MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
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Priorities for Innovation Policy

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Overview

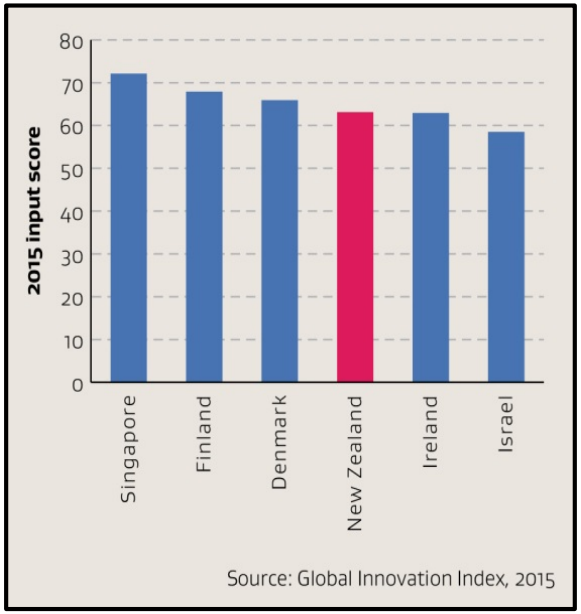
- Mixed performance on Innovation
- Innovation in the Business Growth Agenda
- Innovation priorities and questions for policy development

New Zealand's Innovation Performance

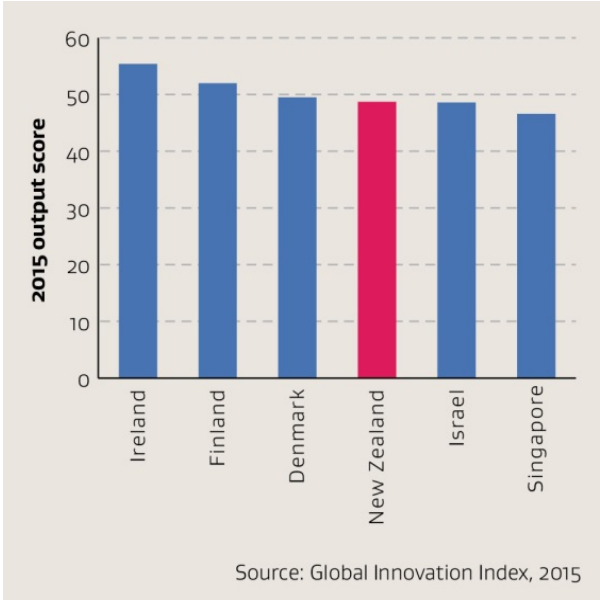
The Global Innovation Index scores countries on their innovation performance. It is published by Cornell University, INSEAD, and the World Intellectual Property Organization.

The index consists of a ranking of world economies' innovation capabilities and results

The Index scores countries on the **inputs that enable innovative activity:** including institutions, human capital, research infrastructure, market and business sophistication.



The Index also compiles a score for countries' innovation outputs: including knowledge and technology outputs and creative outputs.



However ….

- NZ has a persistent income gap compared to other advanced economies
- Despite progress in reducing the gap in recent years, NZ GDP remains 6.9 percent below the OECD average
- OECD suggests that about a third of that gap could be explained by a lack of investment in knowledge based capital
- In some areas NZ does **well** (software investment and trademarks)
- In other aspects NZ compares **poorly** (our R&D intensity and the share of total R&D performed by business are among the lowest in the OECD

Business Growth Agenda

Creating a more productive New Zealand economy will require a restructuring towards knowledge intensive sectors, such as high technology manufacturing, as well as an increase in productivity across all sectors of the economy

National Statement of Science Investment 2015-2025

BGA Building Innovation

Strengthening innovation performance through a comprehensive action plan. Key priorities include:

- Making the most of the digital economy
- Investing in knowledge production and diffusion
- Lifting BERD

