The role of clusters in creating value in supply chains: evidence from the examination of clusters with RBV

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ABSTRACT

The role of clusters within larger supply chains has received little attention, yet there is evidence that clustering can bring significant advantages to member firms. This investigation focuses on supply chain management capabilities in clusters through the examination using the Resource Based View (RBV). The strategic implications of clustering and the role that clusters can play in creating value in the supply chain are explicated for one cluster. Capabilities relating to information sharing and willingness to share information, structures for sharing of risks and rewards, market mediation, and return stabilisation, are identified as key methods used by the cluster to generate value and operate successfully.

Keywords: supply chain management, clustering, RBV, strategy, value creation

INTRODUCTION

Over several decades supply chain management has changed the face of business competition as the basis of competition shifts from firm-firm competition to chain-chain competition. A decade ago it was claimed that “in today’s challenging global markets, the route to sustainable advantage lies in being able to leverage the respective strengths and competences of network partners to achieve greater responsiveness to market needs” (Christopher & Towill, 2000, p. 209; emphasis added). This perspective implicitly relates to the resource based view (RBV), which sees firms as bundles of capabilities (Conner, 1991; Ghoshal & Moran, 1996; Madhok, 1996; Teece, Pisano, & Shuen, 1997, inter alia), derived from “the distinctive ways that things are accomplished within the enterprise” (Teece et al., 1997, p. 528). An enterprise is a grouping of individuals; a supply chain is a grouping of enterprises; a supply chain may also be perceived as a bundle of capabilities derived from the distinctive methods of accomplishing objectives within the supply chain. Investigation using other theoretical lenses, such as RBV, has been limited in supply chain management (Ketchen & Hult, 2007). The focus of the present research is on capabilities and resources that are pooled and utilised in clusters to create more competitive supply chains. The research shows that the capabilities and resources, effectively utilised in clusters, are capable of generating greater value and returns for
members and the supply chains. Through improved understanding of how clusters can increase value in the supply chain the RBV lens can be used to suggest areas for managerial attention in improved supply chain management and indicates that scholars may require further emphasis on collaboration in the use, development, and leveraging of resources and capabilities within supply chains.

LITERATURE REVIEW

In this section we explore the concept of RBV and the applicability of this theoretical lens to the examination of supply chain management capabilities in clusters and outline several propositions.

The Theoretical Lens of RBV

The RBV theoretical lens perceives competitive advantage as a state gained when a firm has capabilities that are difficult for the competitors to acquire or imitate, providing the RBV perspective with the capacity to explain heterogeneity in competitiveness (Barney, 1991, 1996; Conner & Prahalad, 1996; Peteraf, 1993). A firm may be considered as “a bundle of resources and capabilities linked together through firm-specific routines which can behave both as a competitive constraint as well as the source of sustainable value” (Madhok, 1996, p. 578). Such bundles are dynamic and undergo constant change, generating a dynamic capability. Eisenhardt and Martin (2000) describe such a dynamic capability as “the processes to integrate, reconfigure, gain and release resources – to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets collide, split, evolve, and die” (2000, p. 1107). It is the presence of routines and procedures, “the distinctive ways that things are accomplished” (Teece et al., 1997, p. 528), that means that “a dynamic capability is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness” (Zollo & Winter, 2002, p. 340).

RBV in Clusters and Networks

A cluster or a network of companies can be considered a ‘quasi firm’ or ‘quasi enterprise’ (Bruce & Jordan, 2007; Eccles, 1981), a series of linked companies that present a bundle of resources and capabilities. If firm competitiveness may be impacted by the bundle of firm capabilities that align with the competitive priorities (Ward, McCreery, Ritzman, & Sharma, 1998), then cluster competitiveness may be impacted by the ability of the firms inside the cluster to bundle their
capabilities, develop new capabilities, and align these with the competitive priorities of the cluster. Competitive priorities are generally accepted be cost, quality, flexibility, and delivery, although some suggest that ‘innovativeness’ and ‘service’ should be considered (Boyer & Lewis, 2002).

