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A SURVEY ON THE
Innovation of
Australian Companies
2017



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Introduction

Australian companies are competing in increasingly volatile and uncertain business environments. Innovating on a continuing basis is widely claimed to be the solution within such environments. This struggle for innovation is particularly acute for small and mid-sized companies because they lack the resources of large companies to innovate, and they lack the attention and government support of entrepreneurial start-ups. Likewise, scholarly attention on innovativeness of small and mid-sized Australian companies is lacking.

Since 2016, the research teams at the UNSW Business School and Pitcher Partners have collaborated to examine the current conditions of innovation in mid-sized Australian companies with the support of an Australian Research Council (ARC) research funding (LP140100838, 2014-2017). Reports of the first phase and second phase of the project can be found at the UNSW Business School research webpage (links provided at the end of this report).

This report is the outcome of the third phase of the project, which is a national survey designed to identify some unique managerial and organisational features of Australian companies and explore to what extent these features are conducive for innovation to happen.

The data of this study were collected through an online survey of the Qualtrics' survey panel of Australian senior managers in September 2017. The survey consisted of 5 sections: (1) thinking style of the managing directors, (2) characteristics of top management team, (3) existence of simple governance rules, (4) sources of new ideas, and (5) innovation of the companies. This report first summarizes the initial findings based on the five sections of the survey, and then describes the demographics of the companies.

Key Findings

- 1 Managing directors of older and larger companies are low in both convergent and divergent thinking. pg 3
- 2 The desire to instigate more divergent thinking in companies explains the recent explosion of attention given to human-centric design-based thinking and the interest in studying how start-ups stay innovative. pg 3
- 3 Older companies and older top management teams tend to experiment less with new ideas and working methods. pg 5
- 4 Top management teams that are reluctant to experiment invariably frustrate the evolution of new innovative processes and systemic innovations strategies within firms. pg 5
- 5 Simple rules could reduce cognitive overload and guide decision making in a company. pg 7
- 6 Simple rules are only useful when they do not lead to a culture of incremental and iterative innovations that bars radical innovation. pg 7
- 7 Australian companies have not made use of the full spectrum of information sources available to them. They emphasise mostly on customers and own employees and rely less on other market and institutional sources of information. pg 9
- 8 Innovation can be across product, process, marketing, organisation, and business model. Companies do not always have to compete through cutting edge technological innovation. pg 11

Thinking Style

“The desire to instigate more divergent thinking in companies explains the recent explosion of attention given to human-centric design-based thinking and the interest in studying how start-ups stay innovative.”

Key Findings

Individuals differ in how they perceive information and solve problems. Divergent thinking is a thought process where an individual seeks to come up with many solutions to a problem. Convergent thinking instead seeks to find the single best answer to a clearly defined problem. While a divergent thinker deals with a problem as an open-ended question, a convergent thinker deals with a problem as if it was a standardised multiple-choice question with just a finite number of answers. It should be noted that a person can exhibit both thinking styles: a person can apply both divergent and convergent thinking to solve problems.

Results of the survey suggest that the managing directors in Australian companies are slightly higher in convergent thinking (mean score = 4.21) than divergent thinking (mean score = 4.02), where 4 is high and 5 is very high.

Age of the managing director is weakly but still positively correlated with convergent thinking, and negatively correlated with divergent thinking. This suggests that older top managers tend to adopt more convergent thinking. An alternative interpretation is cohort effects, where

people born in a certain era are more trained to think in a certain way.

There is a weak and negative correlation between company size and both convergent thinking and divergent thinking style of the managing director. Similarly, there is a negative correlation between age of a company and managing director's convergent thinking and divergent thinking styles. In other words, managing directors of smaller and younger companies are higher in both divergent and convergent thinking.