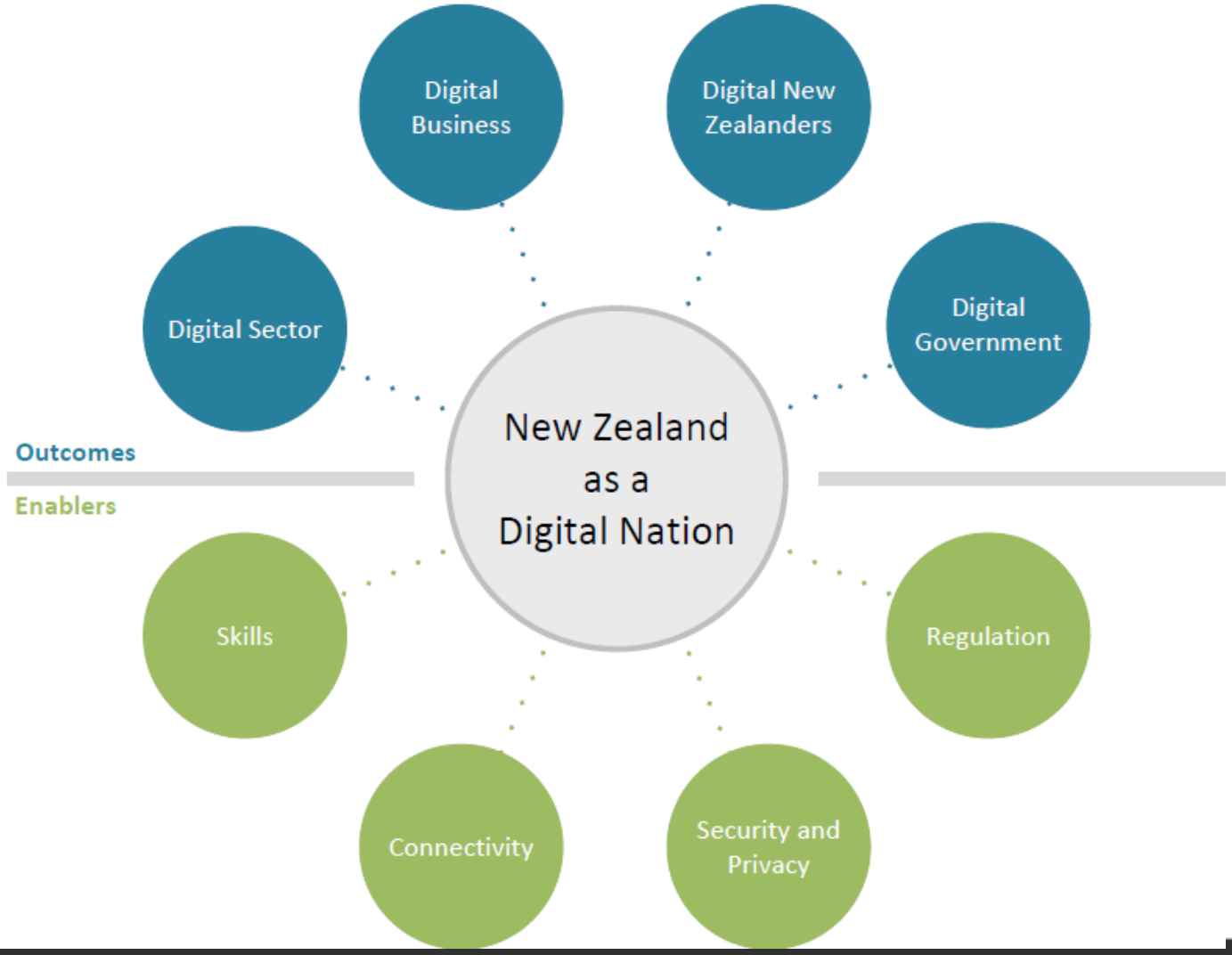
The plan also encompasses

- Adopting regulations that support innovative new products and services
- Growing the availability of innovation skills

Strong arguments for raising performance (for the firm and the economy)

- New Zealand firms that make more extensive use of the internet are 6% more productive than average firms in their industry.
- The gains that firms can reap from the Internet depend overwhelmingly on the extent to which firms use the internet *to reorganise the way they do business*".
- Smart use of Ultra Fast Broadband could contribute $33bn in productivity benefits over 20 years.
- Adoption of ICT may also increase the resilience of firms (and industries) to the impacts of disruptive change

