

NSW Remote Working Insights

# Our experience during COVID-19 and what it means for the future of work



NSW Innovation and Productivity Council  
November 2020



# About the NSW Innovation and Productivity Council

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The NSW Innovation and Productivity Council (IPC) was established by the *Innovation and Productivity Council Act 1996*. It advises the NSW Government on priorities for innovation-led economic development and productivity.

Council members are leaders from industry, education and research sectors. Members are appointed for three-year terms. The current Council was appointed in 2020 and is chaired by Neville Stevens AO, a former Secretary of the Australian Department of Industry and the Australian Department of Communications, Information Technology and the Arts.

The NSW Chief Scientist & Engineer, Professor Hugh Durrant-Whyte, and the NSW Chief Economist, Stephen Walters, are special advisors to the Council.

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## Contact

The Council welcomes feedback and inquiries regarding publications, website and media. To contact the Council secretariat:

Phone: +61 2 9338 6600

Email: [ipc.secretariat@treasury.nsw.gov.au](mailto:ipc.secretariat@treasury.nsw.gov.au)

Physical mail:

**NSW Innovation and Productivity Council Secretariat**  
GPO Box 5477  
Sydney NSW 2001  
Australia

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# Minister's Message



To combat the spread of COVID-19, in March 2020 the NSW Government directed non-essential workers to work from home. With so many logging on from home for the first time, the forced experiment in remote work was always going to be a challenge.

Yet NSW businesses adapted remarkably well to this new way of working. Many organisations have discovered that their employees were quick to embrace technology to keep their businesses functioning.



The first NSW Innovation and Productivity Council NSW Remote Working Insights report comes at a pivotal time for the State. In the future, those looking back at 2020 may point out it was the year everything changed, for better and for worse. Without the benefit of hindsight, Governments need to grasp the changes happening in real time.

Many are asking if remote work is a new normal. This report provides timely data on NSW workers' experience of and attitudes to remote work and assesses what the future holds.

In making us happier and more productive, more flexibility to work remotely could be one of the positives to stem from the COVID-19 crisis. But only if we play our cards right. This report can be used as a foundation to aid the NSW Government, businesses and residents in tackling the challenges of remote work to fully realise the benefits.

The report brings together for the first time:

- a new **artificial intelligence-driven analysis** of more than 20,000 different tasks in the economy to assess New South Wales' potential for remote work, and
- results from a new NSW Innovation and Productivity Council **survey of 1,500 workers** in August and September 2020.

This paper provides a great basis for future discussions around remote work and I invite the NSW community to join the ongoing conversation.

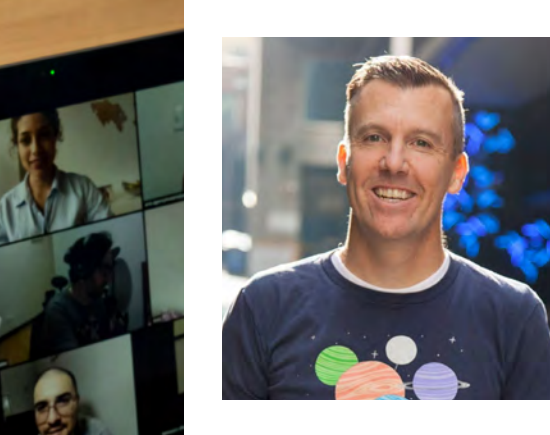
A handwritten signature in black ink, appearing to read 'Stuart Ayres'. The signature is fluid and cursive.

**The Hon. Stuart Ayres MP**

*Minister for Jobs, Investment, Tourism and Western Sydney*

# NSW Innovation and Productivity Council Project Champion's Foreword

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The world works in unusual ways. Seemingly unrelated phenomena can be linked. The COVID-19 pandemic has had a devastating impact on many, yet it may have catalysed a big change in the way (and the where) we work. The recent shift to remote working was not a question of technology. Many of us had the tech know-how to remote work, yet prior to 2020 few did. Cultural and social barriers stood in the way. It has taken a highly infectious virus to tear them down.



COVID-19 pushed rates of remote working to never-before-seen levels. As the skyscrapers that dot Sydney's iconic skyline stood empty, journalists speculated that the temporary experiment in remote work may transition into a permanent end to the cubicle farm. For many the lockdown experiment has removed institutional barriers to remote work, and shown we can have productive interactions with those on the other side of the city, country or even world.

Many have continued to work remotely even after the lifting of restrictions. And why wouldn't they? Commuting can be a big a source of stress and can steal away our precious time. Time that could be

spent with the kids or surfing. Also, in the times that we have to focus to complete an individual task colleagues can be a distraction. Firms also stand to benefit in not having to fork out as much on office space and overheads.

Remote working shows promise in making us happier and more productive, but it doesn't always go smoothly. It can be hard bouncing ideas off one another and collaborating. And spontaneous run-ins at work can lead to new ideas and partnerships which underpin our innovation economy. And who doesn't miss the office chats? And while many of us can work remotely, not everyone is lucky enough to be able to do this.

This is the first report of the NSW Innovation and Productivity Council's NSW Remote Working Insights research series, launched to unearth and unpack the ongoing shift toward remote work. In this report we take a deep dive into New South Wales' workforce to assess who can remote work and to what extent. We also asked 1,500 remote workers about their experiences. I hope you enjoy reading it.

**Steve Sammartino**  
*Project Champion*





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# 01. Executive Summary

## We're measuring the results of a huge remote working experiment

Remote working is a rapidly emerging aspect of workforce adaptation and the future of work. By May 2020, in response to the COVID-19 pandemic, 46 per cent of NSW workers were working from home. Among other things, this has been a huge experiment in our ability to work remotely.

To evaluate that experiment, the NSW Innovation and Productivity Council is employing a unique combination of tools: data from artificial intelligence platform Faethm, and our own survey of 1,500 NSW remote workers. We designed our survey with expert advice from the Data and Statistical Analysis team in the NSW Department of Premier and Cabinet.

The Council's report provides insights into the current situation and is the first in a series of publications that will examine changes in working patterns and arrangements because of COVID-19. It will provide evidence and insights into longer-term implications to support NSW public policy development and workforce planning into the future.

## We have already saved time and increased productivity by working remotely

Amid the storm of COVID-19, the Council's work contains some good news. If done in a balanced way, remote working can actually **strengthen** the NSW economy and **improve** our lives.

Those of us who can work remotely report being more productive when we do—by an average of 13 per cent.

That is translating into gains for workers as well as for employers. Without the need to prepare and commute, the average NSW remote worker has an extra 1 hour and 17 minutes per day. The average worker puts a portion of that time back into work. But we use most of it as personal and family time. Working remotely two days a week saves the average worker the equivalent of 3.3 weeks' leave a year, and \$860 a year in travel costs.

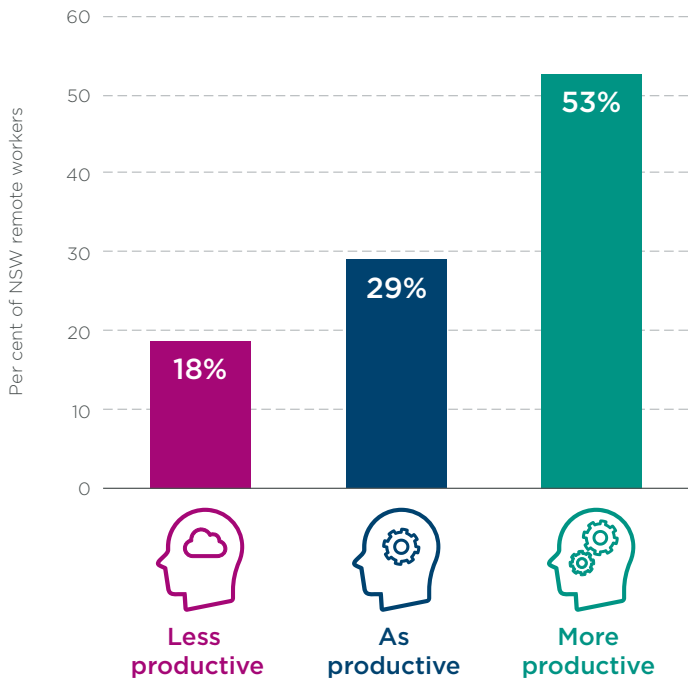




## Executive Summary

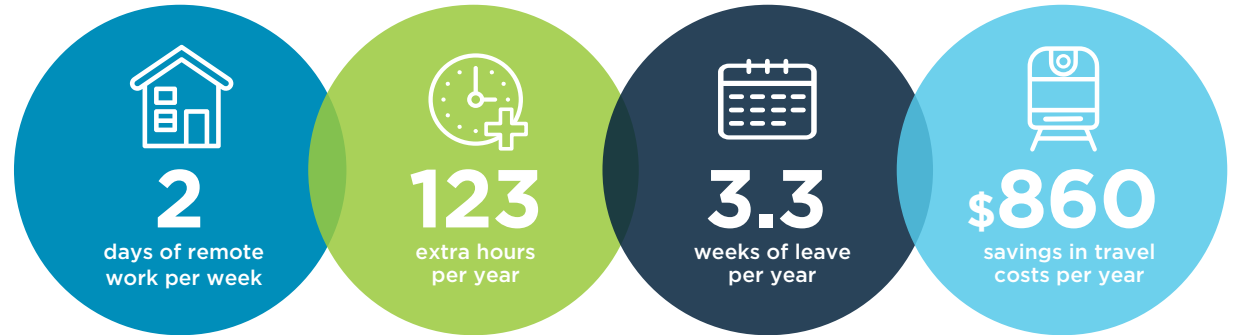
### FIGURE: MOST WORKERS REPORT HIGHER PRODUCTIVITY WHEN WORKING REMOTELY

Productivity reported when working remotely, compared to working at an employer's workplace



Source: IPC Remote Working Survey 2020

### FIGURE: THE TIME AND MONEY REMOTE WORKERS SAVE



Note: Weeks of additional leave assumes a 37-hour work week. Travel costs savings are calculated using adult Opal 10-20 km peak time train fare. Source: IPC Remote Working Survey 2020; Transport NSW; IPC calculations

By reducing the traffic on our roads and public transport networks, remote work can even benefit workers who do not work remotely.

### The challenges and opportunities ahead

Most of us are already adapting to more remote work, with many of us liking it. The Council's survey found we rank 'better work-life balance' as the single best aspect of remote work.

Our survey also confirms that remote working creates new challenges:

- Some tasks cannot be done remotely—for instance, most nurses' and builders' tasks.
- Some of us find remote work socially isolating—some find it lonely.
- Some of us have difficulties collaborating with other people online.
- On-the-job learning is more challenging.
- Benefits from remote working may not be equally shared. Industries like bricks and mortar retail and hospitality require physical presence. Here, some service workers will be unable to benefit directly from remote working—although they will still benefit from a wider economic resurgence.

