



Characterizing the Ideal Model of Value Chain Management and Barriers to its Implementation

Martin Gooch, Director, Value Chain Management Centre
Abdel Felfel, Research Assistant, Value Chain Management Centre

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Executive Summary

Many attempts have been made to describe what differentiates a supply chain from a value chain. In taking a dualistic (black and white) approach to arguing that supply chains and value chains are two very different entities and, therefore, cannot exist simultaneously because one option counters the other, such commentators missed three simple though obvious facts. The first is that what lies at the heart of the differentiation is the way each is managed. The second is that, as with any managerial practice, the ability to manage a chain has to be learnt and is, therefore, an ongoing process. The third is that almost every function (i.e. logistics, selling, buying, processing, marketing, etc.) that occurs in a supply chain also occurs in a value chain.

Attempts to make a stark differentiation between supply chains and value chains fail to recognize that management is the key differentiator. They also fail to recognize that because management is a reiterating and evolutionary process, a supply chain doesn't just morph into a value chain overnight. Many examples exist where agricultural and agri-food companies are following a Supply Chain Management (SCM) approach to business. Fewer examples exist where agricultural and agri-food companies have taken a Value Chain Management (VCM) approach to business, even though it is proving a more effective approach to achieving sustainable competitive advantage.

We argue that what commentators and authors should be focusing on is whether businesses are being managed using a supply chain or value chain management philosophy. As well, we discuss the common reasons for the relatively slow pace at which agriculture and agri-food companies are adopting VCM as a business strategy. These include factors that can prevent the formation and sustainability of closely-aligned value chains, and therefore the ability of businesses to benefit from adopting a VCM approach to business.

Using terminology common to the North American business environment, the most obvious differences between supply chain and value chain management are as follows. Supply chain management focuses mostly on increasing the efficiency of current operations, such as minimizing transportation or production costs in isolation of other factors. Its core focus is on reducing costs while retaining the systems and processes already in place. Value chain management, on the other hand, comes from the standpoint of basing management decisions on what is required to create value from consumers' perspective. Its core focus is on developing the systems (resources, infrastructure, processes and relationships) necessary to satisfy or exceed consumers' expectations. Cost reduction is an outcome of this approach, as is superior quality and competitiveness. A good analogy for comparing the sustainability of the two approaches is to consider the fortunes of General Motors (which followed the SCM approach) versus Toyota (which followed the VCM approach).

This paper describes the factors that characterize the successful management of value chains that have been identified as world leaders. It then relates the factors that research has shown to impede the development and management of agri-food and agri-product value chains.

Introduction

A value chain is comprised of the series of events surrounding the development, production, and delivery of a good or service desired by targeted consumers (EFFFP, 2004; Dunne, 2001). This is achieved by ensuring that goods gain consumer-recognized value as they move through each step of the chain. In an efficient and effective value chain, this is achieved through coordinating operations in a manner that ensures the involved companies are able to create more consumer recognized value than their competitors (Womack & Jones, 2005).

The need to react more effectively to consumer demands than traditional approaches allow has come from the enormous changes that have occurred in the international trade of agricultural and food products, consumer tastes, and advances in production, transport and other supply chain technologies (Felfel 2007). These changes have led to market fragmentation and a reduction in the competitiveness of many commodity-oriented organizations. They have also led to competitiveness increasingly being a function of business, rather than industry-related capabilities (Bonney et al, 2007; Dunne, 2001; Newton, 2000).

As the ability to adapt stems largely from the existence of strategic relationships between complementary teams and businesses (Cohen & Levinthal, 1990), more effectively managing the value chain than traditional management approaches allow is becoming widely accepted as a strategic response businesses can use to increase their competitiveness (Bonney et al, 2007; Gooch, 2005; Dunne, 2001).

A closely-aligned value chain often contains vertically and horizontally linked players such as farmer(s), processor(s), distributor(s), and retailer(s). However, forming such a strategic coalition requires the existence of certain factors and capabilities. Falling into the categories of “*know why*” and “*know how*”, the key requirements for such a strategic coalition include shared vision and strategy, mutual respect, leadership, compatible culture, collaboration, commitment, win-win orientation, and mindsets suited to formalizing a business structure oriented toward maintaining strong relationships and creating value for consumers (Gooch, 2005; Min *et al.*, 2005). These requirements are outlined in figure 1.

