communication will only fuel the uncertainty and worries.

News coverage following Ampere's and Soitec's virtual press conferences

All trade shows and industry events in China have been cancelled until at least the end of April, limiting the opportunity to meet clients and other stakeholders for international companies. Semicon China / Electronica China is tentatively postponed to June 2020 and EDICon to September, for example, leaving the microelectronic industry with limited options to reassure their customers and partners about their plans or new products. But technology is advanced enough that virtual communication activities offer an almost seamless alternative to keep an organisation's ecosystem updated.

Press Events Go Virtual

China is especially interested in the aftermath and recovery of the economy and supply chains, and, when it comes to technology, which innovations will allow the country to build stronger digital preparedness. Influence Matters, a Pubic Relations firm providing PR services to tech companies in China, has recently supported two of their semiconductor clients, Soitec and Ampere, to present their solutions for a stronger digital

Media could attend the press conference organised by Influence Matters virtually in March 2020

News coverage of Ampere's press event

economy and update the market on their business with virtual announcements.

Soitec, the semiconductor material company from France with facilities in Grenoble and Singapore, has been a client of Influence Matters since 2016. As with all of their clients, Influence Matters advocates a thought-leading, locally relevant and consistent approach to communicating with their "ecosystem of influence" in China. On top of digital communications through press announcements and social media digital activities (WeChat), the PR firm holds regular press events when global executives are visiting China. In December 2019, an update was due but as no executives were visiting, they put together a virtual press briefing with the VP based in France. The briefing was attended by top semiconductor and electronic engineering media in China, behind their computers on a video conferencing platform. It has helped Soitec being featured on 21IC.com (China's top online portal for electronics engineers) and EEFocus (another online portal for electronic engineers in China) among many others, and direct media exposure to Soitec's customers.

For American chip company Ampere, the PR firm had originally planned a physical press event in Beijing for the launch of their new Ampere Altra(TM) chip for cloud servers to mark the importance of the announcement. Following the corinavirus outbreak during the Chinese New Year holidays in China, the confinement and quarantine measures necessary to curb the virus spread, they swiftly edited the plan to a virtual press event with attendance of over 20 editors from leading EE, semicon, IT and business press in China to ensure the announcement was widely relayed to the market. Every editor invited to attend the virtual press event responded positively to the effort made by Ampere to talk to them during the outbreak as a sign of support to the recovery and China technology development roadmaps. The coverage of the announcement, at this time, will put Ampere firmly in the mind of the cloud computing market in China and set solid bases for their business development with local partners.

Media could attend the press conference organised by Influence Matters virtually in March 2020.

Digital Communications Should Take Many Forms

Influence Matters has also developed a comic strip series for Harting, an industrial connectors manufacturer from Germany, to demonstrate their products in a mobile-friendly manner, more in touch with the formats of content consumed by engineers in China.

The rebound in China will be rapid and fueled by the technology sector, with an increased need for a better digital economy heavily reliant on global innovations. Influence Matters expects the rebound to bring increased focus on developing the country's infrastructures in 5G, smart manufacturing, smart cities and smart health with all the services that will be derived from these areas. International companies with technologies that can support China's rebound should work now on building or strengthening partnerships in China and communicate accordingly.

ABOUT THE AUTHOR

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(a B2B tech PR agency in China)
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CREATING A ROBUST WORKFORCE FOR BUSINESS SUCCESS

Despite current economic uncertainties and a weaker demand from some end-markets such as consumer electronics, there are still bright spots within the electronics industry driven by the Internet of Things, Artificial Intelligence and the rise of electric and autonomous vehicles. These changes, coupled with industry transformation, will not only generate new jobs, but also enhance and transform existing roles for both PMET and Rank-and-File (RnF) workers in various disciplines such as engineering, support technology, finance, human resources and business analytics.

Reskilling (For New Hires)

The adoption of Industry 4.0 solutions has increased the demand for workers with the necessary skills to manage and handle these new processes and technologies. To help companies in the semiconductor industry cope better with changes in this transformation, SSIA has been working with the Workforce Singapore (WSG) to ramp up reskilling efforts through the Electronics Professional Conversion Programme (PCP) for operators and PMETs. Under this program, companies can consider hiring new roles from the large pool of mid-careerists who bring with them a wealth of working experience and simply need a quick period of retraining to bridge the skills gap. Moreover, each participating company can receive funding up to 90% of 6 months' salary.

Redeployment (For Existing Employees)

Helping enterprises retain their workers during this challenging period is one of the initiatives highlighted in the Budget 2020. For the semiconductor industry, the PCP Programme can also help to equip employees with the necessary skills to take on new job roles within the companies. Participating employers will also receive funding up to 90% of 6 months' salary.

Companies who are interested in joining the program can email daphne@ssia.org.sg for details.

PROFESSIONAL CONVERSION PROGRAMME (PCP) FOR ELECTRONICS INDUSTRY

SSIA is the programme manager for Electronics PCP. This programme aims to help mid-career PMET to reskill and acquire a new skill set to make a career switch within participating companies based on the job opening available.

Programme Manager: SSIA Singapore Semiconductor Industry Association

Supported by: WSG Workforce Singapore

MODES OF DELIVERY

PLACE-AND-TRAIN
PMET is hired by a participating employer before undergoing training to take on new job role

ATTACH-AND-TRAIN
PMET is provided with training and work attachments, in advance of job placement, through industry partners in growth sectors with good future job opportunities

REDEPLOYMENT
PMET at risk of redundancy is retained by existing employers and provided with training to take on new job roles within the same company

BENEFITS

- Facilitate recruitment of career switchers to meet employers' manpower needs
- Tap on Government funding through Course Fee Grant and Salary Support / Training Allowance
- Leverage structured industry-recognised training
- Minimise redundancies and reskill experienced employees to take on new job roles

> "Through the skills upgrading programme, I have built up my expertise on sophisticated machinery through the intensive training provided by various stakeholders. These skills and knowledge acquired will boost my career path in the semiconductor industry."