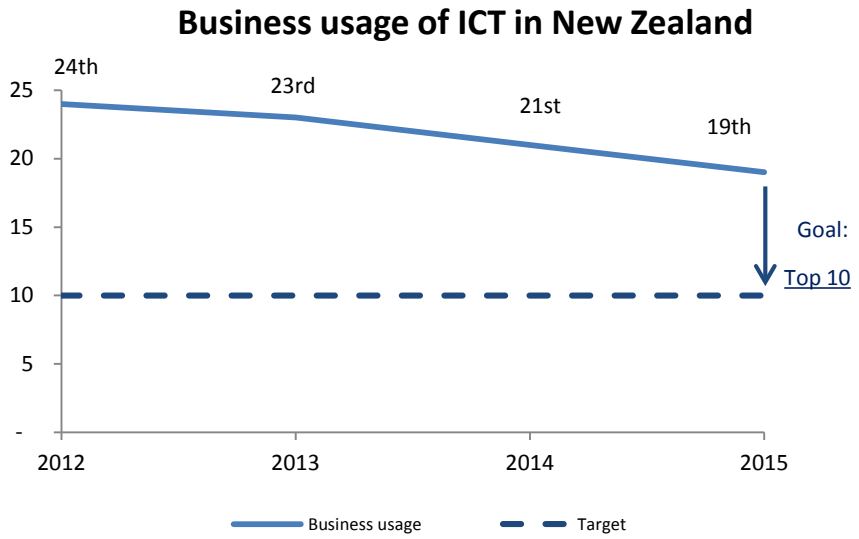
Making the most of the digital economy



Digital Business

Business usage of technology is less in NZ than in similar countries, though this appears to be improving.

Global Information Technology Report



Firms reporting the introduction of new goods and services not possible without ICT	↑	**2012 – 21%** 2010 – 22%
Firms reporting improved efficiency of workflow processes from ICT use	↔	**2012 – 54%** 2010 – 54%
Firms with online ordering facilities (i.e. not email)	↑	**2012 – 15%** 2010 – 14%

Challenges in lifting investment and performance

Broader barriers to improving SME productivity need to be considered if thinking of any interventions. Challenges aren't unique to ICT, eg:

- Time poor, risk averse, cash flow, limited knowledge, vendor information push and lack of impartial information
- Limited competition and management capability lead to low productivity

Some lessons can be learnt from interventions here and internationally

- Government has relatively few levers in this area and it is still unclear what interventions will be worthwhile
- International examples show us that business and sector led initiatives more likely to succeed than "government push", and avoid risk of "crowding out"
- Each sector has different ICT needs and transformation path - different and tailored approaches needed.

Knowledge production and diffusion

We want to see a society fully engaged with, and benefiting from, a larger, more engaged and more responsive science and innovation system that leverages strong international connections

National Statement of Science Investment 2015-2025

IN 2025, WE WANT TO SEE...

- a better-performing science system that is larger, more agile and more responsive, investing effectively for long-term impact on our health, economy, environment and society.

