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Wine Industry RD&E: Devloping Partner Co-creation Capabilities



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Research Organisation: **University of Adelaide**

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Devloping Partner Co-creation Capabilities

Report Prepared for
Australian Grape and Wine Authority

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ABSTRACT

Abstract

This research supports the work of Wine Australia by identifying capabilities required to bring together research institutes, wine producers, and others in the wine sector to integrate resources and skills in a way that achieves superior RD&E outcomes. Through a series of interviews and an exploratory survey, several capabilities required for successful R&D collaboration are identified; market knowledge, absorptive capacity, technological competence, network and alliance capabilities, co-creation capability and the capability to build capabilities. The study suggests all partners should focus on developing relational capabilities, while firms low on technical capabilities should focus on developing their capability to build capabilities.

EXECUTIVE SUMMARY

Executive Summary

The global wine industry has undergone a period of dramatic modernisation and transformation, founded in changes of market and production characteristics as well as advances in technology (Giuliani et al., 2010). To develop a competitive advantage in the global wine industry, new wine producing regions in particular have responded, investing heavily in research and development (R&D) activities. Indeed, to extract the full value of its investments, Wine Australia needs to be able to draw on research institutes, wine producers, and various other actors within the wine sector to work together and integrate their resources, strengths, skills and capabilities towards mutual goals.

University-industry collaborations are now recognised as important mechanisms for providing R&D services known to stimulate the economic cycle of innovation and growth (Berbegal-Mirabent et al., 2015), offering a unique opportunity to integrate the diverse resources that exist within the respective partners. For example, while the involvement of regional wine producers enables research institutions the physical resources (e.g. the grapes) and practical insight to facilitate research that will benefit the industry, researchers offer the scientific expertise and tools facilitating innovation. The question remains, however, what capabilities are needed for organisations to co-create value from RD&E efforts and how these capabilities can be developed.

This research thus aims at supporting Wine Australia by developing recommendations on how to strengthen and increase research-industry collaboration and its value, by (1) recognizing the capabilities that enable successful R&D collaboration, (2) identifying how these capabilities are developed, (3) determining how they can be measured, as well as (4) exploring the impact of capabilities on relevant collaboration and adoption outcomes, including an analysis of capability constellations.

A two-phased research study was thus undertaken within the Australian wine context. The first phase, a series of in-depth interviews with key informants knowledgeable about university-industry R&D collaborations in the wine industry, enabled the identification of relevant capabilities (aim 1) and the potential to mutually develop capabilities within the collaboration (aim 2). Based on this insight, an exploratory quantitative study was conducted by means of an online survey, which enabled the identification and adaptation of suitable scales (aim 3), explore the extant capabilities in the organisations involved as well as their outcomes (aim 4), as well as determine capability constellations driving value perceptions, interest in participating in future R&D collaborations as well as innovation adoption (aim 5).

We are grateful for the incubator grant incubator funding received from Wine Australia (AGWA), enabling us to complete this research.

BACKGROUND

Background

While Wine Australia invests extensively in research, development and extension (RD&E) to continually drive the innovativeness and competitiveness of the Australian wine sector, the outcomes are not always readily adopted. The question thus remains what capabilities are needed for organizations in the wine industry to co-create value from RD&E efforts and, in particular, how these capabilities can be developed.

This project aims to identify the co-creation capabilities needed by all parties involved in R&D focused collaborations between the wine industry and its research partners, and determine how such capabilities can be mutually developed. Advancing academic knowledge through the identification of co-creation capabilities and strategies for their mutual development, the key findings will be translated into recommendations for Wine Australia to be applied to future RD&E investments. In addition, it provides information for the wine industry as to the capabilities that should be developed so as to foster greater involvement of organisations in R&D collaborations as well as uptake of related innovation.

By examining RD&E from a co-creation and capability perspective, we adopt the principle that innovation begins and ends with the grape grower and/or wine producer. Reviews of RD&E processes have shown that involving the beneficiaries in the research process results in the best extension and adoption outcomes (GWRDC Innovation and Adoption Review, 2014). This is consistent with the academic literature on co-creation, which recognises that co-creation activities enhance the value-in-use for each actor involved in the collaboration.

By providing a framework for developing capabilities to co-create R&D initiatives, enhanced collaborations can be facilitated across a wide range of initiatives. This is important, as R&D involvement is often driven by early-adopters and further adoption of innovation can be hampered by the fact this group may not represent the broader target audience (GWRDC Adoption Strategy Workshop 2012). There is, therefore, a potential need to develop capabilities in a broader range of wine industry participants to facilitate more far-reaching collaboration and co-creation in R&D across the wine sector.

PROJECT AIMS

Project Aims and Performance Targets

The aims of this project are to identify the capabilities required to co-create value in wine-related research-business collaborations, as well as develop an understanding of how the capabilities can be developed. Specifically, the following aims are specified for this project, across two phases of the project:

PHASE 1 – series of qualitative interviews

(1) To identify the capabilities that are (a) shown by firms involved in R&D collaborations in the wine industry and (b) enable the integration of resources in this context

(2) To identify how the identified capabilities can be mutually developed

PHASE 2 – exploratory survey research utilising online questionnaire

(3) To determine suitable scales to test relevant capabilities and co-creation capabilities in this context, so as to provide a capability assessment framework for organisations in the wine industry

(4) To explore the outcomes of capabilities assessed

To determine the collection of capabilities (a) determining the value an organisation gains from taking part in the R&D collaboration, (b) the organisation's interest in future engaging in R&D collaborations, as well as (c) its interest in adopting innovations.

These aims clearly fit within the overarching AGWA objective to make more effective use of the resources and skills of the community in general and the scientific community in particular. The proposed project addresses the key challenge associated with building wine sector skills and capabilities to accelerate the adoption of R&D outcomes. Specifically, our findings will focus on building capabilities within people, organisations and enterprises across the grape and wine value chain.

In addition, the Primary Industries Standing Committee (PISC) wine sector strategy aims to boost the competitiveness and sustainability of the sector across the value chain by 1) facilitating greater coordination among all stakeholders to work together effectively, 2) supporting a strong culture of collaboration and 3) focusing RD&E resources so they are used more effectively, efficiently and collaboratively. This research will provide a framework for achieving this strategic goal on an ongoing basis across the Australian wine sector.