Mr Michael Chong Mun Kay
Senior Equipment Engineer of STATS ChipPAC Pte Ltd

> "I was previously from the healthcare sector. The PCP has enabled me to master the technical skillset required to perform in the semiconductor industry. I am glad SSMC supported me to develop competency for my role in Quality & Reliability Assurance."

Ms Pascale Tan Peck Hui
Technical Manager of SSMC

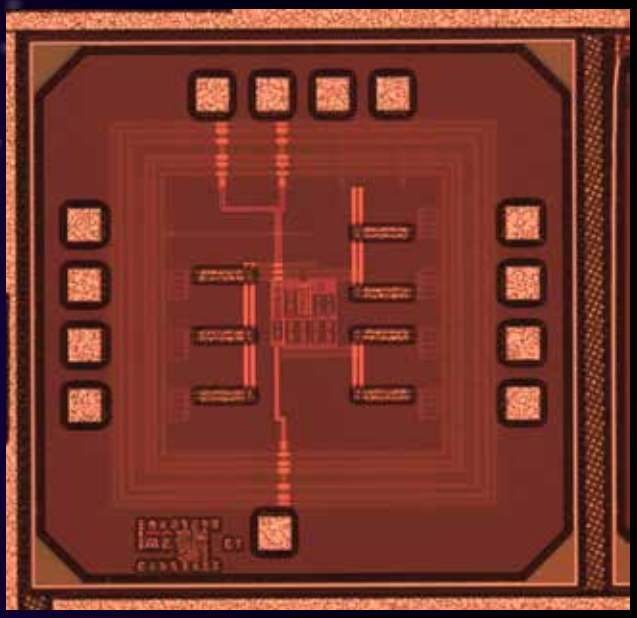
> "The PCP was well-structured, with an environment that encourages learning through mentorship. Our e-learning programs supplemented in my learning and understanding of operations in the clean room. I now have a clear understanding of the functions of the tools and procedures involved in a wafer fab facility."

Mr Effandi bin Sajari
Senior Associate Engineer of GLOBALFOUNDRIES

> "I am thankful that I was able to make a career switch to the exciting semiconductor industry through the PCP by WSG. While I have acquired engineering experience in my previous job role, I was apprehensive about making a career switch into the semiconductor industry due to its complex technologies. However, going through the programme, which involves a combination of structured classroom training and on-the-job experiential learning at SSMC, helped to ease my transition and really gave me the confidence that I will do well in my job."

Mr Ng H. K.
Technical Manager of SSMC

A*STAR'S NOVEL AI CHIP DESIGN PLATFORM TO GIVE THE SEMICONDUCTOR INDUSTRY A BOOST IN PRODUCTIVITY AND QUALITY



A three-stage operational amplifier (OPA) designed by the AI platform

Researchers of the Agency for Science, Technology and Research (A*STAR) have developed an AI chip design platform that has the potential to transform the multibillion-dollar global integrated circuit (IC) design industry by accelerating design optimisation, reducing IC design turnaround time, and improving productivity significantly by twofold.

The traditional way of designing integrated circuits is a complicated process that requires experienced engineers with domain knowledge. It is a manual, laborious process where designers rely on trial-and-error to achieve their design goals, slowing down productivity in the process.

As technology advances, the complexity of chip design is ever increasing.

SMILE AI Platform

To combat these challenges, A*STAR's Smart IC Design with Learning Enablement (SMILE) is an AI platform that uses machine learning to automate these complex processes. The SMILE platform is able to augment the circuit design process to improve productivity and quality, perform design space exploration, and enable rapid IP development. It can enable accelerated and automated design closure even in the absence of an experienced designer.

To demonstrate its effectiveness, the platform has been deployed internally within A*STAR's laboratories, and researchers were able to show two times silicon-proven performance boost compared to the best human optimised design – all within the span of a day. This is a breakthrough in terms of productivity in IC design.

The developed capability is in the intersection of deep learning and circuit design. It combines integrated circuit design and electronic design and automation (EDA) expertise from the Institute of Microelectronics (IME), and AI algorithms from the Institutefor Infocomm Research (I^2R).

A Boost In Productivity and Quality

By employing state-of-the-art AI semi-supervised learning, and an algorithm unique to A*STAR, the system is able to improve its learning accuracy with a significantly less amount of training data. In conjunction with EDA, to capture prior knowledge of the circuits and suggest an optimised solution, SMILE is a smart system which balances the trade-offs in speed, area, power, and overall performance.

This development will benefit semiconductor design industries, ranging from IP development and fabless IC design companies, as it will greatly improve the productivity of the research and development of integrated circuits, and reduce the time to push the product to the market.

"With this novel technology, we can advance science in the wider ecosystem and give the semiconductor industry a boost in productivity. Companies can leverage A*STAR's technologies to scale up and remain competitive." said Prof Dim-LeeKwong, Executive Director of IME.

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A *STAR

SKYWORKS – REACHING NEW HEIGHTS IN WIRELESS CONNECTIVITY

Connectivity has expanded far beyond smartphones and person-to-person communications to now encompass device-to-device networks in smart home, industrial, automotive markets and many more. Exciting new platforms are bringing together deep learning, artificial intelligence and ambient awareness. Across the Internet of Things (IoT), it is estimated that 75 billion devices will be intelligently connected globally by 2025. This rapid acceleration will have a transformative effect on the economy, giving rise to new business models and significantly impacting everyday life.

Prepare for Emerging Technologies

In Skyworks' Singapore facility, situated in the heart of Bedok, Singapore, the motto "Rage on!" is a motivational phrase to encourage employees to be innovative and breakthrough new challenges in the electronics manufacturing industry. These include the solutions which are empowering the new and emerging applications and connecting the IoT ecosystem. Besides, Skyworks is also developing new products and solutions for the upcoming 5G revolution.