When a firm is outside such a network it may either develop a required capability itself, or join with the network to access capabilities already developed, which is a common and well-recognised strategy for SMEs (Gulati, 1999; Shaw, 2006; Szarka, 1990). This is akin to Porter’s perception that firms may need to look beyond their boundaries to secure sufficient resources and capabilities (1998). As the capabilities shift beyond the boundaries of a single firm, the unit of analysis must change from the firm to the network. This has lead the approach to be dubbed as the ‘relational view’ of competitive advantage, focusing on the network routines and processes as being important to understand competitive advantage, where complementary capabilities and knowledge-sharing routines within the network play an important role (Dyer & Singh, 1998).

RBV focuses on the possession of inimitable and rare capabilities and the competitive advantage conferred by these. Does it matter whether these capabilities are located within an individual, a firm (the traditional perspective), or a network? Is the unit of analysis important in this concept? Dyer and Singh (1998) argue that the RBV is distinctly different to the relational view. It is noted that “the RBV focuses on how individual firms generate supernormal returns based upon resources, assets, and capabilities that are housed within the firm. However, according to a relational perspective, rents are jointly generated and owned by partnering firms” (Dyer & Singh, 1998, p. 675). The benefit, in the relational view, are generated and owned by partnering firms rather than individual firms. Yet to generate these benefits resources or capabilities are still leveraged, although they are leveraged by the cluster or network rather than by a specific firm. It is the distinctive method of operation of the network that generates the capability, much as it is the distinctive method of operation within a firm that drives firm-level capabilities (Teece et al., 1997).

If the true source of advantage lies within capabilities, the routines and procedures developed, then there should be little distinction between the firm and the network (which may also be described as a quasi-firm). Within a firm, capabilities are generated by interactions between people or groups of people (Figure 1, (A) and (B)); within a network, the capabilities are generated by interactions
between people or firms (Figure 1, (C)). All that changes is the level of analysis and investigation may be required to include other levels of analysis, where factors may impact on the perceived level of analysis (Antia & Frazier, 2001), such as when factors at the network level impact on firm decisions. <insert Figure 1 about here>

The relationships depicted in Figure 1 show a nested, or recursive, formation similar to that displayed by Russian nesting dolls. When one is opened and inspected there is a microcosm held within. In this manner the RBV, and associated nomenclature, are used within this investigation.

Why the RBV is Considered

It is generally considered that there is weak theoretical underpinning for the relatively young discipline of supply chain management (Halldorsson, Kotzab, Mikkola, & Skjøtt-Larsen, 2007). Progress may be made by employing theoretical perspectives from other disciplines; it has been noted in the *Journal of Operations Management* that “researchers interested in operations management in general and supply chain management (SCM) in particular have made limited use of organizational theories” (Ketchen & Hult, 2007, p. 455). Such theories may provide new insights into supply chain research (Holweg & Pil, 2008). The two-decade dominance of RBV in the field of strategic management (Foss & Ishikawa, 2007) makes it a valuable perspective in the analysis of supply chain management problems. Applied to clusters RBV may add value as it approaches the concept strategically and many disentangle the web of relationships to allow analysis. Examining supply chain practices using RBV may identify characteristics that are inimitable and rare, leading Ketchen and Giunipero to state that they “believe strategies that build on key theories such as the RBV and KBV will create advantages in chain versus chain competition” (Ketchen & Giunipero, 2004, p. 55).

Capabilities and Resources in Clusters

There has been little empirical investigation of supply chain management in clusters with the exception of DeWitt et al. (2006). Clustering can be an effective for small firms as “a cluster allows each member to benefit as if it had greater scale or as if it had joined with others formally – without requiring it to sacrifice its flexibility” (Porter, 1998, p. 80). The members coordinate activities on the horizontal dimension of the supply chain to generate this ‘virtual scale’ (Christopher, 2004).
Other capabilities that may be realised at the network level include improved manufacturing lead time, improved delivery, and increased productivity through greater levels of supply chain integration (Chen & Paulraj, 2004; Liker & Wu, 2000). Collaborative approaches to learning, such as engaging in problem-solving with customers or suppliers, form another capability. It is the efforts and performance of all members that contribute to the overall performance of the network (Chen & Paulraj, 2004); likewise it is member capabilities that can contribute to the capabilities of the network. Working in this manner means the members of the cluster must coordinate activities horizontally, at one level of the chain (Christopher, 2004; Nooteboom, 1999, p. 92-93); supply chain research emphasises links in a vertical chain, from supply to consumer. Supply chain management lies between vertical integration and disparate firms (Ellram, 1991). Working horizontally in clusters means coordinating activities with competitors, generating ‘coopetition,’ embodying simultaneously competition and cooperation (Bengtsson & Kock, 2000; Brandenburger & Nalebuff, 1996).

