



Covid-19 and Workforce Resilience in Singapore

Insight Brief

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15 May 2020

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Background

The novel coronavirus disease (Covid-19) pandemic has resulted in a global lockdown, with millions of businesses abruptly forced to adopt work from home practices. A Gartner, Inc. survey¹ of 800 global HR executives on 17 March 2020 found that 88 percent of organizations have encouraged or required employees to work from home due to Covid-19.

This global lockdown is affecting workplace collaboration, office culture, and employee engagement, and leading to distraction, social isolation, and mental health concerns. At the same time, it has given rise to unexpected benefits. Without physical meetings, everyone is easily reachable and productivity increases with more work packed into a day. Employees are happier when they spend their time savings from avoiding daily commutes on meaningful pursuits such as personal or family time. Part-time workers such as mothers returning to the workforce are more easily accommodated. Companies are tapping into new markets as physical borders and distances are neutralised.

Singapore is relatively well-poised to adapt to teleworking, with our high rates of home ownership, nationwide broadband network, 4G connectivity and high smartphone and credit card penetration, established eCommerce, payment systems, and logistics fulfilment capabilities, as well as abundant government grant schemes and digitalisation initiatives such as e-Invoicing. At the same time, technologies that are rapidly maturing, such as artificial intelligence, chatbots, and the Internet-of-Things (IoT), as well as new business

models such as online communities, digital marketing, or drop shipping, may hold the answer to Singapore's challenges in an ageing workforce.

Yet, a previous Ministry of Manpower survey² had showed that flexible work arrangements have the biggest impact on resignation rates, and that back in 2018, formal teleworking featured in only 8.4 percent firms offering some form of flexible work arrangements. With the unprecedented rate of business cessations in April 2020, companies more than ever are now trying to make sense of these dynamics as countries gradually lift their lockdowns. They will need to consider how actively they should expect employees to return to their offices, how some forms of protection and social distancing can best be enforced in the workplace, which job roles can reasonably continue to be remote, how to trust team members and manage performance remotely, and what new capabilities, skills, and operating models they might need to invest in.

To initiate a dialogue on what would a 'new normal' for different jobs might look like in Singapore, Eden Strategy Institute developed a workforce transformation model to peer into the future of specific jobs that Covid-19 will disrupt. Proactively planning for the future of work will help avoid structural unemployment, and we hope that this paper will help identify new capabilities to invest in, jobs to be reconceived, and skills to be acquired – whether at the level of personal careers, enterprise development, or national policy.

¹ Gartner HR Survey Reveals 88% of Organizations Have Encouraged or Required Employees to Work From Home Due to Coronavirus. Press release (19 March 2020). Retrieved from <https://www.gartner.com/en/newsroom/press-releases/2020-03-19-gartner-hr-survey-reveals-88-of-organizations-have-e>

² Report: Conditions of Employment 018. Ministry of Manpower. Retrieved from <https://stats.mom.gov.sg/Pages/Conditions-Of-Employment-2018.aspx>

Methodology

Many drivers will work in unison to determine the exact job impact that Covid-19 poses to the Singapore workforce, including the length of disruption, whether subsequent waves of infection – globally or locally – will necessitate future lockdowns, the extent of testing and porosity of Singapore’s border control, as well as the resulting human and economic impact, the range and effectiveness of policy, business, and technological responses, and the degree of attitudinal and behavioural change in the workforce. Much uncertainty continues to surround these factors, therefore the scope of this paper focuses on just two critical factors that influence the modality of different jobs as lockdowns ease: (i) The extent to which digitalisation and automation technologies support a job in Singapore to be performed remotely in the foreseeable future, or its ‘Teleworkability’; and (ii) The degree of Human Interaction required to perform a particular job.

In their seminal 2013 paper³, Oxford academics Frey and Osborne identified three types of tasks that remain non-susceptible to computerisation due to current engineering bottlenecks: Social Intelligence; Creativity; as well as Perception and Manipulation. They used these three variables to categorise 702 occupations in the United States, to calculate the risk that each occupation might be replaced by available technologies. This study was replicated by Lee King Fui at ISEAS-Yusof Ishak Institute in Singapore⁴ using data from the Labour Force in Singapore 2014 study provided by the Ministry

of Manpower⁵, and mapped against Singapore Standard Occupational Classification (SSOC-2015) job codes provided by the Department of Statistics Singapore⁶, to calculate computerisation risk for three dozen key job groups in Singapore.

