



What is Commercialisation?

A REVIEW OF COMMERCIALISATION RESEARCH

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Why do we need a CSC?

In 2019 Australia fell two places on the Global Innovation Index to 22nd place.

Australia is viewed as an “inefficient innovator” – on par with Mexico, Russia, Mali and Zambia.

Major weaknesses include:

- Government funding to education
- STEM Graduates
- GERD funding from overseas
- University-Industry collaboration
- Cluster development
- Patents in triadic patent families
- R&D personnel employed in business enterprises
- Knowledge, technology & creative outputs

The problem does not lie so much with our research, but with our ability to commercialise.



Australia drops in WIPO innovation rankings Clever country, anyone?

By David Braue on Aug 01 2019 01:12 PM

Print article



It's been 31 years since Bob Hawke dubbed Australia the “clever country” – but if Australia is so clever, why is it falling short on so many innovation metrics?

Critics are asking questions after Australia dropped in the latest World Intellectual Property Organisation (WIPO) rankings of the world's most innovative countries.

Australia's innovation score of 50.34 placed it 22nd in WIPO's newly released Global Innovation Index 2019 (GII) report – a drop of two positions from last year's ranking – after it was edged out by Austria and Iceland.

That score put Australia as the Asia-Pacific's sixth most-innovative country – behind Singapore, South Korea, Hong Kong, China, and Japan.

Yet while all those countries were evaluated as being “above expectations” for their level of development, Australia and 25th ranked New Zealand joined a cluster of high-income countries that were simply judged as being in line with expectations.

Last year's higher ranking came amidst WIPO optimism about Australia's potential leadership in renewable energy storage, with WIPO noting “highly suitable weather conditions” and “a national innovation regulatory environment” backed by “unwavering investor confidence.”



Inputs don't match outputs

We rank behind regional competitors such as Singapore, South Korea, China and Japan.

As a nation we are being matched by single firms such as Samsung, Google and VW.

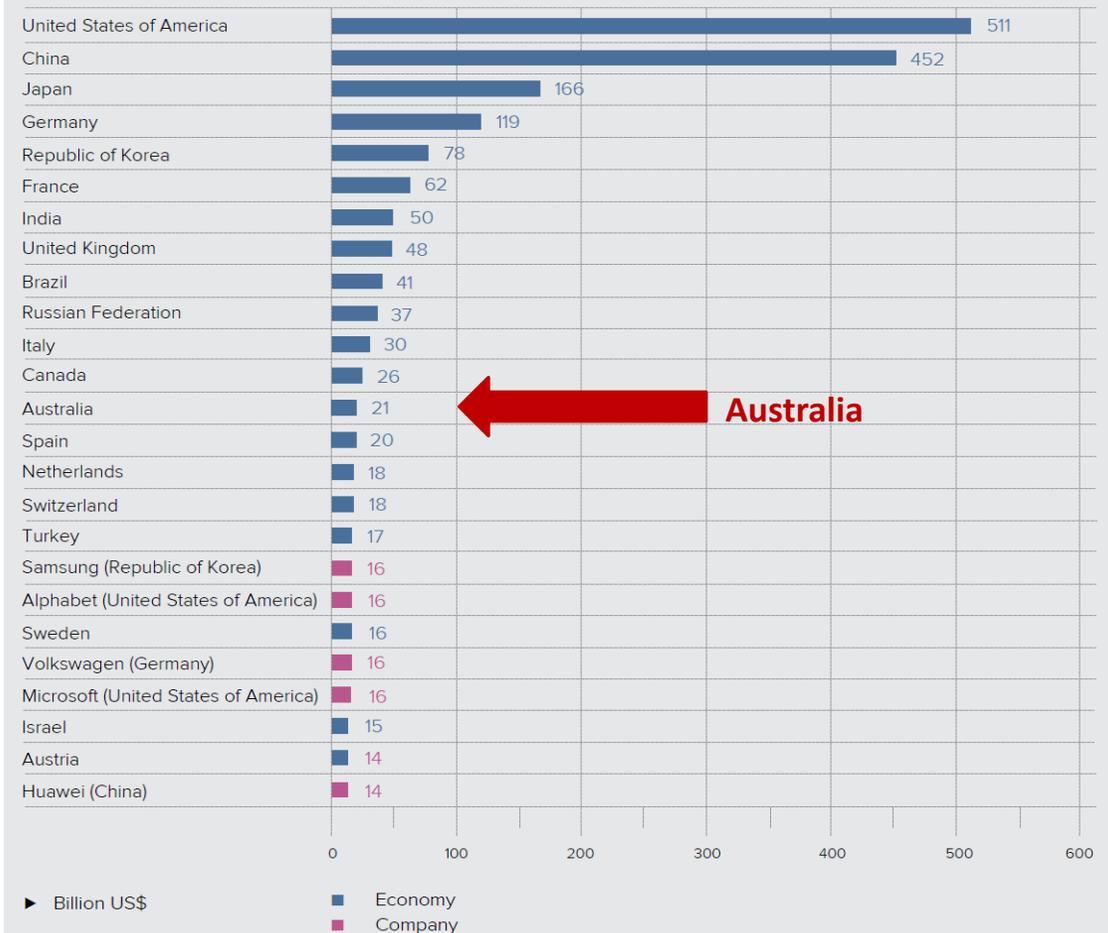
Our metrics on innovation remain an issue with the Australian Innovation Metrics Review seeking to address the problem.