5G will transform our world, creating an ecosystem where everyone is connected to everything, all the time - and changing how we live, work, play and learn. Skyworks is at the forefront of this sea change. Leveraging their technology leadership, broad systems expertise and operational scale, Skyworks is creating the solutions that will launch the true potential of 5G, and a world of new and unimagined applications. From their breakthrough SKY5® unifying platform to their 5G small cell and multiple-input, multiple-output (MIMO) technology, Skyworks' comprehensive approach across both infrastructure and user equipment facilitates powerful, high-speed end-to-end 5G connectivity.

Regional History

Skyworks Solutions, Inc. (Nasdaq: SWKS) is headquartered in Woburn, Massachusetts, USA. The beginnings of Skyworks in Singapore started in August 2014 through a joint venture between Skyworks Solutions and Panasonic (Skyworks Panasonic Filter Solutions). In August 2016, the joint venture between the two major companies concluded and Skyworks' filter solutions division

in Singapore was born. In May 2017, an amalgamation process cemented the presence of Skyworks in Singapore and this facility now houses more than 1,000 employees. Singapore has seen a steady growth in electronics manufacturing over the years and even more so in 2020 as Skyworks prepares for emerging technologies in cellular, wired and wireless communications.

Singapore Operations

Skyworks Solutions has a diverse geographic supply chain ranging from broad market, mobile, assembly and filtering solutions. Around the globe, Skyworks Solutions Inc. has 18 design centers, 15 sales offices and 6 manufacturing sites. In Singapore, high-performance filtering devices are manufactured with TC-SAW filters and BAW filters leading its product portfolio. A state-of-the-art filter assembly facility manufactures, tests and ships over 20 million finished products per day. Skyworks' Singapore facility is ISO9001/ISO14001 certified and is an active member of the Singapore Semiconductor Industry Association (SSIA). Skyworks has been recognized as one of the supporters of the Professional Conversion Program (PCP) for the Electronics industry.

Manufacturing and Quality Mindset with Pride

Skyworks Solutions encourages the mindset of all its employees to have PRIDE in their daily work activities to 'Rage On' for 2020.

P-Proactive: Have a "CAN DO" mindset, taking responsibility to be the change.

R-Relationships: Expresses appreciation & encourage others to be their best.

I-Innovation: Make time to think creatively about solutions to issues.

D-Dare to dream: Trust and empower others to give things a GO.

E-Excellence: Strive to be the BEST-IN-CLASS in the filter business.

> "Getting out of our comfort zone to drive Quality Culture Innovation. Empower our people to drive, facilitate and lead the change towards culture excellence. Let's build a strong team to achieve Best-in-Class filter quality and Best-in-Class factory operations"

Annie Xu
Director of Quality, Skyworks Solutions, Singapore

> "Manufacturing excellence is not only measured by outputs but also by perfect quality. Contrast to popular belief, quality is not a distractor but an enabler to achieve manufacturing excellence. At Skyworks, we believe perfect quality will reduce our cost, improve cycle times and our efficiency. 'RAGE ON' to deliver perfect quality with PRIDE is our motto."

Johnny Cham
VP of Operations, Skyworks Solutions, Singapore

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SEMICONDUCTOR GROWTH BEING DRIVEN BY VEHICLES AND NARROWING LINEWIDTHS DEMAND TOP ANALYTICS

The semiconductor industry is going through a period of rapid expansion. In part, this is due to the automotive industry's hunger for microelectronics. With linewidths decreasing and wafers getting larger to cope with demand, pure water analytics is playing an increasingly important role.

Unprecedented demand for ICs

Over the next two years, 19 new semiconductor fabs will be built across the world and numerous others are undergoing significant upgrades. The global semiconductor market is projected to reach USD 831 billion by 2024 from USD 409 billion in 2017. One major contributor to this surge in activity is due to the increasing demand in the automotive industry.

Today, a luxury car has approximately USD 1,000 of microelectronics. That is expected to rise to USD 6,000 over the next four years. The accelerating development of electric vehicles and the forecast that by 2025 many vehicles will be self-driving, will fuel massive demand for more powerful and cheaper microelectronics devices.

Narrowing linewidths demand tighter analytics

As the circuitry on integrated chips continues to get smaller (TSMC will soon produce integrated circuits with a 3 -nanometer linewidth) and with more chips per wafer, the need for accurate pure water analytical measurements will grow to ensure manufacture meets the required product quality and yield.

The standards for Ultrapure Water have been updated in the past year to detail the recommended measurement level. The current resistivity standard for UPW is now at less than 18.18 MΩ x cm^{-1} at 25 °C.

The industry has also established standards for TOC (≤ 1 ppb), dissolved oxygen (≤ 10 ppb), bacteria (1 CFU / 100 mL) and silica (≤ 0.5 ppb).

Additionally, other parameters such as, pH, ORP, ozone, pressure and flow are

also utilised for the preparation of UPW.

Besides the production and control of UPW, these parameters are also important in several other critical manufacturing processes within the semiconductor fab.

Pure water analytics is required for the control of functional waters (ozonated water, ion water, hydrogenated water), wafer etching wafer cleaning, wafer stripping, ion implantation, cleaning for metal removal as well as RCA cleaning (SC-1 and SC-2).

The UPW waste stream contains a variety of contaminants and to treat this stream to the levels utilised in production requires advanced analytics.

Accurate, real-time measurements

METTLER TOLEDO Thornton has always been at the forefront of developments in process analytics.

Innovations, such as Intelligent Sensor Management (ISM®) with its advanced diagnostics that predict when sensor maintenance will be required have made METTLER TOLEDO is the leading measurement technology provider for UltraPure Water.

Process analytics for today and tomorrow

For the semiconductor industry to meet upcoming demand, they will require advanced water management technology with parameters that provide high accuracy, real-time, and continuous measurements with self diagnostics.

METTLER TOLEDO has accepted that challenge and will continue to innovate and provide the technology that will help you stay ahead of the curve.