METHOD

The intention of this research is to explore how clusters can create value in supply chains. The exploratory makes the case study approach useful and is recommended by Yin as being suitable to answer how questions. Case study research is also capable of working with a small sample size, making it suitable for New Zealand management research (Chetty, 1996).

The selection of cases is critical to the research design (Collis & Hussey, 2003; Miles & Huberman, 1984; Yin, 2009). Normann (1970) argues that generalisation from few cases, or even one, is possible when the dynamics of the phenomena studied are fully captured. Such research must “reach fundamental understanding of the structure, process and driving forces rather than a superficial establishment of correlation or cause-effect relationships” (Normann, 1970, p. 53) which allow concern with whether particular patterns or concepts from the cases may be applied to other environments (Collis & Hussey, 2003). In this manner a researcher “may try to integrate purposively extreme or deviant cases” (Flick, 2007, p. 27) by carefully selecting sites to capture variation and changes in patterns. To investigate the variations and identify common patterns a maximum variation sampling strategy (Miles & Huberman, 1994, p. 28). The cases were purposively and carefully chosen so that clusters were included where there was very successful coordination of supply chain
management activities as well as clusters where there was less successful coordination. While other parameters are held constant, the reasons for differences in success may be inferred from differences in patterns between polar cases (Eisenhardt, 1989; Pettigrew, 1990). Each cluster was a case, with evidence collected from cluster members. Clusters displaying different levels of success in coordination of supply chain activities were identified through discussions with industry representatives and through examining media reports. Access difficulties were challenging (Gummesson, 2000) and several clusters that were approached by contacting the organising committee, who declined to participate. Later, personal relationships were used to identify potential clusters and make initial introductions, leading to greater success in engaging with the clusters.

Data were gathered from documents and interviews. The use of interviews allowed participants to discuss the coordination of activities and the capabilities within the clusters. As the clusters involved SMEs generally a single, knowledgeable, representative of each firm was interviewed. These participants tended to be logistics managers that worked with the other cluster members on a day-to-day basis and had frequently been involved since the inception of the relationships. Two clusters were in horticultural industries with the third cluster being in the viticulture industry. Each cluster displayed differing degrees of success in the supply chain management. Only one of the horticulture clusters, NZBrand, is reported in detail hereafter, as these represent some of the salient differences between the NZBrand cluster and the other clusters used in the study.

Interview recordings were transcribed and these textual data were transferred into NVivo, a computer-aided qualitative analysis tool, for coding. The initial coding sequence involved breaking apart the textual data analytically (Strauss, 1987; Strauss & Corbin, 1990). In the focused coding phase (Charmaz, 2006) the codes were then synthesised at an abstract level in a theoretically sensible manner aligned with extant literature (Glaser, 1978). The process was iterative with some initial codes changing membership of focused codes as more data were coded. Finally, several categories were formed to account for large patterns observed, heeding Dey’s warning that “[C]ategory membership becomes a matter of degree, not a dichotomy” (Dey, 1999, p. 70). The categories formed the basis for creating a case study on each cluster, which subsequently underwent within and then cross-case
analysis (Eisenhardt, 1989; Eisenhardt & Graebner, 2007; Yin, 2009). Space limitations prevent full presentation here but examples are given in Table 1 and Table 2. Clusters are compared in Table 3.

DISCUSSION

In this section for reasons of parsimony one case, the NZBrand cluster, is examined using the theoretical lens of the RBV to understand the utilisation of capabilities and resources. This approach also requires understanding the constituent components of the cluster, the individual organisations, as capabilities may be held and various levels of analysis and may span several levels of analysis (Wood, 2010). The contribution of the clustering to the cluster success will be evaluated in the conclusion.

The Industry and NZBrand Arrangement

The NZBrand cluster is comprised of four exporters of horticultural products. Each firm had, individually, unsuccessfully attempted to enter the Japanese market. Japanese firms may use firm size as a proxy for implied future stability of the relationship (Batt & Morooka, 2003); larger suppliers may be preferred. Presenting a substantial single bundle of fruit allowed NZBrand to access the market. NZBrand has a dual purpose: it is both a marketing and a supply chain arrangement. In terms of the marketing it allows presentation of a single source of supply and a strong story to the customers. In terms of the supply chain arrangements they have the combined supply base of the cluster to draw upon, rather than firm-specific supply bases. In this situation the marketing and supply chain benefits are interrelated; the ability to provide better and surer supply, through the supply chain benefits relating to the increased supply base, provide a strong value proposition for marketing.

