This initial overview takes a high level look at how automation will impact office based employment in Asia Pacific and examines the consequences for corporate office demand across the region.

**Ada Choi**
Senior Director, Research

**Liz Hung**
Associate Director, Research

**Jimmy Ong**
Senior Analyst, Research

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# HOW JOB AUTOMATION WILL RESHAPE CORPORATE OFFICE DEMAND IN ASIA PACIFIC

## OFFICE JOBS AT RISK OF BEING AUTOMATED

Technology has long been a major driver and disruptor of workplace and workforce change. During the Industrial Revolution in the 18th and 19th centuries, the creation of the factory system, which used powered machinery and centralised workplaces to mass-produce goods, rendered many craft workers obsolete. At the same time, however, it made products cheaper for general households and created new job opportunities in the manufacturing sector. In Asia Pacific, rapid industrialisation and urbanisation has transformed the composition of the regional workforce over the past 40 years. Employment in primary industry has fallen from 64% of total employment in 1980 to 32% in 2016. (Figure 1).

The latest wave of technological evolution, which includes robotics and artificial intelligence,

is expected to have a far more profound impact on jobs and the nature of work. New advances have led to the development of intelligent machines and enabled computers to self-improve by deep learning[1]. The Internet of Things – the interconnection via the Internet of computing devices embedded in everyday objects – is enabling machines to perform a greater variety and number of tasks, at speeds and levels of complexity far beyond human capability. That said, the ability of a computer to truly think 'freely' or to have a creative approach to work is still many years away, if it ever proves possible at all.

The coming years will see the rapid automation of manual labour and customer service jobs, forcing millions to learn new skills or change roles entirely. A 2013 study by Oxford University estimated that 47% of total jobs in the U.S. are at risk of at least partial automation[2]. While many of these roles will be blue collar jobs, office-based employment, ranging from non-professional administrative functions to higher value and more complex roles such as lawyers, fund managers and sales managers, will also be affected.

Taken at face value, the automation of a large number of office jobs implies that companies will require fewer employees and, consequently, smaller office space. However, the reality is more nuanced and complex, and will likely see most jobs evolve in different ways to harness the respective strengths of humans and technology.

**Figure 1: CHANGE IN EMPLOYMENT STRUCTURE IN ASIA PACIFIC**
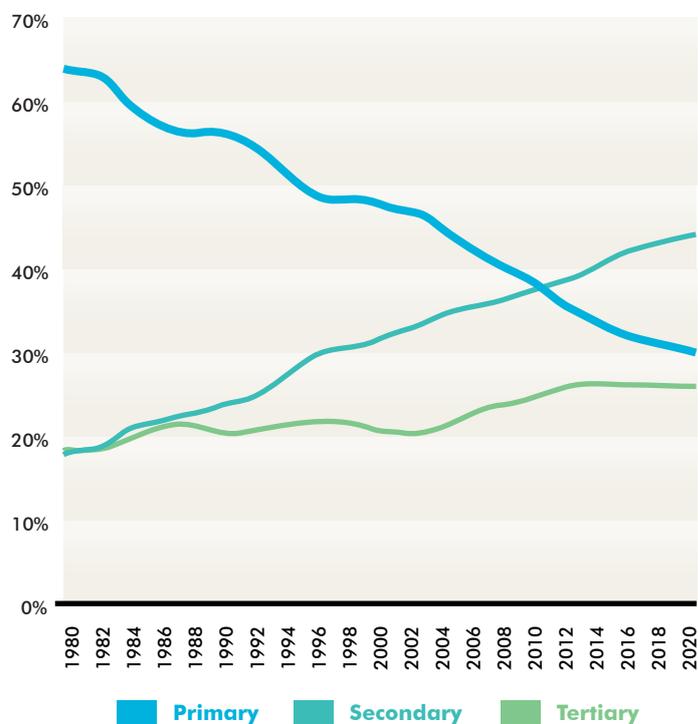


Source: Oxford Economics, June 2017.

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[1] Deep learning is a form of machine learning that provides computers with the ability to learn data representation without being explicitly programmed and structured data. It speeds up the development of applications on speech recognition, natural language processing and recommender system.