RESEARCH METHOD – Phase 1

Phase 1 – Identification of Capabilities

To explore the role of capabilities in wine industry R&D collaborations, a series of in-depth interviews was conducted with key informants in South Australia. Since the 1980s, Australia has developed a reputation of innovation leadership in the global wine industry, with strong centralisation of R&D levy collection and distribution and priority setting to help maximise the industry uptake of innovation (Aylward, 2007). This has had the desired outcomes of high-quality and consistent output from the region, and duly a strong and marketable reputation, making Australia and its largest wine producing state, South Australia, a relevant region to conduct this study. South Australia, in particular, leads wine innovation through its Wine Innovation Cluster, comprising the Australian Wine Research Institute, CSIRO Plant Industry, South Australian Research & Development Institute and the University of Adelaide, in collaboration with national and international partners.

Semi-structured in-depth interviews were deemed the most appropriate methodology, as they allow for an exploration of complex concepts (Fern, 1982; Kinnear et al., 1993) and thus, in this context, the meaning and nature of particular capabilities and their change within the context of wine industry R&D collaborations. In total, 20 interviews were conducted, with personal contacts and snowball sampling used to recruit participants. Initially, individuals and organisations well-known as current and proactive contributors to R&D efforts were invited to participate in this study. At the completion of the interviews, participants were welcomed to refer the investigators to others with relevant expertise.

A diverse sample was sought so as to capture a broad range of perspectives on the topic under investigation from those involved in R&D collaborations in the Australian wine industry. Hence, interviewees were chosen to represent the different stakeholders involved in wine industry R&D collaborations, including a variation in the number of years and collaborations interviewees had been involved in. The interview sample comprised of 6 university-employed researchers, 8 researchers employed by government-funded research bodies, and 6 employed by regional wine producers. Interviews were primarily conducted face-to-face (with two telephone interviews) and were digitally recorded for later transcription. Notes were also taken during the interviews to capture emergent themes and ideas.

Interviews were analysed by thematic coding of interview transcripts using qualitative analysis software NVivo. Following Miles and Huberman (1994), coding nodes were developed based on themes inducted from the literature and were modified during the data analysis, meaning a simultaneous process of coding and analysis. Thematic coding also permitted the inclusion of emergent themes that did not directly inform the interview questions, but were relevant to the research problem and warranted exploration.

IDENTIFICATION OF CAPABILITIES

Core Capabilities in Wine Industry RD&E

The results reveal a range of capabilities critical for R&D collaborations, which can be grouped into technical capabilities, and thus the capabilities that are integrated as part of the R&D collaboration (technological competence and market knowledge competence), and relational capabilities, representing that capabilities that enable the resource integration between partners (absorptive capacity, network competence and co-creation capability).

Technological Competence

Technological capabilities are typically brought to collaborations by the scientific partner. These are reflected in specialised scientific knowledge, methodological and analytical skills. Commonly, a variety of researchers coordinate so as to fully cover the technological skills required to bring about the mutual value creation and specifically innovation success, as outlined in the following quote:

> *"We needed some skills that we don't have to do the work … we needed those skills, and I've talked to them in the past, and there's trust there, so we decided to try to put in the grant together." (Researcher#3)*

Market Knowledge

Market knowledge is an important resource brought to R&D collaborations by the wine industry partner(s) involved. While research organisations often contribute the scientific expertise to conduct the research, they commonly rely upon the commercial partners' knowledge of the industry and market to develop innovative ideas and technology that are applicable and successful. As expressed by one of the researchers interviewed:

> *"At the start of any work, we would want to develop varieties that the industry wants. We consult with industry about the types of specifications that they'll be interested in …. There's a knowledge that we have to have from industry feedback at the start of that sort of process". (Researcher#12)*

Absorptive Capacity

As the wine industry goes through a period of dramatic change, organisations need to be able to recognise new external knowledge, assimilate it and apply it for the purpose of creating value (Jansen et al., 2005). This capability, referred to as absorptive capacity, was identified in the data as relevant to both research and industry partners, both of which recognised the necessity of seeking and using knowledge in collaborations. As expressed by one of the researchers interviewed:

> *"Sometimes, you do get a genuine feedback loop happening where they're bringing their industry experience to the table; you're bringing the ideas to the experience, and they say, "That's great. That would never work, but this could," and that can help narrow your focus." (Researcher#1)*

Network & Alliance Capabilities

All interviewees indicated the importance of developing relationships and networks, not only to enable the R&D collaborations to evolve and to ensure potential opportunities can be taken advantage of as they arise, but also to make sure that resources offered by the different partners can be integrated in the process. Networking capabilities entail the behavioural routines that are followed within the organisation, such as building an image to attract potential partners, embedding systems and setting expectations to work with partners, and implementing procedures around termination (Mitrega et al., 2012). As expressed by one of the researchers:

> *"I think that getting together [and] making sure that you've got a good understanding of what each other want. Managing the stakeholder relationship all the way along, because research never goes the way you think and there's inevitably a tension in terms of pace. Industry always wants it faster than you can usually do it scientifically robustly, but that's where you just need to have a group of people who understand each other's requirements." (Researcher#7)*

In addition to the ability to initiate, maintain and, if necessary end, relationships, interviewees also commented on the importance of developing experience in partnering by being involved in a multitude of collaborations, as well as the need for individuals taking responsibility for managing the collaborations and relevant interactions. These facets are part of an alliance competence (Lambe et al., 2002):

> *"If you had a raft of potential collaborators to work with you could probably choose the one that you thought had the greatest industry visibility... There's some real value of interacting with that company by virtue of what you got through the connections from work with somebody like that. Like I said before, it's relationship management." (Researcher#8)*

Companies that have collaborated previously often have superior capabilities in selecting and negotiating with potential partners, and planning the day-to-day operations so that everyone has a clear understanding of role expectations (Day 1995). Firms with a strong alliance capability are also able to develop capable alliance managers that facilitate effective management of the R&D collaboration (Spekman et al., 1996), with one interviewee noting that different people may take on various roles.