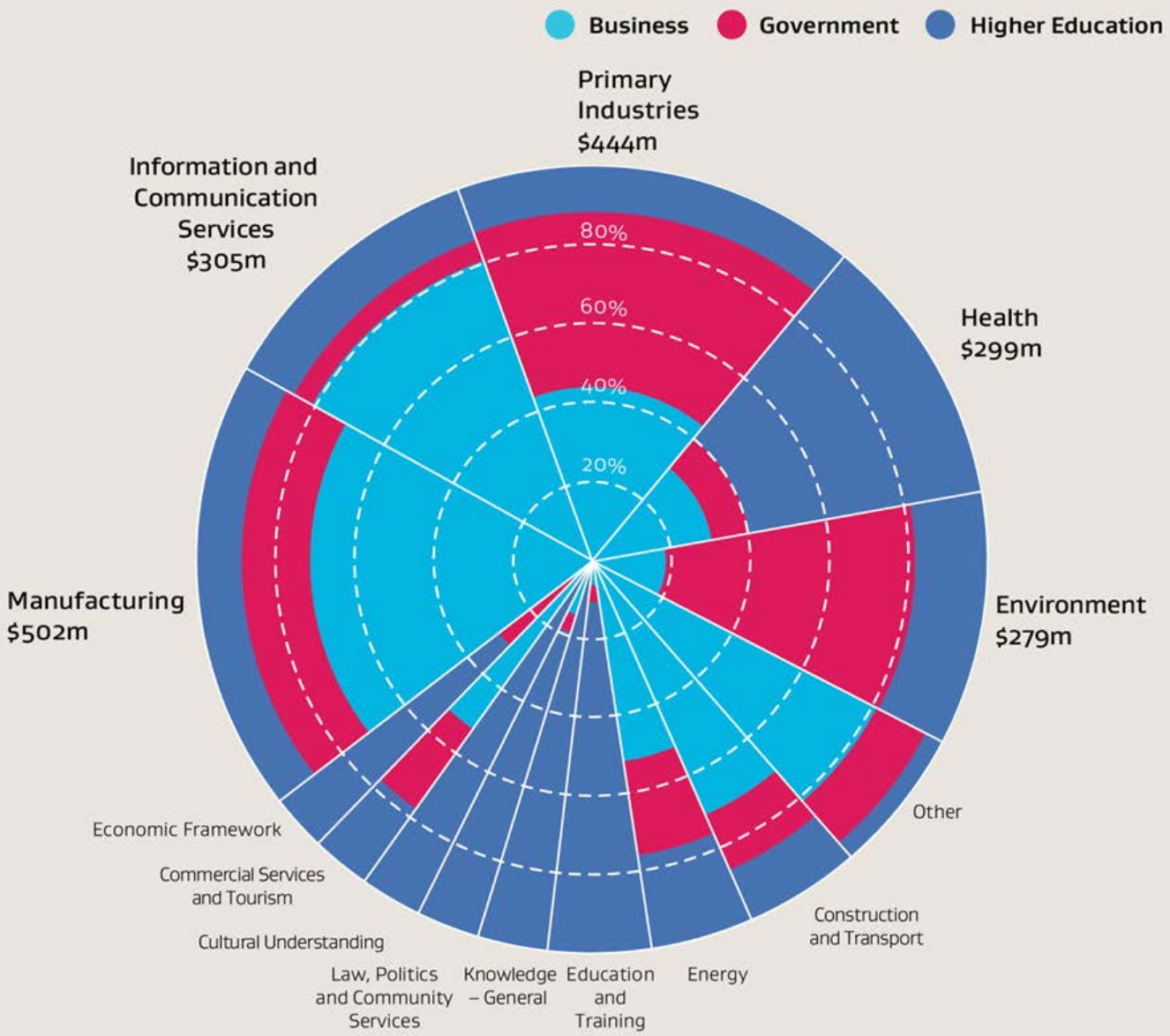
- Growth in BERD to well above 1 per cent of GDP, driving a thriving independent research sector that is a major pillar of the New Zealand science system