[2] Oxford University (September 2013) - The future of employment: How susceptible are jobs to computerisation?

## OFFICE JOBS AT RISK OF BEING AUTOMATED

Automation will not only impact blue-collar employment; the adoption of digitisation and use of artificial intelligence will have a strong bearing on the future of office jobs across a number of different sectors.

In 2016, US$24.7 billion globally and US$8.6 billion in Asia[3] were invested in new tech for finance. However, the so called FinTech sector is not the only one being disrupted; InsurTech and Regulatory Tech (RegTech) are also experiencing a phase of rapid development and seeing increasing levels of automation. That said, the degree to which jobs may change as a result of this investment are wholly dependent on the tasks being automated. Artificial intelligence is already being used to reduce the number of employees required to process insurance claims.

Within the financial sector, retail banking is expected to see the adoption of automation in the form of robo-advisors, automated investing and complex algorithms that can determine a customer's credit, all of which could replace human beings. Recent innovations include DBS's virtual assistant which can answer customer enquiries on online messaging platforms.

Front-line staff in banks and asset management companies are also under growing pressure as more companies adopt robo-advisors to replace human employees. In 2017, Blackrock, the world's largest asset management company, announced it would replace 40 portfolio managers with algorithms and artificial intelligence programmes[4].

In the legal sector, international law firms are utilising artificial intelligence systems to complete tasks traditionally performed by associates and paralegals, such as organising, discovering and summarising documents for use as evidence in litigation, legal research and due diligence. Similar job functions in the insurance sector, such as reading medical certificates and survey records, have also begun to be performed by robots.

Artificial intelligence can also create content. In the media sector, automation software is being used to generate basic news articles based on statistical figures, such as company earnings and weather reports. Other examples of automation include artificial intelligence programmes being used to create online advertisements, thereby reducing the need for human designers.

## Figure 2: OFFICE JOBS AT RISK OF BEING AUTOMATED
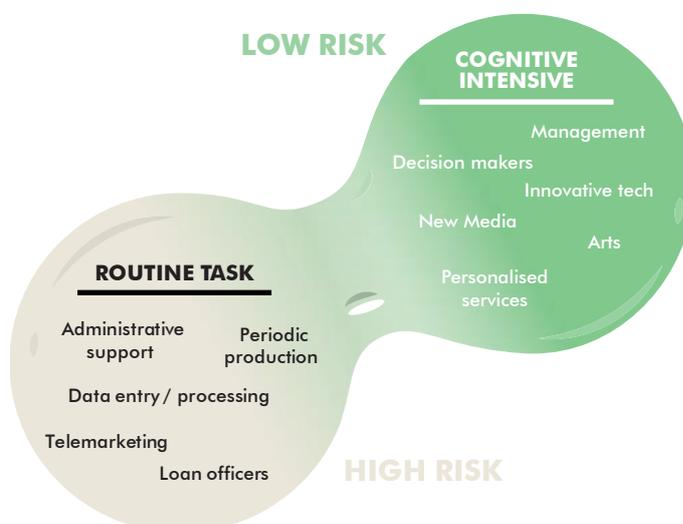


Source: The future of employment: How susceptible are jobs to computerisation?, Oxford University

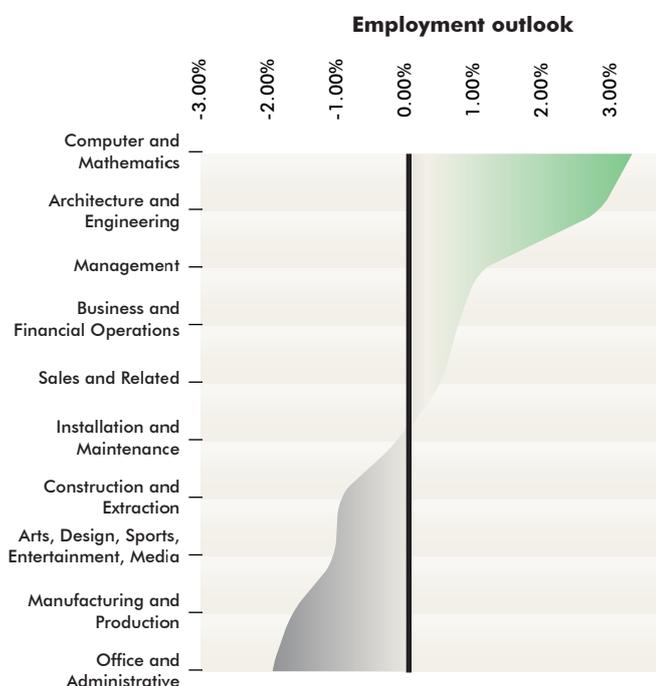[3] KPMG (February 2017) The Pulse of Fintech Q4 2016
[4] Blackrock is Cutting Jobs and Banking on Robots to Beat the Stock Market (http://fortune.com/2017/03/29/blackrock-robots-stock-picking/)