> *There needs to be at least one or two very good communicators in the overall collaboration … making sure that nothing is misinterpreted. … It's definitely good to have one person who —it doesn't have to be the communicator—but one person who is very good at keeping track of where everything's up to." (Researcher#1)*

Co-creation Capability

While respondents varied in their use and predilection for the term "co-creation", the relevance of having the capability to integrate resources through interactions emerged from the interviews.

> *"A researcher's job is to find the value and then the user's job is to make use of that to improve their business …. That's one-on-one co-creation. You couldn't create that value if this other party didn't work with you to define what it is that is the value. Otherwise you could be working on something which is totally esoteric and of no value to anyone." (Industry#5)*

Organisations need to possess the ability to integrate resources with partners in the R&D collaboration to allow for the creation of mutual value. Co-creation capability comprises six dimensions that explicate the interaction that occurs between the R&D collaboration partners and facilitates the co-creation of value in an organizational setting, namely individuated, relational, ethical, developmental, concerted and empowered interaction capabilities (Karpen et al., 2015).

Capability to Build Capabilities

In addition to identifying key capabilities that (a) are integrated between partners and (b) facilitate the integration between partners in wine-industry R&D collaborations, an important contribution of this research lies in the identification of capabilities that not only support resource integration within wine-related R&D collaborations, but also facilitate the development of relevant capabilities missing in one or all of collaborative partners. Importantly, the results show a clear ability of capability co-creation as part of R&D collaborations, with one interviewee stating that *"At this stage, I feel as though we're co-creating more resources and expertise than actually products that…have reached commercialisation" (Industry#3).* This is illustrative of the notion that successful collaborations involve the co-development of capabilities, not just specific research outcomes or commercial results.

It was evident throughout the interviews that collaborative R&D participants see the collaborations as sources of long-term competitiveness, a primary reason why co-development of capabilities is critical. Wine producers discussed how they wanted to *"[build] expertise within our researchers so as we keep using them they've got the expertise that we want them to have to support us" (Industry#3).* It was also acknowledged that co-development of knowledge was a "two-way process," and industry input developed researchers' "*technical knowledge of our processes and… a better feeling for the way we think*" (Industry#3), but that at the same time, wine producers knew they should "*be open to some new ideas that they [the researchers] will show us" (Industry#3).*

RESEARCH METHOD - Phase 2

Phase 2 – Exploring R&D Collaborations

The findings of the qualitative phase 1 built the foundation for an exploratory quantitative research phase, aiming to explore the outcomes of the capabilities in terms of

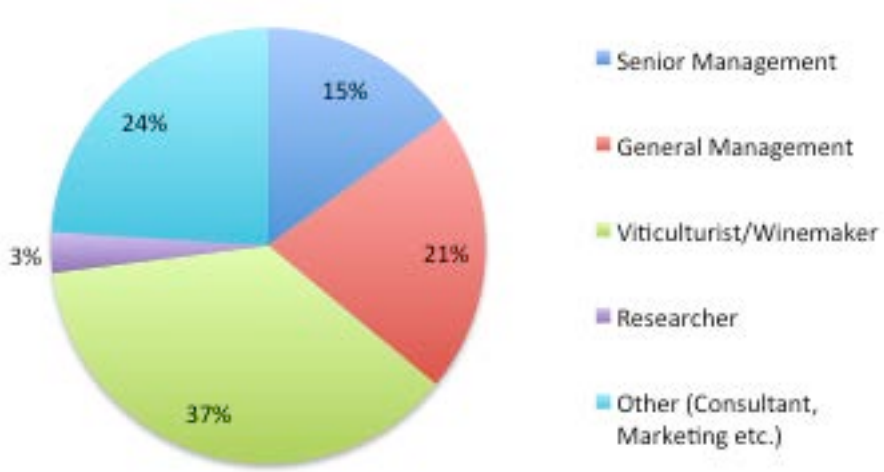
(a) determining the value an organisation gains from taking part in the R&D collaboration,
(b) the organisation's interest in future engaging in R&D collaborations, as well as
(c) its interest in adopting innovations.

Firstly, an extensive literature review led to the identification of measurement scales suitable for adaptation to the context of wine RD&E, with the final items and relevant sources outlined below. These scales provide an important resource, as they can be utilised by firms in the wine industry to examine their capabilities, enabling management to identify the areas in which the organisation's strengths and weaknesses lie.

An online survey was then developed and distributed to staff employed in the wine industry. In particular, an email invitation was sent out to alumni of The University of Adelaide's wine degrees, complemented by researcher contact to wineries believed to be interested in the topic. Of the overall sample of 48 respondents, 33 complete responses were captured, including 15 responses reporting on an existing collaboration and 18 responses of individuals/organisations without experience participating in R&D collaboration. While the number of responses limits the type of analysis that can be undertaken, it is sufficient to gain exploratory insight.

Sample Characteristics

Respondents from Phase 2 (the survey) were predominantly from the wine industry, with the majority being either managers within organisations from the wine sector or viticulturists and winemakers. This ensured an industry perspective for this study.