## Executive Summary

The Council has identified four ways in which remote working may change New South Wales:

- Productivity could rise, strengthening economic growth, state finances, and living standards.
- Sydney's central business district (CBD) will remain the state's employment hub, but offices could be reborn as spaces for collaboration and innovation.
- Congestion may ease with less pressure on our roads and rail system and better CBD access.
- There could be impacts on health and inequality, for better or, in some cases, worse.

### The best of both worlds: a 'hybrid model' of remote work

While COVID-19 pushed remote working to an extreme, working remotely is rarely an all-or-nothing choice. The Council's work shows that most of us can work some of the time from home and some of the time on-site. Only 5 per cent of us can perform all our tasks remotely, but fully half of us can work remotely for at least two days a week.

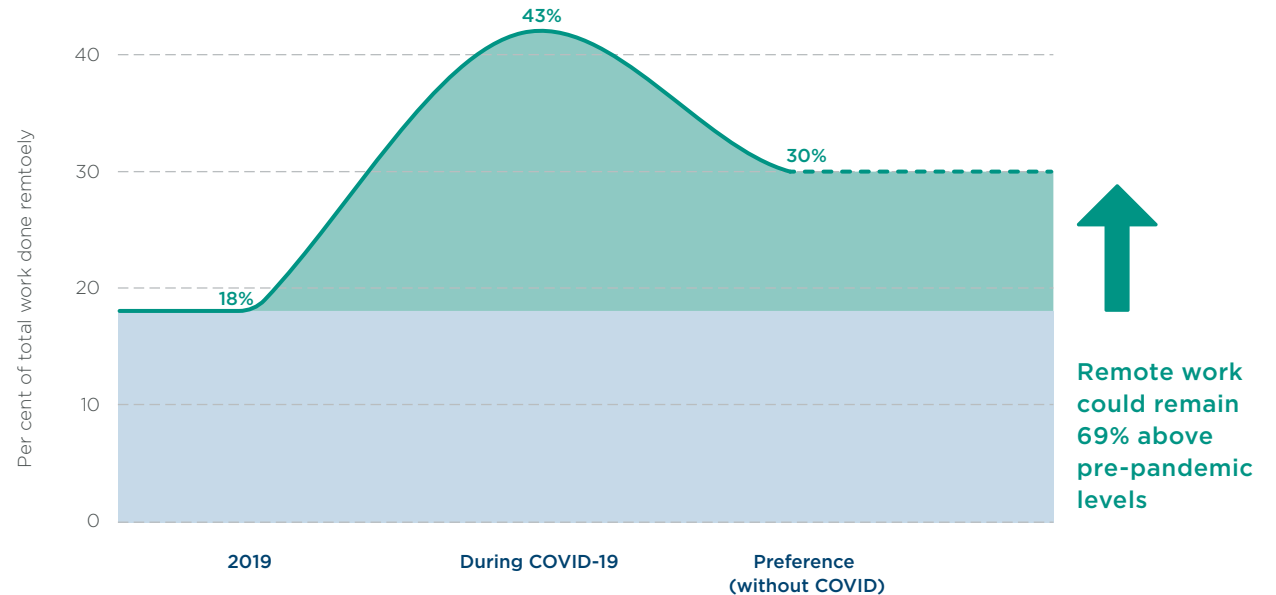
COVID-19 forced us to work remotely wherever possible. In the future, however, NSW workers want more of a balance. Most of those who can work remotely want to do it for two to three days per week. We like remote work, but we also value working together in person.

This 'hybrid model' takes remote work's best aspects, and combines them with the benefits of gathering together in one location.

- The majority of us can work remotely some of the time.
- We can gather on-site for collaboration, team-building, and 'non-remoteable' tasks.

The challenge, once COVID-19 has passed, is this: to find a flexible mix of workspaces, policies and practices that caters to these preferences. This is a solvable challenge for NSW employers, workers and policymakers.

**FIGURE: REMOTE WORK WILL DROP BUT IS LIKELY TO STAY ABOVE PRE-PANDEMIC LEVELS**



Source: IPC Remote Working Survey 2020; IPC analysis





02.

Remote  
Working  
Potential

# Remote working: temporary experiment or permanent shift?

Many workers and businesses have been forced to try remote work for the first time. They have encountered both benefits and challenges.

In March 2020, Australian governments introduced emergency restrictions to slow the spread of COVID-19. The NSW Government directed non-essential NSW workers to work from home. Almost overnight, the rate of remote work rose to record highs—46 per cent or more were working remotely in late April and early May.

Commentators have speculated that what began as a temporary experiment might turn into a permanent revolution (Boddy, 2020; Nixey, 2020; Thompson, 2020; World Economic Forum, 2020). Early surveys support this speculation:

- 67 per cent of Australians polled in April expected to work from home more after the crisis.
- So did 76 per cent of managers in another poll and 83 per cent of businesses in a City of Sydney survey (Committee for Sydney, 2020; NBN, 2020; Swinburne University, 2020).

Other commentators have urged caution. They argue that old patterns will reassert themselves after the crisis, and that the 'death of the office' is much exaggerated (Cummins, 2020).





## Remote working: temporary experiment or permanent shift?

### NSW policymakers need quality data on the shift to remote working

A permanent increase in remote work is likely to change many aspects of social and economic life in New South Wales.

- Remote working could lift the state's productivity. Not all NSW workers can work remotely, but those who can report being 13 per cent more productive.
- More remote working could change how NSW businesses operate. For instance, it could soften demand for CBD office space, potentially opening central areas for other uses.
- It could spur NSW workers to reconsider where they live, work and consume, reshaping our cities and regions. Some workers might relocate to the urban fringe and commute less frequently. If workers do relocate, spending on services around employment centres could shift to new locations.

- It could substantially shift infrastructure demand and population densities. Permanent increases in remote working could reduce and reshape demand across transport networks, freeing up capacity and reducing congestion.
- The social implications of remote working need to be examined carefully. Remote working can impact mental health and inequality. Workers who cannot work remotely will not benefit as much as those who can.

If remote working is here to stay, policymakers can help NSW workers and businesses grasp the opportunities and overcome the challenges. This could require adjusting regulations, shifting services and reprioritising infrastructure spending to meet new patterns of demand and ways of doing business.

The changes caused by remote working could be both broad and deep. So policymakers need high-quality data—and they need it as soon as possible.

### This report explores the new landscape

Remote working is a hot topic. New surveys, modelling, and studies are released almost daily. With this report, we take stock of the growing literature and provide a balanced analysis specific to the NSW economy. This is the Council's first report in a series that will examine longer-term changes in working patterns and arrangements in a with-COVID world, to support public policy development and workforce planning into the future.

This report brings together three sources of insight:

1. It harnesses **Faethm's Artificial Intelligence Predictive Analytics Platform ([www.faethm.ai](http://www.faethm.ai))** to assess the underlying potential for the NSW workforce to work remotely.
2. It presents new insights from the NSW Innovation and Productivity Council's **Remote Working Survey** of 1,500 NSW remote workers—including shifts in preferences, attitudes, time use, labour productivity, and industry- and occupation-specific impacts (see Appendix A).
3. It sets out the NSW Innovation and Productivity Council's **analysis of the literature**, to provide a balanced view of what a shift towards remote working means for policymakers, businesses, and the public.

# New South Wales has long had remote working potential

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Technology and knowledge-intensive work have gradually made remote working more feasible.



Remote working is an arrangement where an employee works from somewhere other than their employer's workplace. Remote working is often called 'telework' or 'telecommuting'. Employees often work remotely from their homes, but remote working can be done from almost anywhere—a café, a local work hub, even a train.

Futurists and academics have long predicted that 'distance-destroying' technologies like laptops and mobile phones would move many workers out of their central workplaces (Nilles et al., 1976; Toffler, 1990; Drucker, 1993). As communications technology has become better, cheaper, and more widespread, more workers have gained the potential to work from anywhere with an internet connection.

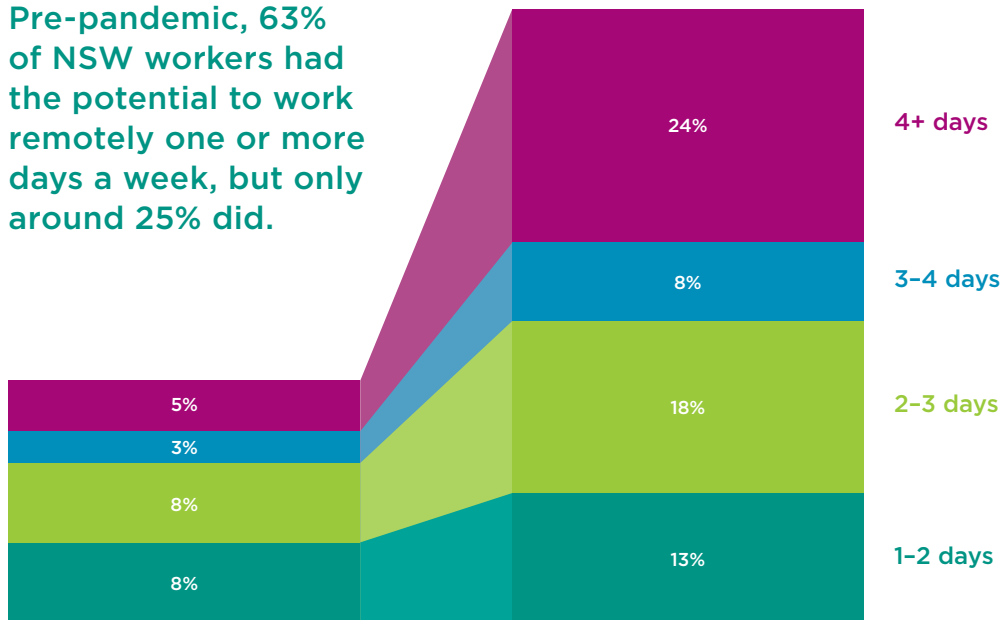
The potential for remote working has also grown with the rise of the knowledge-intensive worker. Knowledge-intensive work—such as financial, professional, and technological services—has long been growing as a share of employment (Adeney, 2018). Today, knowledge-intensive work accounts for around two-fifths of all employment in New South Wales. Compared with service work and physical production, knowledge work is well suited to remote working. In New South Wales, Sydney has become the national hub for knowledge industries. So Sydney has significant potential for remote working.