- Reduced complexity and increased transparency in the public science system

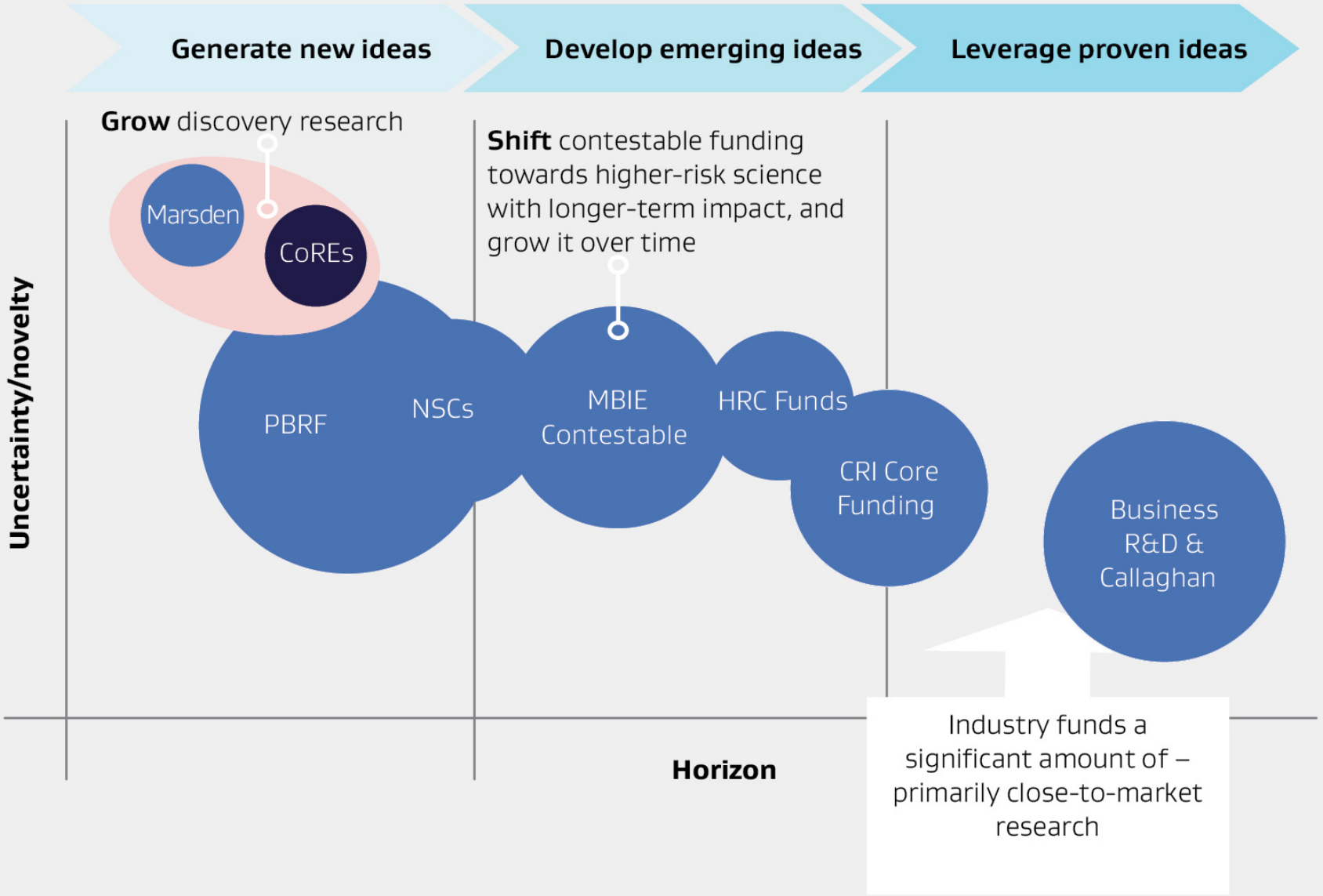
- Continuous improvement in New Zealand's international standing as a high-quality R&D destination, resulting in the attraction, development and retention of talented scientists, and direct investment by multinational organisations.

- Comprehensive evaluation and monitoring of performance, underpinned by easily available, reliable data on the science system, to measure our progress towards these goals.

EXPENDITURE ON R&D BY PURPOSE OF RESEARCH AND SECTOR OF EXPENDITURE 2014



Source: Statistics NZ R&D Survey 2014


Generate new ideas
Develop emerging ideas
Leverage proven ideas
Grow discovery research
Marsden
CoREs
Shift contestable funding towards higher-risk science with longer-term impact, and grow it over time
PBRF
NSCs
MBIE Contestable
HRC Funds
CRI Core Funding
Business R&D & Callaghan
Uncertainty/novelty
Horizon
Industry funds a significant amount of – primarily close-to-market research

