



# Boosting productivity in the services sector

Summary version

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**May 2014**

## The New Zealand Productivity Commission

Date: May 2014

The Commission – an independent Crown entity – completes in-depth inquiry reports on topics that the Government selects, carries out productivity-related research and promotes understanding of productivity issues. The Commission’s work is guided by the New Zealand Productivity Commission Act 2010.

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# Foreword

The services sector touches the lives of all New Zealanders many times every day; for example, going to the bank, using a mobile phone, watching television or doing the shopping. Three-quarters of New Zealanders make their living working in the sector. Those who work in the other sectors still depend on services, as those sectors use services extensively as inputs.

The sector accounts for more than 70% of New Zealand's gross domestic product, and for more than half of exports when service inputs to merchandise exports are included. The productivity of the sector strongly affects the productivity of the economy as a whole.

New Zealand's productivity performance is below par compared with OECD peers. Given the services sector's increasingly important economic role, improving its productivity would boost national living standards. Against this background, the Government asked the Commission to undertake an inquiry into the services sector and to identify opportunities to improve its productivity.

To approach this task, we assessed a huge amount of information about the sector's productivity performance and interactions with the rest of the economy. We sought to understand what drives productivity and the barriers to productivity improvement. It quickly became evident that many factors affect productivity in this large and diverse sector. We chose to focus on two particularly important issues, which influence productivity growth across the sector:

- the role of competition and how it can be enhanced; and
- how the sector applies information and communications technology (ICT). ICT is transforming existing services and creating new ones, and research has established strong links between the adoption of ICT and productivity.

We identified ways to sharpen competition and also changes that would help firms to harness ICT more effectively. While the enterprise and diligence of individual New Zealanders drives productivity growth, a supportive policy environment is also important. Our recommendations will help the Government to significantly improve that environment.

The Commission has consulted widely, receiving 56 submissions and holding more than 60 meetings with participants. This has contributed enormously to our understanding of the issues and to our recommendations. I would like to thank all those who provided this valuable information.

Professor Sally Davenport, Dr Graham Scott and I oversaw the preparation of this report. We acknowledge the work and commitment of the inquiry team: Geoff Lewis (inquiry director), Dave Heatley, Terry Genet, Ron Crawford, Jonathan Dallaston, Linda Dougherty and Bruce White, and the other Commission staff and external providers who made important contributions. We also thank members of the ICT reference panel who provided valuable insights and expertise.



MURRAY SHERWIN

Chair

May 2014

# Terms of reference

## Boosting productivity in the services sector

### Context

1. Services are often described as things you can buy or sell but cannot carry. From browsing the internet, dining out, buying and selling a home to receiving an education or medical treatment, services make up a wide and diverse range of activities that impact on the lives of all New Zealanders on a daily basis.
2. The services sector stands out in New Zealand's economy, accounting for over 70 percent of registered businesses, national output and employment. Services make up a critical part of New Zealand's export revenue. In 2009, New Zealand's services exports were valued at \$12.7 billion and represented 22 percent of all exports. Travel and transportation services accounted for 77 percent of services exports.
3. Furthermore, services form a valuable input to many of New Zealand's exports. Nearly half of the value of New Zealand's exports can be attributed to value-added from the services sector.
4. Despite the clear importance of the services sector to the New Zealand economy, relatively little is known about the impact and drivers of service sector productivity. Measurement can be difficult, but overseas experience suggests that there is considerable variability in the degree to which countries have benefited from improved services productivity growth. In New Zealand, there has been considerable variation in productivity performance across the services sector.
5. Improving productivity in the services sector would contribute to a number of Government goals including to materially lift New Zealand's long-run productivity growth rate while maintaining our high rate of labour force participation, and to increase the ratio of exports to GDP to 40% by 2025.
6. Given the significance of the services sector to New Zealand's economy but the relatively small amount of study into the sector's productivity performance, the Government is commissioning a Productivity Commission Inquiry into Boosting Productivity in the Services Sector.

### Purpose and scope

7. The purpose of the inquiry is two-fold: to provide an overview of the role of services in the New Zealand economy and to provide policy options to lift productivity in the services sector.

#### A. The role of services in the New Zealand economy

8. This part of the inquiry should provide an overall assessment of the role and performance of the services sector in New Zealand. This assessment should:
  - a) describe the recent productivity performance of the services sector, including the extent to which employment has shifted from high to low productivity sectors;
  - b) assess the impact of the services sector on the New Zealand economy overall, including how it affects the performance of the primary and manufacturing sectors; and
  - c) assess the performance of the New Zealand services sector against the experience of OECD and other small open economies.

#### B. Policy options to lift productivity in the services sector

9. Given the diversity of industries within the services sector, policy recommendations and lessons for lifting productivity are likely to be better informed by looking at selected issues or parts of the sector in more depth.
10. Informed by part A above, this part of the inquiry should provide detailed analysis on a selection of issues that are critical for lifting productivity in the relevant parts of services sector. This analysis should lead to policy recommendations to lift productivity in those parts of the services sector.

11. The Commission should have regard to the following criteria when determining the issues or parts of the sector on which it will undertake more in-depth analysis:
  - a) whether the issues or parts chosen for further analysis have the potential to make a significant impact on New Zealand's overall productivity performance;
  - b) the extent to which the analysis will be able to identify impediments to increasing productivity in the services sector and lead to concrete recommendations for changes to government policy which can overcome those impediments.
12. In applying the criteria above, the Commission should take into account the following aspects when determining the issues or parts of the sector on which it will undertake in-depth analysis:
  - c) The increasing importance of services to GDP, to global trade, and as a contributor to the Government's goal of lifting the ratio of exports to GDP to 40% by 2025.
  - d) The wide variation in the productivity performance of services subsectors and industries, and the ability to draw lessons from high performing subsectors (for example financial and insurance services) and to lift productivity in relatively poor performing subsectors (for example administrative and support services).
  - e) The importance of information and communications technology in other OECD countries as a contributor to strong productivity growth and as an explanation for differences in productivity growth across countries.
13. The Commission should seek views from interested parties when determining the services sector issues on which it will undertake in-depth analysis.

### **Other matters**

14. Consideration of productivity in the services sector should be limited to market-provided services and therefore exclude study of services provided directly by the public sector. The Government has a wide programme underway to improve public sector productivity, detailed consideration of this sector is not possible within the time available to the Commission, and measurement issues in this sector also make analysis difficult.
15. The Commission should prioritise its effort by using judgement as to the degree of depth and sophistication of analysis it applies to satisfy each part of the Terms of Reference. In making this prioritisation, the Commission should emphasise the importance of making concrete policy recommendations in part B that maximise the impact on New Zealand's overall productivity performance.

### **Consultation requirements**

16. In undertaking this inquiry the Commission should consult with key interest groups and affected parties.

### **Timeframe**

17. The Commission must publish a draft report and/or discussion paper(s) on the inquiry for public comment, followed by a final report, which must be submitted to each of the referring Ministers by the end of April 2014.<sup>1</sup>

### **Referring Ministers**

Hon Bill English, Minister of Finance

Hon Steven Joyce, Minister for Economic Development

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<sup>1</sup> Originally the end of February 2014.

# About the summary version

This summary version provides the key points, findings and recommendations from the Productivity Commission's final report of the inquiry *Boosting Productivity in the Services Sector*.

In March 2013, the Productivity Commission was asked to assess the role of services in the New Zealand economy and provide policy options to lift productivity in the services sector. A 1st interim report (July 2013) provided an overview of the services sector in New Zealand, concluding that services are a central component of the economy and that there is significant scope to improve the productivity performance of the sector.

Drawing on submissions received on the 1st interim report, two topics related to services-sector productivity were chosen for in-depth analysis: competition and ICT. A 2nd interim report on these two topics was published in January 2014. The final report brings together the key insights from both interim reports. It contains 81 findings and 31 recommendations. The Commission's research and analysis was supplemented by 56 submissions, 3 roundtables, over 60 engagement meetings and a survey of 1 526 businesses.

To see the full version of the report please visit our website [www.productivity.govt.nz](http://www.productivity.govt.nz).

## Format of the summary version

### Key points

- The key points box at the start of each chapter is a summary of the main considerations and findings on each topic.

**F**

Findings

**R**

Recommendations

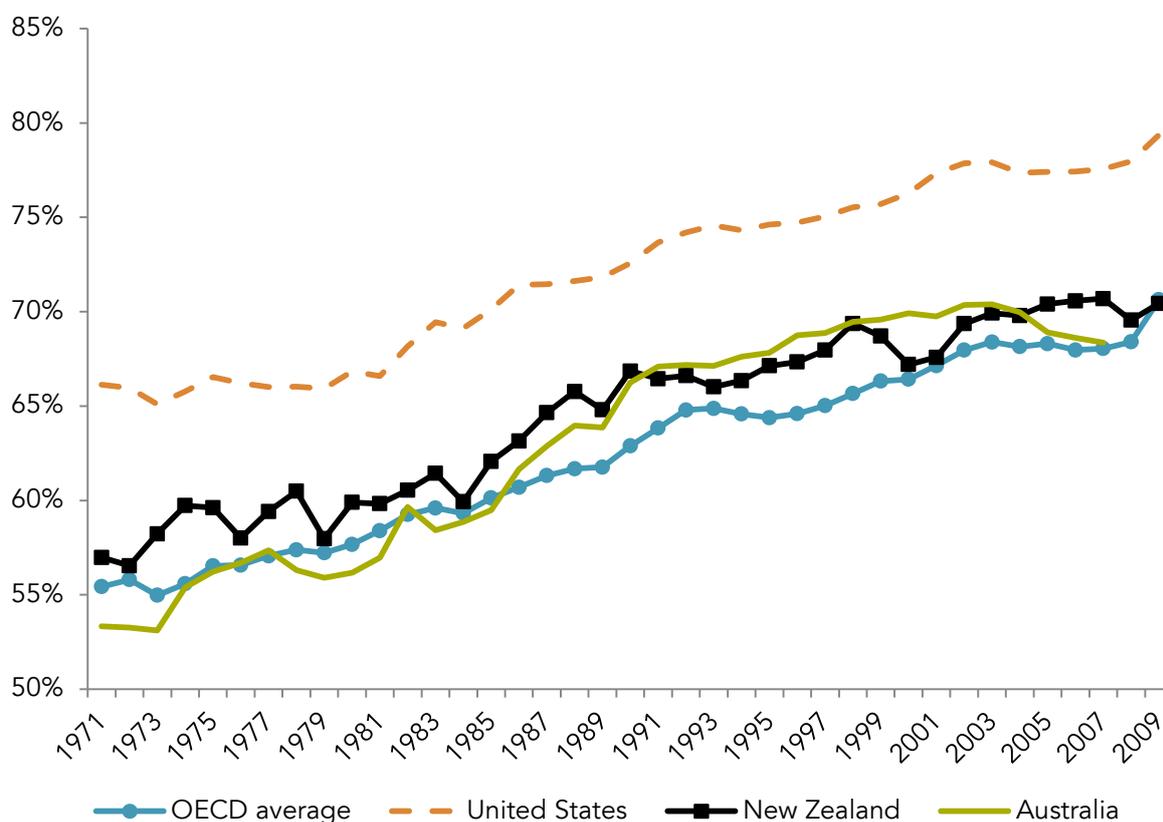
# Contents

Foreword .....	iii
Terms of reference .....	iv
About the summary version.....	vi
<b>Overview.....</b>	<b>1</b>
What are services?.....	1
Why does the productivity of the services sector matter?.....	2
How well has the services sector performed?.....	2
Competition and ICT: two topics for in-depth analysis .....	3
How does competition affect productivity in the services sector? .....	3
Opportunities to increase competition in the services sector .....	4
The contribution of ICT to productivity in the services sector .....	7
Increasing the productivity potential of ICT.....	9
Five themes for boosting productivity .....	12
<b>1 About this inquiry .....</b>	<b>14</b>
<b>2 Understanding services.....</b>	<b>15</b>
<b>3 Productivity performance.....</b>	<b>16</b>
<b>4 The contribution of services to the New Zealand economy.....</b>	<b>18</b>
<b>5 Competition in the services sector .....</b>	<b>20</b>
<b>6 Addressing search and switching costs .....</b>	<b>22</b>
<b>7 Improving competition law .....</b>	<b>25</b>
<b>8 ICT is revolutionising services .....</b>	<b>27</b>
<b>9 ICT adoption by firms .....</b>	<b>29</b>
<b>10 Supply and demand of IT skills.....</b>	<b>31</b>
<b>11 Cloud computing .....</b>	<b>34</b>
<b>12 Overall assessment .....</b>	<b>36</b>