Inputs ranking = 15/129

Outputs ranking = 31/129

Overall ranking = 22/129

Public and private R&D expenditures, 2017 (or latest available year)



Source: Authors' estimates, based on data from UNESCO Institute for Statistics (UIS); and EU Industrial R&D Investment Scoreboard 2018.

The need for a healthy innovation ecosystem

There is a need to address the overall health of the national innovation system.

All actors must be engaged and helped to connect via enhanced knowledge and networking.

They are currently not connecting effectively due to gaps and disconnects in the commercialisation pipeline.



What is commercialisation?



General definition: ... Commercialisation is the organisation of something in a way intended to make a profit: e.g. The commercialisation of football has turned it from a sport into a business. The majority of visitors to the Lake District do not want commercialisation. She complains bitterly about the commercialisation of Christmas (Cambridge Dictionary, 2019).



Business definition: ... Commercialisation is the process of making a product or service available for sale to the public: e.g. The commercialisation of faculty research could help the school make money (Cambridge Dictionary, 2019).

There is a problem in adequately defining the concept of commercialisation

- A review of 269 research papers specifically focused on commercialisation failed to clearly define the concept at all.
- This is a problem because: *“Good science has to begin with good definition.”*¹

¹ Bygrave & Hofer (1991).

Key elements of commercialisation

Development of new products

Development of new processes

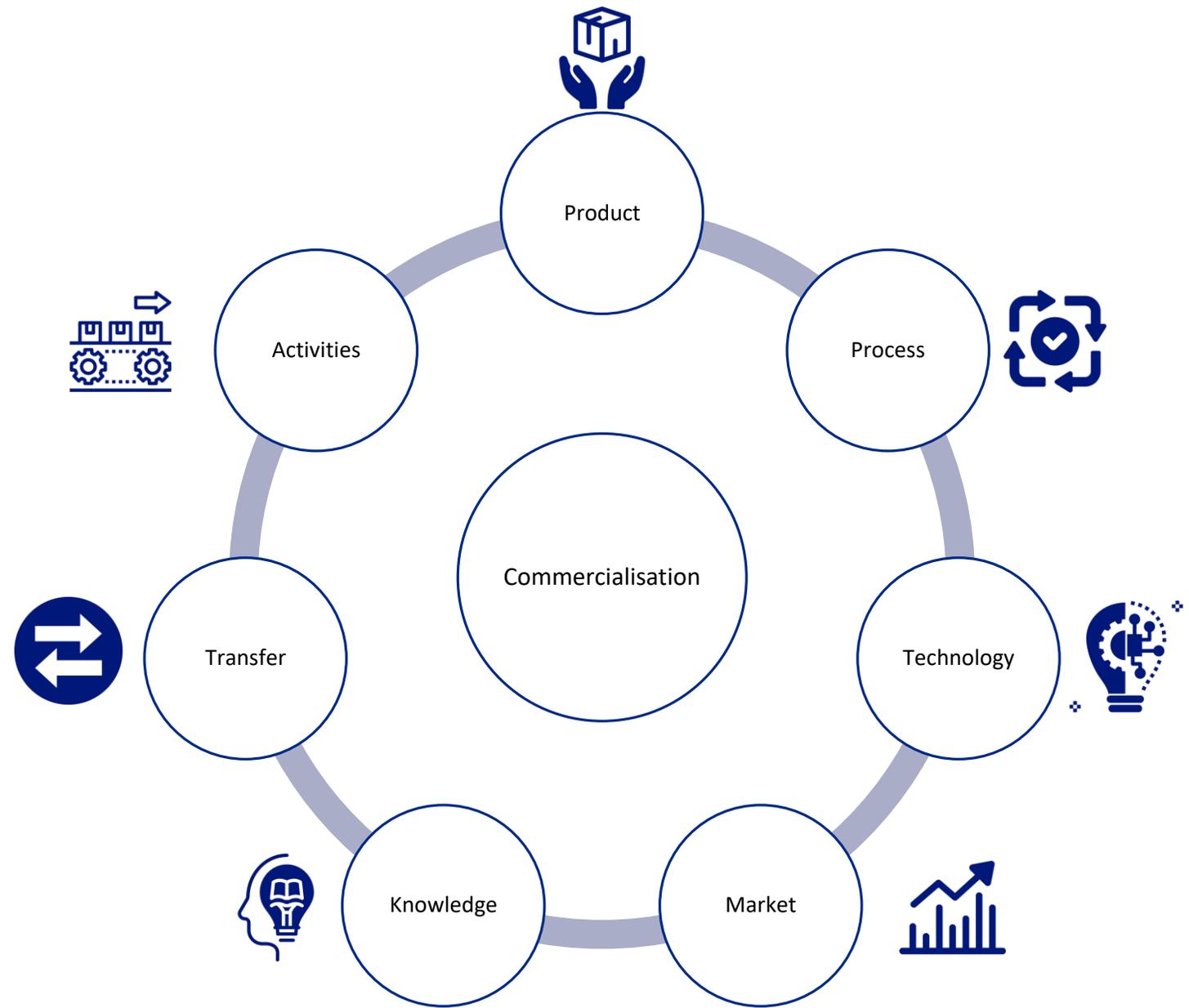
Application of technology

Diffusion into markets

Application of knowledge

Transfer of technology & knowledge

NPD and commercialisation activities



The focus has been on atypical outliers

Type of firm	Definition
Unicorns	Start-up with market valuation of >\$1bn.
Gazelles	Firms with average annual growth rate of >20% over four years.
Born Global Firms	Start-up firms that export >25% of product within the first two-years.
New-technology-based firms	Firms <25 years old focused on exploitation of technology innovation.
High-Tech Firms	Firms that invest >5% total annual turnover into R&D and employ above average number of engineers or scientists.
Entrepreneurial Start-Ups	Business founded with a repeatable, scalable business model focused on growth.
Generic Start-Ups	New business, independently owned-operated, focused on exploitation of an opportunity.

The Gazelle is better than the Unicorn



The Unicorn



Exciting and new, but overhyped and so far, profitless and potentially unsustainable.



The Gazelle



More enduring but elusive and certainly not start-ups.