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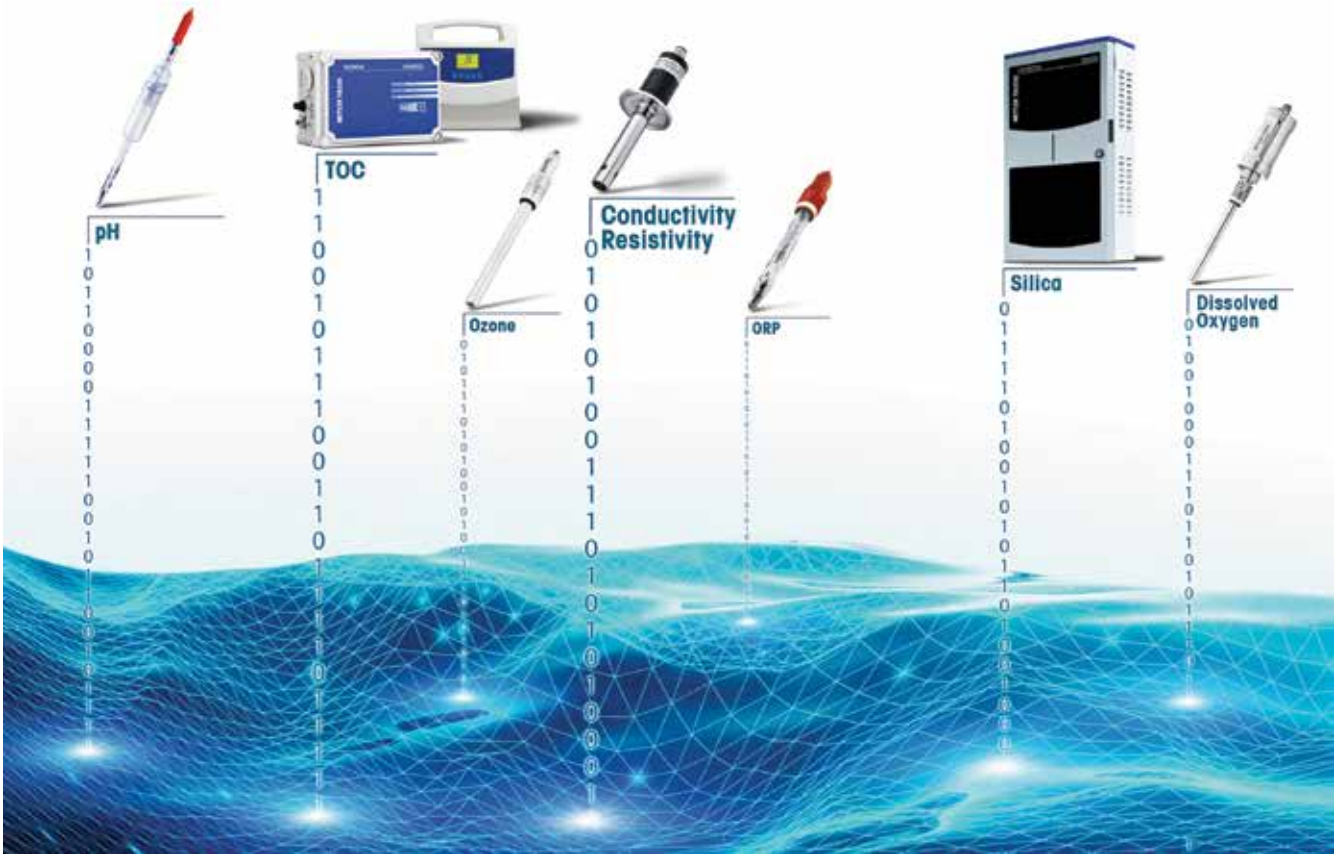

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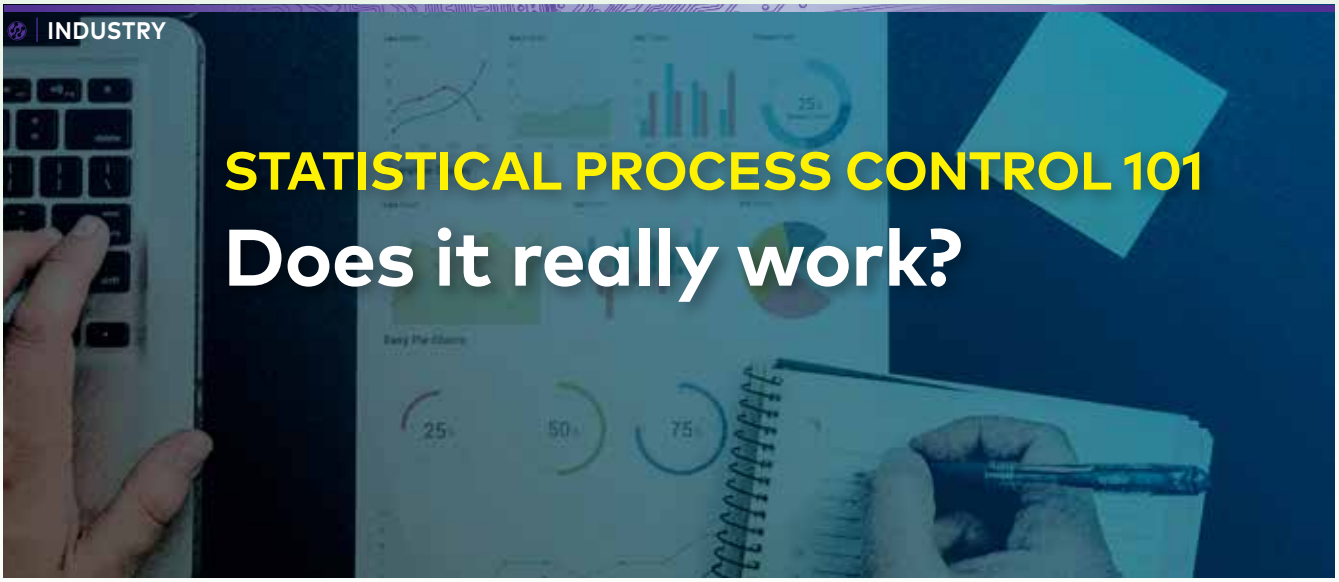
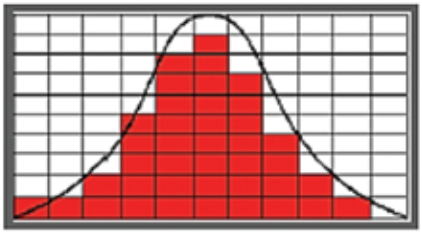