Our study uses these studies as a starting point, by scanning the landscape for current technologies that can support remote work in Singapore’ context, and developing a 2019 Department of Statistics Singapore employment data set with a novel **Teleworkability Score** building on Lee’s computerisation risk scores as well as how these technologies can or have been affecting each SSOC job group in Singapore during the Covid-19 ‘circuit breaker’. In addition, we categorised each job by its **Human Interaction Requirement Score** for its tasks to be performed well and without significant compromise. For example, technologies and operating models such as voice transcription technologies, IoT-enabled smart factories, or central kitchens allow jobs such as clerks, machine operators, or food preparation assistants to be performed remotely, compared to roles such as Health Professionals, Personal Care, or Protective Care Workers, which demand more direct human contact. Similarly, human interaction may currently feature in but not be necessary for assemblers, quality checkers, or labourers to perform, unlike managers, customer service representatives, or sales workers whose jobs may involve much more social interaction.

³Frey, Carl B. and Michael A. Osborne. “The Future of Employment: How Susceptible are Jobs to Computerisation?”. Oxford Martin School Working Papers, September 2013.

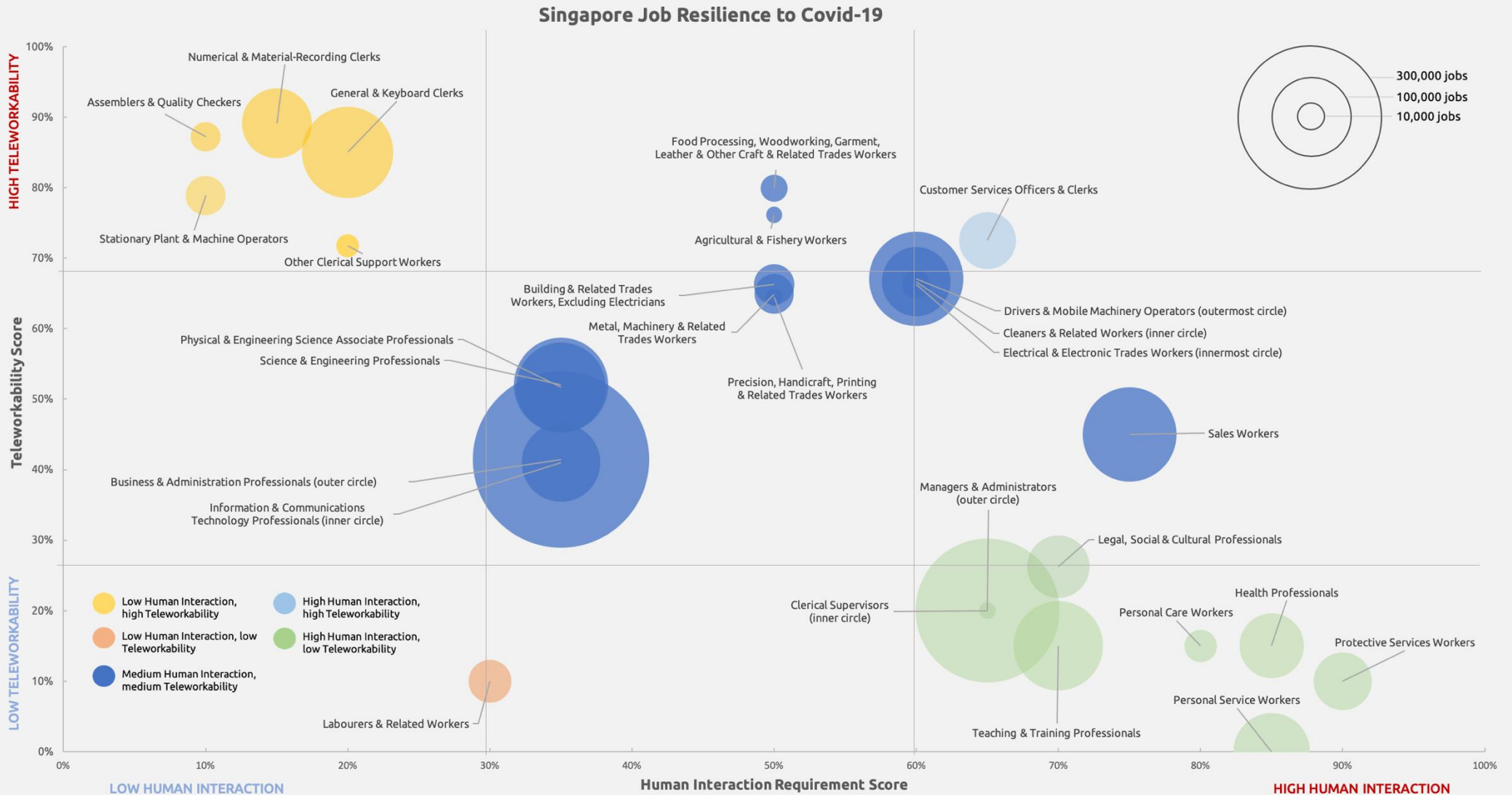
⁴ Lee, K.F. “Automation, Computerization and Future Employment in Singapore”. Journal of Southeast Asian Economies, Vol. 34, No. 2 (August 2017), pp. 388-99.