Figure 1: Strategic and Operational Value Chain Management



Although forging a closely aligned value chain can be a complex, challenging process, the benefits are undeniable. Most notable is the ability to reduce costs, which can have a significant impact on the viability of any business. Porter (1985) identified ten factors that impact business costs and relate to value chain activities: scale, capacity utilization, linkages, interrelationships, vertical integration, location, timing, learning, policy decisions, and government regulations. Additional cost saving benefits of VMC, as cited by Gooch, include how collaboration helps reduce transaction and monitoring costs, and enables businesses to limit the negative impacts of

factors occurring in the wider trading environment.

Min *et al.* (2005) and RIRDC (2001) state that following a VCM business approach enables companies to not only reduce costs, but also increase revenues. For Min *et al.* (2005) the opportunity to increase revenue stems from collaboration that enables five factors to occur: 1) Mutuality – this includes mutual benefits and synergies; 2) Efficiency – doing things right such as cost and inventory reductions, shortened lead-times, streamlined value chain processes; 3) Effectiveness – doing the right things such as improved customer service, increased market share, better pricing and new product development; 4) Profitability – in the form of return on investment and sales per target segment; and 5) Reinforcement and expansion of relationships – including trust, commitment, interdependence and mutual involvements.

The three revenue-generating benefits of VCM cited by RIRDC are: 1) the ability to innovate more quickly and profitably by identifying new consumer needs and new uses, 2) the ability to target new markets where the organization can be “number 1,” and 3) the ability to develop the long-term shared strategies necessary for businesses to be financially sustainable.

A challenging endeavour

Given that management is a process that must be learnt and VCM is a new approach for most agri-food and product businesses, it is perhaps not surprising that many value chain initiatives only lasted a few years. The reasons for why value chain initiatives fail after an initial 12-24 months boils down to a small number of recurring factors. The first is that the value chain is missing one of the key requirements of success, such as an effective governance system. The second is that the value chain does not have capabilities necessary to create a sustainable competitive advantage. The participants are unable to learn and, in so doing, possess the capabilities necessary to adapt to the changing business environment. Other common reasons for value chain initiatives failing to achieve their potential include the partners exhibiting: incorrect or unsuitable cultures; impractical or non-aligned strategies; physical mismatches in structure versus products and markets; possessing operations that do not suit customer requirements; the inability or unwillingness to share information; incorrect, or the lack of or too much technology; incorrect or insufficient training; incentives that are misaligned to participants' goals.

Without access to the necessary resources, developing a closely-aligned value chain can be a costly endeavour. Particularly as changing individuals' behaviour and attitudes towards business practices, company policies, corporate values, production processes and relationships between partners it is a difficult and challenging process (Whipple and Frankel, 2000). That behaviour and attitude is an outcome of how effectively the systems in which people exist and perform their tasks are managed, the following section identifies factors that characterize the management systems and processes that have enabled successful value chain initiatives to address these challenges. Later sections detail factors that have been found to impede attempts to encourage individuals' to adopt the attitudes and behaviours necessary for embracing VCM approaches.

Value Chain Management

The traditional definition of supply chain management is a situation where businesses focus on increasing the efficiency with which they utilise their *current resources* (Spekman *et al.*, 1998; Tummala *et al.*, 2006; Kannegiesser *et al.* 2008). Value chain management is a more integrated and cross-functional decision-making approach that sees organizations use their complementary capabilities and knowledge to jointly *develop the resources* necessary to deliver superior value to consumers. This leads to the ability to produce, process, deliver and market products more effectively *and* efficiently than previously possible (Bonney *et al.*, 2007; Gooch, 2005; Newton, 2000). It also provides them with the ability to adapt more effectively to a changing business environment.

While all value chains are not the same, the success of any value chain is dependent upon it exhibiting certain characteristics. Collins *et al.* (2002) defined these as the six principles of VCM:

1. Focus on Customers and Consumers
2. Create, Share, Realize and Protect Value
3. Get the Product Right – Every Time
4. Ensure Effective and Efficient Logistics
5. Ensure an Effective Information and Communications Strategy Is In Place
6. Build and Maintain Effective Relationships

Developed through the study of successful value chain alliances in the agri-food and other industries, these principles span the entire chain. Should any of the six principle areas of VCM be neglected or non-existent, the alliance will not perform to its full potential. However, these principles do not differentiate between strategic and operational factors, or between the responsibilities of individual partners versus those of the whole chain.