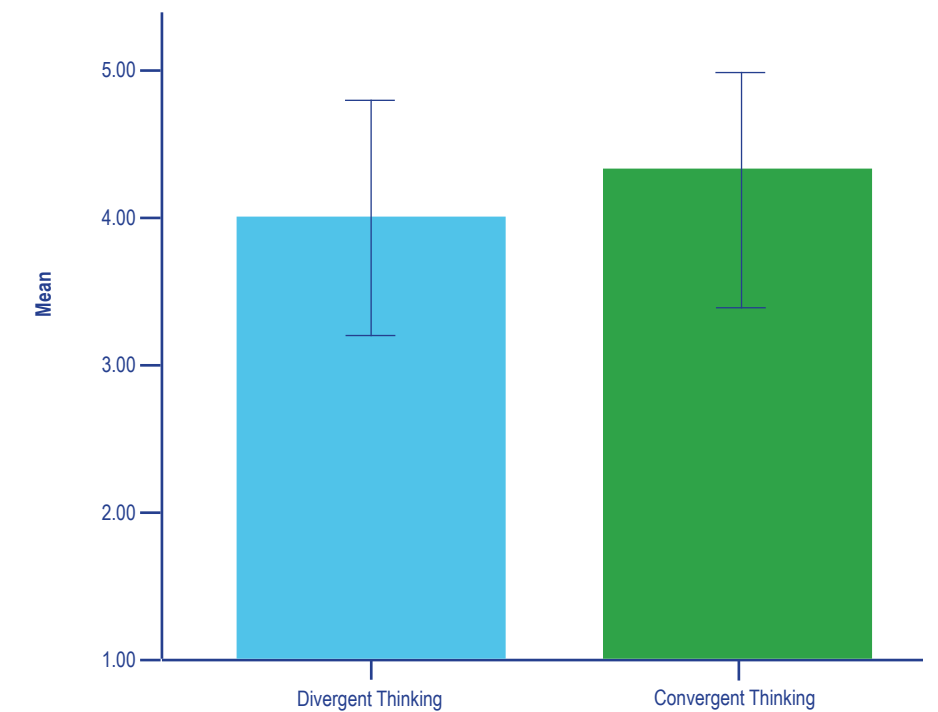
Opportunities and Challenges

Convergent and divergent thinking frequently work hand in hand with each other. For companies to be innovative, they need to be able to come up with new ideas by divergent thinking and be able to evaluate which of these ideas are the best by convergent thinking. The survey shows that older managing directors tend to display more convergent thinking and less divergent thinking; whereas managing directors of older and larger companies are low in both convergent and divergent thinking.

We believe that more training in

divergent thinking will be able to help managing directors and companies in these situations. The desire to instigate more divergent thinking in companies explains the recent explosion of attention given to human-centric design-based thinking and the interest in studying how start-ups stay innovative.

Divergent and Convergent Thinking



Error Bars: +/- 1 SD: 1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree nor disagree, 4 = somewhat agree, 5 = strongly agree

“Managing directors of older and larger companies are low in both convergent and divergent thinking”

Top Management Team

“Top management teams that are reluctant to experiment invariably frustrate the evolution of new innovative processes and systemic innovation strategies within firms.”

Key Findings

The top management team is central to the governance of and decision-making within a company. The average top management team in our survey has 3.78 members (s.d. = 3.48, range from 0 to 20). The percentage of males is reported to be 61.31% (s.d. = 34.21). The average age of the team members resides mostly in the 45-54 years old bracket (41% of the sample), followed by the 55-64 years old bracket (24%) and the 35-44 years old bracket (20%).

The survey asked for the learning behaviour of the top management team in terms of experimentation of new working methods. The average score of experimentation is 3.81 on a 5-point scale (1=very low; 3=average; 5=very high). The score of experimentation decreases as the team, the top manager, or the company gets older: experimentation is somewhat negatively correlated with the average age of team members, the age of managing director, and the age of the company. Divergent thinking style of the managing director is more positively correlated with experimentation behaviour of the top management team than convergent thinking style. Experimentation of top management team is, however, unrelated to company size.

Opportunities and Challenges

It is widely agreed that it is important to assemble a top management team that can learn and is not afraid to experiment with new ideas in today's business environment. Top management teams that are reluctant to experiment invariably frustrate the evolution of new innovative processes and systemic innovations strategies within firms. This survey reveals that age is a key barrier to experimentation - older companies and older top management teams experiment less with new ideas and working methods. While this could be prudent in some situations, we generally believe that it more likely due to complacency and/or overconfidence.

3.81 out of 5 is the average score of top management team experimentation with new working methods.

The score gets lower when:

- 1 Managing directors are older
- 2 TMT members are older
- 3 Companies are older

“Older companies and older top management teams tend to experiment less with new ideas and working methods.”

Simple Rules

“Simple rules are only useful when they do not lead to a culture of incremental and iterative innovations that bars radical innovation.”

Key Findings

The principle of governing through simple rules - a few hard and straightforward guidelines in a company that define its direction - could reduce cognitive overload and guide decision making. This survey asked managers to what extent they agree to the existence of such rules in their companies. On average, Australian companies were rated highly at 3.90 for simple rules on a 5-point scale (1 = very low; 3 = average, 5 = very strong).

While a score of 3.90 is quite high on a 5-point scale, there are variations in the sample based on company size and age. Existence of simple rules is negatively correlated with company size and company age. This suggests that rules become less simple – perhaps more complex and convoluted when a company is bigger or is older.

The results of the survey also show that the extent of simple rules does not depend on the managing director. Both convergent thinker and divergent thinker are strongly associated with more simple rules in companies. On the other hand, the age of the managing director is only weakly associated with simple rules.

Opportunities and Challenges

Governing through simple rules is particularly relevant for a complex world that is marred with wicked problems. Attempting to solve wicked problems with complex processes will only create more confusion. On the other hand, when middle managers can approach problems they face with a few easy to remember rules, they can use their discretion to be more adaptable, more flexible, and more responsive to unexpected opportunities. However, simple rules are useful when they do not lead to a culture of incremental and iterative innovations that bars radical innovation.

This survey reveals a high score on simple rules for Australian companies that vary by company's characteristics (i.e., company age and size) but not by managing director's characteristics (i.e., their thinking style and age). To deal with a turbulent and complex business environment, managing directors may consider implementing simple rules in their companies.

Simple rules could reduce cognitive overload and guide decision making in a company
On simple rules

Australian companies overall scored **3.90**

Companies younger than 5 years (sample size = 60) scored **4.00**

Companies older than 5 years (sample size = 149) scored **3.67**

“Most Australian companies are able to make use of a set of simple governing rules to guide their decision making.”

Sources of New Ideas

Key Findings

Information is crucial for business to come up with new ideas. The survey asked the extent to which eleven sources of information are used for innovation. Results show that Australian companies rely mostly on their customers (5.85 out of 7; where 1 = not used, 7 = very high) and their own employees to bring up new ideas (average = 5.62, between somewhat high and high).