## OFFICE JOBS WILL BE REDEFINED

As corporations strive to remain competitive, they are looking to leverage the latest technology by allocating more investment, setting up innovation labs and hiring more in-house IT talent. Employment growth in the information and technology sector is consequently expected to surge in the coming years[5] (Figure 3). There will be a greater number of opportunities in the creative side of the IT sector, especially involving the analysis and interpretation of the vast amounts of data that are being made available.

However, the growth in employment derived from the increased focus on technology is unlikely to fully offset the large number of jobs in the broader employment market expected to be lost as a result of automation, particularly in administrative roles, many of which take up a large volume of office space. CBRE Research expects automation to have an especially strong impact on the offshoring industry in Asia Pacific, as many jobs in the sector involve low-value administrative work. India and the Philippines, the two main Business Process Outsourcing (BPO) markets, are already bracing for a slowdown in job growth. In November 2016, the India National Association of Software and Services Companies (NASSCOM) reduced its 2017 growth projections for the IT sector from 10-12% to 8-10%. In response, the BPO industry is planning to upgrade the skills of its workers and shift to providing higher level services, which it hopes will lead to job creation and dilute the effect of reduction of old processing jobs.

In spite of the trend towards automation, existing technology is only capable of replacing some functions of a job and very few occupations can be entirely replaced by machines. McKinsey's recent *A Future that Works: Automation, Employment and Productivity* report concluded that only 5% of occupations could be entirely replaced by current technology.

## BUSINESS PROCESSES WILL BE REFINED AS THE RESULT OF AUTOMATION

In future, staff will allocate less time to basic tasks such as inputting, checking and validating data, and more time on new initiatives, meeting clients and collaboration. This will necessitate not only more people able to think more creatively, but also a structure that will facilitate such an approach. Instead of having a stagnant hierarchy, companies' organisational structure will evolve and flatten out. The workforce will be organised into various project teams, each with their own distinct area of focus, surrounding a management team in the core.

**Figure 3: EMPLOYMENT OUTLOOK BY JOB FAMILY (COMPOUND GROWTH RATE, 2015 – 2020, %)**



Source: Future of Jobs Survey, World Economic Forum

In order to stay relevant, middle managers will need to reposition themselves as brand custodians responsible for shaping the corporate vision and making major decisions.

While back-office operations will be most affected by automation, the need to swiftly adapt to market changes means that companies will need to maintain a workforce that can adapt over time.

## THE IMPACT OF AUTOMATION ON CORPORATE OFFICE DEMAND

In the U.S., CBRE Research has estimated that automation will put demand for approximately 18% of existing office stock at risk[6] and have a varied impact on the office job market. Major office markets will be relatively immune to automation as space is predominantly occupied by jobs that are the least vulnerable. However, the ultimate effect on overall office demand is still an unknown as professions will evolve and new types of jobs will emerge.

## CBRE RESEARCH EXPECTS TO SEE THE FOLLOWING IMPACT IN ASIA PACIFIC:

**Slower growth in net office demand:** While the automation of jobs will not cause mass unemployment, technology is likely to play a role in ensuring overall demand for pure office space moderates in the coming years. However, regional job growth remains brisk on the back of higher economic growth and the transition to the services industry. Asia Pacific office-based job growth is forecast to weaken slightly from the annual rate of 3.1% over the past five years to 2.6% over the next five years[7].

The adoption of mobile working enabled by technology and activity based working will reduce office space requirements. The use of cloud computing solutions will also lower the need for servers and storage space.