The following section breaks the six principles into two categories: strategic and operational. It then provides a concise description of each of the strategic and operational factors that have had a significant impact on how effectively the value chain has been managed.

Strategic Management

As VCM is a multifunctional business approach, strategic factors focus on creating an environment that will enable the chain to achieve its purpose and objectives. Strategic management activities associated with VCM include developing and maintaining constructive relationships between the partners, building a learning environment, implementing effective information and communication systems, aligning capacities, creating the governance systems necessary to develop collaborative corporate cultures, and identifying appropriate performance measurements.

Creating and maintaining constructive relationships

Changing cultural, behavioural and business practices presents a significant challenge for any business, particularly in the agri-product industry where businesses have traditionally operated in an adversarial rather than collaborative fashion. Wilson (1995) identified that the ability to develop constructive relationships often relied on the willingness of participants to share information. That willingness to share information relies on the attitudes and mindsets of individuals. Turning adversarial mindsets into those that support a more collaborative approach is one of the most important steps in building and maintaining partners' relationships. It is a process that may require the investment of considerable resources. It may also invoke significant risks if resistance to change is not managed correctly (Stuart and McCutcheon, 2000).

Tummala *et al.* (2006) say that the risks posed by dissenting individuals who do not believe in the need for collaborative relationships can be most effectively handled by proactively addressing the concerns of each areas of business, those that will be most directly affected by any change in management approach. That they have successfully addressed the concerns of dissenting individuals is a characteristic of successful value chain alliances.

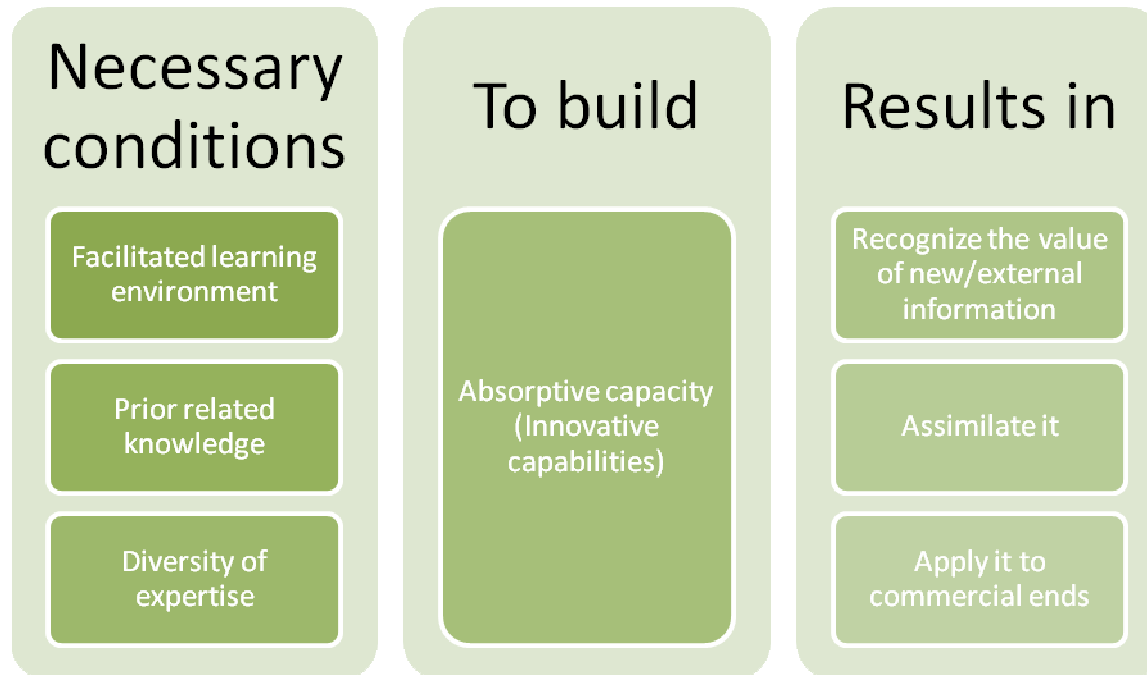
Creating effective relationships provides the potential to establish a closely-aligned value chain. Maintaining effective relationships makes the initiative sustainable. It also requires effort to be invested at multiple points of businesses' interaction. These include, but are not limited to, sharing risks and benefits, joint planning, joint decision-making, joint problem-solving and conflict resolution, communicating benefits of relationships, and clarifying partners' needs and expectations.