⁵Singapore Ministry of Manpower <http://stats.mom.gov.sg/Pages/Labour-Force-In-Singapore-2014.aspx>.

⁶Department of Statistics Singapore http://www.singstat.gov.sg/docs/default-source/default-document-library/methodologies_and_standards/standards_and_classifications/occupational_classification/ssoc2015-isco-correspondence.xls.

Results and Analysis

This model addresses 30 major SSOC job categories in Singapore that collectively cover 2.1 million workers, or 94.3 percent out of Singapore's 2.2 million resident labour force in 2019.



Mapping the jobs against the defining factors of Teleworkability and Human Interaction may offer insight on different priorities for each quadrant.

High Human Interaction, Low Teleworkability

Jobs that fall in this category (denoted in green bubbles above), such as Healthcare Professionals, carry high infection risk as they will likely continue to involve considerable in-person interaction. However, this category also includes Personal Care Workers, Protective Services Workers, Legal, Social and Cultural Professionals, Teaching and Training Professionals, as well as Managers, Administrators and Clerical Supervisors.

Companies can consider focusing on workplace protection investments for such jobs, such as with masks, hand sanitisers, frequent temperature checks, visitor logs, safety partitions, air purifiers, and improved workplace ventilation. This could benefit from new grant support for workplace modification, as it is a large part of Singapore's workforce numbering 643,910 people.

High Human Interaction, High Teleworkability

A job that scores highly on both Human Interaction as well as Teleworkability may require its operating model to be completely transformed before it can be performed remotely without compromising service levels. Customer Service Officers and Clerks fall into this category (in light blue bubbles), with this segment comprising 44,100 jobs.

While there exists an abundance of training material around general digital literacy, tools, and competency maps, employers and staff may benefit from more targeted guidance on how they can experiment with completely new operating workflows and business models. Credit card companies have already demonstrated that some personal concierge tasks can be better performed remotely. Big Data Analytics has the potential to identify user trends, anticipate, and even pre-empt service requests even before they occur. Yet, transforming such roles cannot only involve helping enterprises acquire new technology. Chatbots, automated calls and workflows, or email scripts can improve response time while reducing headcount on basic inquiries, but need to be infused with personality, customisation, and human input to avoid appearing robotic.

We observe an excellent example at the Dawn Ver pop-up café in Tokyo, where Japanese start-up Ory employed ten paralysed operators to control OriHime-D robot servers, adding humanity to social interactions with patrons while avoiding direct human contact⁷. Some user segments are growing in sophistication, and may prefer to self-help by researching, engaging with user communities, and troubleshooting an issue themselves, but this demands a culture change to embrace open innovation, offer training, and develop curatorial and community management capabilities. Customers are increasingly expecting seamless omnichannel consistency of service, whether they are making an inquiry in-person or via Telegram. Expert service recovery, supported with data-driven process visibility and control, expanded decision rights, job autonomy, and social media savvy, can turn a complaint on Instagram into a valuable shoutout to an influential customer's social media followers.