# Overview

The services sector is a dominant force in New Zealand's economy, accounting for around 70% of gross domestic product (GDP) and over half of the value of total exports, when service inputs to merchandise exports are included. The sector is growing and is closely linked to the rest of the economy. Its productivity strongly affects the productivity of the economy as a whole and the wellbeing of New Zealanders.

Figure 0.1 Services sector share of GDP compared internationally, 1971–2009



Source: Chapter 2, Figure 2.2.

New Zealand's productivity performance is below par compared with its OECD peers. Reflecting this and the economic importance of services, the Government asked the Commission to undertake an inquiry into the services sector and to identify opportunities to boost its productivity.

The inquiry had two main aims:

- to build a better understanding of the services sector, its recent performance, and its role in the economy; and
- to identify opportunities to boost productivity in the services sector and its contribution to New Zealand's overall productivity.

## What are services?

Informally, services are "the things you can buy or sell but cannot carry". "Buy or sell" points to the fact that services are often the subject of market transactions. "Cannot carry" reflects that services are generally *intangible*; that is, they do not have a stable physical presence.

Intangibility complicates market transactions. It can make it more difficult to determine what is on offer, whether a trade has taken place and to negotiate a remedy for inadequate quality. Many services rely on face-to-face delivery, which reduces the scope for long-distance trading.

The Commission has relied on the classifications adopted by statistical agencies to define *service firms* (those whose main output is services), *service industries* (groups of firms producing similar services) and the *services sector* (all service industries). The other two sectors are the *goods-producing sector* and the *primary sector*.

## Why does the productivity of the services sector matter?

The sector is such a large proportion of the total economy that even small productivity improvements affect the performance of the economy overall. Its contribution can be considered from four viewpoints.

From a *labour force* viewpoint, the majority of working New Zealanders make their living in the sector.

From a *consumption* viewpoint, New Zealanders consume services many times every day.

From a *production* viewpoint, the sector is closely interconnected with the rest of the economy. Services are commonly used as inputs to produce goods and other services. More services are purchased by firms, as inputs to their production, than by households. Firms in the primary and goods-producing sectors spend nearly 40% more on market-provided services than on wages and salaries.

From the viewpoint of *international trade*, services contribute both directly and indirectly.

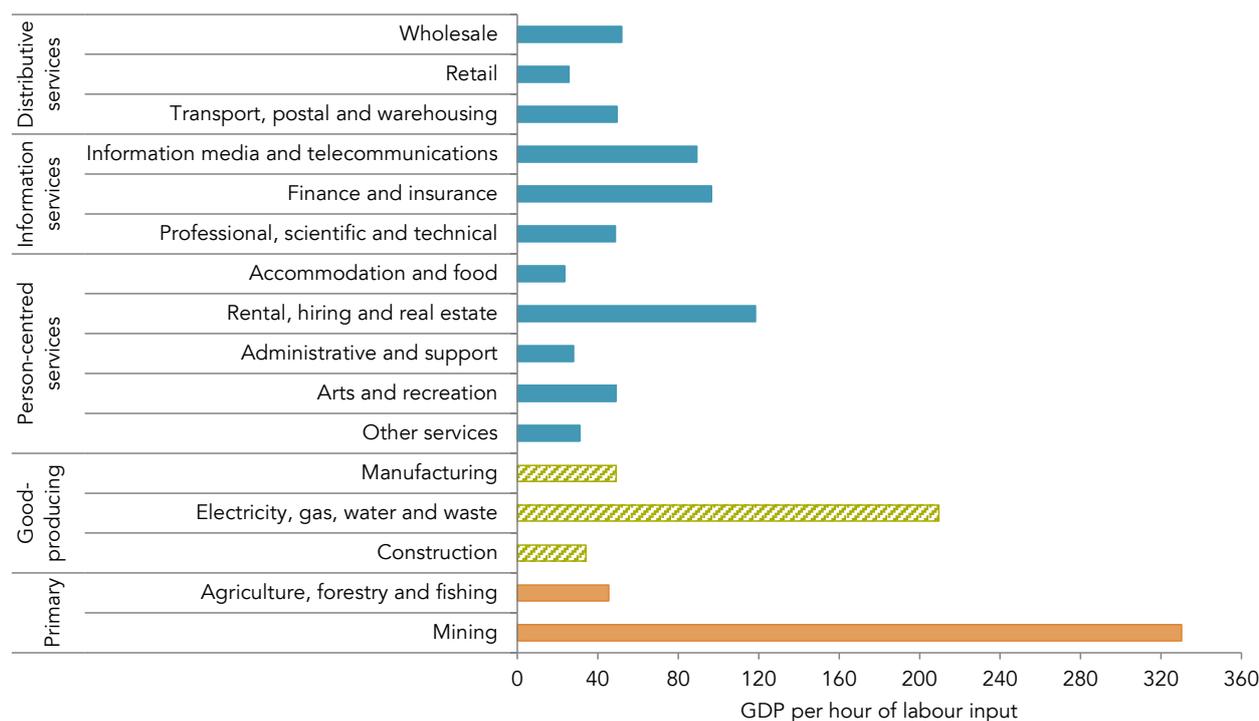
- Directly-traded services contribute 22% of New Zealand's total exports, a proportion comparable to other OECD economies.
- Services are exported indirectly through their contribution to the production of exported goods.
- Services are also exported indirectly by New Zealand firms with a physical presence in other countries, although this form of exporting is small relative to other OECD countries.

## How well has the services sector performed?

The productivity level and growth rate of New Zealand's services sector are below the average of a group of OECD countries for which the Commission was able to obtain comparable data. However, within the sector, individual service industries exhibit big differences in performance. Some (eg, finance and insurance, and information media and telecommunications) are top productivity performers. Others (eg, retail, and accommodation and food services) generally have low productivity levels and growth rates. Figure 0.2 shows labour productivity levels across industries in all three sectors.

The contribution of individual service industries to the economy's aggregate productivity performance depends on each industry's productivity and size. The faster an industry's productivity growth, and the bigger the industry, the larger its contribution. Service industries vary greatly in their contributions to aggregate labour productivity growth. The largest contributions come from the information media and telecommunications industry, and the rental, hiring and real estate industry. At the other end of the spectrum, a number of low-productivity-growth service industries have detracted from aggregate labour productivity growth. Among these are the professional, scientific and technical services industry, and the administrative and support services industry.

The economy's overall productivity performance will suffer if low-productivity industries expand their employment relative to high-productivity industries. However, the Commission's analysis found that such shifts had only a minor negative effect on aggregate productivity growth. Most growth in aggregate productivity arose from growth within industries rather than from shifts in employment between industries.

**Figure 0.2 Labour productivity levels, GDP in NZ\$ per hour of labour input, by industry, 2011**

Source: Chapter 3, Figure 3.7.

## Competition and ICT: two topics for in-depth analysis

The terms of reference directed the Commission to choose specific topics for in-depth analysis, applying two main criteria:

- the potential to make a significant impact on New Zealand's overall productivity performance; and
- the ability to identify impediments to increasing productivity and lead to concrete recommendations for changes to government policy that can overcome those impediments.

The Commission chose two topics:

- stimulating competition in service markets; and
- the application of information and communications technology (ICT) by New Zealand service firms.

Competition and the use of ICT are important drivers of productivity growth across the economy but their effects are particularly important in the services sector. Policy improvements in these areas have the potential to boost productivity across the services sector.

## How does competition affect productivity in the services sector?

The intensity of competition between firms in an economy affects the level and growth rate of productivity. Competition drives the efficient use of resources and the innovations that sustain productivity growth. Barriers to competition generally diminish productivity growth.

There is no single measure of the intensity of competition. The report presents four complementary indicators to provide an overall assessment of the intensity of competition across New Zealand's service industries. Competition varies considerably between industries. At the aggregate level, the finance and insurance; rental, hiring and real estate; retail; and professional, scientific and technical industries appear to have less intense competition than other industries.

## Opportunities to increase competition in the services sector

Many policy instruments affect competition. The main opportunities to strengthen competition to help increase productivity in the services sector are:

- reducing barriers to trade;
- enhancing the capacity of consumers to drive competition; and
- sharpening competition law.

### Reducing barriers to trade in services

Geographic remoteness and small domestic markets partially explain why competition in New Zealand's service markets is less intense than in some other countries. Exposure to foreign competition can increase the intensity of competition, but is limited by screening of foreign direct investment, and by requirements that foreign firms comply with local regulations different from those in other markets.

In its 2012 study of trans-Tasman economic relations, conducted jointly with the Australian Productivity Commission, the Commission made a number of recommendations for reducing barriers to trans-Tasman trade in services. The Government should complete the implementation of those recommendations and build on them by reducing barriers to international trade in services with other countries.

### Enhancing the role of consumers

By seeking the best value, consumers play an important role in the competitive process. However, search costs (ie, finding a preferred supplier) and switching costs (ie, changing suppliers) are particularly pronounced in some service markets. These costs can reduce competition by making it difficult for consumers to compare different service providers and respond to price and quality signals.

Well-informed consumers that are able to switch between suppliers, increase the intensity of competition. Some switching costs cannot be avoided, and some can even intensify competition, if suppliers expect that such costs will help them to retain new customers. However, if switching costs exceed efficient levels, customers can become locked in. Similarly, competition can be diminished if service offerings become so complicated that consumers face prohibitive costs in evaluating competing service offerings in order to identify the best option.

The inquiry considered four ways to reduce switching and search costs, through improving:

- comparison websites;
- information disclosure;
- contract termination arrangements; and
- processes for switching service providers.

### Comparison websites

Comparison websites reduce search costs by comparing prices and other product attributes. Privately-owned comparison sites are less common in New Zealand than in some other countries, possibly because of the small size of New Zealand markets. The Commission has not identified other barriers to entry.