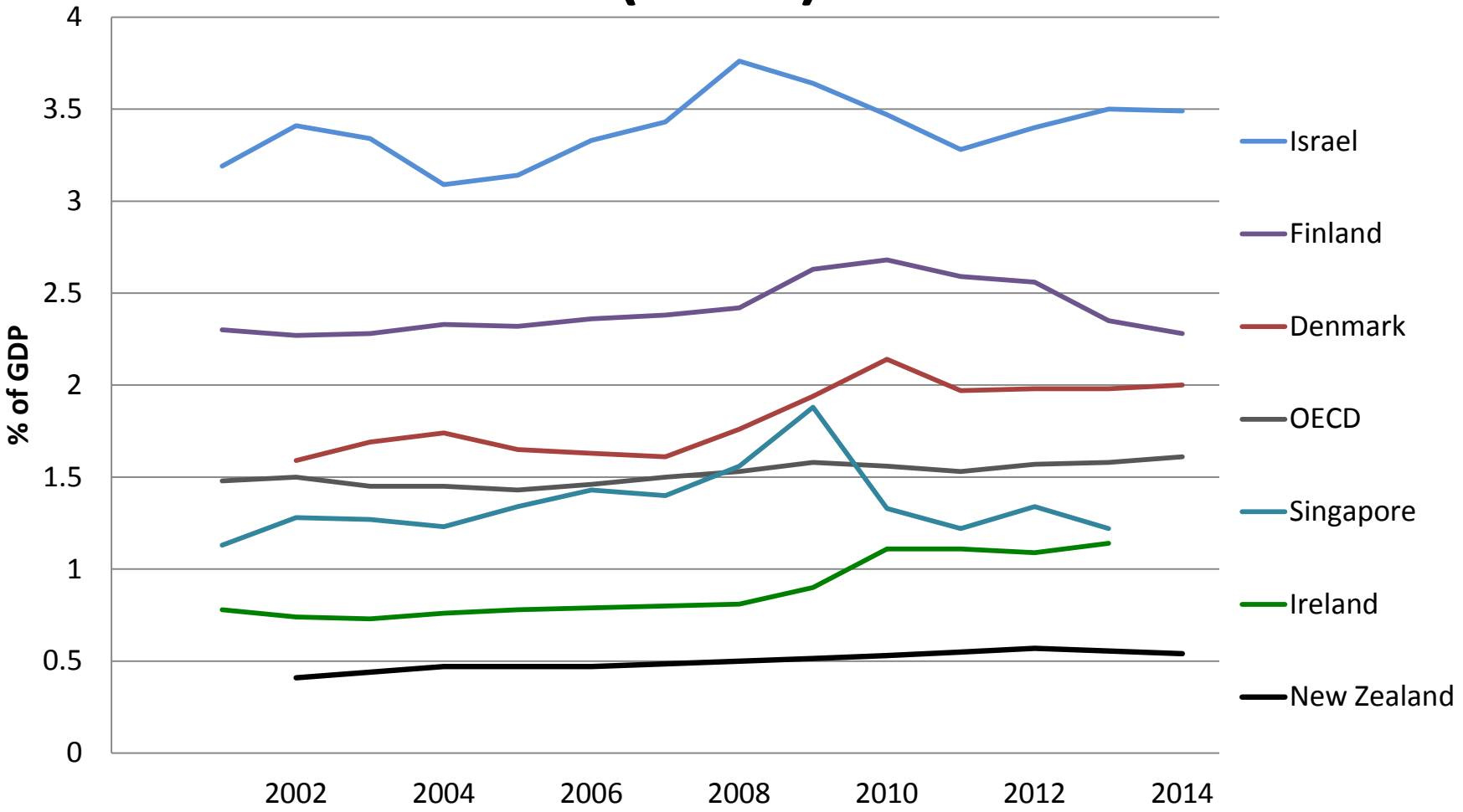
Business expenditure on R & D

- OECD estimates that NZ's weak R&D investment could account for between 3 and 11 of the 27 percentage points productivity gap between New Zealand and the OECD average

- Low levels of private sector R&D can be largely attributed to its distance from world centres of economic activity, industry structure (in particular, the high employment share of the agriculture sector) and firm size

- This does not indicate that there is no problem – as New Zealand's industry structure and firm size is at least partly a result of past R&D expenditure and an increased rate of growth would almost certainly require structural change.