Building a learning environment

Success is an output of the system. The ability to learn and adapt is a critical component of a sustainable value chain alliance. Otherwise, the partners will be unable to develop innovative solutions to problems that may have prevented them from exploiting market opportunities. Cohen and Levinthal (1990) showed that organizations must have considerable absorption capacity in order to recognize the value of internal and external information, assimilate it into meaningful packages, and apply it to commercial ends. The ability to achieve this is dependent upon the partners creating an effective learning environment, possessing prior related knowledge, and sharing a diversity of expertise (figure 2).

Organizations that do not develop this capacity are unable to assimilate, use, or apply new information as well as otherwise possible. Given a decrease in product lifetimes and the speed at which changes are occurring in the business environment, organizations that do not exhibit a learning culture are becoming increasingly unviable. A successful value chain should have plans for developing the human capital required to leverage skills, expertise and capabilities, and to facilitate a learning environment that benefits the chain by turning internal and external information into valuable knowledge.

Figure 2: Value Chain Absorptive Capacity



Implementing information and communication technology

An important factor in strategically managing value chains is using information and communication technology (ICT) to identify trends in both market and operational performance. Handfield and Nichols (1999) described ICT as the disseminator and enabler for process and product communication, thereby reducing paperwork and lead times. Moreover, ICT also offers numerous opportunities for organizations to streamline communication and improve partners' response deficiencies. Which provide businesses with the opportunity to simultaneously decrease costs and increase revenue (Tummala *et al.*, 2006). A successful value chain will most likely have an ICT system that provides both transactional and analytical capabilities.

Aligning capacities and re-engineering material flows

The essence of VCM is that, through closely aligning their individual operations, organizations can focus their combined resources on producing final goods that meet the demands of the end market better than the competition (Womack & Jones, 2005; Gooch, 2005).

Strategically managing material flows to reduce inventories, receive market signals sooner, and enables the cause of quality issues to be determined then addressed quickly and accurately. An efficient and effective value chain is also able to optimize its logistics-related processes, thereby reducing transportation costs. It is also able to address the variables and uncertainties that affect consumers' demands.

Creating corporate culture

Corporate culture and the associated characteristics are fundamental for forging a successful value chain alliance. Creating a corporate culture based on mutual respect, collaboration, commitment, trust and a win-win mindset is not an easy task. Mainly because most of these traits must be earned and are therefore an outcome of how businesses operate. Moreover, the literature suggests that while many business managers speak encouragingly about collaboration, they actually behave differently.

Methods that leading value chain alliances have used to create the necessary corporate culture include ensuring the commitment and involvement of senior and middle managers, undertaking multi-function and business planning processes, and providing mutual feedback. They have also developed a governance process that clearly identifies individuals' and organizations' roles, responsibilities and accountabilities.

Identifying performance measurements and benchmarking

To ensure the effectiveness of a value chain, performance measures have to be predetermined and agreed upon. As well, these plans must be monitored so that corrective actions may be taken in the event that deviations occur between actual and planned outcomes. Stuart and McCutcheon (2000) argue that the most effective relationships exist when chain partners have been made aware of the performance standards for which they are being held accountable.

Determining performance measures helps ensure that partners accomplish the specific (collaborative) goals they set. Improving value chain performance depends on the ability to address, evaluate and benchmark against specific measurables. Performance measures should be objective-based, specific, measurable, and evaluated at regular intervals. They also need to be enforced (Tummala *et al.*, 2006).

Operations Management

The operations management aspect of VCM focuses mainly on increasing the effectiveness and efficiency of operations and processes occurring along the value chain. This includes managing activities related to consumer research and forecasting, managing R&D processes, mapping and measuring chain activities, ensuring effective communications, establishing cross-functional management teams, maintaining effective information systems, enforcing quality assurance programs, ensuring optimal logistics and distribution solutions, monitoring and reporting consumer satisfaction, and evaluating overall performance.