They rely less on other market networks (such as competitors, suppliers and consultants; scores ranging from somewhat low to somewhat high). They rely even less on institutional networks (such as universities, public institutes, and community network; scores ranging from low to somewhat low).

The survey also revealed that divergent thinking style of managing director has higher correlations with all sources of information than convergent thinking. This suggests that directors with a divergent thinking style tend to use more information from all sources.

The age of the managing director is weakly and negatively correlated with using information from own organisation, suppliers, customers, and community networks. Older directors tend to use less market

information sources than younger directors.

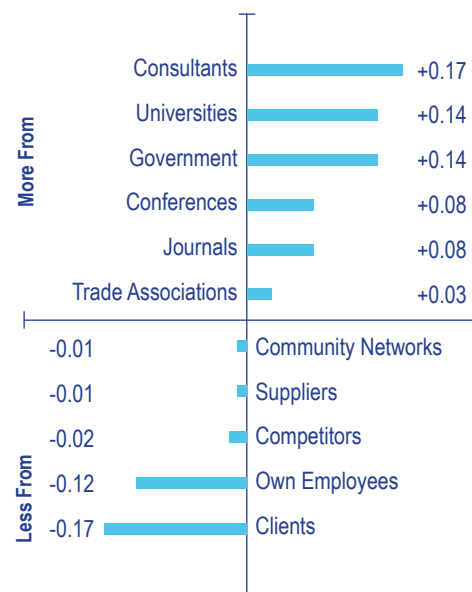
Company size is positively correlated with multiple sources of information such as competitors, consultants, universities, governments, conferences, journals, professional associations. This suggests that the breadth of information of big companies is wider than small companies.

Company age is negatively correlated with obtaining information from own employees, suppliers, customers, competitors, but positively correlated with obtaining information from consultants, universities, government, conferences, and journals. The results show that young and old companies tap into different information sources: young companies mainly obtain information from own organisation and market sources, whereas old companies use institutional and publicly available knowledge.

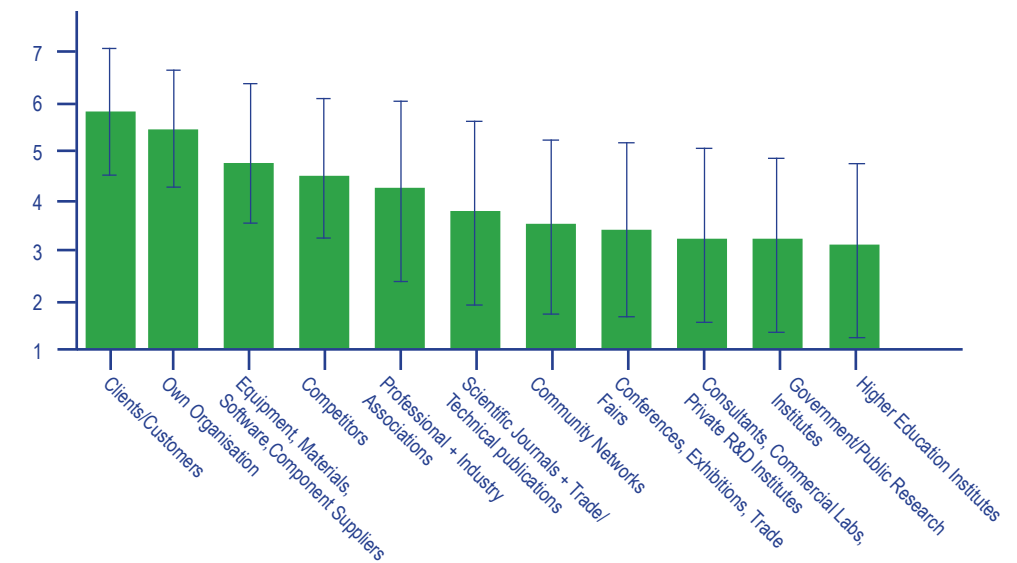
their customers and own employees, they have ignored other potentially useful information sources, such as suppliers and competitors.

There is recently the concept of bricolage, which suggests that when companies are constrained in resources, their managers should address the scarcity problem head on rather than avoiding the problem. They should make the best use of whatever is available at hand. They should improvise to recombine existing resources for new uses (as in the idea of frugal innovation), and they should also network with external partners to tap into resources and information residing outside the company. With a bricolage approach, a company with limited resources is able to innovate and keep up with the competition.

As a company grows older, it obtains ideas:



Information Sources



Error Bars: +/- 1 SD: 1 = not used, 2 = very low, 3 = low, 4 = somewhat low, 5 = somewhat high, 6 = high, 7 = very high