The Government might consider funding or providing additional websites in order to reduce search costs. However, before doing so the Government should demonstrate that this would increase competition, would not crowd out private providers, and would pass a cost-benefit test. Any such websites should be funded sufficiently to ensure that they remain accurate and accessible.

Other countries have developed best-practice guidelines and accreditation systems as a form of oversight of comparison websites. However, the existing provisions in the Fair Trading Act 1986, in conjunction with

the regular monitoring activities of the Commerce Commission, provide sufficient oversight and there is no need for a government-sponsored accreditation system.

### **Information disclosure**

Government-mandated information disclosure is another way to reduce search costs in service markets. For example, KiwiSaver providers are now required to regularly disclose standardised information about their performance and fees. While complying with information-disclosure requirements imposes some costs on providers, the requirements are a relatively light-handed way to reduce search costs. For disclosure to be effective, the information must be presented in ways that consumers can access and understand.

### **Contract termination arrangements**

Many services, such as telecommunications, are provided through contracts. While contracts can benefit consumers, they impede switching if they contain unreasonable terms that unduly discourage consumers from ending the contract. Recent legislation prohibits the use of certain “unfair contract terms” and should resolve this problem.

The Ministry of Business, Innovation and Employment should review the impacts of the new provisions on unfair contract terms introduced in the Fair Trading Amendment Act 2013, within two to four years of the Act coming into effect. This new law currently applies only to consumers of services who are householders rather than businesses. Given that businesses rely heavily on services as inputs, the review should examine business-to-business contracting arrangements to establish whether there is any evidence of practices that are harmful to competition.

### **Processes for switching service providers**

An industry-led initiative introduced a streamlined process for switching banks in 2010. While the process appears to significantly reduce the barriers to switching banks, it should be better publicised and more transparent. Payments NZ should collect and publish statistics that show the number of bank switches each year and how long the switching process takes.

Switching banks could be further streamlined by making bank account numbers portable, enabling customers to keep their account numbers. However, there are significant practical barriers to full bank account number portability. New Zealand officials should monitor international developments and, if another country develops a workable approach, should examine the value of applying it in New Zealand.

Telephone number portability has reduced switching costs for consumers and strengthened competition among telecommunications providers. The absence of email address portability is a remaining barrier to switching for consumers who use the email address offered by their internet service provider. The New Zealand Telecommunications Forum should investigate mechanisms to enable business and residential customers to switch internet service providers without losing access to emails. If a viable low-cost option exists, it should be implemented.

### **Occupational regulation and professional bodies should promote competition**

Occupational regulation regimes are common in the services sector (eg, in engineering, legal, accounting and architectural services). These regimes often help consumers to choose a service supplier, by providing information about suppliers’ qualifications and experience. However, these regimes can also impose costs. In particular, applying entry restrictions to professions, or setting professional standards too high, can limit supply and restrain competition, to the detriment of consumers.

Different approaches to occupational regulation lead to different trade-offs between regulating quality and promoting competition. Licensing regimes (which impose a legal requirement that a practitioner meets prescribed standards) can be more effective than registration regimes (in which practitioners must be registered but have to meet only basic requirements) in putting a floor under standards. However, licensees have an incentive to “capture” the licensing regime, to use it to restrict entry to the profession or trade.

The Government should consider the impacts on competition of arrangements for regulating providers of professional services. Where licensing is required to provide a minimum level of protection to users of a

professional service, the activity that requires licensing should be prescribed no more broadly than is needed to achieve that protection.

In some cases, occupational regulation regimes are set up in legislation. In such cases, the Government should be explicit in legislation about its expectations of those bodies, including entry and ongoing competency standards; their obligations to support a competitive market for the professional service; and to establish a well-functioning complaints resolution and reporting system. Legislation should also require that the governing boards of professional bodies include members who are knowledgeable about the interests of consumers.

## **Competition law could be improved**

Competition laws and the institutions that implement them – competition agencies and the courts – are an important influence on how firms behave. Accordingly, they influence the intensity of competition and productivity performance in service industries. New Zealand’s small market size, remoteness and the characteristics of many services (such as low geographic tradability and high search and switching costs) mean that well-functioning competition law is particularly important in the services sector.

The Commission focused on three particular areas of competition law, rather than attempting to review the entire competition law framework. The areas were: preventing dominant firms from taking advantage of market power, pro-competitive collaboration, and market studies that deepen understanding of how industries, markets, or market practices are working.

### **Section 36 – taking advantage of market power**

An important purpose of a competition regime is to prevent dominant firms from misusing their market power to damage the competitive process. Such damage may include improperly restricting the entry of new firms, and preventing other firms from engaging in the market or eliminating them.

Section 36 of the Commerce Act 1986 aims to deter and prevent dominant firms misusing their market power. It was drafted to be similar to the parallel section in Australian law, but New Zealand courts have diverged from Australian courts in interpreting it. New Zealand’s highest court has relied solely on a “counterfactual test”. Using this test, a firm is only judged to have taken advantage of market power if it can be argued that the firm would have behaved differently in a competitive market.

Monopolisation provisions (as they are termed) are tricky to get right and contentious in many countries. In New Zealand, those in favour of retaining the status quo suggest that changes to s 36 could create uncertainty for large firms and discourage them from innovation and other desirable competitive activities. However, other commentators consider that the counterfactual test is complicated to apply, suffers from conceptual problems, and can lead to wrong conclusions about whether firms are abusing their market power.

The Commission considers that s 36 should be reviewed, through a thorough legal and economic analysis that assesses reform options against the objectives of economic efficiency (particularly dynamic efficiency) and the long-term interests of consumers. The review should take into account the impact of small domestic markets, which may not be large enough to support firms that are big enough to exploit economies of scale, at the same time as maintaining sufficient competition and challenge to the market power of those firms.

### **Competition law should not stifle collaboration that improves productivity**

Competition law should not prevent firms from collaborating to become more innovative and efficient. The Commerce (Cartels and Other Matters) Amendment Bill, currently progressing through Parliament, proposes significant changes that will redraw the permitted boundaries between competition and collaboration. Those responsible for collaborating to fix prices or quantities (cartel behaviour) will become subject to criminal sanctions. However, there is an exemption for certain collaborative activities along with a clearance regime for firms to check the lawfulness of proposals.

While it is difficult to predict how the Bill might affect competition and collaboration in the services sector, it runs the risk of discouraging productivity-enhancing collaboration. Industry peak bodies may be able to

help mitigate this risk by disseminating information about the Bill to their members, including information about the steps required to gain clearance for collaborative arrangements. The Bill's impact on the costs of doing business and undertaking innovation should be evaluated between two to four years after it comes into force.

### Market studies can identify constraints on competition in specific markets

Competition authorities in many countries undertake broad-ranging inquiries into the state of competition in specific markets – commonly known as *market studies*. The Commerce Commission does not have the authority to do this, with the sole exception of studies into competition in telecommunications markets. While the Government has other instruments for inquiring into specific markets, the Commerce Commission has particular expertise that could be applied to this task.

The benefits of well-designed market studies are likely to outweigh their costs. Most importantly, market studies are a useful tool that may enable the Commerce Commission to develop a deeper understanding of the dynamics of specific markets and to identify a wider range of competition issues. There is value in granting the Commerce Commission powers to conduct market studies regarding competition in any market in the economy. The power to conduct market studies should be based on existing practice under s 9A (1) (b) of the Telecommunications Act 2001.

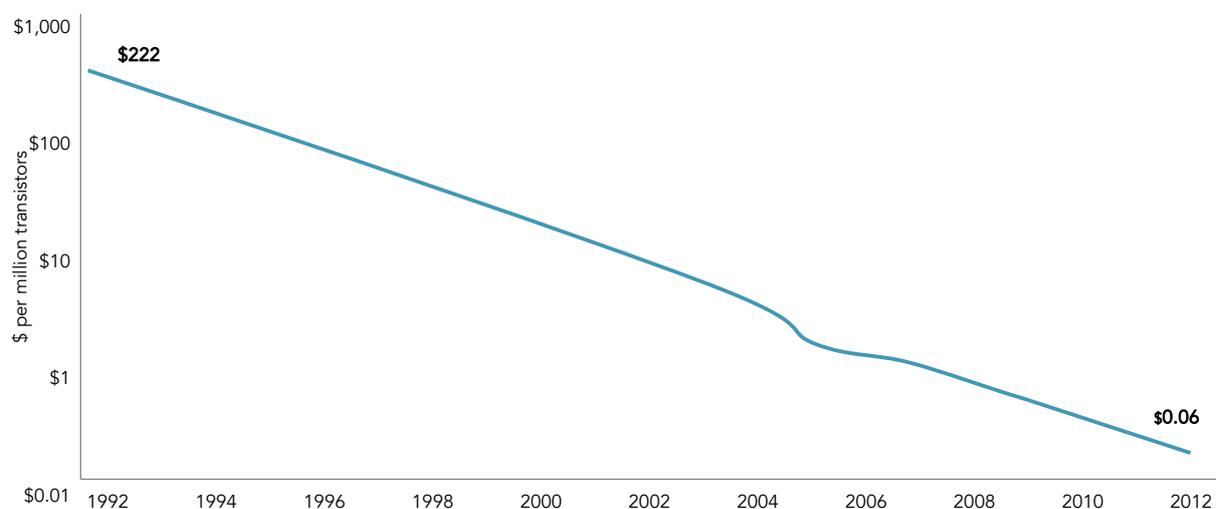
## The contribution of ICT to productivity in the services sector

ICT underpins a “revolution” in services, which is transforming many existing services and creating new ones. Research has established strong links between ICT and productivity in the services sector, both overseas and in New Zealand. For example, more effective use of ICT in some service industries explains much of the superior productivity performance of the United States relative to European countries over the past two decades.

New Zealand data is broadly consistent with international evidence that industries that produce ICT, or are relatively intensive users of ICT, tend to show stronger productivity growth than less ICT-intensive industries.

The costs of producing ICT have fallen dramatically, while quality has improved significantly. This process continues, driven by technology advances that have seen the number of transistors that can be placed upon microchips approximately double every two years. These dramatic increases in computing power per dollar spent underpin ICT's strong current and potential future contribution to productivity, economic growth and wellbeing.

**Figure 0.3** The falling costs of transistors (\$ per million), 1992–2012



Source: Chapter 8, Figure 8.2.

But the changes made possible by ICT are disruptive. The effects across the economy are pervasive and impact service industries in particular. Applying ICT often devalues existing assets while creating new

opportunities for profit. Existing assets whose value can be undermined by ICT include firms, business models, brands, and human and physical capital.

When assets lose value in their current use, market forces encourage their reallocation to more productive uses. But the process is seldom simple or easy. Moving assets to more productive uses is the single largest contributor to productivity growth. Adjustment costs – incurred in redeploying devalued assets – discourage reallocation. Policies aimed at reducing adjustment costs can contribute to productivity growth. Firms, industries and countries will be better off to the extent that they can adapt quickly – and at lower cost – to the opportunities that ICT creates and destroys.

As with other countries, New Zealand faces the issue of how best to make choices about policies and institutions that influence the way it responds to, and takes advantage of, the ICT revolution. These choices are best made in a thoughtful and informed way, to avoid the risks of an uncoordinated set of policies and institutions that work against each other and dissipate potential gains.