NZBrand exports a single type of fruit. Some of the members solely export this fruit while for other members it is one of a portfolio of horticultural products that they deal with. The industry suffers from a ‘commodity’ perception where it is internationally difficult to compete on a basis other than price, as do many other horticultural products. As the source of fruit is New Zealand, NZBrand has been successful in marketing the fruit while drawing on the perception of New Zealand as ‘clean and green.’ One manager in NZBrand asserted that “it is New Zealand fruit that they want. So we sold New Zealand.” This differentiates the fruit, yet it is also the source of reduced competitiveness as supply from a single country varies over seasons, reducing the attractiveness to an importer.

Supply Chain Capabilities Generated Through the NZBrand Arrangement
Clustering enables the sharing of capabilities and volumes and the development of new capabilities.

*Sharing of capabilities and resources*

Each member had developed specific capabilities before joining NZBrand. One advantage of clustering is that SMEs are able to access resources and capabilities elsewhere in the network, without having to develop or acquire these themselves (Porter, 1998, 2003). Being able to share the volumes within the cluster creates economies of scale (Porter, 1998), yet it is the ability to share the capabilities that allows NZBrand much of their success. Each firm has developed, through different trajectories and path dependencies, a range of complementary capabilities. Working as a cluster the most competent member is allocated tasks. As an example, the member with the widest portfolio of products has developed strong capabilities relating to shipping arrangements. Shipping tasks in the cluster are allocated to this, most able, member. Sharing capabilities in this manner benefits all members; those that do not have the capability no longer need to develop it and gain inexpensive access through clustering, while those who possess the capability gain economies of scale and greater opportunity to use the capability. The other clusters studied (HortCom and WineCom) failed to create as much value in the supply chain and focused primarily on sharing volumes.

*Proposition 1: Sharing firm-level capabilities in a cluster allows for greater value creation in the supply chain*

*Cluster capabilities and resources*

Working as a cluster enables creation of new capabilities as there are a more entities, whether member firms or individuals, that may interact and develop new routines and procedures. The act of coordinating NZBrand activities suggests joint capabilities, even though there is no coordinator role. There are several aspects to the joint coordination in NZBrand. One of these is communication, horizontally, between cluster members which was initially uncomfortable. One Manager commented that the communication between competitors “was one of the bigger hurdles to get over, is that ‘oh, **** we don’t want them to know too much about our business.’” Ultimately, the ability to communicate clearly and openly enables the cluster to function. One Manager noted that “it is better to sit down with your competitor and say, ‘This is what I am going to do,’ and he says, ‘Well, this is what I am going to do.’ So you can actually understand. And there [are] ‘no surprises’ as well.”
Management of horizontal communication involves strategic information, gathered through members’ customers and suppliers, as well as operational information, such as stock availability. Processes to share information for operational purposes in a standardised format have been developed. New relationships between individuals in the firms have developed and some cross-firm boundary mentoring has occurred, as one individual works with a newcomer in another firm to ‘educate’ them about the industry intricacies. It is largely the willingness of the firms to reveal previously guarded information to competitors that allows coordination of activities. The willingness to share information was not present in the less successful clusters; instead there was ill-will between individuals.

Proposition 2a: Information sharing capabilities create avenues for enhanced value creation in supply chains

Proposition 2b: Information sharing capabilities must be matched by a willingness to share the information for a cluster to be effective in value creation.

Japan is a key market for NZBrand and the USA is developing. One capability the cluster has developed is the method for sharing the costs and benefits of the cooperation equitably. Costs and revenue associated with supplying the Japanese market are pooled and split between the members on a pro rata basis for each season. Thus, if a member contributed 30% of the total units of fruit, they receive 30% of the revenue and accrue 30% of costs. NZBrand can thus “even out freight and market differentials so that no-one is disadvantaged by which order they fill” (Cluster Documents). This enables the coordination and sharing of volumes within the cluster (Wood, 2010), with one manager noting that members are aware “the boot will be on the other foot the next week or the next month,” and they may require future assistance. Firms possessing capabilities valuable to the cluster find these capabilities well-utilised, leading to reduced cluster costs. Structuring the cost and benefit sharing protocols in this manner represents a significant capability for the cluster. Contrastingly, HortCom and WineCom had mechanisms in place to divide only costs, evidencing focus on cost minimisation and unwillingness to coordinate activities to enhance value and no method to share benefits created.