Opportunities and Challenges

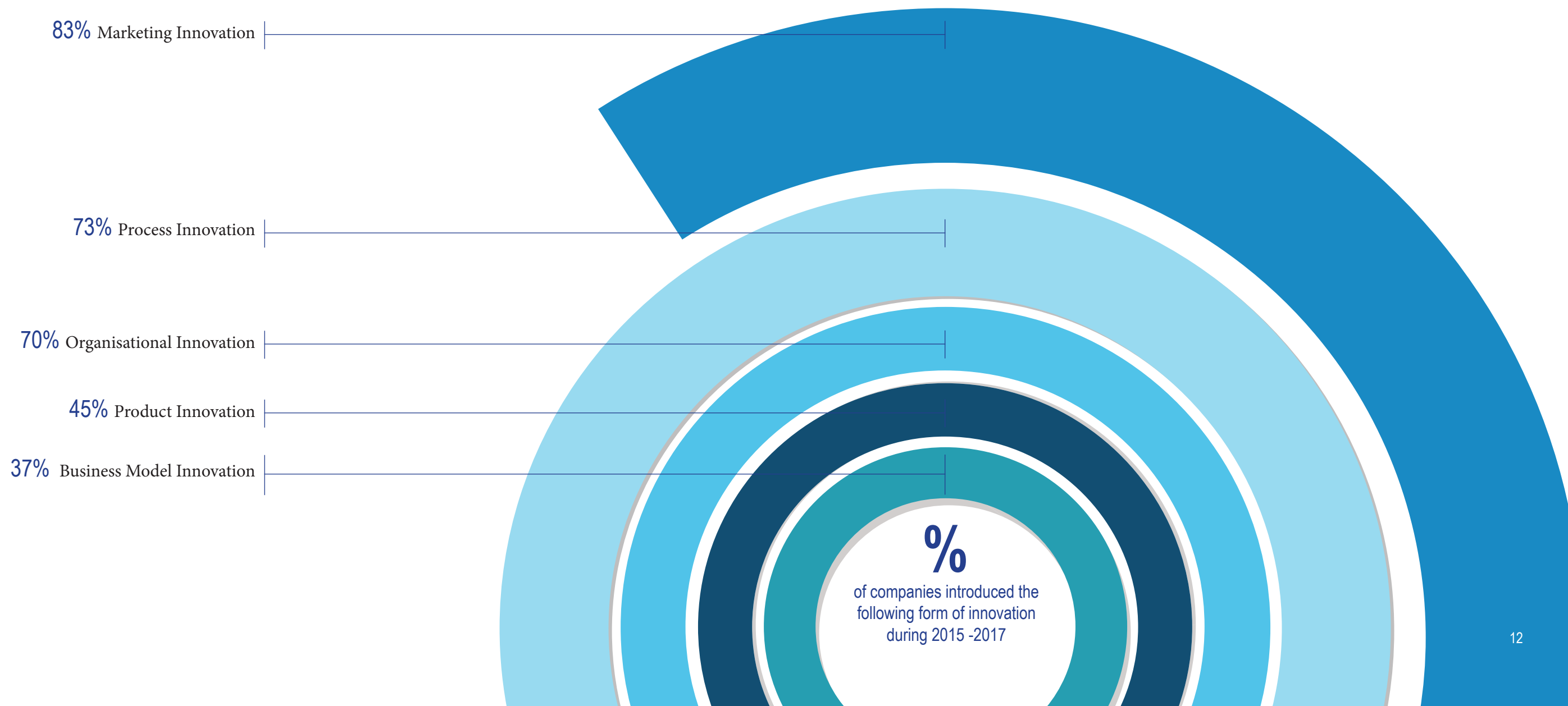
The results of this survey show that managers of Australian companies have not made use of the full spectrum of information sources available to them. While Australian managers are able to tap into information from

“Australian companies have not made use of the full spectrum of information sources available to them. They emphasise mostly customers and own employees and rely less on other market sources and publicly available knowledge.”

Innovation

Innovation refers to the development and adoption of a product, an idea, or a behaviour that is new to a firm. During 2015-2017, Australian companies have introduced various forms of product innovation, process innovation, organisational innovation, marketing innovation, and business model innovation in their businesses.

“Innovation can be across product, process, marketing, organisation, and business model. Companies do not always have to compete through cutting edge technological innovation.”



Product Innovativeness

“Companies with managing directors who are apt in divergent thinking style have a higher percentage of products new to the market and products new to the company.”

Key Findings

Among the various aspects of innovation, products differ in the degree of innovativeness. A product may be new for a company, but it may not be new for a market. The survey asked the relative percentages of (1) products new to the market, (2) products new to the company, and (3) unchanged products in annual turnover volume. The percentages reflect the innovativeness of a company. The survey found that 22% of the products offered by Australian companies are new to the market, 23% of the products are new to the company, and 55% of the products have been unchanged.

The influence of managing director on innovativeness is noticeable in the survey. Divergent thinking style is correlated with the percentage of products new to the market and products new to the company. On the other hand, convergent thinking style is only weakly correlated with new products.

Age of managing director is negatively correlated with the percentage of products new to the market and products new to the company and positively correlated with unchanged product. The above suggests that products offered by a company tend