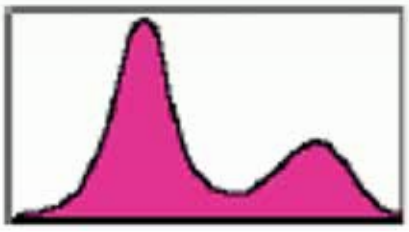
STATISTICAL PROCESS CONTROL 101
Does it really work?

The heart of the matter is that variation exists in everything! Thus, a perfect process with no variation is a figment of imagination. This is where statistical process control (SPC) comes into play. The first step in the implementation of SPC is to reduce the variation in the process, next having brought the situation under control, to then monitor the process to ensure the identified variations do not increase.

To visualize the variations found in the process, a common tool used is the Histogram.



Histogram is also known as a frequency distribution chart. This bell-shaped curve is also referred to as a normal distribution, which would be discussed in further details later in the article. So, what does this curve tell us about the process in question? The closer the points fall in the center, the less variation occurring in the process. Conversely, the further out the points lie, the more variation is occurring. If they fall outside the distribution, these would be considered as outliers. This will mandate immediate actions to address these issues and eliminate them. So, what are AB-Normal distributions?



A 2-hump camel is called a bi-modal distribution. This indicates something has changed in the process, causing the shift, which could have been induced by a change in the raw material, process flow or even a shift change of operators.

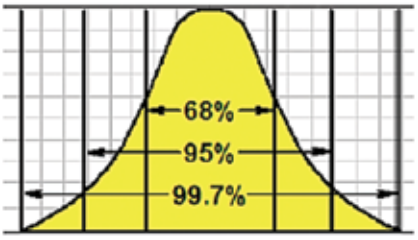
A skewed distribution chart should also trigger alarm bells, as this indicates that deviation in the process or the upper/ lower limits were set up incorrectly, leading to the curve leaning to one side.

Normal Curves

The normal curve is one of the most common patterns of variations observed. This is the primary reason that Statistical Process Control is pegged to this form of distribution and the associated statistical probabilities in computations.

The "68-95-99.7" rule applies to all normal curves, which state the following:

- 68% of process data fall within ±1 standard deviation of the mean
- 95% of process data fall within ±2 standard deviation of the mean
- 99.7% of the process data fall within ±3



standard deviation of the mean

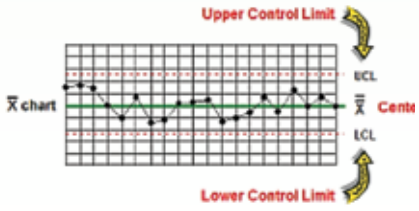
$$\sigma = \sqrt{\frac{\sum(X-\mu)^2}{N}}$$

What is Standard deviation (s)?
It is an effective statistical measurement to determine how the data is clustered around the mean, thus indicating the variation. This translates to the smaller the s, the less variation is present in the process. So, the question now is what constitutes a stable process. The general criteria are, whilst variation is permissible, they must fall into a constrained pattern, with minimal

changes and outlies/unusual points are not present in the data set. Once a stable process is attained, this would result in a predictable output.

What are the main root causes for an unstable process? Surprisingly, from the findings and from many industrial use cases, this comes from the application of over adjustment. What is the yardstick or basis of measurement used to judge the instability? Another key component in the overall SPC scheme of things is the MSA (measurement system analysis). The process may actually be stable, but due to a flawed measurement system, the process may look unstable.

Control Charts



The control charts serve to flag out when the process is out of control, and the engineers must intervene to correct the situation, the chart itself does not control the process.

MSA requires a clear understanding and the ability to quantify the uncertainties in relation to collecting the measurements. Uncertainties are classified into Type A and Type B. Type A can be quantified by statistics like linearity or repeatability. For Type B, uncertainties fall under the area where engineering judgment must be applied. An example of Type B uncertainties could be a jig used to hold the sample for the requirement measurements. Do uncertainties come in the form of how repeatably can the part be placed onto the jig?

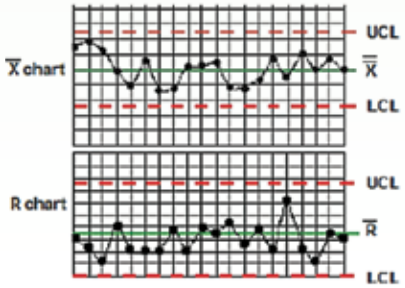
Looking at the control chart, the key components are the center line and the upper / lower control limits.

- The center line of the chart indicatesthe process mean.
- The upper and lower control limits indicate the boundaries of variation of the process, usually ±3s.

Types of Control Charts

Control charts can be further sub-divided into 2 groups: Variable and Attribute Control Charts. Variables can be measured (temperature, length), whilst the attribute is something which can be counted (part is good or bad).

In the case of the Variable control chart, 2 charts used in tandem: The average ($\overline{X}$) and range (R) charts. The ($\overline{X}$) monitors the process center, and the (R) the overall variation in the process.



For the Attribute charts, there are 4 types: p Chart, np Chart, c Chart and u Chart.

Process Capability

In simple terms, this compares the process output against the customer's specifications. All the control charting talked about earlier is merely to monitor variability in the process, the customer is not in the equation yet.