## **New Zealand's ICT investment is relatively lower and later**

New Zealand creates a very small proportion of global ICT products. The main way it will benefit from ICT is from cleverly adopting and using ICT that is developed and produced overseas.

ICT investment per person in New Zealand – when adjusted for international ICT prices – has historically been lower than other advanced countries.

There are common patterns in how firms adopt new technology, including ICT. These patterns are driven by changes over time in prices, quality, risks, adoption costs and expected benefits. Individual firms adopt technology when it becomes available and when its anticipated benefits exceed expected costs. The best time to make a particular ICT investment will vary by technology and by firm.

For many important ICT investments, a significant part of the costs are fixed; that is, they vary little with the size of the investing firm or that firm's anticipated revenues. This favours larger firms, who can spread the fixed costs over a larger revenue base and are further favoured to the extent they can access lower-cost capital. New Zealand has few firms large enough to fully exploit those scale advantages.

New Zealand's service firms are more likely to have significantly invested in ICT during the past two years than those in the goods-producing or primary industries, according to survey results. The most commonly cited reasons for investing in ICT are to improve services or support new activities. The factors that discourage New Zealand service firms from investing in ICT include the overall financial case, limited capital, and, of lesser importance, limited information and limited access to skills.

## **Factors that affect ICT adoption and application**

Firms' perceptions of the risks, costs and returns from ICT adoption are influenced by multiple factors including government policies and regulations.

The mostly intangible nature of ICT investment provides one reason why small and medium enterprises (SMEs) may find it difficult to get funds to invest in ICT. Software generally costs more than hardware and yet has little if any resale value. Software cannot serve as collateral and SMEs rely on investment capital. New Zealand lacks large firms and the investor market is small. Local investors are not able to develop depth in specialist fields in the way that, for example, investors in the United States have done.

People-management practices are particularly important for the managers of service firms investing in ICT. To make effective use of ICT, managers will often need to substantially reorganise and redesign business processes; promote and reward employees based on performance; and hire and retain top employees. Effective management of change also involves tracking what is going on inside the business, setting targets, monitoring outcomes and taking action to correct problems. While scant, evidence suggests that New Zealand management practices, particularly people-management practices, are weak.

ICT investments have better outcomes if a firm has ICT-savvy management and governance. Only a small proportion of New Zealand directors have an ICT background, though this is changing as a younger generation takes up positions.

Effective use of ICT also requires skilled ICT professionals. Shortages of these can delay ICT investments.

The two Southern Cross cables provide most of New Zealand's international data connectivity. Some concerns have been expressed about the capacity of these cables and the market power of their owner. The Commission is not aware of hard evidence to support these concerns, which should become less relevant if plans to build an additional cable between New Zealand and Australia come to fruition. This link would provide further competition on the trans-Tasman leg and into Asia, and indirect competition for data traffic to the United States.

Restrictive product market, labour market and land-use regulations can be a barrier to adopting ICT, because they make it difficult for human resources and physical capital to shift to more productive uses enabled by ICT. Regularly reviewing regulation to ensure that it does not unnecessarily restrain ICT adoption is worthwhile, particularly given other disadvantages that New Zealand faces in terms of market scale and less intense competition.

## Increasing the productivity potential of ICT

Because ICT is a general-purpose technology, it is causing extensive and far-reaching changes in employment and skill requirements, and considerable reallocation of resources from old to new businesses. The policies and institutions that establish the framework of New Zealand's market economy need to support and encourage flexibility, adaptability and experimentation. The process of change will often be hard and uncomfortable, and will call for policy consideration of social, community and economic issues. Yet, with policies and institutions that support change rather than obstruct it, New Zealanders will have the opportunity to reap major gains from the ICT revolution, partly because it can reduce the effects of distance and a small domestic market.

### Framework policies

Some government policies focus specifically on ICT. Framework policies apply more widely and also influence the adoption of ICT, for example by:

- increasing effective market size through trade openness and economic integration with other countries;
- regulating labour and capital markets and regulating land use, which can help or hinder the reallocation of economic resources to their most productive uses;
- funding and providing for education and training that builds human capital;
- facilitating the provision of infrastructure;
- increasing the intensity of competition;
- supporting business capability development, including improving access to good quality information; and
- supporting risk-taking and experimentation.

New Zealand has good policy settings relative to other countries in some of these areas. However, it faces challenges that many other countries do not, such as the economy's small size and remoteness from its markets. This means that it needs to have particularly good framework policies that address these challenges. For example, although New Zealand's labour market regulation is generally rated at the "flexible" end of the spectrum in international comparisons, the ICT revolution is likely to place a premium on such flexibility into the future, to make it easier for more innovative and productive firms to grow and the less productive to exit.

Three other policy initiatives would also help remove barriers to New Zealand firms adopting ICT.

- The Ministry of Business, Innovation and Employment, when next reviewing the KiwiSaver Act 2006 or within three years, should consider options for making it easier for KiwiSaver providers to invest in private equity and venture capital. This initiative should improve the supply of funding for investment in ICT-enabled innovation and business transformation.
- The Treasury, the State Services Commission and the Department of Prime Minister and Cabinet should ensure that the design of regulations that significantly affect the adoption of ICT by firms takes comprehensive account of costs and benefits. This initiative would help to avoid unintended regulatory costs to ICT adoption.
- When procuring ICT, the Government should purchase non-exclusive rights for the use of intellectual property (IP), rather than exclusive or ownership rights.. This would encourage lower prices for the government and the productive re-use of that IP by suppliers.

### Improving ICT skills

There is a global shortage of ICT professionals. Global demand for ICT professionals has continued to rise since the 1970s. This pattern is likely to continue, given the falling cost of ICT and its increasing use.

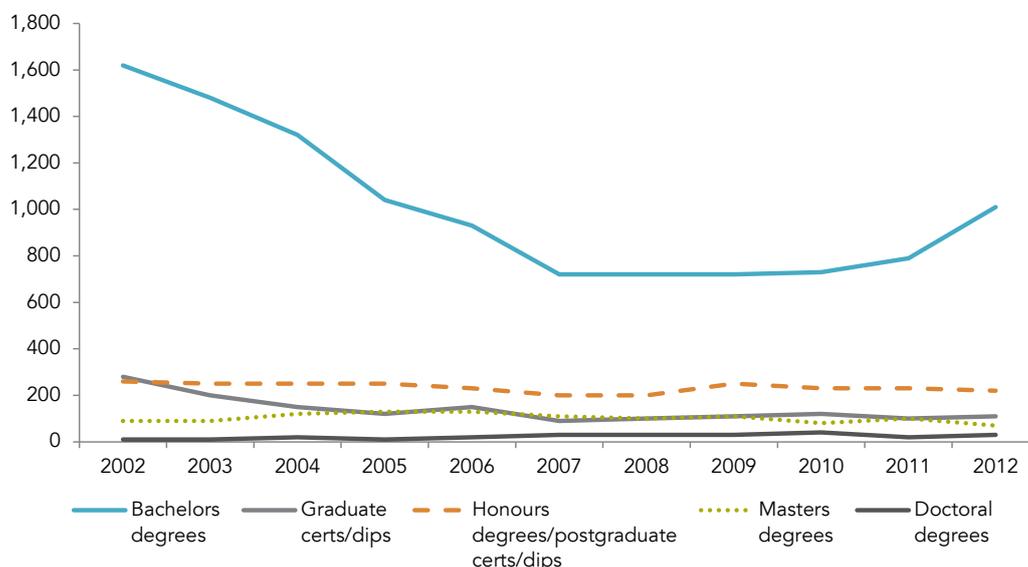
The dotcom bust in 2000 saw a rapid fall in the number of students graduating in New Zealand with IT qualifications (Figure 0.4). Lower numbers of IT graduates continued through the 2000s, at the same time as the number of jobs and people in ICT continued to rise.

Skill shortages can lead to low investment in new ICT and less effective use of installed ICT. Firms will not invest in new technology if they expect that employees with the required skills will not be available. This expectation can be self-fulfilling because prospective employees will not invest in skills if they expect firms will not invest in technology.

New Zealand employers compete in an international market for ICT skills. Net migration of ICT graduates is an important contributor to balancing supply and demand. New Zealand’s immigration policy appears to be working reasonably well in making it easy for skilled migrants to fill ICT vacancies. Changes to New Zealand’s tax laws would allow more efficient temporary transfers of employees into New Zealand to meet fluctuations in demand for specific ICT skills.

ICT is developing extremely rapidly and firms, rather than academic institutions, are driving ICT innovation. Unless these institutions have close links with business, it will be hard for ICT academics to keep pace with innovation. Poor linkages between the education and business sectors make it difficult for tertiary education providers to prepare students for careers in ICT.

**Figure 0.4 Trends in IT degree completions by New Zealand domestic students, 2002–2012**



Source: Chapter 10, Figure 10.2.

Current funding arrangements for tertiary education providers do not provide strong incentives to establish and maintain links with firms. Student choices are the main drivers of funding for particular programmes and providers.

Recently the Ministry of Education started publishing information on graduate employment and earnings outcomes by field of study, but not by education provider. If prospective students had better information about the employment and earnings outcomes of graduates with qualifications gained from *particular providers*, this would sharpen incentives for tertiary education providers to tailor their programmes to industry needs.

Few ICT students gain significant business knowledge during their studies, and computer science qualifications tend to focus on developing technical expertise within a scientific paradigm. Adding to this are course requirements and timetabling issues that sometimes make it hard for students to do a joint degree in computer science and business.

Tertiary providers often let graduates in one discipline undertake 1-year programmes in a second discipline. Computer science graduates could be encouraged to undertake a 1-year programme in business studies. This would better prepare them for work in firms where ICT is closely integrated into business strategy.

Larger firms that use and produce ICT often offer internships for students and induction programmes for graduates. By contrast, smaller firms have fewer resources to offer such programmes. More collaboration among small firms and tertiary education providers could improve the supply of “work-ready” ICT graduates. Industry-led initiatives could encourage the development of collaborative arrangements, including internships for ICT students in small firms. The Tertiary Education Commission and the Ministry of Business, Innovation and Employment should work with industry associations, ICT firms and education providers to help develop such initiatives.

## **Cloud computing is changing ICT service delivery**

There is no single definition of cloud computing. It encapsulates many ideas, including that ownership of data can be separated from its physical location and direct control; data should be stored and processed where it is cheapest; services are best rented on an as-needed basis; and access to data should be seamless across devices and locations.

The shift involved from in-house to cloud computing – from the immediate physical control of data to control via contract – is as much psychological as technological. Overcoming barriers to the adoption of cloud computing typically involves designing contracts and institutions to minimise and best allocate risk, and building trust in those contracts and institutions.

The trend towards cloud computing is driven by: huge economies of scale and scope in the centralised storage and processing of data; falling data transport costs; near global internet connectivity; and consumers placing a significant premium on mobility and the use of multiple devices. These trends have reshaped the ICT world during the past decade and show no signs of abating in the near future. The effect of scale shows in the much lower prices that United States cloud providers offer consumers compared to New Zealand providers.

### **Cloud computing offers significant benefits**

Cost reductions and the new and enhanced capabilities of cloud computing potentially benefit all ICT users. Many cloud-based products and services are “scalable”, in the sense that purchasers can buy exactly (or very nearly) the quantity they need and vary that quantity over time. This is particularly beneficial to firms that are small and/or variable users of ICT.