MEASUREMENT ITEMS

Measurement Items for R&D Capabilities

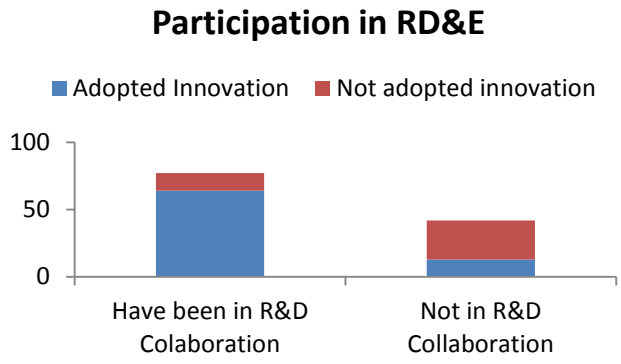
Construct	Items
Technological competence (Ritter and Gemunden, 2004)	We are technological leaders in our industry We place high emphasis on our R&D activities We take technological risks We are constantly developing new products, methods and/or ideas
Market knowledge (Li and Calantone, 1998)	Our knowledge of customer needs is thorough Customer information is integrated into new ideas, methods and designs We understand our customers' business We process and analyse customer information We communicate with business partners for new product development We share information on customers with our business partners We cooperate with our business partners in establishing new product development goals and priorities We cooperate with our business partners in generating and screening new product ideas
Absorptive capacity (Tzokas et al., 2015)	We easily implement new technologies in new products We consider how to better exploit new technologies We regularly apply new technologies in new products New opportunities to serve our customers are quickly understood We quickly analyse and interpret changing market demands We are proficient in reactivating existing knowledge for new uses We collect industry information We observe external sources of new technologies We observe technological trends We scan the environment for new technologies
Network capability (Mitrega et al., 2012)	We communicate our relational success with R&D partners widely We build our image as a reliable R&D partner We utilise referrals from our R&D business partners to attract new ones We inform our R&D partners on the evaluation we conduct with regards to their contribution We have a formal system to work with our R&D partners We systematically increase expectations in our relations with R&D partners We have procedures for how to terminate business relationships with R&D partners that are not desirable We have specific conditions in formal contracts with R&D partners, that enable the end of the cooperation We have procedures that enable slow discontinuing (phasing out) relationships with R&D partners who contribute little to the collaboration
Alliance capability (Lambe et al., 2002)	We actively search for promising R&D partners R&D partners that can help our business are actively sought We constantly seek partnering opportunities We have programs to develop capable managers of R&D partnerships We understand how to produce effective managers of R&D partnerships We effectively train competent managers of R&D partnerships
Co-creation capability (Karpen et al., 2015)	We show genuine interest in engaging our R&D partners We do not mislead our R&D partners in any way We are sensitive to our R&D partners' situation We encourage our R&D partners to shape the service they receive We act as one unit when dealing with our R&D partners We help our R&D partners become more knowledgeable
Capability to create capabilities (Lee et al., 2013)	We obtain new capabilities through our R&D partnerships We build beneficial competences through our R&D partnerships We build separate abilities that, when combined, enable us to achieve goals beyond our individual reach

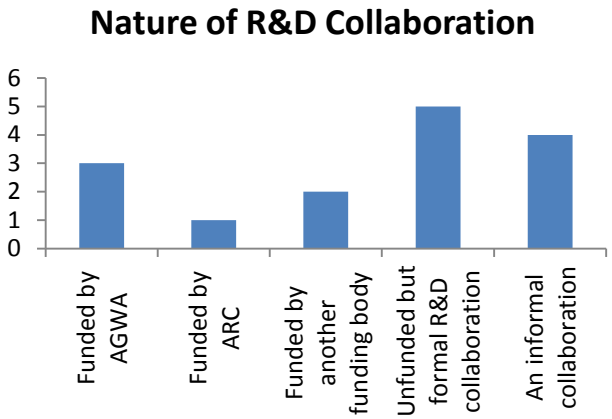
COLLABORATION ACTIVITIES

Current R&D Collaboration Activity of Respondents

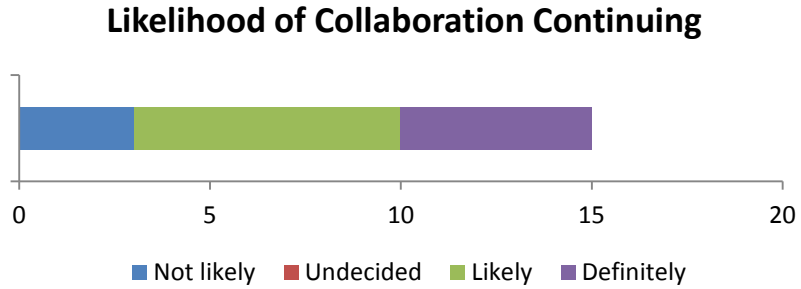
The majority of respondents in this survey had been involved in R&D collaborations previously. While a significant number were funded by major funding bodies such as AGWA and ARC, the sample included a large number of unfunded R&D collaborations with both formal and informal structures.

Regardless of the nature of the R&D collaboration, those respondents that had been involved in a previous collaboration were more likely to have adopted innovations that resulted from them and other collaborations. With Wine Australia keen to enhance the rate of innovation adoptions, encouraging more people to participate in R&D collaborations would appear to be one avenue to achieve this.





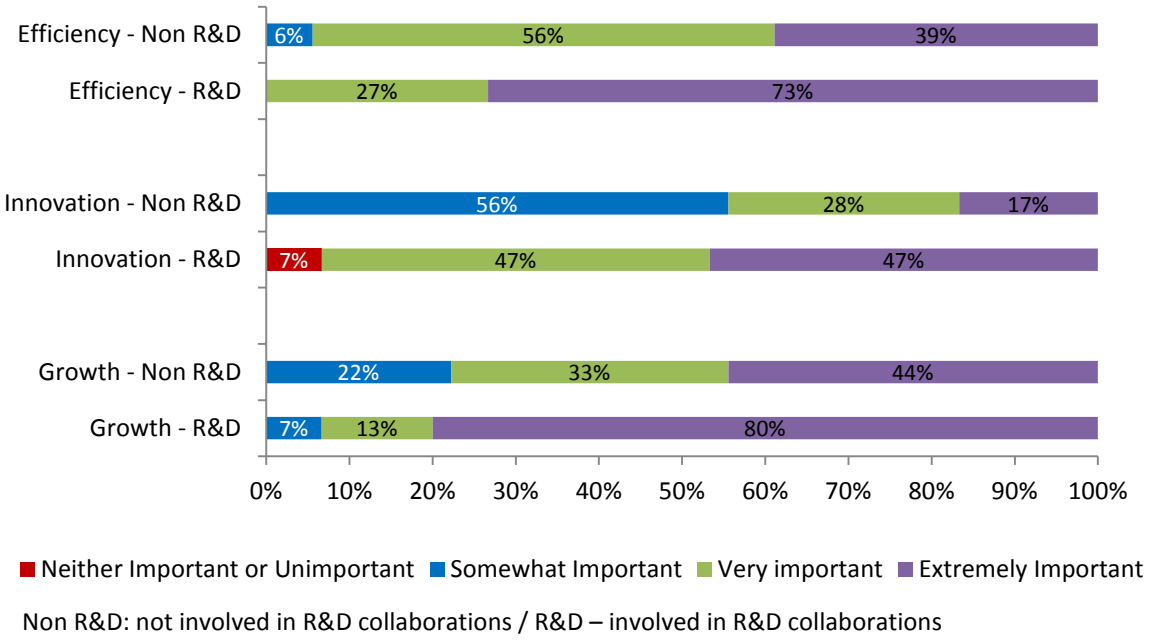
R&D collaborations, once established, provide a foundation for future partnerships and ongoing research. Most participants indicated their collaboration would either highly likely or definitely continue or be renewed in the future if a suitable project arose.