## New South Wales has long had remote working potential

**FIGURE 1: BEFORE COVID-19, THE NSW WORKFORCE HAD A LARGE UNTAPPED POTENTIAL FOR REMOTE WORK**

Pre-pandemic, 63% of NSW workers had the potential to work remotely one or more days a week, but only around 25% did.



**How many of us worked remotely before COVID-19?**

Proportion of NSW workforce that worked at least a day per week remotely in 2019, by days per week

**How many of us can potentially work remotely?**

Proportion of NSW workforce that could work at least a day per week remotely, by days per week

## Most of the NSW workforce can do at least some work remotely

Rather than classifying jobs as being suitable or unsuitable for remote work, we have broken jobs into their individual tasks and assessed the remoteability of each task (see Appendix C for our approach). With that done, our analysis reveals who in New South Wales can work remotely, and to what extent. As the right side of Figure 1 shows, nearly a quarter of the workforce can work remotely, and to what extent. A further quarter of the workforce can work between two and four days a week remotely.

The left side of Figure 1 shows how much of our workforce actually worked remotely before 2020. Comparing the right and left sides of Figure 1 reveals that before the COVID-19 pandemic, we were operating far below our potential for remote work.

## Most NSW workers can work remotely part-time

But our analysis also highlights this fact: working remotely is rarely an all-or-nothing choice.

Most workers can work remotely, but only for *part* of their work time. While 24 per cent of NSW workers could work four days a week remotely, only a fraction of that group (5 per cent of the workforce) could make the leap to five days a week and become fully remote workers. 56 per cent of the work done across the NSW economy is not remoteable, and must be done on site.

Note: Data for less than one full day of remote work are not shown. Totals do not add up precisely due to rounding. Source: IPC calculations using data from Faethm and the IPC Remote Working Survey 2020. See Appendix C for more.

## New South Wales has long had remote working potential

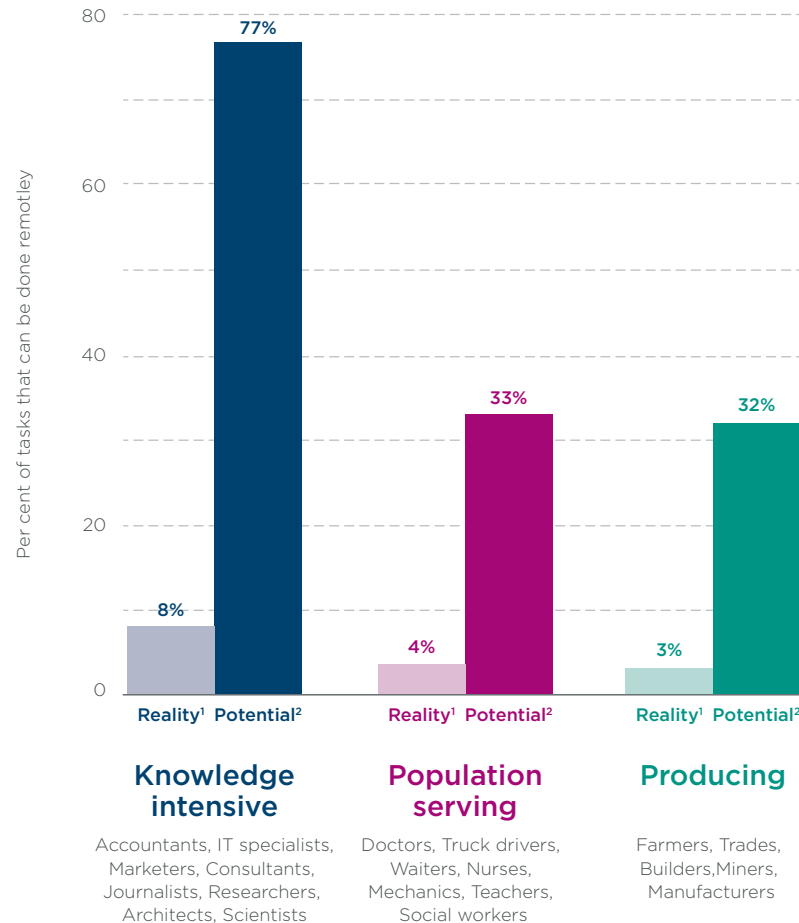
### Knowledge-intensive workers have the greatest potential to work remotely

Knowledge-intensive work, typically performed at a desk with a computer, is often highly remoteable. This means that the potential to work remotely is skewed towards industries like IT and finance. Population-serving occupations, like social work and teaching, have a lower but still sizeable potential for remote work. Producing occupations, like tradespeople and mechanics, have the lowest potential to work remotely (Figure 2).

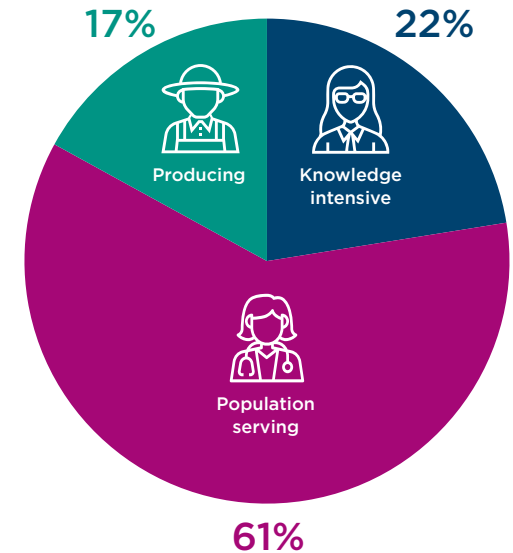
The potential for remote work differs not only across the broad industry groupings, but also within them. Waiters and doctors, for example, both work in population-serving industries, but doctors have much more potential to work remotely than waiters.

**FIGURE 2: MORE WORK CAN BE DONE REMOTELY**

Proportion of tasks that can be performed remotely, by broad industry categories



Proportion of NSW workforce



<sup>1</sup> Reality: Worked from home (2016 Census)

<sup>2</sup> Potential: Proportion of Remoteable Tasks

Note: This analysis is based on Faethm 'remoteability data'. *Producing* excludes agricultural jobs: the census classifies many farmers as 'working from home', which does not represent remote working.

Source: ABS, Census of Population and Housing 2016; IPC calculations using Faethm data. See Appendix C for more.



## New South Wales has long had remote working potential

### The rise of remoteable knowledge jobs has not stopped economic activity concentrating in cities

Despite the rapid adoption of the technology that makes remote working possible, and the rise of highly remoteable knowledge-intensive work, Australia's economic activity has become increasingly centralised in our central business districts (CBDs). Many Australians use telecommunications technology every day at work. But until recently, most of us have had to travel to our employer's workplace to use it.

This paradox is not entirely surprising. CBDs and centralised workplaces are tried and tested spaces for collaboration and innovation. As the Council's research has shown, businesses and institutions that co-locate in clusters or innovation precincts can gain real economic opportunities from collaborating and sharing knowledge and resources in cost-effective ways (NSW Innovation and Productivity Council, 2018).

Within New South Wales, Sydney exemplifies this. Sydney's architecture has had to grow upward in recent decades to house a growing number of workers in knowledge-intensive occupations who want to live near, and work in, Greater Sydney.

### The remote working revolution failed to materialise in Australia before 2020

Australia has lagged behind other advanced economies in adopting remote working (Fitzgerald & Malik, 2017). Despite Australia's rapid adoption of the smartphone and broadband, a remote-work revolution failed to materialise here before the pandemic.

Before 2020, New South Wales was using less than half of its potential to work remotely. We estimate that while 44% of all work tasks in the NSW economy can be done remotely, only 18% were done remotely in 2019 (see Appendix B).

We have compared the total proportion of tasks in knowledge-intensive industries that can be done remotely with the 2016 Census results. Doing so confirms the divide between the level of remote work before the pandemic and our underlying potential (Figure 2). In knowledge-intensive industries, 77 per cent of all tasks could be done remotely on average, yet only 8 per cent of workers worked from home according to the 2016 Census. Population-serving and producing occupations show a similar divide.

Given Australia's technological parity with other advanced economies, our uptake of remote work has probably been held back by institutional barriers.

# 03.

## The Lockdown Experience





# COVID-19 has transformed the remote work norm

To better understand how remote working has changed in New South Wales during the pandemic, the NSW Innovation and Productivity Council surveyed 1,500 NSW workers during August and September 2020.

(See Appendix A for our approach.)

We estimate that in 2019, around 60 per cent of all NSW workers did at least some remote working. Yet those who did some remote work before COVID-19 did not do it that often. The majority did it for less than a day each week (Figure 3). Tellingly, among those who could work remotely in 2019, most would have liked to do it more.

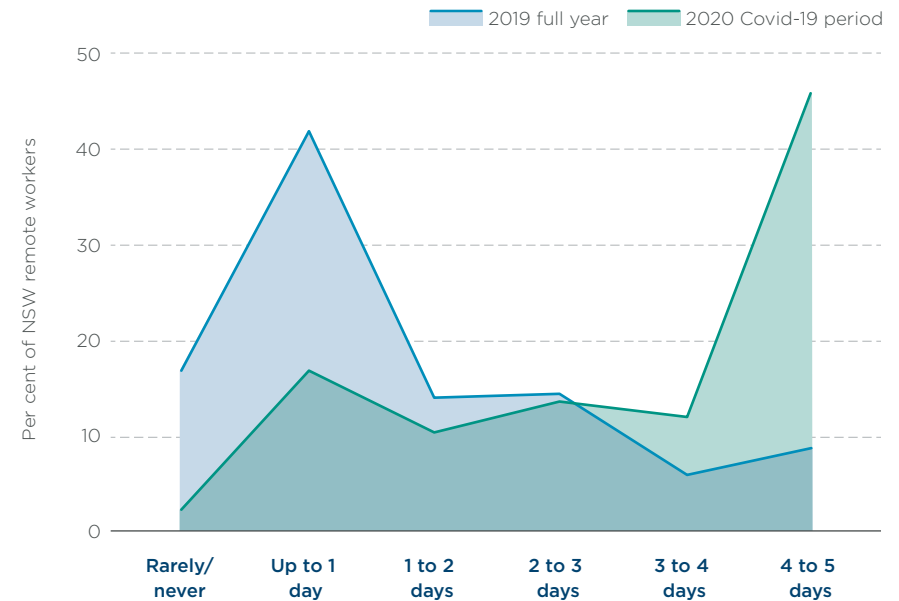
COVID-19 pushed matters to the opposite extreme. During the pandemic, it was common for those of us who could work remotely to do it four or five days a week (Figure 3).

Looking at all the work done across the NSW economy, we estimate that the proportion done remotely rose from 18 per cent in 2019, to 43 per cent during the COVID-19 pandemic (see Appendix B for our approach).