Cloud computing gives firms more choice of ICT inputs. This increases their chances of finding a service closely matched to their particular needs. Also, by increasing the number of close substitutes, cloud computing helps to improve competition and drive down ICT prices.

The ability to rent cloud services in other countries enables New Zealand firms that export digital services to have similar ICT costs to competitors based in those countries. This “levelled playing field” offers an overall

cost advantage to New Zealand firms if other costs (such as labour) are lower than those of their competitors.

### **Adoption of cloud computing in New Zealand**

Sixty percent of New Zealand businesses surveyed reported that they use, or intend to use in the near future, at least one type of cloud computing application. Consumer-oriented cloud applications are most commonly used, followed by business-oriented cloud applications. The services sector makes more use of cloud computing than do the primary and goods-producing sectors.

Government agencies have been strong adopters of New Zealand-located cloud services. Yet, by favouring domestic cloud services, which are significantly more expensive than similar overseas services, the Government has missed opportunities for cost savings and technology demonstrations. The Government should address any data sovereignty, security and privacy risks associated with offshore cloud computing through international negotiations, with Australia in the first instance.

Government advice to its agencies on cloud computing is unduly risk-focused. The Government should review how well it is communicating its cloud computing policies and guidance, and seek to provide balanced advice and constructive support to its agencies.

### **Regulatory barriers to adopting cloud computing**

The important role of ICT and its rapid rate of change create regulatory challenges. Cloud computing further complicates these challenges, as it undermines assumptions about who owns data, and about the location of its production, transport routes, storage and consumption.

In particular, cloud computing has made questions about data location harder to answer. In a real sense, data in the cloud is stored “everywhere and nowhere”. Flexibility over where data is stored and processed allows cloud computing service providers to be more efficient, and ultimately to provide services at lower prices for their customers. Restrictions on where data is stored or the free flow of data between countries may be costly for those affected. They will have a disproportionately negative effect on smaller countries such as New Zealand, which lack the scale to support a wide range of sophisticated, home-grown, digital services.

The Government should pursue free-trade-in-data agreements with other countries. A reasonable aim of such agreements should be that the rights and responsibilities of data owners do not vary with the physical location of their data. Bilateral negotiations with Australia could be resolved quickly, so should be pursued as a first step. Resolving such issues will help New Zealand firms adopt cloud computing.

The widespread adoption of cloud computing creates challenges for taxation, as concepts of country of origin and country of consumption become blurred, and services provided across national borders are difficult to monitor. New Zealand should promote – and participate in – international forums with the aim of reducing the ability of multi-national firms that provide digital services to shift their profits to reduce the tax they pay.

## **Five themes for boosting productivity**

The actions of firms and individuals will drive productivity improvements in New Zealand’s services sector. However, they will be more likely to succeed where the Government provides a supportive policy environment.

Services-sector policy should not be considered in isolation. Service firms share inputs – including labour, capital and land – with other firms in the economy. And the outputs of service firms are largely consumed by other firms. Many of the policies that can make a difference to services-sector productivity relate to these input and output markets, and will likely also have effects on the productivity of firms in the other sectors.

Reflecting on its work for this inquiry, the Commission perceived five themes at the heart of boosting productivity in the services sector. The Government should keep these themes in mind in all relevant policy making in order to maximise services-sector productivity.

First, *internationalisation* expands markets, stimulates competition and transfers knowledge. Lowering barriers faced by foreign service providers to New Zealand markets will help boost competition and transfer knowledge to local firms. Reducing the cost of access to international markets will help New Zealand firms achieve the benefits of scale. Internationalisation requires policy attention to the free flow of goods, services, capital, labour, data, ideas and technologies.

Second, success requires *new skills* and the *flexibility* to adjust. Adoption and effective use of ICT is very important to boost productivity in service firms. Getting the most out of ICT involves complementary investments, including business reorganisation, staff training and technical and management skills. The regulatory environment needs to facilitate rather than impede change. Other regulatory objectives need to be balanced so that sufficient weight is given to impacts on ICT adoption and productivity growth. Should the labour market changes from the ICT revolution prove to be as disruptive as many commentators are predicting, New Zealand and other countries will need to make major modifications to labour market institutions. To be successful, institutions will need to both facilitate change and support people through it.

Third, *experimentation* fosters innovation. Trying many approaches, while retaining the flexibility to quickly back out of unsuccessful ones, is the likely path to success in an uncertain and disruptive environment. Policy needs to allow firms the flexibility to adjust to emerging technology possibilities. Policy that is overly prescriptive about business models or market boundaries, or imposes high exit costs on firms, can discourage innovation.

Fourth, *quality regulation and institutions* underpin well-functioning, efficient markets. Many service markets are highly regulated. The Commission's inquiry into regulatory institutions and practices, undertaken in parallel with this inquiry, identifies many ways to improve regulation. Government needs to ensure that the public institutions, such as competition law, that underpin market competition and market transactions are of high quality. It needs to keep seeking improvements rather than adopting a set-and-forget approach. Government also needs to be quick on its feet in understanding and adjusting to emerging technologies and business innovations.

Fifth, *Government is an important player*. As well as through regulation, the Government interacts with the market services sector through taxation and spending. It is a significant provider of services and infrastructure, and its procurement policy influences markets. Government-provided services were excluded from the terms of reference for this inquiry. However, these services are growing, and the scope for productivity improvement is large. New methods of supply, including through the use of ICT, are likely to be very relevant to improving wider services-sector efficiency.

The Commission expects that the recommendations in this report, if implemented effectively, will make a significant contribution to lifting the sector's productivity. Reflecting the sector's national significance, Cabinet should monitor progress toward implementing accepted recommendations, to ensure that they make the largest possible contribution to improving the productivity of this important part of New Zealand's economy.

The interest in this inquiry and the significant contributions from business, the Council of Trade Unions, education institutions and government agencies is testimony to the national significance of the services sector. The sector is dynamic and operating in a rapidly changing environment. The Commission hopes that this inquiry will stimulate an ongoing national conversation about further ways to improve productivity in the sector.

# 1 About this inquiry

## Key points

- The Government asked the Commission to conduct an inquiry into boosting productivity in the services sector.
- The inquiry's 1<sup>st</sup> interim report – released in July 2013 – addressed Part A of the inquiry's terms of reference. It explored the performance of the services sector and the sector's role in the wider economy.
- Part B of the terms of reference required an in-depth analysis of selected topics, to identify specific opportunities to boost productivity in the services sector and contribute to New Zealand's overall productivity.
- The Commission released a 2<sup>nd</sup> interim report in January 2014 examining two topics:
  - stimulating competition in New Zealand service markets; and
  - the successful application of information and communications technology (ICT) by New Zealand service firms.
- This final report draws together the core insights and findings from the 1<sup>st</sup> and 2<sup>nd</sup> interim reports. It also presents the final recommendations relating to competition and ICT.

## 2 Understanding services

### Key points

- The services sector is broadly defined for national statistical purposes as the remainder of the economy after the primary and goods-producing sectors have been accounted for. This definition of the sector and of the industries within it facilitates international comparisons and the tracking of broad trends over time. Generalisation is valuable in framing thinking about the sector and its role in the economy. Understanding the broad patterns draws attention to features of services that deserve more in-depth analysis.
- Productivity – the standard measure of production efficiency – is hard to measure for many service industries. The analysis in this report draws on the best data available.
- Service transactions commonly involve higher transaction costs than goods transactions for reasons including that the contracts, explicit or implicit, tend to be more complex. Reductions in transaction costs can increase both the number of transactions and the economic benefits created by those transactions.
- Spatial transaction costs are the extra costs incurred because production and customers are not co-located. Spatial transaction costs for some services (eg, those involving travel by the provider or customer) are higher than those typically associated with goods. Legal and regulatory differences between countries can impact strongly on services, exacerbating these costs. High spatial transaction costs can lead to localised domestic markets. Such markets may involve a trade-off between scale in production and competitive pressure.
- Information asymmetries – when sellers and buyers have different information – can be more pronounced in service transactions. Problems arise due to difficulties in assessing service quality before or after purchase, and in obtaining remedies for poor service quality.
- The services sector is highly interlinked with the other sectors of the economy. Physical “goods” embody many services, and likewise intangible “services” require goods in their production. Policy analysis should avoid the trap of treating the primary, goods-producing and services sectors as silos.

### Findings

#### F2.1

Spatial transaction costs – the extra costs incurred because production and customers are not co-located – are often higher for services than for goods. High spatial transaction costs can lead to localised service markets. Competition regulators may need to strike a balance between competition and economies of scale in production in these markets.

#### F2.2

Information asymmetries can be more pronounced in service transactions than goods transactions due to the difficulties in assessing service quality before or after purchase. Information asymmetries, together with the risk of adverse consequences for customers and the public, and difficulties in obtaining remedies for poor service quality, prompt governments towards extensive regulation of many services.

#### F2.3

The services sector is highly intertwined with the primary and goods sectors. Policy development should recognise this interdependence between the three sectors.

## 3 Productivity performance

### Key points

- Labour productivity growth in New Zealand has been below the OECD average since the mid-1970s. A sizable productivity gap has now opened up between New Zealand and the more advanced OECD economies. There is no indication that the gap is narrowing, let alone being eliminated, relative to the OECD leaders.
- Average labour productivity in the services sector is similar to that in the primary and goods-producing sectors, but there are large differences between industries within the sectors.
- Between 1990 and 2012 labour productivity and multi-factor productivity (MFP) grew more rapidly in the services sector than in the goods-producing sector, but less rapidly than in the primary sector.
- Productivity grew strongly in some service industries in the 1990s, associated with major economic reforms and the uptake of new technologies, but this growth was not sustained in the 2000s.
- International comparisons of industry productivity performance are difficult and restricted by the lack of comparable datasets. The data that is available indicates that labour productivity growth in most New Zealand service industries was below the average of corresponding industries in a benchmark set of OECD countries between 2000 and 2007, and that many New Zealand service industries have lower productivity levels and/or growth rates compared with counterparts in Australia and the United Kingdom.
- Given the scale of the services sector, its productivity performance is critical to any closing of New Zealand's aggregate productivity gap with Australia and other leading OECD countries.

### Findings

#### F3.1

The level and rate of growth of labour productivity in New Zealand have been below the OECD average since the mid-1970s.

#### F3.2

The productivity performance of New Zealand service industries is diverse. Service industries are among the most and least productive in the economy in terms of both levels and growth rates of labour productivity.

#### F3.3

Industry variations in labour productivity levels reflect differences in capital intensity as well as in multi-factor productivity (MFP). Service industries that invest in and use information and communications technologies (ICT) intensively (such as information media and telecommunications, and finance and insurance) have considerably higher labour productivity levels, skill requirements and wages.

#### F3.4

The distributive and person-centred service industries generally have low output for each hour paid, have experienced low labour productivity growth, and employ less-skilled people.

#### F3.5

Both MFP growth and capital deepening contributed to labour productivity growth across service industries between 1990 and 2012. MFP growth was generally the more variable and significant of the two.

**F3.6**

New Zealand's non-inclusion in the OECD's industry productivity database limits opportunities for research that would yield evidence and insights of benefit to New Zealand.