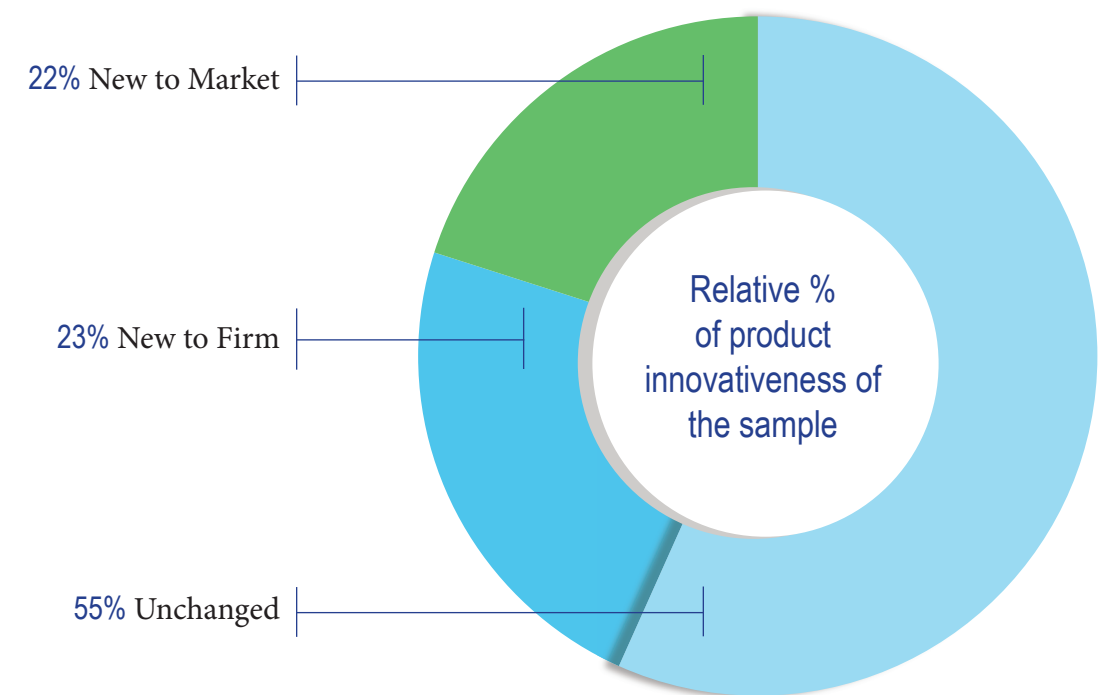
to be more innovative when managing directors are younger and have a divergent thinking style. The influence of company characteristics on product innovativeness is less obvious from the survey results. While older companies tend to offer unchanged products, whether a company is small or large does not seem to affect product innovativeness.

Opportunities and Challenges

New products and services help a company to capture more profit and to stay ahead of competition. Companies may stumble onto new ideas once or twice by luck. However, new products and services may become obsolete very quickly in the market because of strong competitors and imitators. It is therefore important for a company to be able to innovate regularly and continuously over time.

Managing innovation is a daunting task for small and medium sized companies, which are limited by resources and time. Managers of these companies should know that they do not always have to compete through cutting edge technological innovation. To enhance their competitiveness, they should direct their attention into

other kinds of innovation such as process, marketing, management, and even business model innovation.



Methodology

The survey reported in this study was hosted on Qualtrics platform during September 2017. There were 866 attempts. After excluding cases that did not finish the survey, or did not pass the attention checking questions, we received 601 valid replies.

At the beginning of the survey, we asked the respondents to confirm their position in their companies, and only included participants who were senior managers from Australia in the survey.

The survey asked the participants to describe the characteristics of their companies, the managing directors, and innovation activities of their companies. This report interprets the survey results based mainly on two statistics:

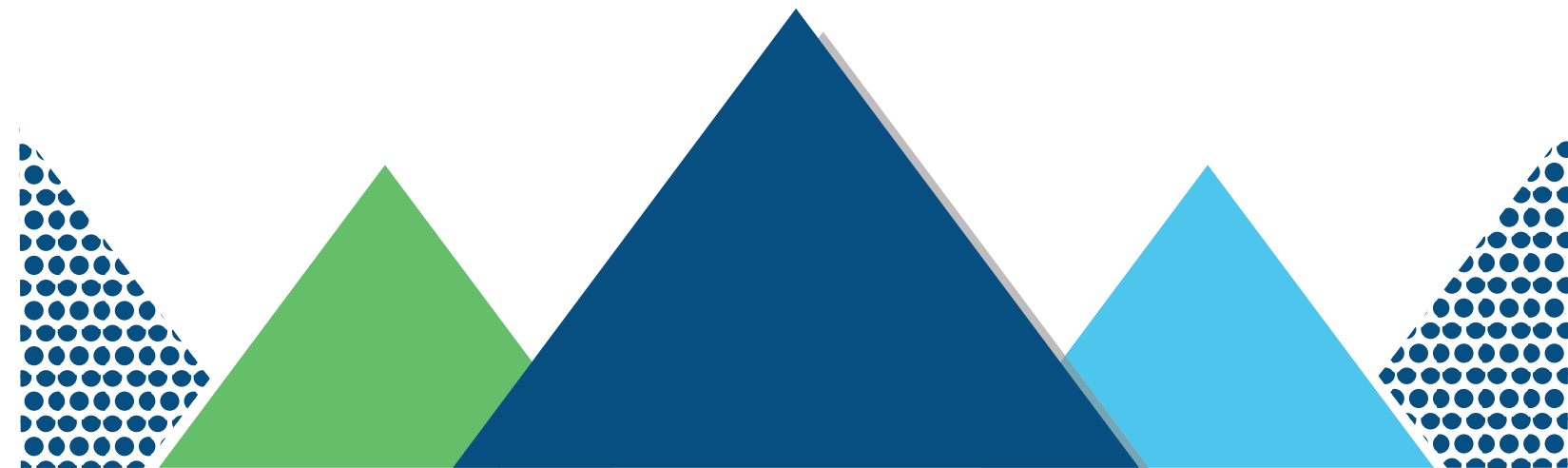
The Mean

The mean score of a factor. The survey asks respondents to evaluate a factor from 1 to 5, with 1 being very low, 3 being average, and 5 being very high.