We estimate that a maximum of 44 per cent of all work in New South Wales can be done remotely. The pandemic pushed remote working very close to this limit.

**FIGURE 3: 4 TO 5 DAYS BECAME THE NORM FOR THOSE WHO CAN WORK REMOTELY**

**Proportion of an average week worked remotely, by time period**



Note: The '2020 COVID-19 period' covers June to September 2020.  
Source: IPC Remote Working Survey 2020

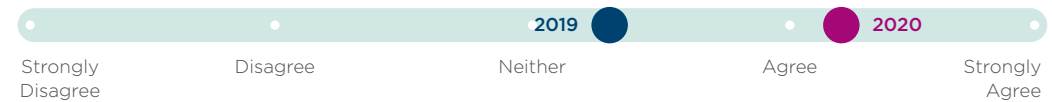
## COVID-19 has transformed the remote work norm

### Employers embraced remote working during the pandemic

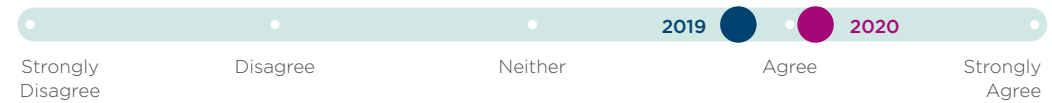
In our 2020 Remote Working Survey, NSW remote workers reported that their employers were more encouraging of remote work compared with 2019. Similarly, NSW remote workers found it easier to get permission to work remotely in 2020, compared to 2019. The difference in attitudes between 2019 and 2020 are shown in Figure 4. Overall, this indicates that employers responded to the threat of COVID-19 and the associated health restrictions by allowing more remote work where possible.

**FIGURE 4: COVID-19 TRIGGERED A SHIFT IN ATTITUDES TO REMOTE WORK**

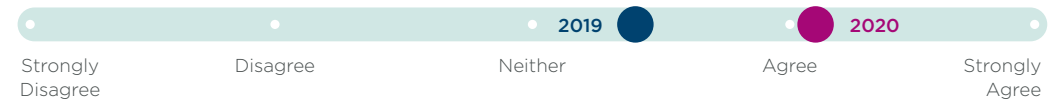
#### My organisation encouraged people to work remotely



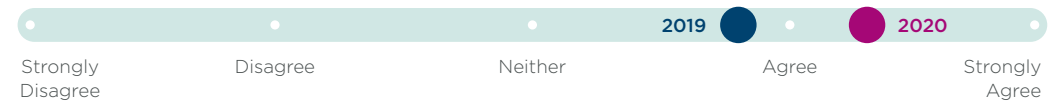
#### My organisation was well prepared for me to work remotely



#### It was common for people in my organisation to work remotely



#### It was easy to get permission to work remotely



Note: The figure shows 2019 and 2020 mean data. Source: IPC Remote Working Survey 2020

# 10 ways remote work could change New South Wales



## 1. Productivity and living standards could rise

Not all NSW workers can work remotely, but those who can report being 13 per cent more productive on average. If remote working becomes more common, and the challenges are managed well, the benefits for New South Wales could be substantial. As the NSW Productivity Commission (2020) has highlighted, improved productivity can drive stronger economic growth, stronger state finances and higher living standards.

## 2. Lower congestion could benefit commuters

Traffic congestion has long challenged New South Wales, and especially Sydney. Slower speeds, queuing, and longer trip times cost the average Sydneysider an estimated \$1,350 annually (Cosgrove, 2015). Congestion is a major focus for economic reform in New South Wales (NSW Productivity Commission, 2020).

More remote work could relieve this congestion, with large benefits to the remaining commuters. Reducing traffic by as little as 5 per cent could increase traffic speeds by up to 50 per cent (Martin & Thornton, 2017).

## 3. More collaborative offices

Many people are now asking: what is an office for? If workers meet in person less often, collaboration and social interaction may become more central to the office. If offices become places for workers to meet and bounce ideas off one another, businesses will need to rethink the kinds of offices they provide. The office may have to adapt to remain relevant. The layout and design of existing office space could change, with an emphasis on collaboration spaces, virtual meeting rooms and 'meeting booths'.

## 4. CBDs could be transformed

The shift to remote working during COVID-19 radically decreased foot traffic in Sydney's CBD, contributing to an estimated \$7 billion in lost revenues (Wade, 2020). While many workers will return to the CBD, more remote working could permanently dampen demand for CBD office space. Other uses may expand to fill the gap—for instance, entertainment, culture, and the arts.

## 5. Benefits would not be shared equally

Workers in knowledge-intensive industries benefit the most from remote working because their work is often highly remoteable. By contrast, workers in industries like retail, hospitality, and health benefit less because they have many tasks that must be done on-site. These workers could still benefit indirectly, however, through less traffic congestion and stronger economic activity in local centres. More research is needed to understand how remote working affects different groups.





### 6. We may need to rethink our infrastructure

Much of our transport infrastructure was designed to serve pre-pandemic levels of transport demand and projected increases in demand. Permanent increases in remote working could create excess capacity on some existing services, and change the economics of proposed transport projects. Where projects are shown to no longer stack up, funding can be redeployed to other priorities.

### 7. Health impacts would be complex

For many, the family and personal time gained by working remotely would mean better mental health. But for others, remote work could be isolating, or even mean greater exposure to domestic abuse. The physical health impacts might also be complex. Remote working can free up time for exercise, but it can reduce incidental exercise, like walking or cycling to work. During COVID-19, many remote workers also set up makeshift home offices without proper ergonomic equipment, risking preventable workplace injuries.

### 8. Local economies could be revitalised

Remote working changes where people spend their money. While COVID-19 restrictions have lowered overall spending, the rise in remote working has also spread out spending that was previously concentrated in CBDs. Workers who previously bought lunch in the city have been buying it locally, supporting local businesses and jobs.

### 9. Economic opportunity may be less tied to place

There are more jobs in Sydney that can be done remotely than in New South Wales' regions (Duke, 2020). In this sense, the benefits of remote working are more accessible to city workers. However, if city firms are willing to hire full-time remote workers, new remote job opportunities may open for regional workers. Businesses would also benefit, using remote work to access a bigger pool of potential employees.

### 10. Many might relocate—but not far

Commuting less makes it easier to live further from city centres, in housing that is cheaper or closer to amenities like beaches and parks. Recent modelling suggests that remote working could lead more workers to live on the urban fringe. But it also suggests that most workers will continue to live fairly close to their employer's workplace, and cities will keep growing (Lennox, 2020).

# NSW workers save more than an hour a day working remotely

NSW Innovation and Productivity Council analysis suggests that by removing the need to prepare for work and commute, NSW remote workers and their employers gain an average of 1 hour and 17 minutes per day.

(See Figure 5.)

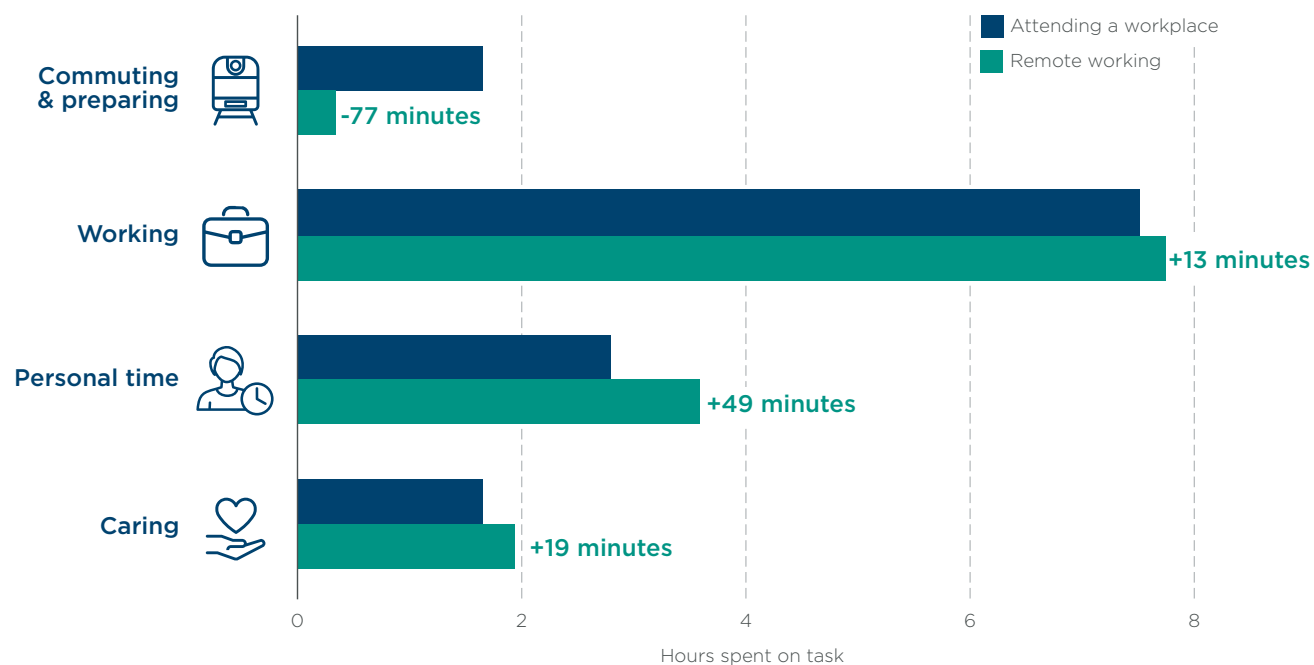
This is perhaps the single greatest benefit of remote work.

On days when they work remotely, NSW workers spend 49 minutes more on personal and family needs, and 19 minutes more on caring and domestic tasks. They spend only 13 minutes more time working.

<sup>1</sup> Note that these tasks do not account for all the time workers have during a day. As such, the sum does not necessarily equal time savings from preparing for and commuting to work.