Consumer research and forecasting

Consumer research explores consumers' desires and needs, and the performance of the value chain in meeting consumers' expectations. Identifying consumer-recognized value enables a chain to be proactive in satisfying consumers' demands and identify opportunities to capture value more effectively than otherwise possible (Webb, 2008). Having in depth knowledge of consumer attitudes and drivers of behaviour also allows businesses to have greater influence over

retailers' decisions, thereby balancing power in the chain (Marston, 2008). It also Consumer research can be performed within the chain, if the appropriate resources are available, or by an external partner.

Research and development activities

Obtaining information on consumer-recognized value is a costly and unnecessary process unless the value chain alliance possesses the capability to turn that information into knowledge, then identifies how it can use that knowledge to improve its processes or develop new products that better meet consumers' demands than products currently available. Leading value chains also use the results of consumer research to gauge their performance in comparison to competitors.

Mapping value chain activities

Leading value chains have developed relatively simple methods to identify how they may maximum use of their resources by managing the determinants of quality. They accomplish this through identifying the relationships that exist between activities performed along the route followed by individual products – from production through to consumption. Known as a value chain map, the outcome is a schematic description of the activities occurring along the value chain, their potential to impact performance if not correctly managed, and the factors that need to be reflected in the chain's management process. The chain map is developed by physically walking the chain, identifying how current practices are performed, and developing metrics which will enable the entire chain (not just individual units of the chain) to continually improve its performance.

Maintaining a flow of communications

Communication is an extremely important aspect of effective value chain management. It provides partners with an opportunity to express their needs and constraints. It also provides them with the opportunity to voice concerns about their own or others' performances. Furthermore, it ensures that when decisions are made, partners will know their exact roles and how their performance will be measured, and that they are rewarded in an equitable manner that reflects the value they have contributed to the value chain. The results of monitoring chain performance, consumer research, and R&D activities must be communicated to all chain partners. By doing so, they can determine how to use each individual partner's resources and capacity, then provide incentives for them to continually improve performance and remain loyal to the chain. Effective communication is the cornerstone of any meaningful governance system.

Managing cross-functional teams

Cross-functional teams lead to more effective decision making. It also reduces redundant activities and duplicated efforts, which minimizes operational costs and the likelihood that costly mistakes will occur anywhere along the value chain. Cross-functional teams raise awareness of each partner's needs and concerns when designing new products and developing new systems. This leads to faster, more effective problem solving and conflict resolution.

Cross functional teams include persons from all functional areas, including consumer research, R&D, production planning, purchasing, finance, marketing, and materials management. Tummala *et al.* (2006) identified that the most effective cross functional teams are those whose performance is monitored according to a range of pre-agreed metrics and where members are educated about the tasks, responsibilities and objectives of other group members. They also visit each other's operations to gain firsthand experience of their operations and challenges they face.

Managing the information system

Access to timely and accurate information plays a critical role in enabling managers to continually improve chain performance. The information systems used by leading value chain initiatives usually contain two kinds of Information and Communication Technology (ICT): transactional and analytical. To be effective, they require individuals with different though complementary skill sets. Transactional IT acquires information on processes, and then compiles raw data into reports that are disseminated to the relevant value chain managers. Analytical IT takes raw data, often both qualitative and quantitative in nature, and uses descriptive and normative models to report findings that allow for effective decision-making to occur along the chain (Shapiro, 2001).

Optimal logistic solutions

An efficient and effective value chain must have an optimal logistics and distribution system that controls the movement of products across the chain. Effective logistics and distribution systems reduce partners' costs through enabling them to lower inventory levels by minimizing variations in demand and supply, and enabling suppliers to more cost effectively meet customer requirements. Greater synchronization between functional areas also provides greater assurance in suppliers being able to cost effectively meet customer requirements. An effective logistics system also enables continual improvements to be identified in how distribution networks, transportation modes, carrier management, warehousing, order processing and fulfillment activities are managed.

Enablers versus Inhibitors

The previous sections of this discussion paper focused on identifying the characteristics that typify an exemplary value chain. The remainder identifies factors found to inhibit the development and success of value chain initiatives.