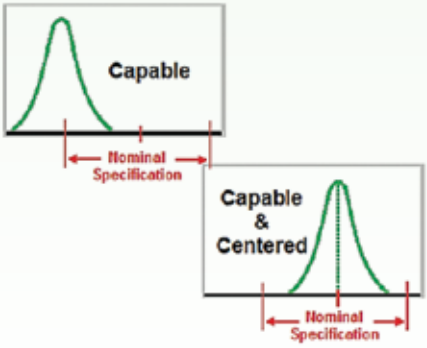
- Process Capability Index (Cp), which must be ≥1.33 for the process to be considered capable

$$Cp = \frac{USL - LSL}{6s}$$

- Cpk is used to look at the capability and how centered is the process in question. Based on whichever is smaller:

$$C_{pl} = \frac{(\bar{\bar{X}} - LSL)}{3s}$$

$$C_{pu} = \frac{(USL - \bar{\bar{X}})}{3s}$$



SPC can work, as long as it is applied correctly!

ABOUT THE AUTHOR

John Yik

John has over 25 years experience in the semiconductor manufacturing industry. His experience covers IC and MEMS manufacturing, covering a broad spectrum from photolithography to eutectic bonding, and metrology. He is ACTA certified, presently a free-lance technical trainer, focusing on semiconductor manufacturing, FMEA, SPC and Industry 4.0

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WISDOM OF A TRIATHLETE – INSIGHTS ON LEADERSHIP

New Wisdom of ... Series

We are bringing you a new series that will give you unique perspectives from several experts and luminaries. They will share what has made them great or how they must focus or how they choose to overcome obstacles in their different fields. Included after their experiences will be my perspective on what an organizational leader can learn from those insights to better manage or lead their organisation.

Wisdom of a Triathlete

Let's start the series with the wisdom of the triathlete.

Enrico Varella, a friend and colleague over the years, has participated in triathlons and marathons since 2002. He has completed 23 Ironman triathlons (3.8km swim, 180km cycle, 42.2km run), the Boston Marathon three times, and participated in five world championships.

The **first race scenario** Enrico said to me, "You must learn to 'Manage what you can control.'" What he meant was as a triathlete all these things are beyond their

control, such as bad weather, choppy water, searing heat, jellyfish-stings, bee stings, or falling on slippery roads – but they still have to carry on. What you must learn he said is "to manage how we respond to each of these challenges, obstacles, or mistakes by managing our emotional responses to them. You have to re-focus, get yourself together, and then just continue. If you are steadfast and resolute in getting to your goals, you will complete the race."

What We Can Learn from This

As a leader, you must understand the "Rules of the game" within your organization to know what the organization expects of you to manage the inevitable rough business patches, interpersonal or intergroup conflicts, and (hopefully not too often) your own missteps. In the end, you can only control what you can do and not worry about everyone else. So, for your corporate career marathon – you need to manage your emotions, re-focus, get yourself together when things don't go according to plan and continue steadfastly to move resolutely towards your own goals.

So How Are You Doing This?

What process, checkpoint or date do you use to "re-focus"?

Do you have a mentor you go to for advice?

How do you motivate yourself to resolutely keep going towards your goals?

In the **second race scenario,** Enrico said to me, "Purposeful Patience, Pays." There was a race where even when starting in the middle of the pack, he emerged from the sea-swim in 4th place, then rode to 3rd place, and ran to 2nd place and then podium finished. Along the way, several people ahead of him in each segment of the race dropped off the pace or just

simply gave up for different reasons. Throughout the race, he patiently chased the pack down to earn a place among the top three. That enabled him to qualify for the half-Ironman world championships in Lake Taupo, New Zealand in 2020 and the Ironman 70.3 Goa, India, 20 October 2019 - his main goal.

What We Can Learn from This

Sometimes it may seem like you are behind everyone and taking forever to get that promotion, that prized project or your senior leaders' recognition. So just like Enrico, just because you didn't get the promotion in your time frame or that recognition, don't give up or throw in the towel as other people in front of you may drop off their pace or get a "cramp" or just stop from "exhaustion" and when they do - you will be ready. A corporate career is a marathon, you must keep pace with the pack and your chance may be right around the corner!

So How Are You Doing This?

Who is in front of you that you need to keep pace with?

Who should you go to get advice or help to get some fresh ideas?

How do you motivate yourself to stay up with "the front pack" even though you are tired?

In the **third race scenario,** Enrico said to me, "Stay ahead: hunt or be hunted." In all the races you participate in, you must focus on staying ahead, completing, and winning. There are hundreds, sometimes thousands, in a race, but there are only a few wanting the same thing as you: a top-three finish. You must be strong, stay focused, and be in the hunt or someone will come from behind and beat you at the finish line. This is where preparation makes the difference. Many races are won and lost in the last 10 meters.

What We Can Learn from This

There are hundreds if not thousands of people working in an organization, but only a smaller number who are qualified

and focused on getting those prized roles and senior positions. If you are not preparing and putting in the effort in the 5% situations to stand out, then you may lose out. Senior leaders are considering their choices all the time – are you top of their minds, or is it someone else, trying a little harder ahead of you? 2020 should be your year to focus and take those 5% opportunities.

So How Are You Doing This?

What 5% situations are coming up and who will be there?

What do you need to do to prepare for it?

What can you do to stand out in that opportunity?

Included a brief program description below of both our classroom and online programs, that helps individuals become more visible in their organizations:

A high-paced and transformational program filled with practical techniques and skills that you will practice and can apply immediately for these 5 work situations that will determine your visibility in the organization: the 1-on-1 meeting, team meetings, conference calls, business presentations, and company socials. It is here that your leaders will listen to your next great idea or your points of view on an issue, or just see how comfortable you are interacting informally with them. Increase your communication repertoire, and know-how to change your presence and mindset to stand out in these critical "5% situations" with your senior leaders.