The Correlations

The correlation coefficient between two factors. The correlation coefficient (r), ranges from 0 to 1, provides information on the direction and the

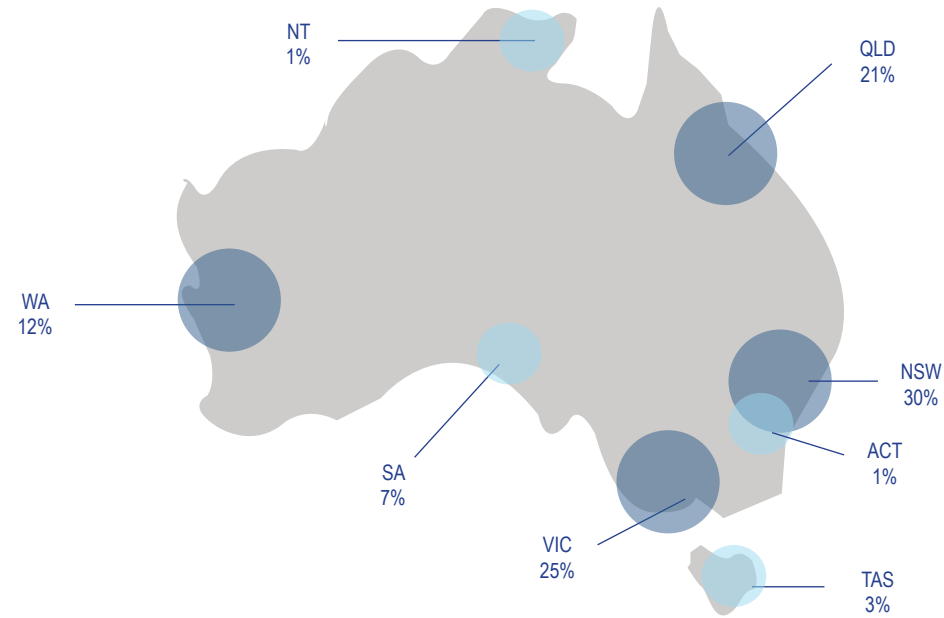
strength of a relationship. The sign of the coefficient represents whether two factors go up and down together or go in opposite directions (i.e., when one factor goes up, the other factor goes down). The value of the coefficient represents the strength of a relationship. A number closer to 0 represents a weak relationship, whereas a number close to 1 represents a strong relationship. For this survey, a correlation below 0.1 is considered a weak relationship, a correlation between 0.1 and 0.3 is considered a medium relationship, a correlation above 0.3 is considered a strong relationship between two factors.



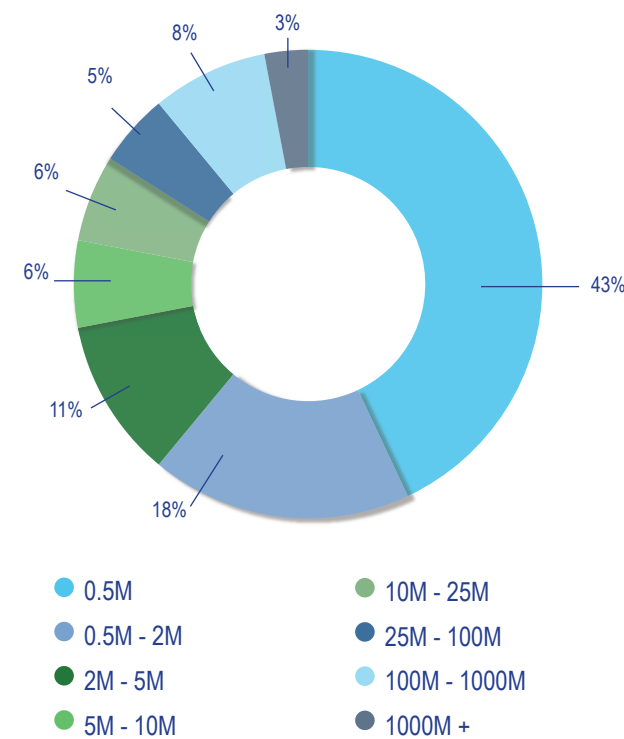
The Sample in Numbers

Senior managers from 601 companies completed the survey and provided information about their companies and the managing directors of their companies.