Proposition 3: Mechanisms that allow for divisions of benefits as well as costs create opportunity for a cluster to generate greater value in a supply chain.
Clustering enables effective mediation between demand and supply, an important objective of a supply chain (Fisher, 1997). The effectiveness of NZBrand was explained by a Manager by saying that “your tentacles are much more effective [. . .] as to how you might [. . .] work your way around the particular demands of the marketplace with matching that with production and weather issues, and regional issues, and all of those type of things.” NZBrand reduces waste and is more able to place fruit effectively. Members can better meet specific customer requirements. If a customer requires fruit with different specifications, a member can source this from another member’s supply, representing improved supply chain mediation capabilities (the exporter works with the packers that ordinarily supply another cluster member, so the supply comes from the supply chain of another member, shown Figure 2). NZBrand has improved market mediation capabilities through coordination of activities, drawing on member capabilities and resources. Through the NZBrand structure, the already well-organised industry has witnessed reduced volatility in returns to growers and higher returns. NZBrand has been more effective in placing fruit internationally, mitigating price swings. The structure has reduced competition in domestic supply chains as packers can no longer encourage growers to switch allegiance with the incentive of greater returns (Figure 2). Increased industry stability is generated by NZBrand’s improved market mediation capabilities and one manager noted that “[. . .] the service providers, who rely on performance for their clientele, were concerned [about the clustering]. But they have become quite used to it now; because it actually creates stability, [. . .] their clients are more interested in stability than occasional competitive financial wins.” The less successful clusters see evidence of individual members attempting to improve their market mediation capabilities, creating smaller increases in the returns that are generated and are passed through the supply chain.

Proposition 4a: Successful coordination of supply chain activities in a cluster can improve the market mediation capabilities of a supply chain

Proposition 4b: Successful coordination of supply chain activities in a cluster can increase and stabilise returns generated through the supply chain

Measures of Success

Measuring the success of the NZBrand venture is challenging as there is no baseline to measure against. The capabilities used by the cluster reduce costs and create value within the supply chain. The
key measure is how the cluster has managed to “increase the value in Japan over the last four to five years by [an amount in Yen] per tray which shows an increase in the market perceived value of New Zealand grown [fruit].” The measure is in Japanese Yen and does not take into account foreign exchange fluctuations. Other measures include the continued willingness for the members to work together, after a decade of operation; the customers’ willingness to continue to work with NZBrand after a bad season when the supply of fruit was reduced; and the continued enthusiasm of both suppliers and customers for the NZBrand venture due to the value it has unlocked in the supply chain.

Implications for Supply Chain Management from Using RBV in this Research

Several firms have capabilities which are leveraged by NZBrand. These firm-level capabilities are subsumed by the cluster and may be utilised at the cluster level. Other capabilities emerge through creating more opportunities for exchanges and interactions between firms and individuals by widening the quasi-firm boundaries from the firm to the cluster. New interactions lead to new capabilities which may increase the cluster competitiveness and are thus of great strategic value.

This consideration highlights two types of capabilities for the cluster: those gained by subsuming the member firms (interactions shown in (A) of Figure 1, which are incorporated as one organisation in (C) of Figure 1) and those that are gained by new interactions between entities within the cluster (Figure 1, (C)). Future successes may depend on the cluster ability to develop further capabilities, which may be considered a cross-organisational learning capability (Wood, 2010). Beyond developing further capabilities in communication there is the difficulty that if a new capability is developed and consists of routines conducted primarily within one member, this member may require some arrangement of compensation. The structures that NZBrand uses are based on supply volumes, precluding reward for development of capabilities by members. Whether a direct reward is required for further capability development within the cluster can be answered using a longitudinal study.