⁷Japanese café uses robots controlled by paralysed people. BBC News, 6 December 2018. Retrieved from <https://www.bbc.com/news/technology-46466531>

Low Human Interaction, High Teleworkability

Jobs in this category (denoted as yellow bubbles) include Stationary Plant & Machine Operators, Assemblers & Quality Checkers, Numerical & Material-Recording Clerks, General & Keyboard Clerks, as well as other Clerical Support Workers. This is a sizeable group of 219,050 workers that perform manual tasks such as operating simple equipment, data entry, filing, answering calls, redirecting calls, preparing invoices, and sorting information.

These jobs may still be preserved even in a post-pandemic context, as long as they can embrace teleworking technology and improve on their productivity, and in fact initiatives such as the Productivity Solutions Grants already exist to augment these jobs. However, in our experience interacting with employers in this segment (often small and medium enterprises from more traditional sectors such as food manufacturing, storage and warehousing, and shipping) we find that they tend to be unfamiliar with operating models, resistant to technology, and conservative about change. We have discovered numerous behavioural insights when changing employer mindsets. For example, we have learnt that such companies only really have an opportunity to transform when an entrepreneur is motivated by changes to his identity, by building momentum and confidence with small changes that reframe his identity as a forward-looking, modern business leader.

We observe that many new capability onboarding initiatives stall not only for lack of change management and job redesign, but because business owners are unwilling to designate time to the effort, and the business lacks absorptive capacity to fully exploit technology features. Finally, we have experienced that successful job transitions do not only involve new tools and training curriculum; adult learners

respond better to andragogy than pedagogy. Mid- or late-stage career professionals want to learn, but first need to be fully bought into the new roles and understand the overall impact on their careers in order to feel motivated. They are also selective about the content and instructors, and prefer respectful, apprenticeship-based on-job learning to classroom lessons.

Low Human Interaction, Low Teleworkability

Finally, the jobs in this category (denoted as pink bubbles), essentially comprising the 25,100 low-skilled Labourers and Related Workers in construction, manufacturing, transport, and storage, perform tasks such as loading and unloading, carrying and stacking goods, digging, cutting rocks, working with construction materials, and using and maintaining simple equipment.

This is a segment that is most susceptible to technology substitution risk. The Covid-19 outbreak among migrant workers will likely see an increase in costs and reduction in Singapore's traditional reliance on affordable foreign labour over time. SkillsFuture courses and Skills Frameworks generally focus on executive level learning, while increased adoption of Design for Manufacturing and Assembly (DfMA) could gradually reduce manpower inputs in such jobs. It is our view that more deliberate efforts will be needed to transform these sectors, which may include more widespread experimentation with new technologies (e.g. pre-casting), considerable job augmentation (e.g. with robots or exo-skeletons), job redesign such as with labour-technology substitution, as well as sector rebranding and job profiling.

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Much uncertainty remains with the largest group of 880,900 jobs that scored medium on both Teleworkability and Human Interaction (in dark blue bubbles). Businesses, workers, policymakers, technology, and human resource professionals will need to forge consensus over how and if such jobs might evolve. As much as this will involve considerable insight and leadership, we believe that Singapore's workforce fitness, labour relations, and technology readiness holds it in good stead to do so. What we do know for certain is that across the board, there are a total of 336,530 jobs high in Teleworkability that are poised for change. We expect to see considerable adjustment to how these jobs will be performed. The Covid-19 pandemic presents an unprecedented opportunity to protect lives, transform operating models, acquire new skills, create future jobs, improve productivity, re-configure the very nature of work across numerous sectors, and possibly even reshape the structure of Singapore's economy and profile of our workforce.



About

Eden Strategy Institute is a strategy consulting firm specializing in Business System Innovation. Our distinctive approach to sustainable advantage helps organizations achieve social impact by designing new growth platforms, operations, and services, and aligning them with market forces and developmental opportunities. Eden's operating principle involves an uncompromising focus on analytical rigor, organizational engagement, and lasting impact. We accomplish this by designing strategy around pressing organizational issues, building trust among stakeholders, and leading them to surface innovative, action-oriented initiatives around which they can build consensus.

Eden's Future Capabilities Practice approaches the changing nature of work by scanning for disruptive trends and technologies; modelling possible scenarios of the future that will demand organizations, industries, and countries to invest in new capabilities; as well as developing curricula, instructional design, and effecting learning and mindset change to prepare the workforce of tomorrow.

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