**F3.7**

Labour productivity growth has been slower in more than half of New Zealand's service industries, compared with their counterparts in Australia and the United Kingdom.

**F3.8**

There is significant variation industry by industry in productivity growth rates and levels compared with other OECD countries. But the general picture is in line with New Zealand's relatively poor productivity performance observed at the economy-wide level.

**F3.9**

New Zealand's service industries generally had relatively weak MFP growth compared with OECD countries between 2000 and 2007. MFP tended to be a greater contributor than capital intensity to New Zealand's labour productivity differences in service industries – in both growth rates and levels – compared with other OECD countries.

**F3.10**

The information media and telecommunications industry was an exceptionally good performer in having high levels and growth rates of labour productivity and MFP growth both relative to other industries in New Zealand, and to its Australian counterpart industry, from 1997 to 2010.

**F3.11**

The available evidence suggests that New Zealand's distributive service industries have underperformed relative to other OECD countries.

**F3.12**

Weaker productivity performance in New Zealand's services sector has contributed significantly to New Zealand's lack of progress towards closing its aggregate productivity gap with Australia and other leading OECD countries.

## Recommendations

**R3.1**

Statistics New Zealand should work with the OECD to include New Zealand in the OECD industry productivity database.

## 4 The contribution of services to the New Zealand economy

### Key points

- The services sector is tightly linked to the rest of the economy. There is a complex web of services that are inputs to the production of goods, and goods that are inputs to the production of services. This web interconnects the primary, goods-producing and services sectors.
- More services are purchased by firms, as inputs to their production, than by households. The primary and goods-producing sectors, taken together, spend nearly 40% more on market-provided services than on wages and salaries.
- The way that service industries are integrated into the New Zealand economy is broadly similar to comparable countries.
- The services sector supplies over half the value of New Zealand's exports when both service inputs to goods exports and direct exports by the services sector are taken into account. Accordingly, the performance of the services sector has a major bearing on New Zealand's export performance.
- Outward direct investment (ODI) is an important way that firms can export services – particularly those that require co-location of the service provider and customer. New Zealand's ODI as a proportion of GDP is low compared with other OECD economies.
- The industrial structure of the New Zealand economy, as measured by employment shares, has undergone significant change during the past three decades. Employment growth has been stronger in industries with lower labour-productivity growth than in industries with higher productivity growth.
- The shift of employment to service industries over the last three decades had a small negative effect on aggregate labour-productivity growth and a negligible effect on MFP growth.

### Findings

**F4.1**

The services sector is tightly linked to the rest of the economy. There is a complex web of services that are inputs to the production of goods, and goods that are inputs to the production of services. This web interconnects the primary, goods-producing and services sectors.

**F4.2**

Nearly half of the outputs of the services sector are purchased by firms for use as inputs to their production. Firms purchase more services than households.

**F4.3**

The way that service industries are integrated into the New Zealand economy is broadly similar to comparable countries.

**F4.4**

The services sector supplies over half the value of New Zealand's exports when both service inputs to goods exports and exports by the services sector are taken into account.

**F4.5**

Establishing a commercial presence in foreign markets via outward direct investment (ODI) is an important channel for firms to export services – particularly those that require co-location of the service provider and customer. New Zealand's ODI as a proportion of GDP is low compared with most other OECD economies.

**F4.6**

Between-industry structural change over the past three decades had a small negative effect on New Zealand's aggregate labour productivity growth. Within-industry labour productivity growth was much more significant. The effect of between-industry structural change on MFP growth has been negligible.

**F4.7**

A shift to services accounted for some of the negative between-industry effect on labour productivity growth, though shifts to wholesale trade and finance and insurance made positive contributions.

**F4.8**

The effect on labour productivity growth from employment shifting between industries, while small, was more negative in New Zealand than in other OECD countries between 1990 and 2005. This difference can partly be explained by strong growth in labour force participation and in the productivity of utility industries during the 1990s – both of which were desirable developments.

## 5 Competition in the services sector

### Key points

- Pressure from actual or prospective competition increases productivity growth.
- There is no single measure of the intensity of competition. This chapter presents data on four complementary indicators to provide an overall assessment of the intensity of competition across New Zealand's industries.
- The intensity of competition varies between industries within the services sector. But, generally, New Zealand's service industries experience less intense competition than the goods-producing industries and primary industries.
- When assessed at the whole-of-industry level, the service industries with less intense competition are finance and insurance, rental, hiring and real estate, retail, and professional, scientific and technical.
- Many policies and regulations, including barriers to foreign investors and to the use of foreign qualifications, affect competition in service industries. ICT is changing the landscape in ways that increase competition including by expanding consumers' access to information about service providers.
- The evidence that competition is relatively weak in some service industries suggests that measures to strengthen it would enhance innovation and productivity growth.

### Findings

**F5.1**

Services are generally less tradable over distance within New Zealand than are goods.

**F5.2**

The intensity of competition varies between industries within the services sector. But generally New Zealand's service industries experience less intense competition than goods-producing industries and primary industries.

**F5.3**

When assessed at the whole-of-industry level, the service industries with relatively weak intensity of competition are:

- financial and insurance;
- rental, hiring and real estate;
- retail; and
- professional, scientific and technical.

**F5.4**

Foreign suppliers increase the intensity of competition in New Zealand service markets. Cross-border regulatory differences and screening requirements for foreign direct investment can discourage foreign service providers from establishing a local presence.

**F5.5**

New Zealand does not recognise some licences to practice held by foreign service providers even when those licences are based on equivalent or better standards than the corresponding New Zealand standards. Increased recognition of overseas qualifications would remove a barrier to competition.

## Recommendations

**R5.1**

The Government should complete the implementation of the recommendations for reducing trans-Tasman barriers to trade in services made in the Commission's 2012 joint study with the Australian Productivity Commission, and build on them by reducing barriers to international trade in services with other countries.

**R5.2**

The Government should mandate the recognition of foreign licenses to practise when those licences are based on equivalent or better standards than the corresponding New Zealand standards.

## 6 Addressing search and switching costs

### Key points

- Confident and well-informed consumers play an important role in the competitive process. By seeking the best value, they advance their own interests and provide signals to suppliers on favoured product characteristics. Competition between suppliers who respond to these signals can lead to lower costs, improved quality, greater innovation and higher productivity.
- The costs of finding a supplier (search costs), and the costs of changing suppliers (switching costs) are particularly pronounced in some parts of the services sector. These costs can reduce competition in some circumstances by making it difficult for consumers to compare different service providers and respond to price and quality signals.
- Initiatives to help stimulate demand-based competition in service industries should extend to business consumers, as well as household consumers.
- Comparison websites can usefully support competition by reducing consumers' search costs. These websites are relatively under-developed in New Zealand.
- Inaccurate or misleading comparison websites can undermine efforts to increase transparency and competition in service markets. Other countries have developed best-practice guidelines and accreditation systems to help protect users of comparison websites. Introducing such measures is not currently necessary in New Zealand as the Fair Trading Act 1986 provides sufficient protection.
- Information disclosure is one approach that can increase transparency and competition in service markets. The recently introduced KiwiSaver periodic disclosure requirements are a good example.
- The banking industry recently introduced a system to streamline the process of switching banks. The publicity and transparency of this process should be increased. A similar industry-led initiative in telecommunications could address some remaining switching barriers, including email address portability.
- Regulating professional standards is of value to consumers. But professional standards can dampen competition if entry standards are set too high or if licensing requirements hinder competition from service providers who offer a cheaper but less "gold-plated" service.
- Recent policy reforms in the UK legal profession have made professional bodies responsible for promoting competition in the provision of legal services. There is merit in New Zealand following the UK lead by including the promotion of a competitive market in the statutory objectives for professional bodies.

## Findings

- F6.1** Accurate and accessible comparison websites can help to reduce search costs and facilitate more competitive markets.
- F6.2** Government initiatives to fund or develop comparison websites need to be appropriately resourced so that the information presented is accessible and accurate.
- F6.3** Privately operated comparison websites tend to be less prevalent in New Zealand than in other countries. There are no apparent barriers to entry in this market, and new firms have entered in recent years. It is likely that the small scale of the New Zealand market makes it difficult for comparison websites to attract enough traffic to be commercially successful.
- F6.4** Comparison websites can undermine consumer confidence if the sites fail to provide reliable information or are not transparent about the number of service providers they are comparing, how the sites receive revenue, how the sites rank providers and how the sites receive information.
- F6.5** The existing provisions in the Fair Trading Act 1986 in conjunction with the regular monitoring activities of the Commerce Commission provide sufficient oversight of comparison websites. Currently there is no need for a government-sponsored accreditation system for comparison websites.
- F6.6** Information disclosure requirements, in conjunction with accessible online presentation, can significantly improve the availability of information in complex service markets. Information disclosure regimes should be subject to a cost-benefit test as they can be costly.
- F6.7** There is an absence of accessible comparative information about the services provided by third-tier lenders. Third-tier lenders will be required to disclose certain information if the Credit Contracts and Financial Services Law Reform Bill is passed. It would be beneficial if the information that the Bill mandates was compiled in a user-friendly online format. Several privately operated websites appear well equipped to do this.
- F6.8** Phone number portability removed a significant barrier to switching and positively influenced competition in New Zealand telecommunications markets.
- F6.9** Full bank account number portability is not available in any country. There is no case to introduce it in New Zealand at the present time as the cost would very likely exceed the benefits.

## Recommendations

**R6.1**

Before the Government undertakes any initiative to reduce search and switching costs, it should establish that those costs do have adverse effects, and assess a range of intervention options using a thorough cost-benefit analysis.

**R6.2**

Unfair contract terms provisions introduced in the Fair Trading Amendment Act 2013 should be reviewed by the Ministry of Business, Innovation and Employment (MBIE) between two to four years after coming into effect. When this review is conducted MBIE should examine business-to-business contracting arrangements to establish whether there is any evidence of practices that are harmful to competition.

**R6.3**

To demonstrate the effectiveness of the existing bank switching process Payments NZ should collect and publish statistics that show the number of bank switches each year and how long the switching process takes.

**R6.4**

Government-funded studies examining competition in service markets should, to the extent possible, include business consumers as well as household consumers.

**R6.5**

The New Zealand Telecommunications Forum should investigate mechanisms to enable business and residential customers to switch internet service providers without losing access to emails. If a viable low-cost option exists it should be implemented.

**R6.6**

New Zealand officials should monitor international developments in bank switching and account number portability. If another country develops a workable approach, officials should closely examine its applicability for the New Zealand banking system.

**R6.7**

The Government should consider the competition benefits of a regime based on certification or registration rather than licensing when reviewing existing, or considering new, arrangements for the regulation of providers of professional services.

**R6.8**

When the Government decides that licensing is required to provide a minimum level of protection to all users of a professional service, the activity that requires licensing should be prescribed no more broadly than is required to achieve that protection. This could be achieved by confining the licensing requirement to prescribed areas of "restricted work".

**R6.9**

When the Government gives statutory recognition to professional bodies, it should be explicit in legislation about its expectations of those bodies, including their approach to competency standards (both entry and ongoing) and their approach to complaints resolution and reporting.