The RBV theoretical lens has allowed examination of the cluster in terms of capabilities, allowing consideration of important factors that enhance cluster competitiveness. These capabilities provide competitive advantage through creating supply chain value and are rare and are challenging to imitate. Returning to the quote from Christopher and Towill (2000, p. 209) we can perceive that clusters are capable of leveraging, employing, and utilising capabilities derived from interactions between
individuals and member firms. Clusters draw on strengths and competences of member entities, who are network partners, so the cluster can reduce costs and increase value and improve the cluster responsiveness to demand, enhancing the competitive positioning of a supply chain.

CONCLUSIONS

Using the theoretical lens of RBV the coopetitive cluster of NZBrand is shown to improve the competitiveness of the cluster and members. This can be understood by examining the resources and capabilities that the clustering brings to bear on the competitive positioning of the firms. The ability to share and develop capabilities within the cluster, particularly those relating to information sharing and structures for costs and benefits splitting, help cluster success. Understanding these capabilities, and how they can be enhanced, represents a method for the firms involved to increase the effectiveness of their supply chain management activities and create greater value in the supply chain. Managers need to carefully consider the information sharing capabilities and the willingness of the network partners, along with mechanisms or structures that are created to divide the benefits and costs of coordination. Successful leveraging of clustering can improve market mediation in the supply chain and improve financial returns through the combined efforts from greater value creation in the supply chain.

Limitations

As the research is based on case studies, theoretical generalisation must be undertaken with care. Generalisation beyond the New Zealand or the specific industry business environment, which may possess cultural characteristics leading to enhanced clustering potential, must be conducted carefully. Care was taken to ensure internal validity and reliability during the course of the research but such measures are more difficult in qualitative research.

Future Research

This research highlights several findings that relate to supply chain management and how clusters may contribute to firm success. Some of the implications, such as the ability of a cluster to develop new capabilities, may be best observed through a longitudinal study of the same cluster in several years time. A quantitative study would be challenging to implement as the small sample size means that even if the sample size were adequate, there would be no population to statistically generalise to as the sample would be the population.
References


Figure 1. Interactions at different levels of analysis

(A) Interactions between individuals give rise to capabilities of a firm

(B) The firm displays capabilities based on procedures and routines by member individuals. This is the focus of RBV.

(C) The network (a dyad is displayed for simplicity) displays capabilities based on procedures and routines by member firms. This is the focus of the relational view.

Figure 2. Structure of the supply chain and product and information flows (based on figures in Wood (2010))

Table 1. Example of coding

<table>
<thead>
<tr>
<th>Initial excerpt</th>
<th>Initial code</th>
<th>Focused coding</th>
</tr>
</thead>
<tbody>
<tr>
<td>[...] initially it was contact between myself and the other large exporter, [X]. Saying, “let’s work together in some of the more difficult off-shore markets where, as individuals, we were potentially too small to be significant whereas together we can make some noise.” And then [Y], of course, and we began working in Japan under the one umbrella from that discussion. So it was [X], [Y] &amp; [Z] in this first instance in Japan and then we carried it into the USA shortly afterwards. We are competitors, so right up until shipside we are in competition. From shipside onwards we are not, we are one</td>
<td>“We are competitors, so right up until shipside we are in competition. From shipside onwards we are not, we are one brand, or one desk.”</td>
<td>Since this indicates that the manger is speaking about the concept of ‘coopetition’ this was coded.</td>
</tr>
<tr>
<td>“let’s work together in some of the more difficult off-shore markets where, as individuals, we were potentially too small to be significant whereas together we can make some noise.”</td>
<td>“From shipside onwards we are not, we are one brand, or one desk.”</td>
<td>This indicates that they are benefitting by using a ‘single point of contact’ for the cluster.</td>
</tr>
<tr>
<td>“(...) initially it was contact between myself and the other large exporter . . . and we began working in Japan under the one umbrella . . . and we began working in Japan under the one umbrella</td>
<td>“(...) initially it was contact between myself and the other large exporter . . . and we began working in Japan under the one umbrella</td>
<td>The language used to describe this formation is ‘contact’ and ‘discussion,’ indicating an ‘informal start’ to the cluster.</td>
</tr>
<tr>
<td>“(...) initially it was contact between myself and the other large exporter . . . and we began working in Japan under the one umbrella</td>
<td>“(...) initially it was contact between myself and the other large exporter . . . and we began working in Japan under the one umbrella</td>
<td>Clustering gave the benefit of greater scale. This was initially coded as ‘initial scale’ but was later re-coded under as ‘new venture’ under ‘scale’ as a higher-level category.</td>
</tr>
</tbody>
</table>
Table 2. Example of focused coding