**FIGURE 5: REMOTE WORKING ALLOWS FOR MORE PERSONAL AND FAMILY TIME**

Hours spent on activities when attending an employer's workplace versus working remotely



Note: Differences in time spent on tasks may not sum due to rounding.  
Source: IPC Remote Working Survey 2020

## NSW workers save more than an hour a day working remotely

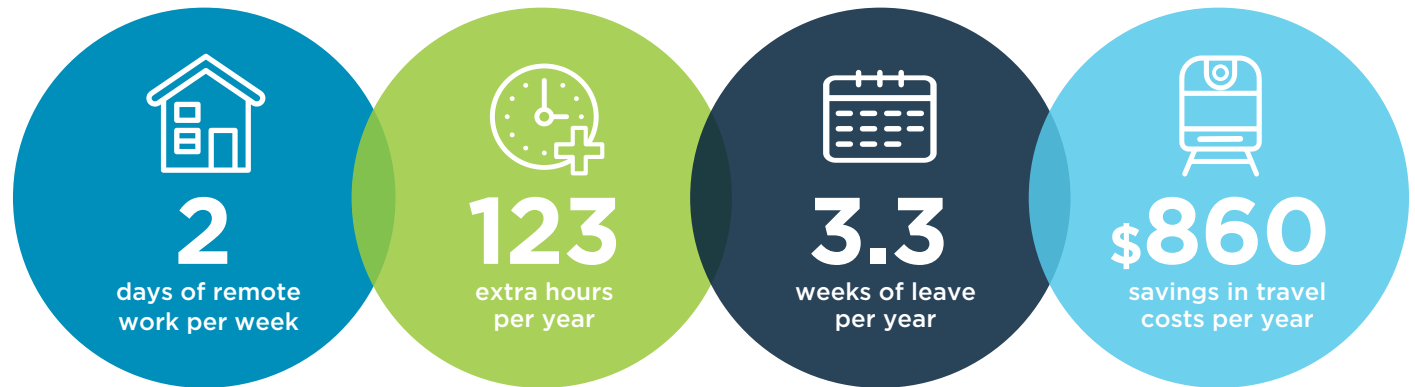
### These time savings add up

Figure 6 shows how an extra two days of remote work a week translates into additional time savings per year, and the equivalent time in annual leave.

This additional time cannot be used in the same way as annual leave—to take a holiday, for instance. Yet it may in fact have more value per hour than annual leave time, because people are often more time-poor during the working week. Avoiding a commute also saves money that would normally be spent on travel, paying for expenses such as vehicle fuel, insurance, or bus fares.

People in Greater Sydney save the most from avoiding commuting and work preparation—on average, 1 hour and 20 minutes. But the time savings for regional remote workers are still large—around an hour on average.

**FIGURE 6: THE TIME AND MONEY REMOTE WORKERS SAVE**



Not having to commute to or prepare for work allows workers to fit in more 'life'. Not surprisingly, remote workers point to better work-life balance as one of the best aspects of remote work. They also feel this helps them to better manage personal and family commitments (see Figure 8).

“

**I don't have to commute 3 hours a day. It is amazing for me.**”

Female, 31, Wollongong, administration services

Note: Weeks of additional leave assumes a 37-hour work week. Travel costs savings are calculated using adult Opal 10-20 km peak time train fare. Source: IPC Remote Working Survey 2020; Transport NSW; IPC calculations



## NSW workers save more than an hour a day working remotely

### Some occupations work longer hours than others when working remotely

Professionals saw the biggest increase in their working hours while working remotely. Meanwhile, those who worked in administrative and sales roles had the smallest increases.

While these results shed some light on how remote working affects working hours, they also reflect the unique circumstances of the COVID-19 pandemic. During the pandemic, many workers were forced to work shorter hours because of poor economic conditions. Others were forced to work shorter hours because they could not do work tasks that still needed to be done on-site.

**FIGURE 7: PROFESSIONALS WORK LONGER HOURS THAN OTHERS WHEN WORKING REMOTELY**

Time spent working when at employer's workplace and working remotely, by occupation



Note: Only occupations with 70 or more responses are shown.  
Source: IPC Remote Working Survey 2020

## NSW workers save more than an hour a day working remotely

### Extra costs are not a big issue for NSW remote workers

Many have argued that the costs taken on by remote workers—such as provision of equipment, internet connectivity, and electricity supply—will outweigh remote working’s benefits. These costs were previously borne by employers.

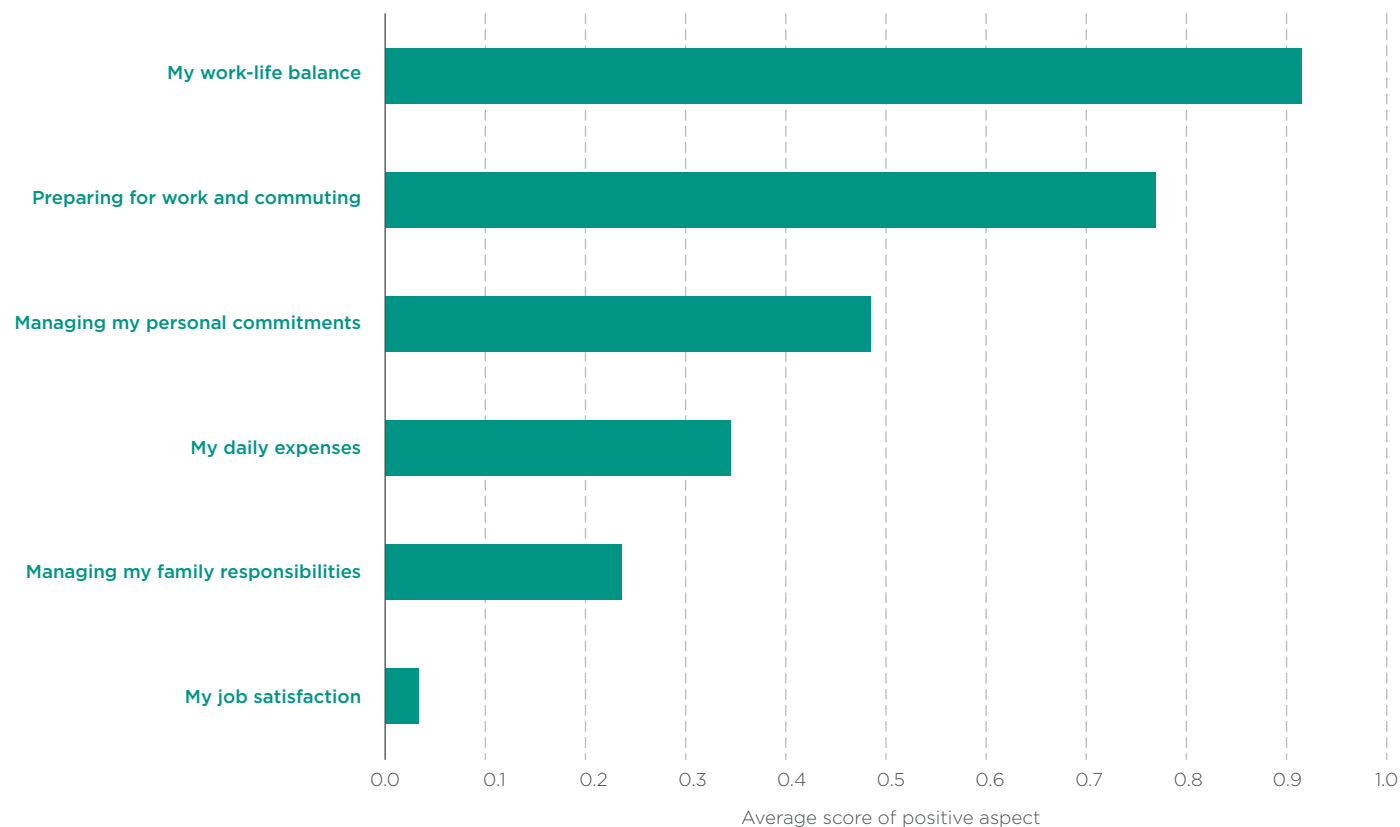
But our results show that cost-shifting is not a major issue for NSW workers. They rank extra costs as one of the least significant barriers to working remotely (see Figure 10).

### Extra time and a better work-life balance are the best parts of remote work

NSW remote workers on average list improved work-life balance as the best aspect of remote working. Time saved on preparing for and commuting to work ranks next. The aspects of remote work that workers themselves most enjoy are all those that give them more time for themselves and their families, as Figure 8 shows. Remote work appears to have little impact on job satisfaction.

**FIGURE 8: REMOTE WORK IMPROVES WORK-LIFE BALANCE**

Best aspects of remote working, in rank order



Note: A higher score indicates a relatively better aspect of remote work.  
Source: IPC Remote Working Survey 2020

# NSW workers find remote working more productive

Consistent with international findings, NSW workers report being more productive for each hour that they work remotely. (See Appendix A.)

Not everyone can work remotely, but those who can report that on average they produce 13 per cent more each hour compared to working on-site.

Our survey results were consistent with many others. For example, in a poll of more than 10,000 workers across six developed nations, including Australia, around 70 per cent said their productivity was the same or higher when working remotely (Citrix Australia, 2020). In another survey of 12,000 employees, 75 per cent stated that they had been able to maintain or improve productivity while working remotely during the COVID-19 crisis (BCG Consulting, 2020). Another Australia-specific survey found 44 per cent of workers rated themselves as more productive after COVID-19 restrictions were implemented (Building 20, 2020). Other surveys had similar results (Indeed, 2019; McCrindle Research, 2013).

Other sources of evidence confirm what workers around the world are reporting (see Box 1).

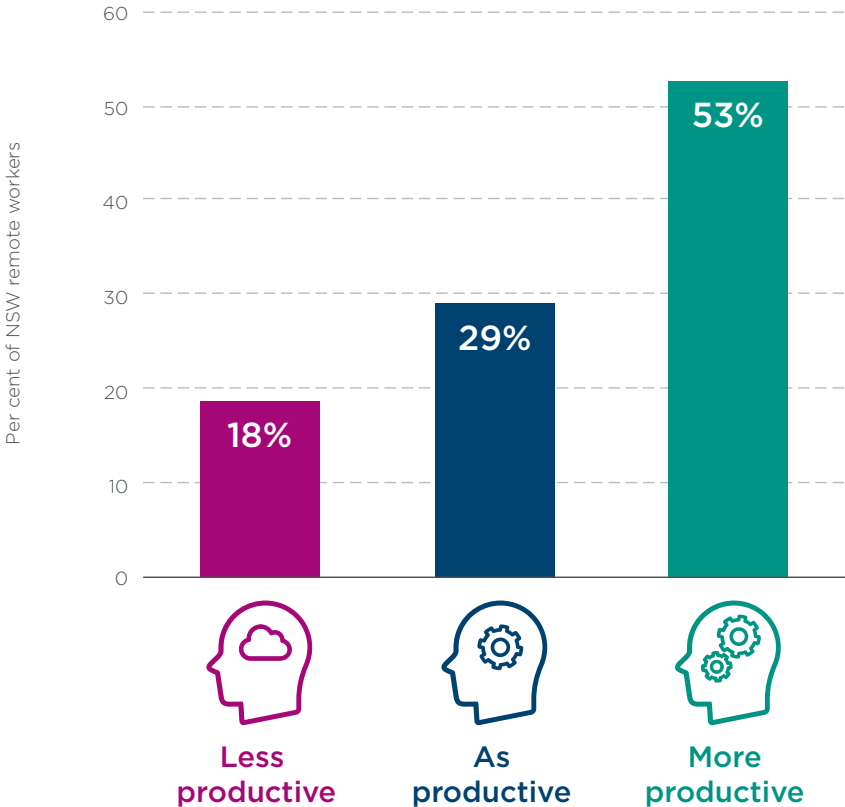
It is important to put these findings in context. The experience of COVID-19 shows how remote working could improve labour productivity—the amount a worker produces each hour they work. If NSW remote workers worked remotely as much as they prefer after the pandemic, we estimate that overall labour productivity in New South Wales would rise by 1.6 per cent (see Appendix D for more). This is a promising sign for the future. But the pandemic has harmed productivity in other ways. Many workers have tasks that cannot be done remotely and have been unable to attend their workplaces. COVID-19 also caused a significant drop in the demand for many goods and services, creating unemployment and reducing economic output. Productivity will fall as firms will be reluctant to let go of skilled labour.