Economic Gardening within the Entrepreneurial Ecosystem¹

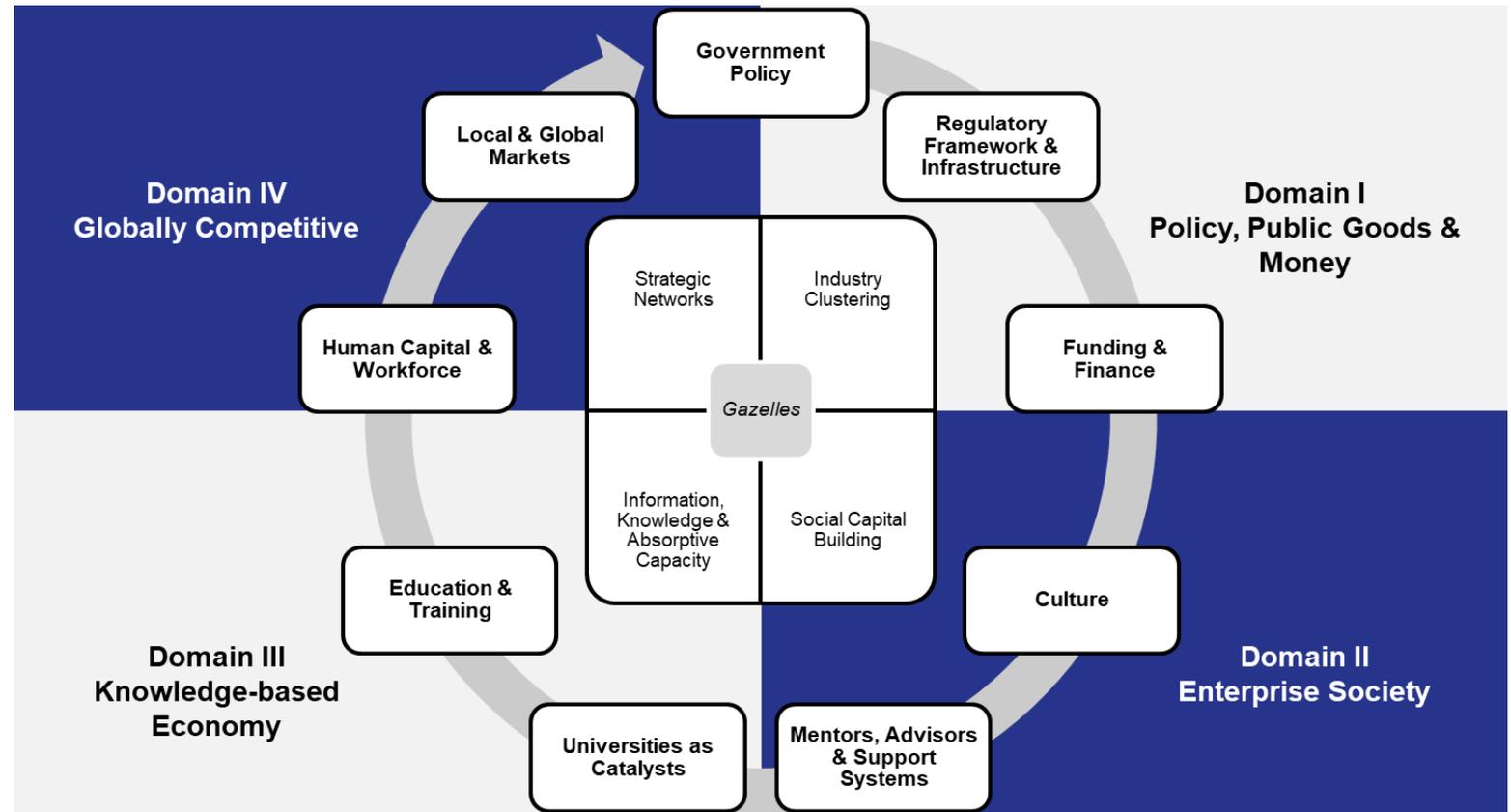
Helping Gazelles through knowledge & networking

The focus of Economic Gardening is to facilitate the Gazelle firms.

Mapping the ecosystem and addressing the health of all four “domains” is critical.

The main focus should be less on creating new ventures and more on fostering the growth of existing ones.

The most important assistance that can be given to such firms is to enhance their knowledge and networks.



¹ Mazzarol, Clark & Reboud (2018).