<table>
<thead>
<tr>
<th>Focused code</th>
<th>Initial code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sharing of capabilities</td>
<td>“We receive yen and it’s all channelled to one account, and [Y] manage that, as well as the shipping arrangements.”</td>
</tr>
<tr>
<td></td>
<td>“[HCG] they are the financial champions, they are the division of [NZBrand] that handles the billing and the shipping invoices.”</td>
</tr>
<tr>
<td></td>
<td>“Like my [colleague in another firm who] does the coordination for the loading of the containers. And my [other colleague in another firm who] does the management of the marketing category with [a customer].”</td>
</tr>
<tr>
<td>Coopetition</td>
<td>“We are competitors, so right up until ship side we are in competition. From shipside onwards we are not, we are one brand, or one desk.”</td>
</tr>
<tr>
<td></td>
<td>“Another member’s customer in another country where we do not operate as a group. And that causes some ripples amongst the loving nature of our relationship, I suppose.”</td>
</tr>
<tr>
<td></td>
<td>“We all flow-plan the entire season in advance and generally people stick to the initial flow-plan […] they then put pressure on for more fruit, some of us supply it, some of us refuse to. Some of us come up short, and we discover a week later that they had it in [another market] instead.”</td>
</tr>
<tr>
<td></td>
<td>“[…] exporters as competing individually in that way, so while they join forces to create a volume off-shore that is pretty much where their cooperation stops.”</td>
</tr>
</tbody>
</table>

Table 3. Comparison of cases attributes

<table>
<thead>
<tr>
<th>Issues</th>
<th>NZBrand</th>
<th>HortCom</th>
<th>WineCom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry</td>
<td>Horticulture</td>
<td>Horticulture</td>
<td>Viticulture</td>
</tr>
<tr>
<td>Cluster success</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Period of operation</td>
<td>10 years</td>
<td>2 years</td>
<td>10 years +</td>
</tr>
<tr>
<td>Size of cluster</td>
<td>4</td>
<td>10-12</td>
<td>10+</td>
</tr>
<tr>
<td>Companies involved in research</td>
<td>5</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>Coordination methods</td>
<td>Between members</td>
<td>External coordinator</td>
<td>Between members</td>
</tr>
<tr>
<td>Trust</td>
<td>High</td>
<td>Low</td>
<td>Moderate</td>
</tr>
<tr>
<td>Willingness to work with others</td>
<td>High</td>
<td>Low</td>
<td>Low-Moderate</td>
</tr>
<tr>
<td>Use of IT</td>
<td>Low</td>
<td>Low</td>
<td>Low-Moderate</td>
</tr>
<tr>
<td>Newness of industry</td>
<td>New in NZ</td>
<td>Old</td>
<td>Old</td>
</tr>
<tr>
<td>Use of group pressure</td>
<td>High</td>
<td>Low</td>
<td>Low-Moderate</td>
</tr>
<tr>
<td>Focus</td>
<td>Sourcing, order fulfilment, logistics, marketing</td>
<td>Shipping rates, coordination of volumes</td>
<td>Some coordination efforts in selected phases of production</td>
</tr>
<tr>
<td>Willingness to share operational information</td>
<td>High</td>
<td>Low – use of coordinator</td>
<td>Low</td>
</tr>
<tr>
<td>Capability to share information between members</td>
<td>High - direct information flows using email/spreadsheets</td>
<td>Low – use of email/spreadsheets through central coordinator</td>
<td>Varied and increasing – driven by external requirements</td>
</tr>
<tr>
<td>Structures to share costs and/or rewards</td>
<td>Strong structures in place to share both</td>
<td>Sharing costs only</td>
<td>Sharing costs only</td>
</tr>
<tr>
<td>Cost minimisation or value creation</td>
<td>Value creation and cost minimisation</td>
<td>Cost minimisation</td>
<td>Value creation and cost minimisation</td>
</tr>
<tr>
<td>Stabilisation of returns</td>
<td>Highly stable</td>
<td>Neglected as focus is on costs</td>
<td>Neglected due to industry structure in the region</td>
</tr>
</tbody>
</table>