Impediments to Value Chain Management

Though offering the opportunity to achieve and maintain above average levels of competitiveness and profitability, forging and maintaining a closely aligned value chain is a challenging endeavour. The extent of these challenges, along with the potential rewards of participating in a closely-aligned value chain, will depend on factors relating to the external environments in which they operate and the internal environment of the companies.

External factors:

Factors associated with the external environment in which companies operate and compete can markedly limit the opportunities for companies to benefit from adopting a VCM business approach. In certain circumstances the external environment can even prevent the formation of closely-aligned value chains. The result is that companies have limited opportunities to successfully adapt to a changing market and business environment.

Commentators often incorrectly state that it was the withdrawal of subsidies that enabled New Zealand's agricultural and agri-food industry to innovate and become more competitive. It was not. The withdrawal of subsidies was the catalyst for change. The enabler of change was deregulation and the impact it had on individuals' mindsets and overall industry culture (McDermott *et al*, 2008; Harris & Rae, 2004).

Many of the policies and regulations that impact the competitiveness of Canada's agri-products industry were developed when the world was very different, and there wasn't such a clear need to establish a demarcation between social and commercial interests. Furthermore, many policies and regulations have been developed as a reaction to current events, instead of being developed proactively to strategically address future challenges or to take advantage of emerging opportunities (Mason, 2008; Tamilia & Charlebois, 2007). Compared to those of more progressive jurisdictions, Canadian policies, regulations and legislations could therefore be outdated before they are even implemented.

Policy and Legislation

Competitiveness is increasingly more a function of business capability than industry level policies and regulation (EFFP, 2004; Curry, 2002; Dunne, 2001). In fact, many industry policies and associated legislation have the potential to severely limit the competitiveness of individual businesses (Mason, 2009; McDermott *et al*, 2008; Harris & Rae, 2004; Scrimgeour & Sheppard, 1998). Perhaps this is no more apparent than their impact on the ability and motivation of businesses to form and manage closely-aligned value chains. As seen in countries such as New Zealand and Australia, government programs aimed at improving competitiveness through using freer trade as the driver and enabler of competitive growth are those most likely to enable stakeholders to adapt by developing more effective value chains.

This is particularly the case in circumstances where legislation gives all or most of the negotiating and marketing power to a specific link in a chain or industry organization. While

legislation relating to food safety provides a necessary public good and tends to have less negative impact of business competitiveness, if not designed appropriately, it too can lessen the incentive of businesses to react constructively to the competitive pressures critical for driving a natural evolution in the capabilities of businesses situated along the entire value chain. The same can be said for policy and legislation relating to the protection of intellectual property rights.

An unintended consequence of reactive versus proactive policies and regulations is the extent to which they motivate businesses to strengthen their competitiveness through embracing non-traditional means to adapt to a changing commercial environment (McDermott *et al*, 2008; Dunne, 2001). Outcomes of policy and legislation that have the greatest impact on behaviour and competitiveness are those that influence the shaping of industry structure. A number of structural factors can severely impact the formation and management of closely-aligned value chains and, therefore, the competitiveness of agri-food businesses situated along the entire value chain (Mason, 2009; McDermott *et al*, 2008; Harris & Rae, 2004; Scrimgeour & Sheppard, 1998).

Industry Structure

Industry structure relates to physical as well as regulatory (legislated) characteristics that exist within the environment in which businesses conduct commercial operations. As a general rule, the fewer organizations that directly influence the commercial decisions of businesses' operations, the more conducive the environment will be for enabling and motivating market-focused innovation (McDermott *et al*, 2008; Tamilia & Charlebois, 2007; Harris & Rae, 2004; Scrimgeour & Sheppard, 1998).

A commonly cited impact of regulated marketing is the extent to which it creates an industry structure that limits the motivation of the wider industry, and inhibits the ability of more progressive stakeholders, to capture greater value from the end market (McDermott *et al*, 2008; Harris & Rae, 2004; Scrimgeour & Sheppard, 1998). Marketing boards have been criticized for hampering product and process innovation (Tamilia & Charlebois, 2007; Scrimgeour & Sheppard, 1998). They have even been termed "agriculture's albatross" (Kerr, 1996) through their role in limiting competitiveness by encouraging the production of "largely unimaginative, undifferentiated products, with a small number of high-ends goods competing with small amounts of high-end foods allowed to be imported at relatively steep price" (Hart, 2005, p. 7).