To learn more, go to:
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ABOUT THE AUTHOR

Stephen Krempl
CEO of Krempl Communications International. Facilitator, Author, Global Speaker, and Coach. He has helped thousands of leaders in over 30+ countries through his programs W3 Winning in the Work World and GEM Global Executive Mindset. Both classroom and online programs have helped individuals Stand Out and get noticed in their organizations.

A CHAT WITH THE SSIA SECRETARIAT TEAM MEMBER

THE STORY OF DAPHNE's CAREER JOURNEY

Daphne is currently the Project Manager of SSIA overseeing all major SSIA events. She is also responsible in identifying and arranging training needs for the industry. Prior to joining SSIA, Daphne has over 10 years in events management from planning to execution at NXP Semiconductors. Voice has a chat with her to know more about her story.

1. Can you tell us about your own journey in the semiconductor industry? What first got you into the semiconductor industry?

I joined Philips Semiconductor (currently known as NXP Semiconductors) in 2006 and was very intrigued by the company technology know-how and the R&D investment in the semiconductor sector. It spurs me to learn more about the background of the micro-chip. making. My curiosity for technology propelled me to deepen my knowledge in the semiconductor industry through learning from the technology experts in the team. My role enables me to meet people from all walks of life from the industry and listening to their story of how semiconductor has transformed the industry as a whole.

> "I guess working with the team that put together a variety of events and seeing how these events was successfully organised have given me the sense of greatest achievement."

2. What were your biggest challenges and excitements as an employee in the semiconductor industry? How did you deal with these?

The volatile demand and short lead time to market and meet customers demand is a never-ending challenge. The ever-changing innovation keeps me on my toes to keep learning and be abreast with the latest technology.

3. How do you know about SSIA and why do you choose to join the Association?

Through some networking sessions, I was introduced to SSIA and how the association supported the growth and development of the semiconductor industry. The opportunity was extended to me to join them to handle marketing & communication for the association which I believe it will strengthen my experience and exposure with the wide network within the industry.

Home-made cakes by Daphne

4. What are the similarities and differences between your previous roles and the role in a semiconductor trade association?

I used to manage all internal and external events for the APAC region with audience that are mainly the internal stakeholders and customers. In the current role, I got to work with all levels of personnel from the government agencies, IHLs, industry partners and leaders. From handling all types of events to supporting the workforce initiatives from the government agencies, it was definitely a new experience to me in my career path.

5. Can you tell us your main roles in SSIA?

As a Project Manager, I plan and oversee all events that drive the society's objective to help making a difference to the members and also ensure all activities are creating value in the industry. I manage end to end project from defining all deliverables including scope, tasks, schedules and budget to deliver expected end results for strategic initiatives.

6. What do you enjoy most about working in SSIA?

I guess working with the team that put together a variety of events and seeing how these events was successfully organised have given me the sense of greatest achievement. Organising each event is a new challenge and that greatly appeals to me because I will usually end up learning a lot from these journeys.

7. How do you see the changes in the semiconductor industry in Singapore in the recent 10 years?

Over the last decade, I've seen how Semiconductor industry has contributed to the change of common household with the smart technology. The semiconductor scene has been evolved with the inclusion of emerging technology such as Artificial Intelligence, 5G networks and the rapid growth of Automotive and Industrial Electronics. These technologies have greatly transformed on how we live in a smart and connected city.

8. Let's talk about something personal. We know you love baking. Can you share with us a bit more about your hobby?

I am meticulous and perfectionist by nature. Putting these traits both in my work and hobby, I'm also a self-taught baker who will improvise all the recipes research online and immerse myself for more than half a day, just to decorate a birthday cake which is usually requested by friends. There will be a great sense of fulfilment whenever I see how my friends or relatives enjoy the cake that I have specially made for them.

Daphne (4th from left) and the SSIA Secretariat team

NAVIGATING THE WORKFORCE EVOLUTION. TOGETHER.

HR Tech Festival Asia - the Biggest Ever Conference for the Professional HR and Tech Communities in Asia Millennials in the workforce will take place from 29-30 September 2020. Digital Transformation. Innovation Mindsets. Organisational Culture. These are much more than just buzzwords and catch-phrases for the modern HR professional navigating the workforce evolution in Asia-Pacific in 2020. Rather, they are specific challenges and opportunities; industry-wide ambitions and business risks – all at the same time.

It's a complex business environment, and HR professionals need to guide their organisations through the storms of continuous change. They need to be at the top of their game, constantly adding value and building the long-term capabilities of their workforces.

Manpower Policies Unpacked

The event is also supported by a wide range of public sector organisations from markets throughout the Association of Southeast Asian Nations (ASEAN) region. In particular, the ASEAN Future of Work stream, in partnership with the Singapore Ministry of Manpower, will see senior leaders from all sides of the employment equation (Governments, Employer Groups, and Labour Unions) from throughout the ASEAN region, discussing skills studies, employment facilitation, and HR capability building across the region.

Other streams will highlight specialisations and content focused on each of: HR & Digital Transformation, the Smart Workforce & Innovation, Recruitment & Employee Engagement, Talent Management & Development, and HR Tech. And the extremely popular (sold out in 2019) CXO Symposium will feature high-level strategy and workforce planning content for all those at the top levels of business.

HR Tech Festival Asia 2020 will be held on 29 -30 September 2020

Region's Biggest HR and Tech Expo

The seven stages set across the entire fourth floor of Suntec Singapore Convention and Exhibition Centre (20,000 square metres) are complemented by what is set to be the region's biggest HR and Tech exposition.

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With more than 200 booth spaces, and interactive elements across the floor, delegates will be able to share in some of the latest products, services, and technologies that are taking HR to the next level in 2020.

The Expo floor will also host a special zone exclusively for the vibrant startup community in Southeast Asia, dealing in HR products and services across the region.