When the Government gives statutory recognition to professional bodies, it should require that the governing boards of professional bodies include members from outside the profession, and members knowledgeable about consumer perspectives. Also, the promotion of competition should be included in the statutory objectives of the professional body.

**R6.10**

The promotion of competition should be included in the statutory objectives of all professional bodies afforded statutory recognition.

## 7 Improving competition law

### Key points

- Competition laws and the institutions that implement them – competition agencies and the courts – have an important influence on the behaviour of firms and on competition outcomes.
- New Zealand’s small market size, geographic isolation and the characteristics of many services make it important that competition law strongly supports competition in the services sector.
- A key component of a competition regime is preventing firms from misusing market power to damage competition and dynamic efficiency. Misuse includes improperly restricting the entry of new firms, preventing others from engaging in the market or eliminating competing firms.
- Section 36 of the Commerce Act 1986 aims to prevent firms misusing their market power. It was drafted to be similar to the parallel section in Australian law, but New Zealand courts have diverged from Australian courts in interpreting it. New Zealand’s highest court has come to rely solely on a “counterfactual test”.
- Sole reliance on the counterfactual test is problematic because it increases the risk that dominant firms escape sanction for conduct that suppresses competition and innovation. But any reform should still allow large firms to compete vigorously as part of the competitive process, and realise efficiencies beyond those possible for firms without market power.
- The Commission believes there is a strong case to review s 36 despite some opposition to change because of loss of certainty and the risk of unintended consequences.
- Potential gains from reform are increased dynamic efficiency by making it harder for firms with market power to suppress the competition and innovation offered by smaller and newer firms, and by clarifying that large firms can implement changes that improve efficiency.
- To help further the goal of a trans-Tasman single economic market, any review should take account of Australia’s current major review of its competition law.
- Competition law should not prevent firms from collaborating to become more competitive and efficient. The Commerce (Cartels and Other Matters) Amendment Bill includes an exemption for certain collaborative activities and a clearance regime for firms to check the lawfulness of proposals. An evaluation of the Bill, that includes consideration of how well it is understood by business, should be conducted after it comes into effect.
- Several approaches to examine competition in New Zealand markets currently exist. One shortfall of these approaches is that the Commerce Commission may only conduct market studies regarding the telecommunications industry. To address this, the Commerce Act should be amended to include a provision similar to s 9A (1) (b) of the Telecommunications Act 2001.

### Findings

#### F7.1

The current law and jurisprudence under s 36 of the Commerce Act 1986 is not working well and risks causing losses of dynamic efficiency through failing to identify some cases where firms use their market power to restrict the ability of other firms to innovate and compete.

**F7.2**

It is important that the Commerce (Cartels and Other Matters) Amendment Bill is well understood by business. Industry associations may be able to help disseminate information about the Bill to their members, including information about the steps required to gain Commerce Commission clearance for collaborative arrangements.

**F7.3**

Competition authorities in many other countries use market studies. While they have common elements, practices vary significantly between jurisdictions.

**F7.4**

Several New Zealand agencies conduct research into competition in New Zealand markets, including the Commerce Commission, MBIE, the Productivity Commission and non-government consumer groups.

## Recommendations

**R7.1**

The Government should review s 36 of the Commerce Act and its interpretation. The review should consider whether other approaches offer greater accuracy in identifying situations where firms have taken advantage of market power and damaged dynamic efficiency with consequent detriments to competition, innovation and/or productivity.

**R7.2**

The review of s 36 should take account of the review of competition policy in Australia, with a view to achieving a consistent approach that:

- furthers the goal of a single trans-Tasman economic market; yet
- still suits New Zealand's characteristics such as its small domestic market.

**R7.3**

The review of s 36 should include consideration of the merits of:

- a more flexible approach where courts do not rely on a single counterfactual test for an abuse of monopoly power;
- more of an "effects" approach to gauge whether conduct has harmed dynamic efficiency, and
- providing for an efficiency defence in cases where the conduct of a firm with substantial market power fails a primary test that it is harming competition.

**R7.4**

The Commerce (Cartels and Other Matters) Amendment Bill should be evaluated between two to four years after it comes into effect. The evaluation should consider impacts on the costs of doing business and undertaking innovation, and the extent to which the implications of the Bill are understood by a range of different types of business.

**R7.5**

The Commerce Commission should be able to undertake studies on competition in any specific market in the economy. To enable this, the Commerce Act should be amended to include a provision similar to s 9A (1) (b) of the Telecommunications Act 2001.

**R7.6**

The design of market studies should be based on existing practice under s 9A (1) (b) of the Telecommunications Act. The ability to make recommendations in market studies would be a useful additional feature, and this should be clarified in the Telecommunications Act and the Commerce Act.

## 8 ICT is revolutionising services

### Key points

- Information and communications technology (ICT) underlies a revolution in services. ICT is transforming many existing services and creating new ones similar to the way in which previous general purpose technologies – such as steam and electricity – transformed manufacturing and agriculture.
- The economic characteristics of ICT include strong economies of scale, non-rivalry and network effects. These underlie its strong current and potential future contributions to productivity, economic growth and wellbeing.
- ICT is disruptive. Its effects across the economy are pervasive and have a significant impact on service industries. Firms, industries and countries will be better off if they can adapt nimbly, and at lower cost, to this disruption.
- The application of ICT often devalues existing assets while creating new opportunities for profit. Affected assets include firms, business models, brands, and human and physical capital.
- The reallocation of assets – putting them to more productive uses – is the single largest contributor to productivity growth. It operates across firms, industries and regions.
- Adjustment costs – the costs incurred in redeploying devalued assets – discourage reallocation. Policies aimed at reducing adjustment costs can contribute to productivity growth.
- ICT adoption increases productivity growth. This effect is strong in some countries over some time periods and in some industries, particularly service industries. The effect appears to be weaker in New Zealand, particularly for the distribution industries (retail, wholesale and transport).
- Firms need to invest in ICT to get the benefits. Per-capita ICT investment in New Zealand has been lower than some comparable advanced countries.
- Countries face choices of policies and institutions that influence the way they respond to, and take advantage of, the ICT revolution. These choices are best made in a thoughtful and informed way, to avoid the risks of an uncoordinated set of policies and institutions that work against each other and dissipate potential gains.

### Findings

**F8.1**

ICT is transforming existing services and creating new ones. Its economic and social effects are comparable to those of previous general purpose technologies, such as steam and electricity, which transformed manufacturing and agriculture.

**F8.2**

Firms, industries and countries will be better off if they are flexible and adapt quickly – and at lower cost – to the opportunities that ICT creates and the devaluation of existing assets.

**F8.3**

Productivity growth from new ICT occurs largely through a process of “creative destruction” – the reallocation of resources towards successful existing firms and to new firms, and away from less successful existing firms. Reallocation is the single largest contributor to productivity growth. It operates across firms, industries and regions. Adjustment costs – the costs incurred in redeploying devalued assets – inhibit reallocation. Policies aimed at reducing adjustment costs can contribute to productivity growth.

**F8.4**

Extracting the highest possible returns from ICT requires complementary investments, including changes in business organisation. These complementary investments are typically more expensive than the direct cost of ICT.

**F8.5**

The economic characteristics of ICT include powerful economies of scale, non-rivalry and network effects. These economic characteristics underpin ICT's strong current and potential future contributions to productivity, economic growth and wellbeing.

**F8.6**

Per-capita investment in ICT in New Zealand has historically been lower than that in most other comparable advanced countries.

**F8.7**

ICT is making a positive contribution to productivity in New Zealand. Its contribution is stronger in service industries.

**F8.8**

Countries face choices of policies and institutions that influence the way they respond to, and take advantage of, the ICT revolution. These choices are best made in a thoughtful and informed way, to avoid the risk of an uncoordinated set of policies and institutions, which work against each other and dissipate potential gains.

**F8.9**

The ICT revolution is creating continuous disruption. In a disruptive environment, rewards to flexibility exist at the individual, firm and national levels.

**F8.10**

In a disruptive environment, governments must strike a balance between providing stable regulatory settings and staying open to change brought about by emerging technologies.

**F8.11**

New Zealand and other countries will need to make major modifications to labour market institutions should the labour market changes from the ICT revolution prove to be as disruptive as many commentators are predicting.

## 9 ICT adoption by firms

### Key points

- The great majority of productivity benefits from information and communications technology (ICT) for New Zealand will come from adopting and using ICT that is developed and produced overseas. New Zealand creates a very small portion of global ICT products.
- Changes over time in prices, quality, risks, adjustment costs and expected benefits drive the pattern of ICT adoption.
- Individual firms adopt technology when it is available and its anticipated benefits exceed expected costs. The best time to adopt technology will vary by technology and by firm.
- A significant proportion of the costs of adopting ICT are fixed; they vary little with a firm's size or its expected revenues. This favours adoption by larger firms. Larger firms are also favoured because they can access lower-cost capital. New Zealand has few large firms compared to other countries, implying later adoption by New Zealand firms, on average.
- The combination of New Zealand's small market scale and the fall in unit ICT costs with increased scale tends to delay ICT adoption.
- New Zealand firms appear to be adopting ICT in line with what would be expected given the private costs and benefits they face.
- Important factors that influence the optimum adoption time for firms include access to capital, information diffusion, and ICT technical and managerial skills.
- The Government should develop a framework of policies and institutions that facilitate flexible resource reallocation, adaptability and mitigation of the costs of transition to an ICT-enabled economy.

### Findings

**F9.1**

A firm's perceptions of risk, cost and returns affect its decisions about adopting ICT. Those perceptions are influenced by government policies, regulation and actions affecting infrastructure, taxes, subsidies and information dissemination.

**F9.2**

Firms in the services sector are more likely to have invested significantly in ICT during the past two years than those in either the goods-producing or primary industries.

**F9.3**

Firms in the services sector are investing in ICT to improve their services or support new activities. Reducing the cost of existing activities is the least common rationale for investing, according to survey responses.

**F9.4**

The factors that discourage New Zealand service firms from investing in ICT include the overall financial case and limited capital, and, of lesser importance, limited information, and limited access to skills.

**F9.5**

The vast majority of New Zealand service firms expect their ICT investment decisions to recover their costs. This suggests a conservative approach to decision making.

**F9.6**

Larger and established service firms face higher adjustment costs than start-ups in adopting ICT, partly because of the risk of incompatibility with or disruption to existing systems.

**F9.7**

It is less costly for multi-national enterprises, than for other firms, to pass tacit “in-house” information on new technology across borders. Multi-nationals may be an important route for technology diffusion into New Zealand.

**F9.8**

The roll-out of fibre-optic networks, and advances in mobile and copper-based fixed-line technology mean that domestic data-communications infrastructure is not constraining New Zealand businesses from adopting ICT.

**F9.9**

The Commission has found no evidence that international data connectivity is limiting the adoption of ICT by New Zealand firms.

**F9.10**

New Zealand firms are, on average, likely to delay adopting ICT compared to firms in larger developed economies, because of factors such as their relatively small domestic markets, distance to larger markets, smaller firm size and low labour costs.

**F9.11**

Restrictive employment protection legislation can make it hard for firms to adjust to new technology and thus reduces innovation. These effects are stronger in the more dynamic parts of the economy and in the services sector.

**F9.12**

Training and advice in effective management practices make a significant difference to firm performance. Effective people management practices, in particular, enable firms to make more productive use of ICT.