**“Productivity is excellent without these interruptions.”**

Female, 62, Sydney, administration services

**FIGURE 9: MOST WORKERS REPORT HIGHER PRODUCTIVITY WHEN WORKING REMOTELY**

Productivity reported when working remotely, compared to working at an employer’s workplace



Source: IPC Remote Working Survey 2020



Box 1

## How reliable are workers' self-reported improvements in productivity?

In surveys across the world, workers consistently report they are more productive when they work remotely. Evidence suggests their perceptions are broadly correct.

We can check what workers report against their managers' views. Manager surveys on remote work productivity produce more tempered results but still suggest remote working improves productivity overall. In an American survey of 1,500 hiring managers, 32 per cent saw an increase in productivity among their employees during COVID-19 shutdowns, compared with about 23 per cent who saw a decline (Ozimek, 2020).

Empirical studies on remote working confirm the findings of surveys. One of the most notable studies involved an analysis of the output of employees at one of China's largest online travel agencies (Bloom et al., 2015). The employees were randomly allocated into 'working from home' and 'working from the office' groups, and their output was tracked. After nine months those who worked at home were found to be 13 per cent more productive than the office workers. They also showed a substantial increase in employee retention.

In another study, the productivity of US Patent and Trademark Office employees that could work from anywhere was 4.4 per cent higher than for those that could not (Choudhury et al., 2018).

While these empirical studies add weight to our findings, it is important to note that each focuses on a single occupation. The productivity of remote work is highly dependent on each specific occupation and is likely to vary significantly across workplaces and industries.

## NSW workers find remote working more productive

### The productivity of remote working varies across different jobs and industries

Table 1 shows that the productivity boost from remote working varies across different types of work. People who work in producing and population-serving industries report the biggest productivity increases when working remotely. However, most work in these industries is not remoteable, which tempers their potential productivity gains. By contrast, knowledge-intensive work is the most remoteable work, so knowledge-intensive industries stand to make the biggest productivity gains overall.




### Remote working can cut business costs

Remote working offers employers the important benefits of lower office costs and other overhead costs. For example, Building 20 estimated that moving to a full remote workforce could save Sydney-based businesses around \$13,680 per employee on rent annually (Building 20, 2020).

Previous research has also highlighted remote working's contributions to better recruitment, higher retention (McCrinkle Research, 2013) and reduced absenteeism (Indeed, 2019).

**TABLE 1: KNOWLEDGE-INTENSIVE INDUSTRIES STAND TO MAKE THE BIGGEST PRODUCTIVITY GAINS**

Potential productivity gains of remote work, by broad industry categories

	 <b>Knowledge intensive</b>	 <b>Population serving</b>	 <b>Producing</b>
<b>Remote worker productivity improvement</b>	11%	13%	17%
<b>'Remoteable' proportion</b>	77%	33%	32%
<b>Potential industry-wide productivity increase</b>	9%	4%	5%

Note: Weighted average estimates based on NSW Innovation and Productivity Council survey data. Only industries with 50 or more survey responses are shown. Estimates exclude industry workers who cannot work remotely. Potential productivity increases are calculated by comparison to a scenario of no remote working.

# Much work must still be done on-site

Not surprisingly, tasks that must be done on-site reduce the possibilities of remote working.

We estimate that 56 per cent of work in the NSW economy cannot be done remotely.

If a task involves working with specialised equipment, or providing personal services, remote work can be less productive or impossible. Car mechanics usually need access to the machinery and vehicles at their employers' workplace. Medical technicians need access to very expensive and often immobile equipment in labs and hospitals. Medical professionals usually need to be with their patients.

**FIGURE 10: SOME BARRIERS ARE BIGGER THAN OTHERS**

**Barriers to remote work, ranked from biggest to smallest**



Source: IPC Remote Working Survey 2020



# Collaboration and knowledge-sharing create challenges

---

**Many NSW remote workers reported that their individual productivity is higher when working remotely. But we also know that teams and businesses are more than the sum of their parts.**

The second-biggest barrier for NSW remote workers was *difficulty collaborating*. Many remote workers also stated that their working relationships and on-the-job learning were negatively impacted. Many other surveys confirm that collaboration and communication are key challenges when working remotely (Buffer, 2020; Indeed, 2019; Smartsheet, 2020).

Research has shown that physical proximity and face-to-face interaction improve the development and diffusion of ideas in knowledge-intensive businesses (Cunningham & Werker, 2012). Physical proximity allows workers to communicate and solve complex, ambiguous problems, and share knowledge with those around them, raising productivity.

While communications technology has come a long way, there is no perfect substitute for face-to-face interaction (Cytowic, 2020). Online, people interact less naturally and spontaneously. By reducing the quality and quantity of collaborative exchanges, remote working could hinder an important aspect of overall productivity.

More than half a decade ago, Yahoo was an early adopter of remote working, but it reverted to on-site work due to difficulties collaborating (Goudreau, 2013). Some analysts caution that remote working during the COVID-19 pandemic could be stunting new ideas and lowering long-run growth (Gorlick, 2020).

These concerns are reinforced by research on 'agglomeration effects'. Agglomeration effects can happen when many workers come together in one physical location and are more productive; the most famous example occurs in California's Silicon Valley. If many workers become remote, these agglomeration effects may not be experienced. While agglomeration's effects are uncertain, if many workers become remote they may not be experienced. One estimate suggests that less interaction between Sydney CBD workers during the COVID-19 pandemic might cause a \$3 billion hit to New South Wales' productivity in 2020 (Wade, 2020). More research is needed to see what happened in practice.

“

**I would like opportunities to connect in person even if most work is undertaken remotely.**”

Male, 51, Sydney, health care



## But technologies and work practices are adapting

Some organisations—especially in the IT sector—have begun adopting ‘all remote’ business models, and promoting practices to encourage collaboration, communication, and team-building in remote work environments (see for example GitLab, 2020). One study suggests that short, concentrated ‘bursty’ communication can be highly effective for remote collaboration (Riedl & Woolley, 2016).

It also seems that as remote working reaches a ‘critical mass’, collaboration and knowledge-sharing become easier within organisations. In 2019, 69 per cent of NSW workers found it easy to collaborate remotely. Information from our Remote Working Survey suggests this improved to 78 per cent in 2020, when the pandemic forced many more people to embrace remote working.

It is also important to put collaboration in context. Even knowledge-intensive workers do not need to collaborate and communicate all the time. Many spend a large part of their time working independently. And while working next to colleagues can have benefits, it can also create distractions that lower productivity (Sander, 2016).

A ‘hybrid’ model may offer the best of both worlds for collaboration and productivity, allowing workers to work remotely on independent tasks, while coming on-site for collaboration. The challenge for workers, people-managers, businesses, and policymakers is coordination—ensuring the right people are working on-site at the right times.

# Social connection is a key challenge

‘Opportunities to socialise’ ranked as the worst aspect of remote work in the NSW Innovation and Productivity Council’s Remote Working Survey. (See Figure 11.)

Psychologists emphasise that a lack of face-to-face interaction can lead to feelings of loneliness, which can damage our health, happiness and productivity (Evans, 2014; Robson, 2020). Other surveys confirm this: employees often report feeling less connected to their co-workers (Buffer, 2020; Building 20, 2020) or simply left out (Grenny & Maxfield, 2017).

“

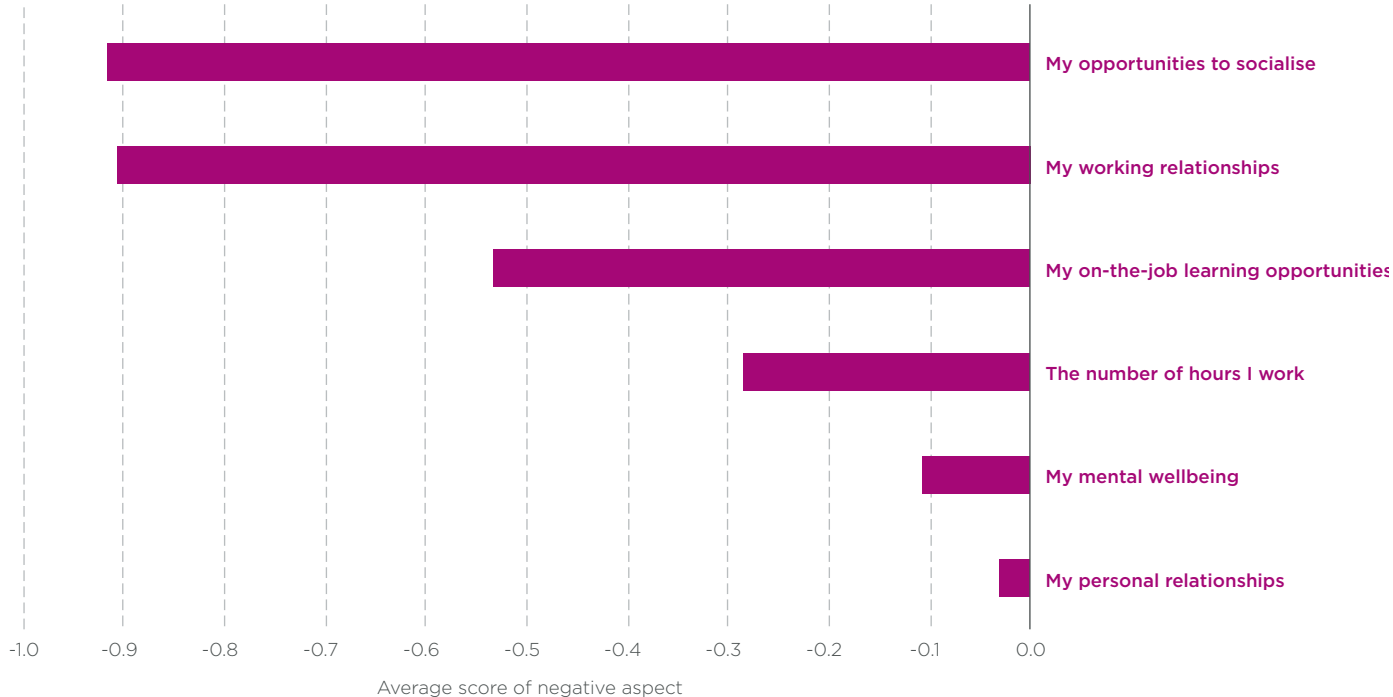
**Remote working works but I miss the incidental interactions**

Female, 52, Sydney, electricity services

”

**FIGURE 11: WORK RELATIONSHIPS AND A LACK OF SOCIAL INTERACTIONS ARE THE WORST PARTS OF REMOTE WORK**

Worst aspects of remote work, in descending order



Source: IPC Remote Working Survey 2020



## Social connection is a key challenge

### Remote working can blur the lines between work and leisure

Working from home can leave workers feeling as if they are 'always on', increasing stress and negatively impacting work-life balance (Buffer, 2020). A 2017 United Nations report found that 41 per cent of remote workers reported high stress levels, compared with just 25 per cent of office workers (Messenger et al., 2017).