MOTIVATION FOR COLLABORATION

Motivation for R&D Collaboration

Organisations with a focus on improving their business with a focus on future growth, improved efficiencies or innovation were more likely to be involved in R&D collaborations. Interestingly, growth and efficiencies were considered more important objectives of the organisations. This would suggest that communication to the wine sector regarding the benefits of R&D collaboration should perhaps focus on these terms rather than promoting the benefits of innovation.

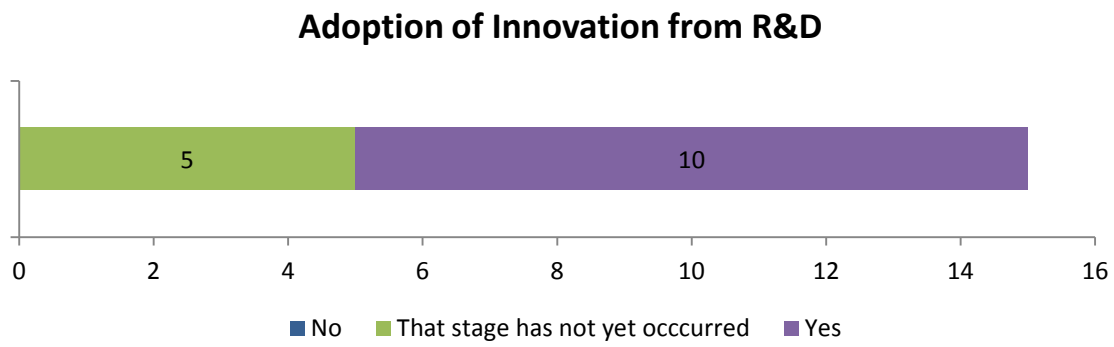


Non R&D: not involved in R&D collaborations / R&D – involved in R&D collaborations

OUTCOMES OF COLLABORATION

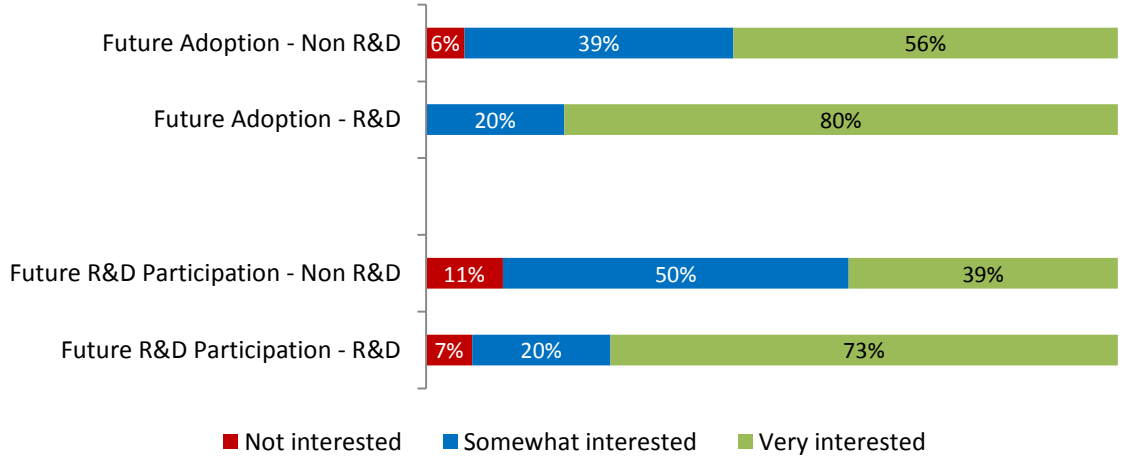
Collaboration Outcomes

While recognising the exploratory nature of the research due to the small sample size, an important outcome of this research lies in the finding that all respondents who have been involved in R&D collaborations have either adopted the resultant innovation or indicate that their collaboration is not yet at the adoption stage. Hence, involvement throughout the R&D process leads to a high likelihood of adoption.



Furthermore, it is evident that the majority of respondents currently involved in R&D collaborations have an interest not only in adopting innovations but also in participating in future R&D collaboration opportunities, with 73% of respondents indicating that they are “very interested” (response scores of 6 and 7). Similarly, 80% are very interested in adopting future innovations.

Importantly, 89% of respondents not currently involved in R&D collaborations indicate a general interest in participating in the future, with 95% indicating that they also have an interest in adopting innovations. However, there level of interest is generally not as high as those currently involved in R&D Collaborations.



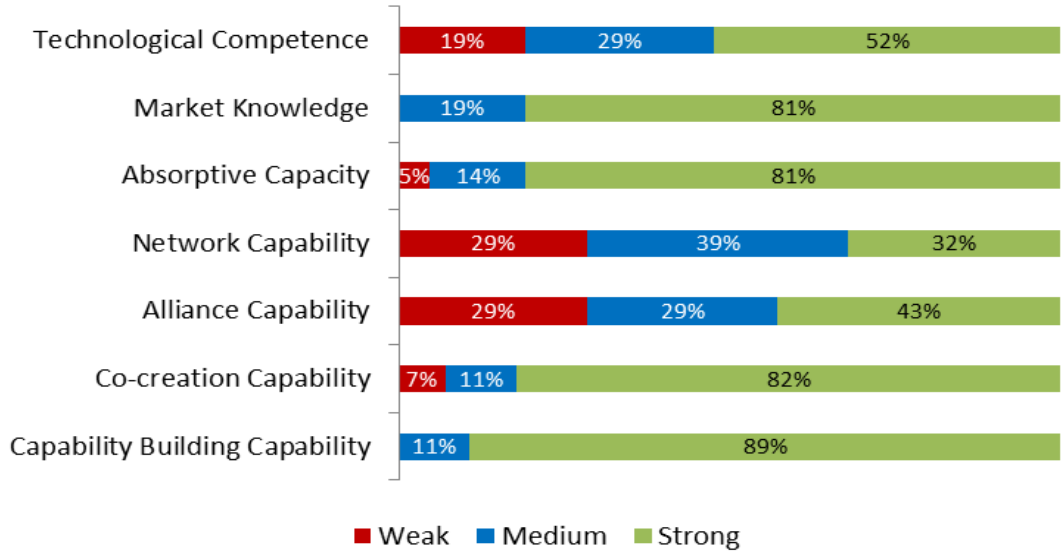
Non R&D: not involved in R&D collaborations / R&D – involved in R&D collaborations