## Recommendations

**R9.1**

The Ministry of Business, Innovation and Employment, when next reviewing the KiwiSaver Act 2006 or within three years, should consider options to make it easier for KiwiSaver providers to invest in private equity and venture capital.

**R9.2**

As a matter of promoting good policy advice, the Treasury, the State Services Commission and the Department of Prime Minister and Cabinet should ensure that the design of regulation that significantly affects the adoption of ICT by firms takes comprehensive account of costs and benefits.

**R9.3**

The Government Chief Information Officer and the Department of Internal Affairs should review and update guidelines for treatment of intellectual property rights (IP) in government ICT procurement contracts. The default position, in practice as well as in principle, should be that the supplier owns the new IP, with licenses being granted to the customer agency and all other state sector agencies. This would encourage lower prices and productive re-use of that IP by suppliers.

**R9.4**

The Treasury, the State Services Commission and the Department of Prime Minister and Cabinet, working together with the Government Chief Information Officer, should agree on and mandate a means to ensure that significant government ICT projects are evaluated and reviewed and the results disseminated both within government and more widely.

## 10 Supply and demand of IT skills

### Key points

- Firms in IT-producing industries and industries that make intensive use of IT need skilled professionals and IT-savvy managers to realise the benefits of IT investments.
- There has been a worldwide long-term increase in the demand for IT professionals. As the cost of IT continues to fall and its use becomes more widespread, this demand is likely to continue.
- New Zealand firms compete in an international market for IT skills. Local firms rely heavily on immigrants to fill vacancies for IT skills. IT graduate salaries are high relative to most other fields of study.
- Closer links between IT departments in tertiary institutions and firms would help students to be more work-ready on graduation. Establishing stable collaborative arrangements takes time and other resources. Intermediaries can play a useful role in bridging the gap between education providers and businesses.
- Funding for tertiary education providers largely follows students' study choices. Better information for intending students on the employment and earnings outcomes of IT graduates from each tertiary education provider would therefore sharpen incentives for providers to collaborate with firms in designing and implementing programmes of learning.
- Small IT-producing and IT-using firms individually lack the resources to provide graduates with an induction programme to build business and entrepreneurial skills. They also find it difficult to collaborate among themselves and with universities and polytechnics to help students gain the technical skills and other skills needed to be ready for work when they graduate.
- Larger IT-producing and IT-using firms offer better salaries to graduates and often provide cadetships and induction programmes that help bridge the gap between study and work. Their support for collaborative arrangements with tertiary education providers helps provide a platform that smaller firms can use to offer placements for students.
- Government should work with industry groups and education providers to encourage the growth of intermediaries that can bridge the education-to-business gap and expand opportunities for IT students to gain workplace experience.

### Findings

**F10.1**

Firms will likely respond to chronic information technology (IT) skills shortages by reducing technology investments.

**F10.2**

The demand for IT professionals globally has been rising for four decades. Given the falling cost of ICT and its increasing use, this pattern is likely to continue.

**F10.3**

The dotcom bust in 2000 saw a rapid fall globally in the number of students graduating with IT qualifications. In the United States, the United Kingdom and New Zealand the number fell by between a third and a half over a 5-year period, reflecting a loss of confidence in IT as a career. Enrolments in IT began to rise only after a lag of seven years, despite continuing rapid growth in IT jobs.

**F10.4**

Flows of IT professionals in and out of New Zealand are strong. New Zealand is highly reliant on immigration to fill IT professional vacancies – especially in some specialist areas. Migration flows cushion the impact of domestic supply fluctuations in the market for IT skills.

**F10.5**

New Zealand's immigration policies and practice present few barriers to professional ICT workers moving to New Zealand to take up relevant job offers. Once here, it is relatively easy for migrant professional workers to qualify for residence.

**F10.6**

New Zealand firms pay close to international wages for entry-level workers in some IT occupations. They pay much less than Australian firms in the upper ranges of remuneration, perhaps because the scope and responsibilities of these high-end jobs are greater in Australia. IT graduate earnings in New Zealand are high relative to graduates in most other fields of study.

**F10.7**

New Zealand firms, like firms in most other developed countries, report significant difficulty in recruiting IT professionals and managers. Some New Zealand firms are limiting their IT investments or sending work overseas because they cannot recruit enough skilled IT professionals in New Zealand.

**F10.8**

Larger ICT-using and ICT-producing firms use their resources to employ top IT graduates. These firms provide induction programmes that help graduates learn quickly about the business environment and proprietary systems. The firms also offer internships to IT students. This arrangement helps them identify the best talent.

**F10.9**

Small ICT-producing and ICT-using firms find it hard to recruit IT graduates who have the range of skills needed to operate successfully in their business environment. Such firms find it hard to collaborate with other similar firms and with tertiary education providers to help students gain a broader range of skills before graduation.

## Recommendations

**R10.1**

The Government should seek to amend the Income Tax Act 2007 to increase the threshold from 92 to 183 days in any 12 month period under which income derived by a non-resident from performing personal or professional services within New Zealand is exempt from New Zealand tax liability.

**R10.2**

The Ministry of Education and the Tertiary Education Commission should continue to work with tertiary education providers to make information available on student employment outcomes by tertiary education provider, qualification and, where numbers are sufficient, by field of study. Once a robust information system is in place, the Ministry should regularly publish information on student outcomes by tertiary provider to help intending students with their choices.

**R10.3**

The Tertiary Education Commission and the Ministry of Business, Innovation and Employment should encourage tertiary education providers and IT industry and professional associations to promote one-year graduate diplomas in business studies for computer science graduates. This will better prepare IT graduates for work in firms whose business strategy is based on IT.

**R10.4**

The Tertiary Education Commission and the Ministry of Business, Innovation and Employment should work with industry associations, IT firms and education providers to develop initiatives that enable greater engagement and collaboration between education providers and ICT firms, especially small firms. This collaboration should aim to increase the supply of “work-ready” graduates.

# 11 Cloud computing

## Key points

- Cloud computing encapsulates many ideas, including that the ownership of data can be separated from its physical location and direct control; data should be stored and processed wherever cheapest; services are best rented on an as-needed basis; and access to services across devices and locations should be seamless.
- Cloud computing is changing how information and communications technology (ICT) services are delivered around the world. Cloud computing is driven by huge economies of scale and scope in the centralised storage and processing of data, falling data transport costs, near global internet connectivity and consumer preference for flexibility and mobility.
- Firms that are small users of ICT should benefit disproportionately from the improved scalability offered by cloud computing. Yet surveys suggest that small firms in New Zealand are slow adopters of cloud computing. Factors such as the costs of complementary investments or obtaining relevant knowledge may be discouraging adoption.
- Cloud computing assists New Zealand digital service exporters through access to foreign ICT infrastructure at the same price as their foreign competitors.
- One barrier to cloud computing is the psychological shift from physical control of data to control via contract. Overcoming this barrier typically involves designing contracts and institutions to minimise risk and to allocate it to those best able to bear it, and building trust in those contracts and institutions.
- Restrictions on data flows will have a disproportionately negative effect on small countries, which lack the scale to support a wide range of sophisticated, home-grown, digital services. The Ministry of Foreign Affairs and Trade and other government agencies should prioritise negotiations on the free flow of data and other internet issues.
- Global-scale cloud computing infrastructure has only just arrived in Australia, and it will take even longer to get to New Zealand. New Zealand policy should support efficient use of Australian infrastructure.
- The government cloud computing programme – based on published rules and guidance – is highly risk averse, and may send a poor signal to private firms. The Government should assess how it can support and facilitate a balanced approach to adoption. Legal or privacy issues associated with cloud computing should be dealt with through international negotiations. Resolving such issues will help New Zealand firms make more productive use of cloud computing services.

## Findings

### F11.1

One barrier to cloud computing is the psychological shift from physical control of data to control via contract. Overcoming this barrier typically involves designing contracts and institutions to minimise risk and to allocate it to those best able to bear it, and building trust in those contracts and institutions.

### F11.2

Cloud computing infrastructure providers in the United States and Australia offer more options and significantly lower prices than equivalent New Zealand providers.

**F11.3** Cloud computing improves the scalability of ICT products, allowing purchasers to buy the exact quantity and quality they prefer. This is particularly beneficial to firms that are small users of ICT, as they can serve their existing market at lower cost.

**F11.4** Cloud computing can level the playing field for data-intensive New Zealand service firms competing in foreign markets. This “levelled playing field” will offer an overall cost advantage to New Zealand firms if other costs (such as labour) are lower than those of their competitors.

**F11.5** Small firms in New Zealand appear to be slow adopters of cloud computing, despite its apparent benefits. Other factors, such as the costs of complementary investments or obtaining relevant knowledge, may be discouraging adoption.

**F11.6** The process of “digital convergence”, where most content is digitised and the lines between different media are increasingly blurred, has made legislation specific to particular media types outdated.

**F11.7** Free trade agreements are likely to have an increasing focus on “free trade in data”. Governments face a challenge of letting data flow freely across national borders without impeding the ability of each nation to enforce its laws.

**F11.8** Restrictions on data flows will have a disproportionately negative effect on smaller countries such as New Zealand, as they lack the scale to support a wide range of sophisticated, home-grown, digital services.

## Recommendations

**R11.1** The Government Chief Information Officer and the Department of Internal Affairs should publicise their capacity and willingness to support government cloud computing and ICT-enabled business change for agencies. The ICT.govt.nz website should provide advice more balanced between benefits and risks, and share the lessons learned from previous and current cloud computing projects.

**R11.2** The Government should address the data sovereignty, security and privacy risks associated with offshore cloud computing through international negotiations. Bilateral negotiations with Australia could be resolved quickly, so should be pursued as a first step. Resolving such issues will help New Zealand firms adopt cloud computing.

**R11.3** The Government should give priority in international trade negotiations to internet issues.

**R11.4** New Zealand should promote – and participate in – international forums with the aim of reducing the ability of multi-national firms providing digital services to shift their profits across national borders to avoid paying tax.

## 12 Overall assessment

### Key points

- The services sector is large, diverse and interlinked with the rest of the economy.
- Services-sector productivity performance is below OECD averages.
- The services sector is growing as a proportion of the economy – a pattern that is typical across countries as living standards rise.
- The intensity of competition tends to be low in service markets. Reasons include that service transactions tend to be complex and information-intensive, and services are difficult to trade over distance. Empowering consumers can help stimulate competition.
- ICT is driving a revolution in services. ICT has high potential to boost productivity, particularly in service industries. However, New Zealand has not received the same boost from ICT as some other countries.
- Reallocation – putting assets to more productive uses – is the single largest contributor to productivity growth. It operates across firms, industries and regions. Barriers to reallocation slow productivity growth.
- Five strong themes emerged during the inquiry. To boost productivity in the services sector, policy makers need to be mindful that:
  - internationalisation expands markets and stimulates competition;
  - success requires new skills and the flexibility to adjust;
  - experimentation fosters innovation;
  - quality regulation and institutions underpin well-functioning, efficient markets; and
  - the Government is an important player, as a service supplier and customer.
- The recommendations in this report, if implemented effectively, would make a significant contribution to lifting the sector's productivity, and to New Zealand's overall economic performance.