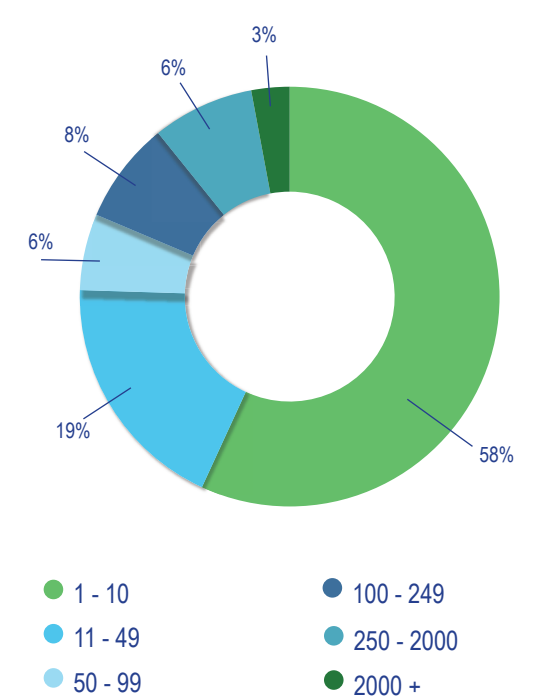
Companies by State & Territories



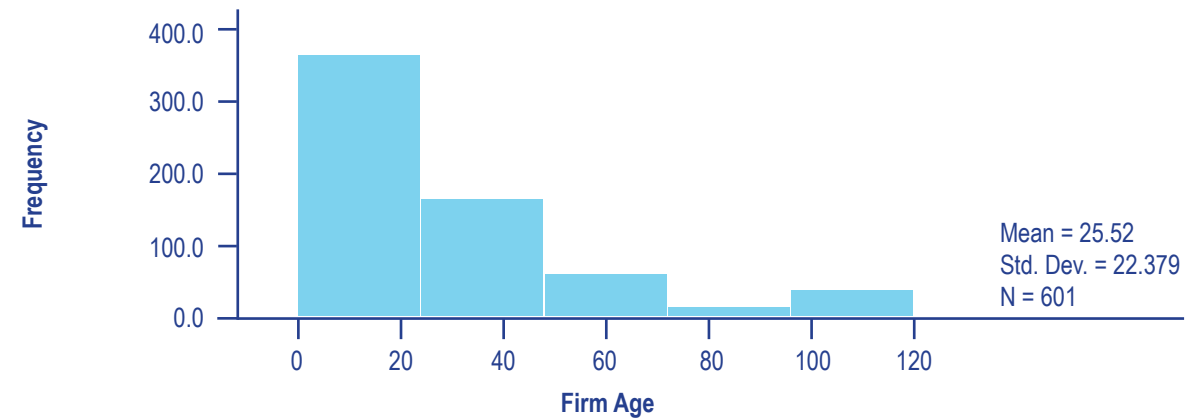
Companies by Size (based on annual sales revenue (AUD\$) in 2016)