COLLABORATION CAPABILITIES

Capabilities

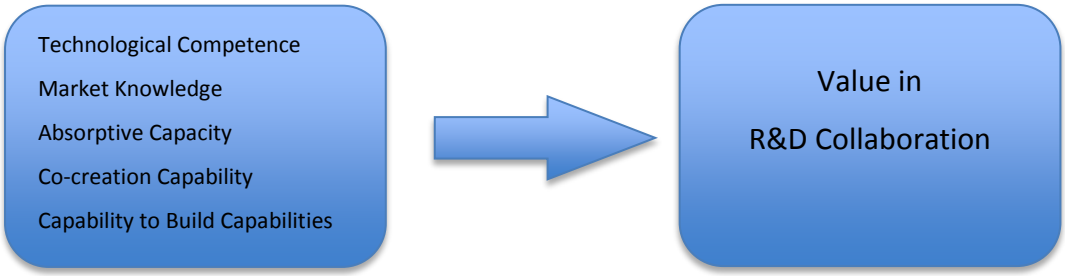
An examination of respondents' perceptions of their own capabilities at the commencement of the R&D collaboration provides us with some insight. Most of the respondents perceived their capabilities in understanding the market and being responsive to it as strong (market knowledge and absorptive capacity). Similarly, they perceived their ability to co-create within the group and build further capabilities as strong. However, only 52% perceived they had strong technological competence, which might speak to why they had decided to enter the R&D collaboration, to gain access to a broader network of skills.

Of particular interest with respect to the relational capabilities is the fact that of all the capabilities it was the network and alliance capabilities that R&D collaborators perceived to be their greatest areas of weakness. It should be considered that these ratings are provided retrospectively, and it could be in hindsight that R&D collaborators reflect on the difficulties they experienced in managing the collaboration group. This also points to where R&D collaboration groups potentially need support.



Capabilities related to R&D Collaboration Outcomes

A primary aim of this research was to examine those capabilities that facilitate value creation within R&D collaborations. The analysis of the exploratory dataset indicates five capabilities exhibited by organizations at the beginning of the partnership as positively associated with the perceptions of value at the point of the data collection; specifically, technological competence, market knowledge, absorptive capacity, co-creation capability, and capability to build capabilities. Therefore, it could be argued that further development of these capabilities at the outset, or prior to, a R&D Collaboration will result in greater value being perceived from the relationship. This suggests these capabilities might be the focus of any training programs developed by Wine Australia to build R&D collaboration capabilities.



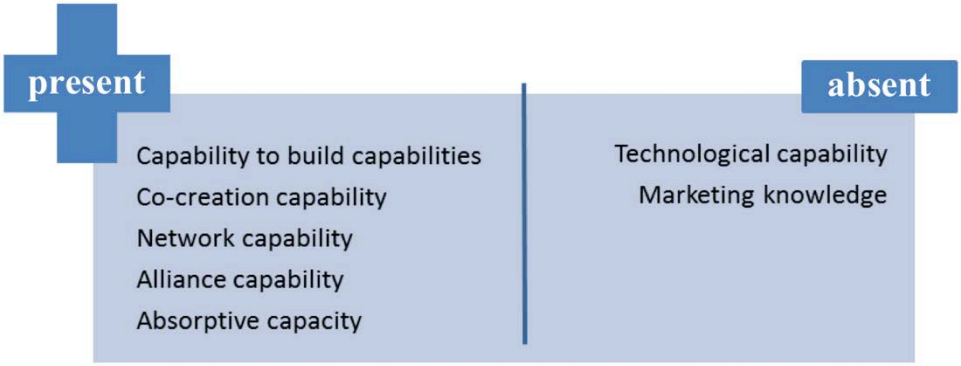
Constellations of Capabilities

A fuzzy set Qualitative Comparative Analysis (fsQCA) was undertaken to understand the groups or constellations of capabilities inherent to organisations who (a) gain value from their R&D collaborations, and (b) have an interest in future R&D collaborations. While fsQCA was first developed by Ragin (1987), researchers have only recently adopted this method in the marketing literature, due to its unique ability to examine combinations of conditions, rather than individual variables, that together result in a particular outcome. In line with recent literature, the direct method of calibration in fsQCA was used (Fiss, 2011; Ragin, 2008).

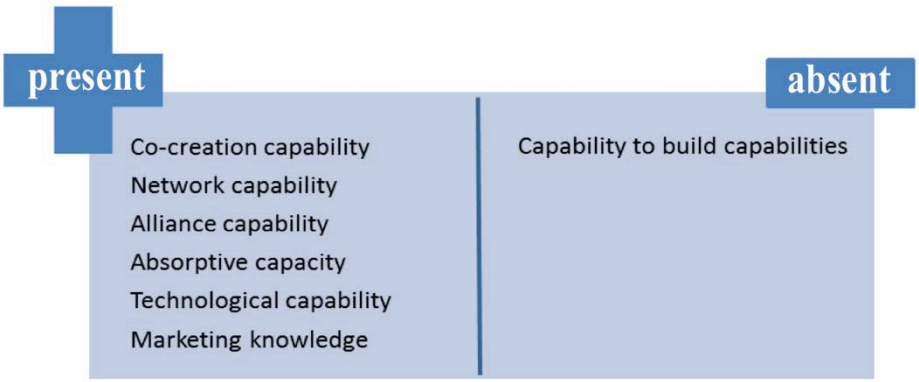
Value from R&D Collaborations

The results indicate that firms that had the following resource groupings at the beginning of their current collaboration have gained value from their R&D collaborations:

(1) Firms that have the capability to enable resource integration (relational capabilities) but do not have those capabilities that are commonly integrated as part of a R&D collaboration (technological and market knowledge competence)



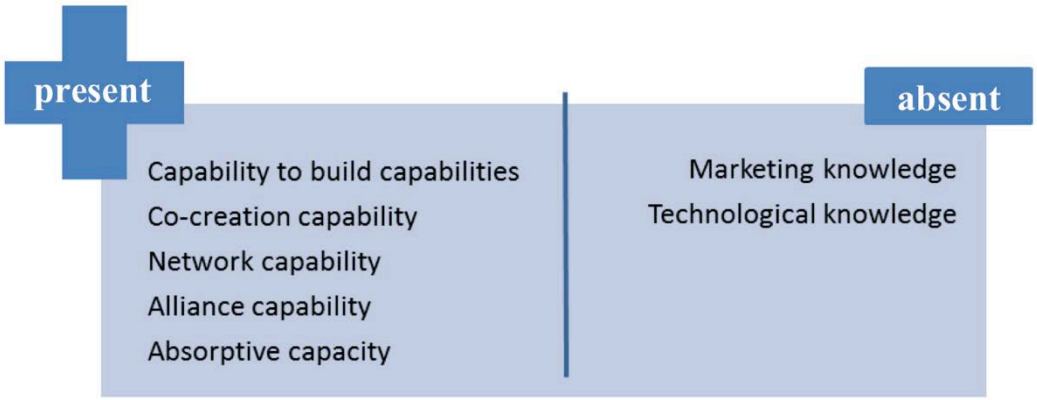
(2) Firms that have the capability to enable resource integration (relational capabilities) and those capabilities that are commonly integrated as part of a R&D collaboration (technological and market knowledge competence), yet miss the capability to build capabilities



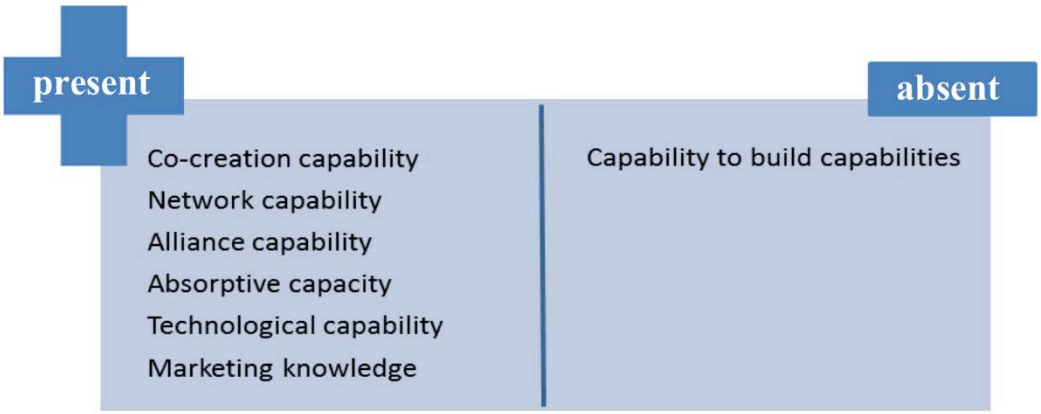
Interest in participating in future R&D collaboration and in adopting innovation

The same results emerge for firms that are interested in (a) participating in future R&D collaborations and (b) in adopting innovation. Firms with the following resource groupings at the beginning of their current collaboration are interested in both (future R&D collaboration and in adopting innovation):

(1) Firms that have low in technical capabilities but are high in the relational capabilities



(2) Firms that have both relational and technical capabilities except for the capability to build capabilities



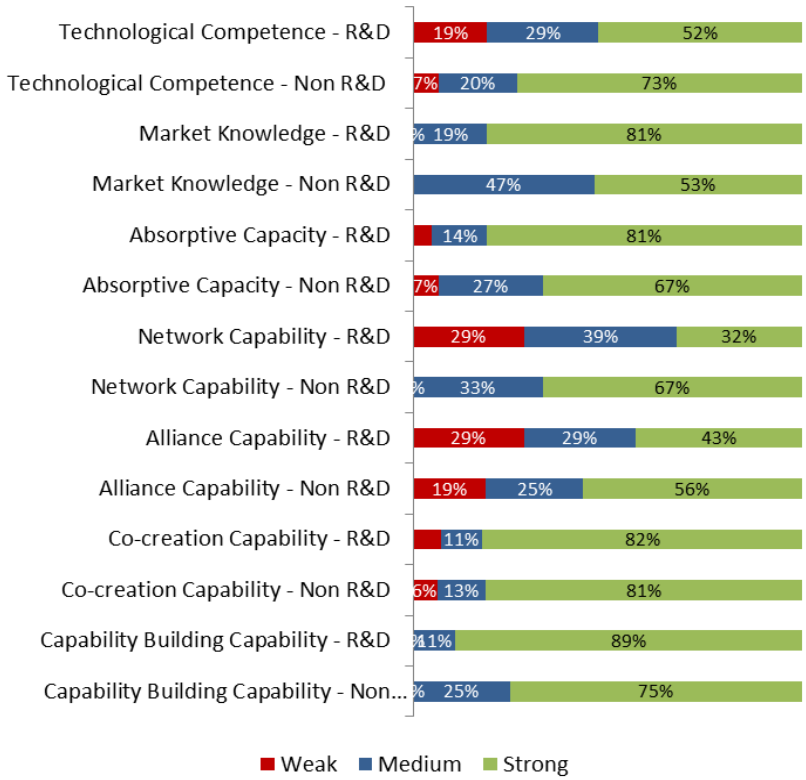
These findings confirm the importance of relational capabilities not only for gaining value from R&D collaborations but also to ensure continued interest in research, development and extension. Interestingly, technical capabilities, commonly assumed as central to joining R&D collaborations, are only required if the firm lacks the capability to build capabilities throughout the collaboration.