“

**Remote work has increased the hours I work and the 'out of hours' demands.**”

Male, 57, Sydney, professional services

### NSW workers want a mix of remote and on-site work

Due to the challenges outlined above, many employees will return to their employer's workplace when they can. Many of those may return to their pre-pandemic patterns of remote work, particularly those who work in industries where remote work is not ideal, such as education. But our results show many workers have found that remote working works, and they are enjoying the benefits. With cultural and institutional barriers overcome, it is unlikely that these workers and their employers will reduce their remote work back to pre-pandemic levels.

“

**A mix of remote and in the office time would let me enjoy the physical social interaction alongside the work benefits of being remote.**”

Female, 64, Sydney, professional services

”

04.

The Future  
of Work



# A hybrid model could overcome the greatest barriers to remote work

Our survey highlights three substantial barriers to remote working:

- having tasks that can't be done remotely
- difficulties collaborating and sharing on-the-job knowledge
- social isolation.

All three of these barriers could possibly be addressed by a hybrid model of remote work—a way of working that combines remote and on-site work.

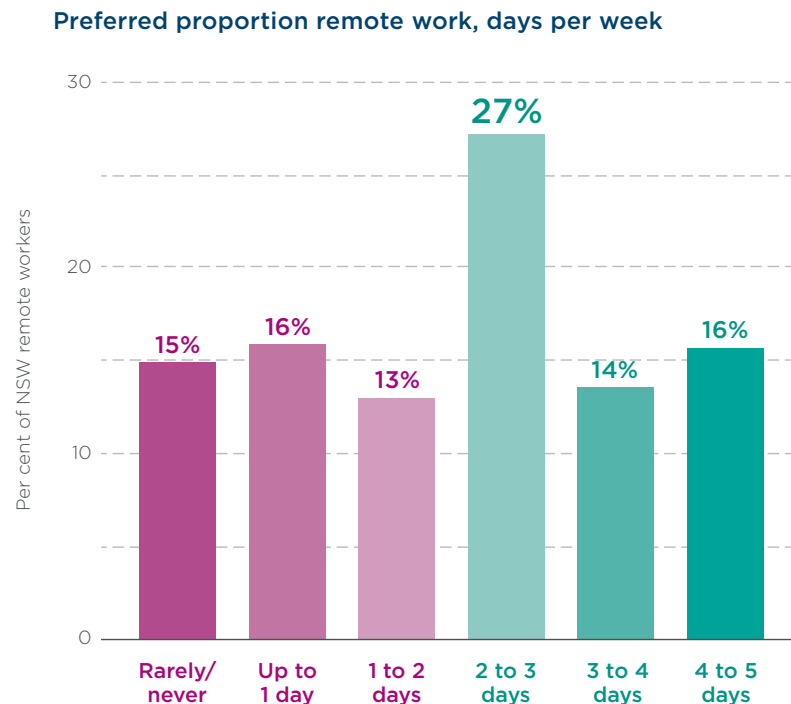
If employees work remotely some of the time, but come on-site for collaboration, team-building, and non-remoteable tasks, they could find remote working much easier. A hybrid approach has the potential to combine the best aspects of remote work with the benefits of working together in person.

Around 66 per cent of NSW remote workers want to keep something similar to the remote working pattern they experienced during COVID-19, while 29 per cent would prefer to do less remote working than during COVID-19. Our next NSW employee survey and report will assess this further.

**FIGURE 12: BEYOND COVID-19, THOSE WHO CAN WORK REMOTELY WANT A BALANCE OF REMOTE AND ON-SITE WORK**

## On-site benefits

- + Easier to collaborate
- + More on-the-job learning
- + Opportunities to socialise
- + Feeling more included



## Remote benefits

- + Increased productivity
- + More time for personal commitments
- + Saving on transport costs
- + Better work-life balance

Source: NSW Innovation and Productivity Council 2020 Remote Working Survey



## A hybrid model could overcome the greatest barriers to remote work

### After COVID-19, most want two- to three- days of remote work per week

After the threat of COVID-19 subsides, NSW workers who can do their work remotely would prefer a balance of remote and face-to-face work. The most popular preference is two to three days per week.

On average, those who worked remotely to some degree prior to COVID-19 said they would do more remote work than before the pandemic. And many of those who are new to remote work said they would continue to do work remotely to some degree.

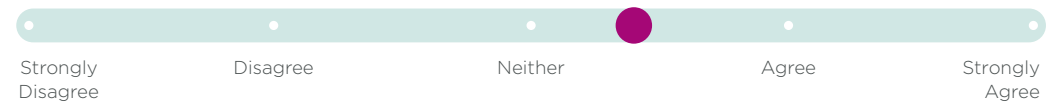
### Into the future, NSW workers expect more remote work choice

NSW remote workers think they will have more choice about working remotely in the future, and will be more supported if they chose to do so (see Figure 13).

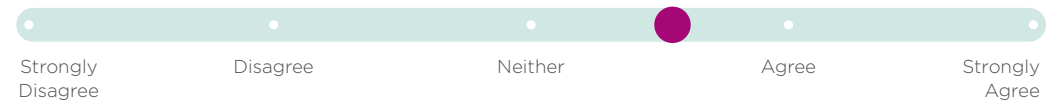
These results suggest that employers and workers may agree to greater levels of remote work going forward. Based on NSW workers' current preferences, we estimate that 30 per cent of all work in New South Wales would be done remotely beyond the COVID-19 pandemic. This would be 69 per cent higher than pre-pandemic levels. Our NSW Remote Working Insights research series will continue to measure these changes over time.

**FIGURE 13: NSW WORKERS EXPECT TO HAVE MORE CHOICE ABOUT REMOTE WORK AFTER THE PANDEMIC**

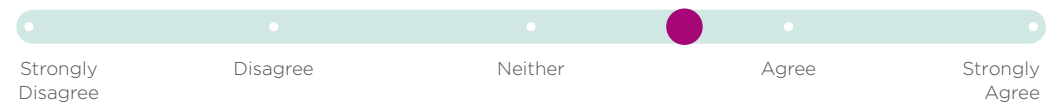
#### My employer would encourage more remote working



#### My employer would make changes to support remote working



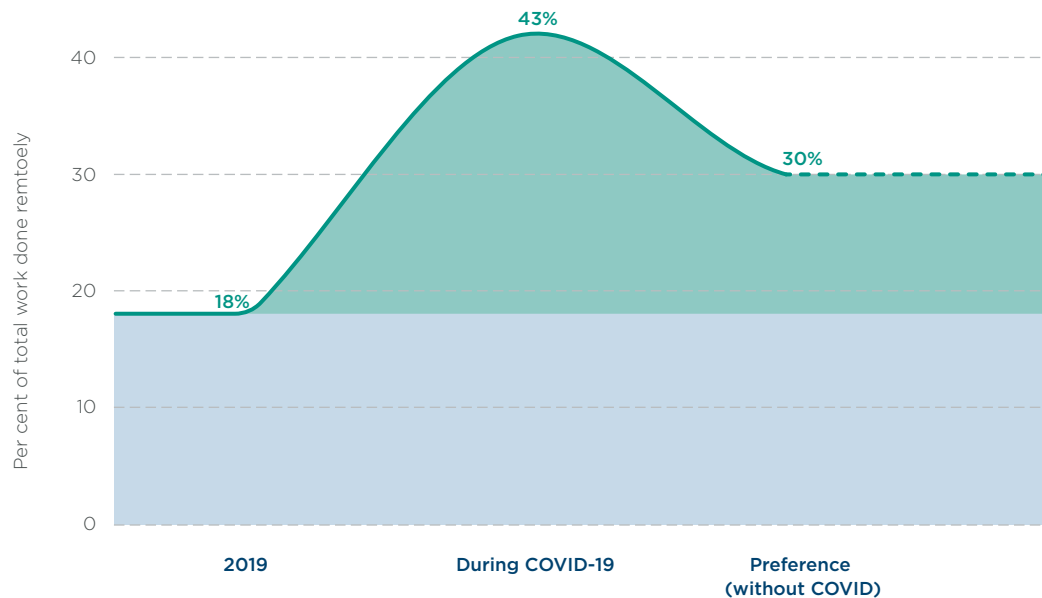
#### I would have more choice about whether I work remotely



Note: The figure shows 2020 mean data. Source: IPC Remote Working Survey 2020

## A hybrid model could overcome the greatest barriers to remote work

**FIGURE 14: REMOTE WORK WILL DROP BUT IS LIKELY TO STAY ABOVE PRE-PANDEMIC LEVELS**



Source: IPC Remote Working Survey 2020; IPC analysis



**Remote work could remain 69% above pre-pandemic levels**

## The appetite for remote work varies across New South Wales

The workers with the largest appetite to work remotely beyond COVID-19 are those in professional and administrative services: 45 per cent want to work remotely for three or more days a week. By contrast, many workers in the education and health care industries would prefer not to work remotely at all (21 per cent for education and 17 per cent for health care).

Both regional and Sydney remote workers want to work remotely more often in the future, but the appetite is lower in regional New South Wales. Of Sydney remote workers, 72 per cent want to work remotely for more than one day, while just 59 per cent of regional remote workers would like to do so. The challenge, once COVID-19 has passed, will be to find a mix of workspaces, policies and practices that caters to these unique preferences.