**Back-offices hit the hardest:** Job automation will have the strongest impact on administrative jobs. Since such roles are often housed in back-offices in non-CBD areas, or have already been outsourced to countries such as India and the Philippines where labour is cheaper, such locations are likely to see weaker growth in office demand. However, these impacts could partly be offset by cost-saving relocations facilitated by increased job mobility. Job automation will have a limited impact on the CBD areas of core office markets, as space in such locations is predominantly utilised for front-office and client facing positions, which cannot be automated or computerised.

**Stronger demand for data centres and innovation laboratories:** Corporate investment in technology will drive the establishment of innovation laboratories to house research and development teams. Many multinationals are already locating staff in innovation centres or co-working centres to facilitate collaboration and expose them to new ideas. The adoption of cloud computing is spurring demand for data centres at the expense of space for servers and data storage within corporate offices. There is an ongoing debate about whether the best approach is to develop new technology in-house or to put in place a process to review and implement early stage developments from 'experts' in a particular field.

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[6] "What do advances in automation promise for U.S. office demand?", Timothy Savage, 19 January 2017.
[7] Source: Oxford Economics, July 2017.

**More robust IT infrastructure in buildings:**
The growth in the number of technology jobs, as well as the greater number of jobs that will be enabled by technology, will require buildings to have higher quality IT infrastructure. Older buildings, or those properties not meeting corporate IT infrastructure requirements, will be less competitive and are likely to struggle to attract and retain tenants.

**Transformation of CBD office space:**
The positive outlook for high value sales and management jobs will ensure stable demand for offices in CBDs or core areas. However, workplace transformation will continue as companies adopt workplace strategy to foster innovation and collaboration across different disciplines and business units.

**Deeper emphasis on office placemaking:**
Greater competition among landlords seeking to attract and retain quality tenants will prompt developers to adopt a more holistic view towards the design and operation of office buildings. This will drive a stronger focus on placemaking – defined by CBRE Research as "integrating design, amenity and community to create a unique space where people want to be" –in office buildings and encourage the adoption of smart building technology, F&B, end-of-trip and wellness facilities.

## CONCLUSION

Advances in all forms of technology have the power to disrupt the way business operates. Disruption, however, brings great opportunity. By harnessing the power of artificial intelligence and machine learning, it frees people to spend their time more creatively and to use the knowledge gained in a different way. To do this successfully, companies must review their organisation and structure to ensure they do not blindly rely on outdated approaches to doing business.

Job automation is already impacting many of the working activities that we undertake and the roles that we create. In future, it will affect all routine tasks, whether manual or cognitive, in some shape or form. Those jobs or professions characterised by repetitive routine functions will be most vulnerable to replacement, while other roles will evolve to enhance human productivity by leveraging the power of technology.

While core areas of major office markets in Asia Pacific are likely to remain resilient, job automation is set to have a far reaching - albeit nuanced - impact on corporate real estate demand in the coming years. It is critical that occupiers and landlords keep themselves informed about trends and advances in job automation; prepare appropriate strategies to ensure they remain competitive; and identify areas in which they can invest in automation at an appropriate time.

## CBRE GLOBAL RESEARCH

This report was prepared by CBRE Asia Pacific Research Team, which forms part of CBRE Global Research – a network of preeminent researchers who collaborate to provide real estate market research and econometric forecasting to real estate investors and occupiers around the globe. For more information regarding this research report, please contact:
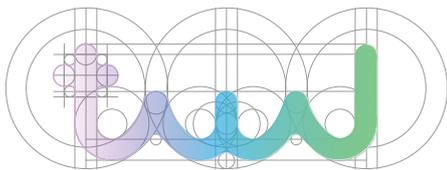
## RESEARCH

**Ada Choi**
*Senior Director, Research*
12/F Three Exchange Square
Hong Kong
ada.choi@cbre.com.hk

**Jimmy Ong**
*Senior Analyst, Research*
12/F Three Exchange Square
Hong Kong
jimmy.ong@cbre.com.hk

**Liz Hung**
*Associate Director, Research*
12/F Three Exchange Square
Hong Kong
liz.hung@cbre.com.hk

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