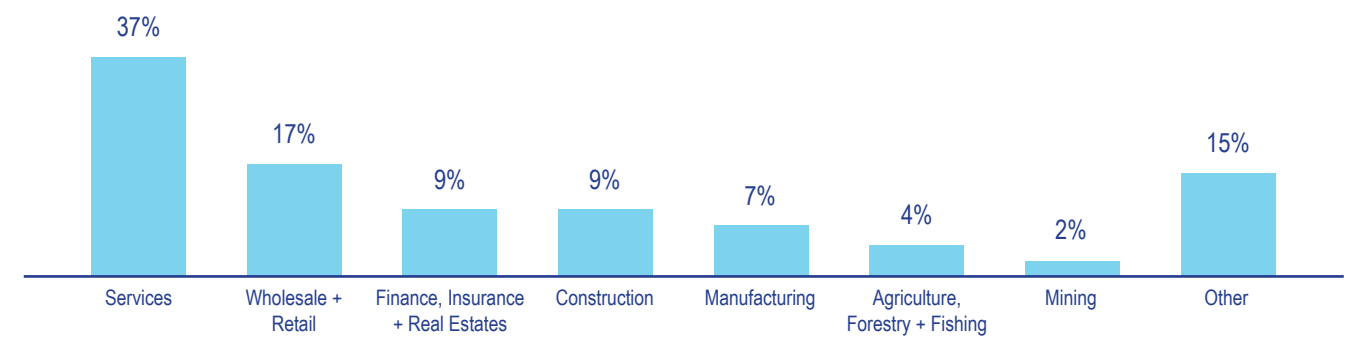
Companies by Employee Numbers



Companies by Age

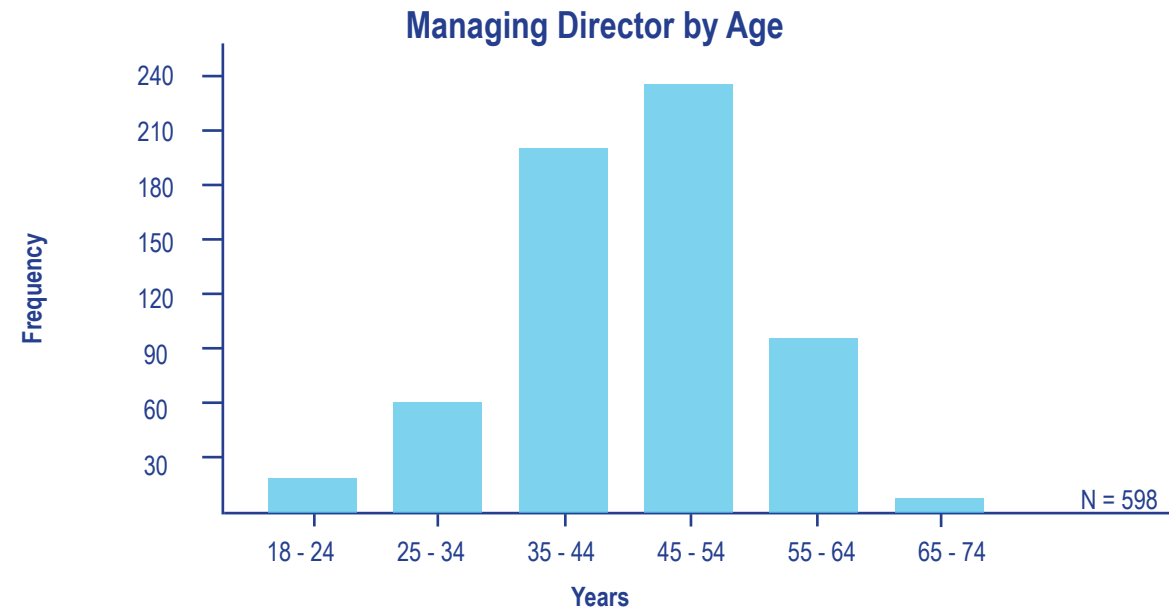


Companies by Industry

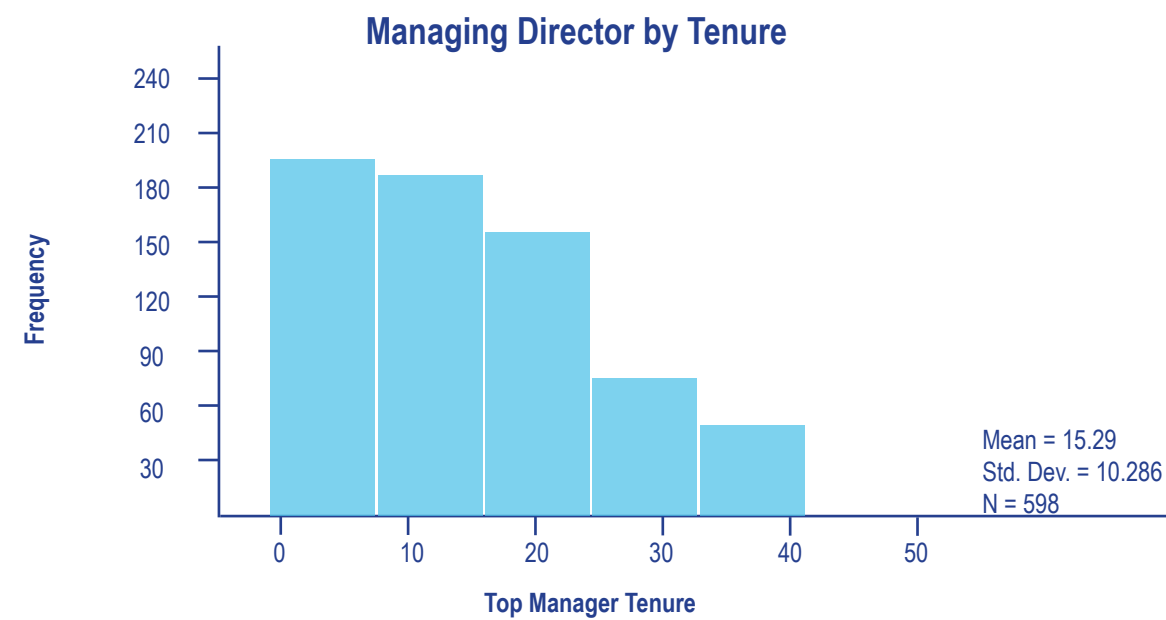
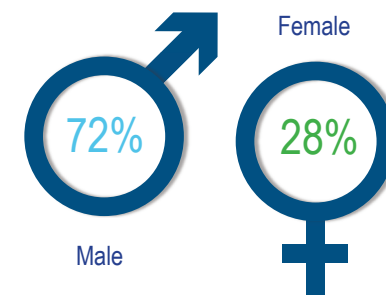


The Sample in Numbers

(continued)



Managing Director by Gender



The Research Team

The UNSW Research Team

Lead researcher: Associate Professor Steven Lui's research focuses on interfirm cooperation, trust, and innovation. His research examines how cooperation leads to innovation and when trust becomes a liability in cooperation.

Professor Chris Jackson's research focuses on cognition, change, innovation, and performance.

Associate Professor George Shinkle's research investigates strategic goal setting, strategic agility, innovation, strategy formulation, and strategy implementation, particularly in turbulent environments. His research targets the nexus between strategic management and organisation theory.

Dr Salih Zeki Ozdemir investigates how the overall structure of social networks and organisations' positions within these networks affect the strategic decisions they undertake. He also researches the evolution of these social networks based on performed actions.

Dr Benjamin Walker investigates personality and cognition and how they predict outcomes such as creativity and innovation.

Pitcher Partners

Pitcher Partners is a consultancy firm servicing Australia with offices in Melbourne, Sydney, Perth, Adelaide, Brisbane and Newcastle. Pitcher Partners prides itself on providing excellent client service with practical advice in a caring working environment. Pitcher Partners has partnered with UNSW in an Australian Research Council Linkage Grant (LP140100838) to produce research on the drivers of innovation in Australian companies.



Associate Professor Steven Lui



Professor Chris Jackson



Associate Professor George Shinkle



Dr Salih Zeki Ozdemir



Dr Benjamin Walker

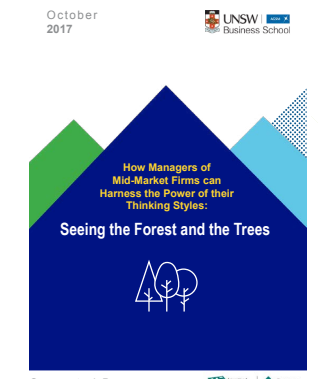
Further Contact

This executive report is the third report of research conducted by the partnership. The first and second reports of the research project can be accessed on the research section of the UNSW Business School, School of Management website (<https://www.business.unsw.edu.au/about/schools/management/research>).

If you want to know more about or are interested to participate in this research, please contact Dr. Steven Lui or any member of the research team.



Phase One Report



Phase Two Report

Australian Research Council Linkage Grant LP140100838



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Companies 2017**

Report produced October 2018 on behalf of the
UNSW Business School and Pitcher Partners