Business R&D (BERD) as a % of GDP

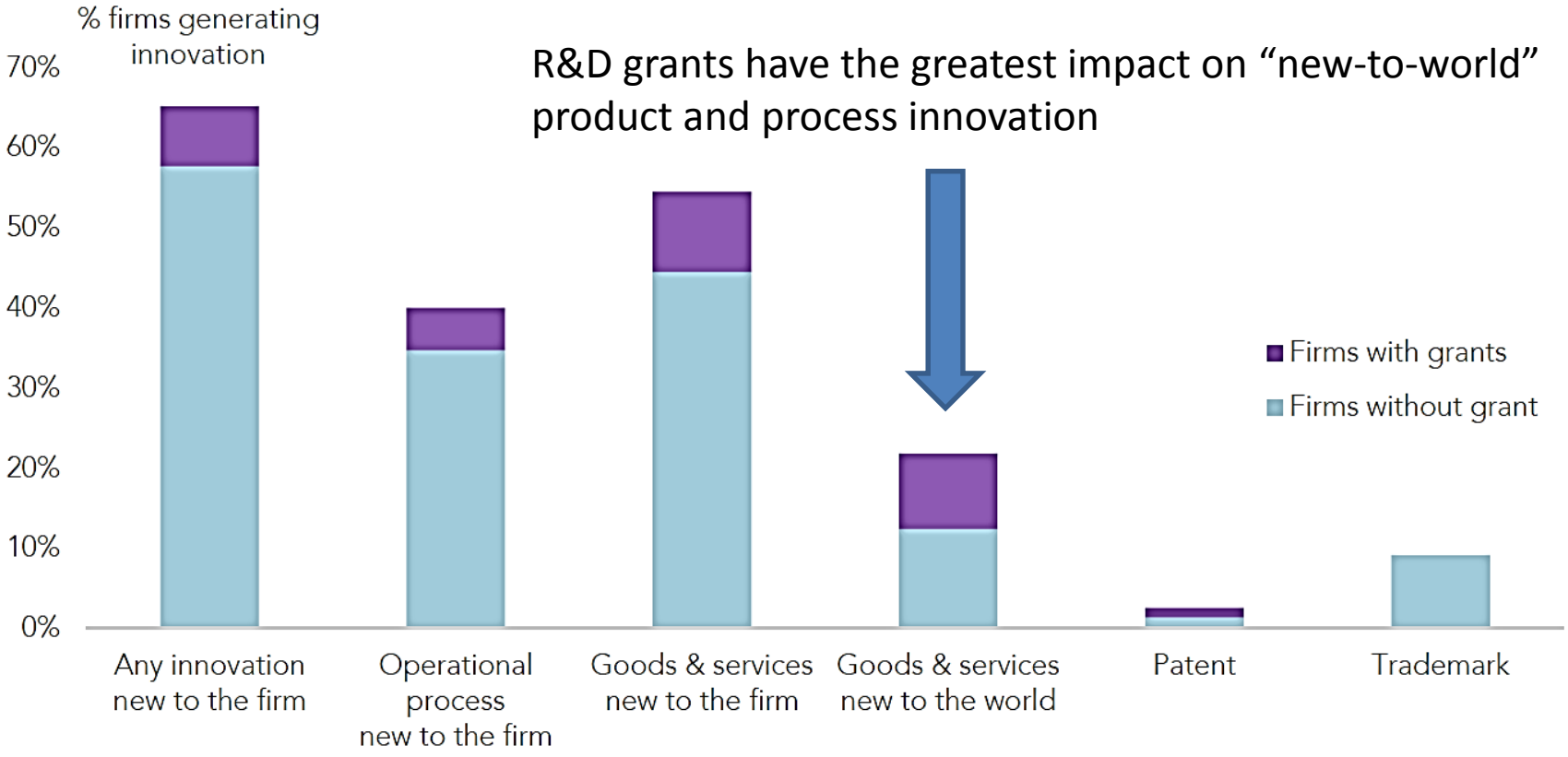


Target to lift business R&D to 1% of GDP (from 0.54% in 2014)

What are we doing?

- Callaghan Innovation – creation of an organisation to drive business investment in R&D
- Re-design, and further investment in, business R&D grants
- Moving towards sector-specific approaches
- Attracting Multinational R&D

Impact of R&D grants on innovation



Source: Jaffe & Le (2015). The impact of R&D subsidy on innovation: A study of New Zealand firms

Note: this research looked at data from 2005 to 2013 so doesn't include the new Growth Grants introduced in 2013

Attracting Multinational R&D

- Multinationals do most of the world's business R&D:
  - top 2,000 do 90% of the world's business R&D
  - top 100 do half of the world's business R&D
- Ireland and Israel attract large amounts of MNC R&D:

	Business R&D as a % of GDP	% of all business R&D performed by foreign-owned subs
Ireland	1.14% of GDP	71% (0.81% of GDP)
Israel	3.49% of GDP	65% (2.27% of GDP)

- Implementing a MNC R&D attraction programme to facilitate specific investment deals