Research so far: Systematic Literature Review

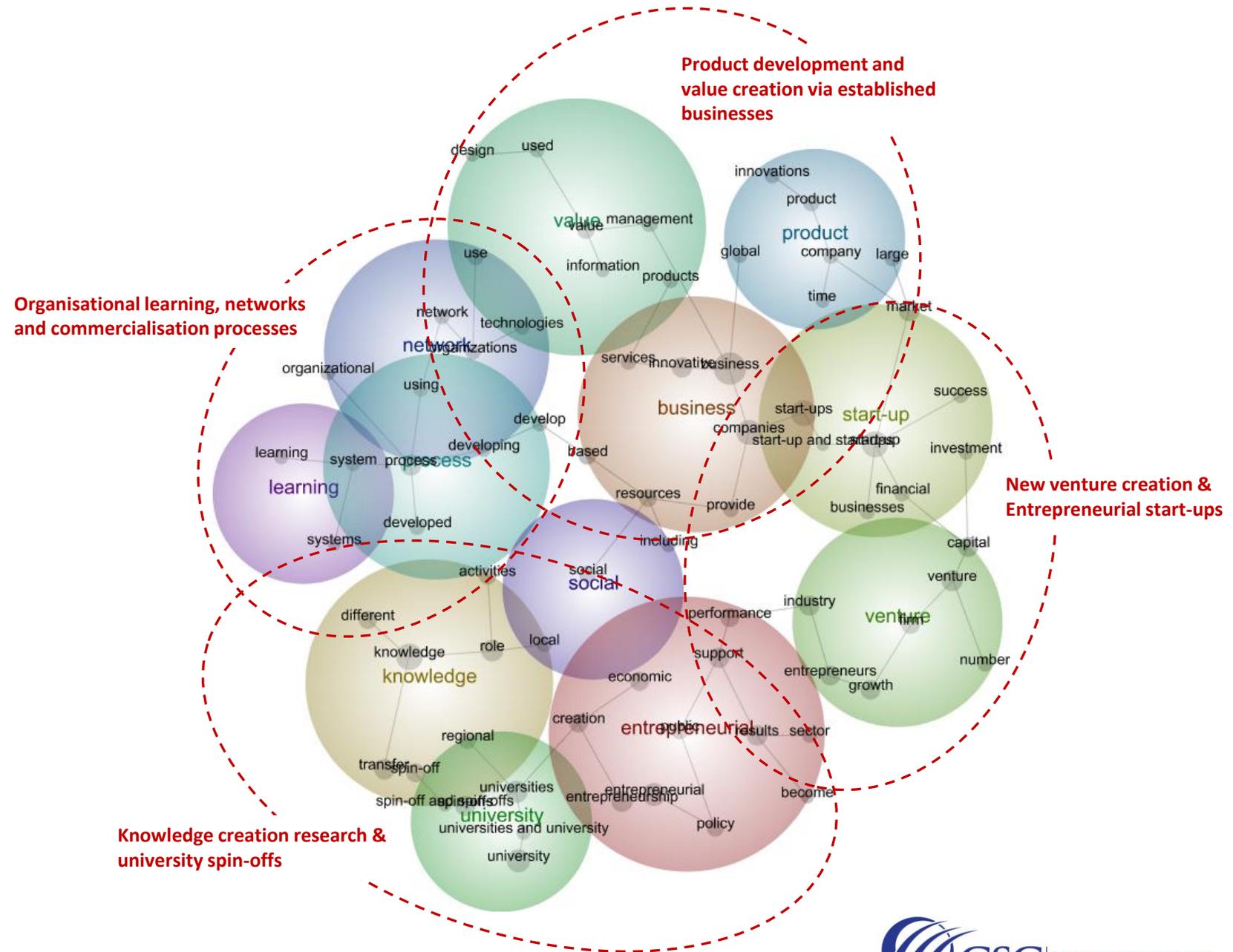
1,426 papers reviewed via Scopus.

Examined via Leximancer text analytic software.

12 major themes emerged that form four core clusters of activity.

- The role of knowledge developed within universities to create new technologies for future commercialisation (e.g. spin-offs).
- New venture creation fostered by entrepreneurial activity via start-ups.
- New product development and value creation via established firms.
- The role of organisational learning, networks and commercialisation processes.

Literature review of taxonomic studies of innovative small firms identified four-part typology.



Mapping the Innovative Small Firm

Inventors	<ul style="list-style-type: none">• Very highly innovative, drawing on an analytic knowledge base¹ to create small or batch production of “pure play” high-tech prototypes that are stand-alone innovations.
Integrators	<ul style="list-style-type: none">• Highly innovative, drawing on a synthetic knowledge base² to create large-scale production of product innovations that integrate into existing processes and services supported by consulting and training.
Niche Specialists	<ul style="list-style-type: none">• Medium innovativeness, drawing on a synthetic knowledge base to create or co-design either small or large-scale production of product or service innovations within specialist markets.
Dominated	<ul style="list-style-type: none">• Low innovativeness, drawing on synthetic knowledge to create or co-design product or service process innovations that integrate into complex production systems of larger firms.

1 Analytic knowledge base builds on creation of new knowledge via formal scientific research.

2 Synthetic knowledge base builds on the novel combination of existing knowledge through application to problems.

Thank you for your attention



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