Are specific capabilities required to collaborate?

An examination of the perceived capabilities of respondents participating in R&D collaborations and a comparison with those respondents that were not participating was anticipated to uncover potential perceived barriers to collaboration. With small sample sizes, only indicative trends could be observed.

Few differences were identified between R&D collaborators and non-collaborators. Non-collaborators had a potentially higher perception of their own networking capabilities. This may suggest that they do not perceive the need to enter into a collaboration to draw on resources of other relevant people in the industry. However, interestingly they may also perceive that they have less market knowledge than their counterparts and therefore would benefit from the association in a larger group.

In general, the few differences means that there is no key capability that needs to be developed among non-collaborators to prepare them to become part of a R&D collaboration group.



Non R&D: not involved in R&D collaborations / R&D – involved in R&D collaborations

Encouraging participation in R&D collaborations

When asked why they had not taken part in R&D collaborations, three key reasons emerged:

1) Not having an opportunity. Six out of 14 participants responding to this question noted a lack of opportunity as a central reason for not having engaged in R&D collaborations to date.

2) Not sufficient resources (e.g. time, staff). Four out of 14 respondents indicated that their lack of time and resources (in particular number of staff) meant they were not able to partake in R&D collaborations.

3) Not perceived to be in job description or not relevant for organisation. Four out of 14 respondents noted that partaking in R&D collaborations was either not appropriate to the business or had not aligned with the role the individual had been undertaken within the organisation.

RECOMMENDATIONS

Key Recommendations

This study focused on the capabilities needed by organizations in the wine industry to co-create value from their research, development and extension (RD&E) efforts. In particular, the project aimed to identify the capabilities required by all parties involved in the R&D collaborations and understand which of these capabilities were critical to achieving valuable outcomes.

In general, the findings suggest a particular focus should lie in developing relational capabilities in organizations. This will build their ability to successfully engage in and manage their efforts in RD&E, leading to enhanced value perceptions and a sustained commitment in future R&D collaborations. In particular, firms low on technical capabilities (such as technological competence or market knowledge) should focus on developing their capability to build capabilities.

Although much insight can be drawn from this report, six key recommendations are outlined below.

1) Encouraging stakeholders to become involved in R&D collaborations will facilitate greater adoption of innovations, as they are more likely to consider adopting new innovations than their counterparts. Given Wine Australia has recognised the challenges involved in the extension stage of RD&E, consideration should therefore be given to encouraging and facilitating R&D collaboration groups. The structure of these collaborations can also include unfunded and informal collaboration groups.

2) Communication to stakeholders regarding the potential benefits of R&D collaboration should focus predominantly on the growth and efficiency benefits to the organisation rather than the innovation outcomes themselves. Growth and efficiency are key business objectives and more likely to motivate people to become involved in the R&D collaboration.

3) People involved in R&D collaboration perceive that their network and alliance capabilities were weak at the outset. As non-R&D participants do not hold this perception, it is likely a retrospective assessment reflects the challenges that were evident in the early stages of the collaboration. This suggests that further support regarding the management of the collaboration in its initial stages would be advantageous and an area that Wine Australia could perhaps provide additional supporting resources.

4) Companies with technological competence, market knowledge and the ability to adapt to changes in the market (absorptive capacity), as well as those that can integrate resources (co-creation capability) and build further capabilities will perceive value in the R&D collaboration. However, for companies without more technical skills, such as technological competence and market knowledge, they can still experience value from their R&D collaboration, as long as they have the capability to build further capabilities. Therefore, further emphasis should be placed on developing this ‘soft skill’ within organisations to ensure maximise value is realised from R&D collaborations.

5) In general, the perceived capabilities of R&D collaborators and those yet to take part in collaborations is minimal. No real identifiable barriers to collaboration were determined. Non-collaborators need to be provided an opportunity to collaborate and convinced that they have the necessary time and resources to contribute. It may also be worth communicating that stakeholders working in any role (e.g. marketing) can contribute to the R&D collaboration, as the diversity of views will enhance the collaboration.

APPENDIX 1: COMMUNICATION

Communication of Findings

To date, the findings from this research have been encapsulated in a publication titled "Developing Resource Integration Capabilities in Wine Industry R&D Collaborations" authored by Dr Jodie Conduit, Dr Carolin Plewa, and Professor Roderick Brodie and accepted for presentation at the Academy of Wine Business Research conference to be held in Adelaide in February 2016. Further publications aimed at leading journals are currently in progress.

As outlined in our application, the investigators will seek to work with Wine Australia to contribute to workshops and seminars, and other extension activities as appropriate.

Developing Resource Integration Capabilities in Wine Industry R&D Collaborations

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Abstract:

◦*Purpose:* This project aims to identify the resource integration capabilities needed by all parties involved in R&D focused collaborations between the wine industry and its research partners and determine how such capabilities can be mutually developed.

◦*Design/methodology/approach:* 20 in-depth interviews were conducted with a series of experts from universities, government research institutions, and industry partners from the wine industry in South Australia regarding wine-related R&D collaborations. The interviews were analysed by thematic coding of the transcripts.

◦*Findings:* The results reveal a range of capabilities critical for the successful resource integration in R&D collaborations, which can be grouped into technical capabilities (technological competence and market knowledge competence), as well as relational capabilities, related here to capabilities enabling the resource integration between partners (absorptive capacity, network competence and co-creation capability). We also identify evidence of the co-development of these capabilities over time among collaboration groups.

◦*Practical implications:* Identified capabilities should be developed in a broad range of wine industry participants to facilitate more far-reaching collaboration and resource integration in R&D across the wine sector. Findings from this research will provide a framework to enable these skills to be developed among further participants in the wine sector.

Key words: co-creation, resource integration, capabilities, R&D collaborations, competencies

APPENDIX 2: REFERENCES

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APPENDIX 3: STAFF

Project Staff

The following University of Adelaide staff and researchers worked on this project.

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APPENDIX 4: BUDGET RECONCILIATION

The End of Project Financial Statement will be submitted in CIMS shortly.