HR Fest Awards

HR Tech Festival Asia 2020 also takes time out to celebrate the outstanding achievements and efforts of the region's top HR leaders, companies and teams. With HR Fest Awards 2020 list of finalists now available, the winners across each of five HR Fest Awards categories will be announced on the HR Tech stage at the close of presentations on the first event day (Tuesday, 29 September 2020).

That will help transition the entire expo floor into a twilight fiesta celebration, with cocktails, networking, live entertainment, and all the winner presentations.

Winners across each of five HR Fest Awards categories will be announced on the HR Tech stage.

The categories for this year's awards are:

- Employer of Choice
- HR Team of the Year
- Best Use of HR Technology
- Best HR Leader (individual)
- Best C-Suite Leader (individual)
- Best Workplace Culture and Engagement (for organisations with fewer than 500 employees)
- Best Workplace Culture and Engagement (for organisations with 500 or more employers)

Registrations are now open. Scan QR Code or visit www.hrtechfestivalasia.com.

SSIA Member Rate

SSIA is proud to be the Supporting Partner for HR Tech Festival Asia 2020. Registrations are now open on www.hrtechfestivalasia.com. To enjoy preferential conference rate, simply quote **SSIA20** in your online registration to enjoy upfront 20% discount off the published conference fee.

SOURCE OF CONTENTS

HRM ASIA

BEHIND THE SCENES OF "LET'S GET REAL"

SIT FACEBOOK LIVE

SSIA Executive Director, Mr Ang Wee Seng, was invited to the Singapore Institute of Technology (SIT) Facebook Live session, Let's Get Live, on 27 February 2020. Together with Associate Professor (A/Prof) Justin Pang and Associate Professor (A/Prof) Neelakantam Venkatarayalu, Wee Seng shared his experience, knowledge on the electronics industry and thoughts on the SIT's new programme, Electronics and Data Engineering (EDE) degree.

The four-year honours degree programme is jointly offered by SIT and Technical University of Munich (TUM), which is recognized as the best university in Germany for Technical and Engineering courses. Notably, TUM graduates have been able to secure a job in relevant fields shortly after graduation.

Meeting the Industry's Needs

SIT aims to nurture graduates of the course to be industry-ready and equipped with professionalism. Through industrial feedbacks, SIT curated a series of digital skillsets that potential employers and industry leaders are looking for in the next generation of engineers. With a strong focus and specialization on electronics and data engineering, the new course aims to integrate graduates with digital capabilities to build a new generation of "Dream Engineers" as Wee Seng called it.

A distinct feature of SIT's degree programmes is the Integrated Work and Study Programme (IWSP) which provides students with the opportunity to undertake real work, allowing them to integrate and practice in realistic work situations. IWSP also gives students the opportunity to develop professional networks and interpersonal skills. Moreover, A/Prof Pang mentioned that there will be a three-week Overseas Immersion Program (OIP) in Germany in the final year of the EDE programme. It presents a great opportunity for students to mingle with TUM students on campus, network with German companies, and organize industrial visits or research seminars.

"Let's Get Real" Live Q&A Session with Associate Professor Justin Pang (left), SSIA Executive Director Ang Wee Seng (center) and Associate Professor Neelakantam Venkatarayalu, Deputy Programme Director of Singapore Institute of Technology (right) .

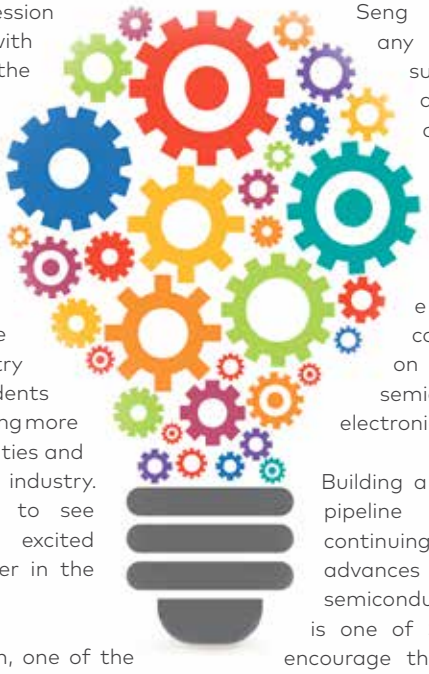
Wee Seng emphasized on the benefits of the OIP as it exposes students on the cultural difference between Singapore and Germany. This will help them understand how cross-cultural communication plays a part in a working environment.

Throughout the course, students will be provided with a holistic education and network that may secure them a work opportunity in Singapore or overseas.

According to A/Prof Neelakantan, several data visualization tools that are known to be a level above the usual data engineering aspects will be introduced to widen students' knowledge and capabilities. Wee Seng stated that the career prospects for the programme graduates could cover a wide spectrum depending on one's interest. He believed the industry is expanding considerably and the demand for these "Dream Engineers" would certainly be higher than the intake.

ENCOURAGE THE NEXT GENERATION OF SEMICONDUCTOR PROFESSIONALS

SSIA Executive Director Ang Wee Seng was invited to share his profession and career journey with 80 students from the Canberra Secondary School on 5 March 2020. During the sharing, he introduced to students the development, ecosystem and the significance of the semiconductor industry in Singapore. Many students were interested in knowing more about the job opportunities and remuneration in the industry. It is so encouraging to see many students feel excited about pursuing a career in the semiconductor industry.



During the Q&A session, one of the students asked Wee Seng an insightful question. She asked if Wee Seng could give her any advice when she successfully becomes an engineer one day. Wee Seng answered, "Never stop learning. The continuous learning culture is something engineering companies stress on too, especially semiconductor and electronics companies."

Building a sustainable talent pipeline is essential for continuing the innovative advances that define the semiconductor industry. It is one of SSIA's missions to encourage the next generation of semiconductor professionals. Schools which are interested in inviting SSIA to share about different perspectives of the semiconductor industry can email secretariat@ssia.org.sg.

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