**Mix it up—one day in the office per week and the rest working remotely.**

Female, 45, Sydney, administration services

# A more flexible future could let workers find their right remote work mix

---

**Our survey results indicate that the COVID-19 remote working experience has exposed many employees to the benefits of remote working. But the survey also shows that workers are missing opportunities to collaborate and interact with colleagues.**

The lack of collaboration opportunities can be addressed. In the shorter term, solutions will often depend on the specific workplace and needs of the employer. More organisations are likely to adopt a work-from-anywhere approach. Many employees will have more flexibility to work at least some of their time remotely.

In the long term, workers may gradually self-select or 'sort' toward occupations, industries and employers where they can work remotely in the proportion they prefer. Those who like working remotely may choose occupations, industries and employers where this is possible. Those who cannot or do not like to work remotely may choose employers, occupations and industries that offer guaranteed central workplaces. The extent to which this happens, of course, cannot yet be determined.

In a work-from-anywhere or hybrid model, employers would have to plan offices and worksites around a mix of remote and on-site work. This would likely see changes in the layout and design of existing office space with an emphasis on collaboration spaces, virtual meeting rooms and 'meeting booths'.

Centralised workplaces will not go away. Workplaces will still need spaces for people who cannot or do not like to work remotely, and to enable workers to spend part of their day collaborating with colleagues and part of the day working individually.

The challenge for both employers and policymakers is to ensure workspaces are available for all styles and preferences. That could let New South Wales realise the benefits a hybrid style of remote and on-site work can bring.

In the future reports we would like to develop additional insights into the shift towards remote working, and how businesses and employees are adapting.



# Appendices



## Appendix A

# The NSW Innovation and Productivity Council's Remote Working Survey

Much of the existing literature on remote working has a national or international focus. While informative, national-level data can mask the state-specific and regional impacts on New South Wales. To address this gap, we commissioned a survey of 1,500 NSW workers during August and September 2020, to understand their experiences of and attitudes to remote working.

To be eligible, respondents had to be employed NSW residents with experience of remote working in their current job. After accounting for unemployed people and those whose jobs cannot be done remotely—for example, dentists, cashiers and cleaners—our sample represents around 59 per cent of NSW workers.

Workers answered questions on:

- their attitudes to remote working
- the amount of time they spent working remotely
- how they spent their time when working remotely
- the barriers they faced when remote working
- their expectations for future remote working
- the best and worst aspects of remote working.

The Council designed its survey with expert advice and assistance from the Data and Statistical Analysis Branch of the NSW Department of Premier and Cabinet.

### Our survey covered key groups in the NSW workforce

We used quotas to interview a good sample of important groups in the NSW workforce, including males, females, Sydney-based and regional workers. Although regional workers were somewhat underrepresented in our sample, all the results we report are statistically significant (see Table 2).

**TABLE 2: COMPARISON OF SAMPLE AND POPULATION BY GENDER AND LOCATION**

	Sample (%)	All of NSW (%)
<b>Gender</b>		
Male	56.3	49.3
Female	43.7	50.7
<b>Location</b>		
Metro NSW (Sydney)	81.3	64.5
Regional NSW	18.7	35.5

The workers we interviewed were evenly spread across key demographics like age, household type, time in their current job, and the size of their organisation. We also interviewed a roughly equal number of people—managers and non-managerial workers (51 per cent versus 49 per cent).

Source: ABS 2016 Census of Population and Housing

### We asked workers about their productivity

NSW workers were asked how productive they were when working remotely, on an hourly basis. Respondents could offer an answer anywhere between '50 per cent less productive' and '50 per cent more productive', in ten percentage point increments.

NSW workers who completed the survey were also able to indicate that their productivity was roughly equal when working remotely and at their employer's workplace.

### We asked workers to complete 'Likert tasks'

To assess attitudes to remote work, we asked NSW remote workers whether they agreed or disagreed with various statements about their attitudes to remote work, and those of their employer.

NSW remote workers were asked to think about 'last year' (2019) and how strongly they agreed or disagreed with statements regarding their own and their employer's attitudes to remote work. Following this, NSW remote workers were then asked to think about the past three months and how much they agreed or disagreed with the same statements. The statements were:

- My organisation encouraged people to work remotely.
- My organisation was well prepared for me to work remotely.
- It was common for people in my organisation to work remotely.
- It was easy to get permission to work remotely.
- I could easily collaborate with colleagues when working remotely.
- I would recommend remote working to others.

Finally, NSW remote workers were asked to think about the future, after the risk of COVID-19 had passed. They were asked to how much they agreed or disagreed with the following statements:

- My employer would encourage more remote working.
- My employer would make changes to support remote working.
- I would have more choice about whether I work remotely.

## We also asked workers to complete ‘best-worst’ tasks

NSW remote workers were asked to identify the best and worst aspects of remote work. We identified 12 aspects of remote work that remote workers were asked to rank. From groups of six aspects, workers were asked to pick the best and worst. The total number of times an aspect was selected as ‘best’, minus the total number of times the aspect was selected as ‘worst’, gave the net score for that aspect, and indicated how favourably the group viewed that aspect. The aspects of remote work that workers were asked to rank are presented in Table 3, along with the net scores. The net score indicates the overall attitude of the survey group, with a higher net score indicating a relatively better aspect of remote work.

**TABLE 3: ASPECTS OF REMOTE WORK, FROM WORST TO BEST**

Aspect of remote work	Net score
My opportunities to socialise	-1,379
My working relationships	-1,362
My on-the-job learning opportunities	-802
The number of hours I work	-428
My mental wellbeing	-162
My personal relationships	-47
My job satisfaction	47
Managing my family responsibilities	353
My daily expenses	517
Managing my personal commitments	730
Preparing for work and commuting	1,157
My work-life balance	1,376

Note: A higher net score indicates a relatively better aspect of remote work.



## Appendix A: The NSW Innovation and Productivity Council's Remote Working Survey

We asked NSW workers questions about what they identified as most important and least important barrier to remote work. We identified 15 possible barriers in total and asked workers to pick the most and least important from groups of six of these barriers. The difference between the number of times an option was selected as the most significant or least significant barrier across the survey group gave us the relative ranking of each barrier.

The ranking of barriers from most significant barrier to least significant barrier is presented in Table 4. The net score is the total number of times a barrier was selected as the least significant barrier, minus the total times the barrier was selected as the most significant. The net score of a barrier indicates the overall attitude of the survey group, with a lower score indicating a greater barrier.

**TABLE 4: BARRIERS TO REMOTE WORK, FROM BIGGEST TO SMALLEST**

Barrier to remote work	Net score
I have tasks that can't be done remotely	-966
Difficulty collaborating remotely	-852
Feeling left out and/or isolated	-426
IT equipment (computer, printer, etc.)	-206
Lack of motivation	-110
Connectivity (internet connection)	-95
My organisation's software and systems	-90
Cyber security	-21
Management discourages remote working	62
My workspace (e.g. suitable chair, lighting, noise levels, facilities)	83
Poor management	172
My living situation (e.g. location, home size, who I live with)	296
Lack of remote working skills	468
Extra costs	606
Caring responsibilities	1,079

Note: A lower net score indicates a larger barrier to remote work.

## Appendix B

# How we estimate changes across the NSW workforce

The Remote Working Survey targeted NSW workers who could complete at least some of their work tasks remotely. This gave the NSW Innovation and Productivity Council detailed insights into the experiences of workers who experienced the recent shift to remote working. We estimate our survey represents the experiences of around 59 per cent of the NSW workforce, with the remaining 41 per cent of workers unable to do any of their work remotely.

To assist policymakers to understand the overall size of the recent shift to remote working, we combined our survey data with 2016 Census data. This let us develop a set of estimates of New South Wales' overall remote working shift that covers 100 per cent of the NSW workforce.

There is limited data available to estimate the total proportion of work completed remotely prior to COVID-19. 2016 Census data is available for 'working from home', which the Council has used as a reasonable proxy for remote working (see for instance *ABS 6333.0 - Characteristics of Employment, Australia*).

We note, however, that working-from-home data does not include people who work from alternate locations like cafes or shared offices, or on public transport. Further, working-from-home data does not classify the proportion of total work time completed remotely, but rather the proportion of workers who worked from home on the day of the Census. The proportion of people working from home roughly corresponds to the proportion of work time being done remotely.

By asking NSW workers how much time they worked remotely in 2019, and in the three months before our survey, which was conducted in August and September 2020, we estimated the total amount of work completed remotely as well as the increase during COVID-19.

During 2019, slightly more than 83 per cent of NSW workers surveyed reported at least some time working remotely. This is a relatively high estimate compared with data from sources such as the 2016 Census. But it does not mean that the NSW workers surveyed worked many *hours* remotely during 2019. The most common response on the duration of remote work time was one day or less per week. Remote working is something most workers did on occasion, but few did regularly.

## Appendix C

# How we estimate New South Wales' remote work potential

To assess the remote work potential of the people of New South Wales, the NSW Innovation and Productivity Council has used two different sets of data.

Data for calculations of the reality of remote work comes from the NSW Innovation and Productivity Council's Remote Working Survey, conducted in August and September 2020.

Calculations of remote work potential are underpinned by data from Faethm, an artificial intelligence platform whose workforce model analyses over 1,500 occupations, broken down into more than 20,000 tasks. Each occupation is broken down into a distinct set of tasks, with each task assessed as 'remoteable' or not. This data lets us assess the proportion of work that can be done remotely by each occupation.

Finally, employment in each occupation is added together to determine the distribution of remoteability across the NSW working population. For a full-time workload, 'two days' represents an occupation where a worker could conceivably work remotely for two days per week.

These 'remoteability' estimates align with other studies that estimate that between 30 per cent and 47 per cent of the Australian workforce can work remotely (Beck & Hensher, 2020; Pennington & Stanford, 2020; Ulubasoglu & Onder, 2020).

## Appendix D

# How we estimate changes in labour productivity due to remote working

Based on our survey results, we estimate that the rate of remote working in New South Wales more than doubled between 2019 and the pandemic period in 2020, from 18 per cent of total work time to 43 per cent. We also found workers were around 13 per cent more productive when remote.

Taken together, we can estimate NSW labour productivity (the productivity of all workers) increased by around 3 per cent between 2019 and the pandemic period. Similarly, if workers were remote as much as they prefer post pandemic, the increase of NSW labour productivity compared to 2019 would be around 1.6 per cent.

These estimates are indicative only. They assume changes in remote working rates are the only factor affecting labour productivity. The estimates do not consider other factors that may affect labour productivity, such as changes in technology, capital use, or broader impacts of the pandemic on total factor productivity. Overall we would expect productivity to decline in an economic downturn as firms will tend to hoard labour as they seek to retain key skilled staff in the face of reduced demand.



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