This is not to say that Marketing Boards and legislated marketing are the antithesis of VCM. For example, Zespri has sole export marketing authority for New Zealand kiwi fruit and are necessarily the marketing board. Its motivation to continually work closely with chain partners to innovate together to develop new products (i.e. varieties with greater quality and consumer appeal), and the processes it follows to meet market demands (i.e. quality management systems), come from it being subject to a regular referendum which keeps it accountable to industry. However, the legislation by which many market boards operate actually inhibits their being operated as a commercial entity. It can also restrict the ability and motivation of the commercial stakeholders they represent to innovate in relation to market demands (Scrimgeour & Sheppard, 1998). It can also discourage, or even prevent, the same sectors from working closely with the overall chain to improve their competitiveness through continually improving their effectiveness and efficiency (Curry, 2002; Kerr, 1996).

However, more often than not, marketing boards have historically played a limited role in the development of agriculture and agri-food competitiveness (Tamilia & Charlebois, 2007; Hart, 2005; Scrimgeour & Sheppard, 1998). One reason is that they have more power on the buying side, rather than the selling side, when negotiating prices with other levels of the chain, even though this is the opposite of the reason they were established.

Combined with other regulatory factors, such as genetic development and registration, policy and legislation can severely impact the innovative capacity of entire sectors. For instance, it has been stated that the structure of the United Kingdom's grain industry enables commercial stakeholders to innovate at least five times faster than the Canadian industry (Beard, 2008). The reasons for this situation occurring include Canadian wheat marketing and pricing systems, intellectual property rights, seed development and registration; and taxation and transportation policies. Legislation that impacts the efficiency and effectiveness of a value chain's operations are not limited to only international trading situation. Non-harmonized provincial policies and standards can have an equally detrimental effect on businesses and industry competitiveness (Tamilia & Charlebois, 2007).

Industry culture

The ability to successfully develop and manage closely-aligned value chains is the combined effect that policy, regulation and industry structure has on industry culture (McDermott *et al*, 2008; Tamilia & Charlebois, 2007; EFP, 2004; Curry, 2002). The characteristics of an unfavorable culture are mistrust, lack of mutual respect, commodity-orientation, more focused on reacting to competitors' behaviour than proactively adapting to consumers' demands, discounting the possibility of win-win outcomes while striving to remain staunchly independent, lack or absence of communications, lacking or failure to fully utilize information technology, and no or little strategic planning.

Internal Factors

In shaping industry culture, policies, regulations and industry structure can significantly influence factors internal to the management of businesses. Individuals' mindsets will determine how they react to incentives designed to strengthen the value chains' competitiveness, and the extent to which they can be encouraged to focus on producing consumer-defined value rather than primarily focusing on producing volume.

Mindsets (attitude)

Mindsets are networks of ideas and assumptions based on prior experience and observations (Moon, 2004), and directly influence the willingness of individuals to entertain new ideas and concepts (Senge, Dow, Neath, 2006). In addition to influencing the extent to which value chain participants are able to communicate effectively, mindsets can also negatively impact the management of a value chain through leading to 1) scepticism about the chain's ability to achieve its objectives; 2) believing that others possess hidden agendas; 3) short term understanding and thinking, and not understanding or accepting the role of leadership within the

value chain. Failure to address any these factors will lead to individuals being risk averse and not being fully committed to the value chain (Marston, 2008; Bonney *et al*, 2007).

Incentives

Having the correct incentives in place is a crucial factor in determining the success of any value chain initiative (Beard, 2008; Marston, 2008). A value chain has to have key performance indicators (KPIs) that extend beyond individual business functions and organizations, and individuals need to know their roles and responsibilities in relation to those KPIs. Otherwise, the chain will likely be measuring the wrong performance criteria. It will also not be able to hold each individual accountable for poor performance. Further, if individuals are not able to be rewarded at a level that directly correlates to the value that they contribute to the chain from the consumers' perspective, it is likely that the chain's most valuable participants will choose to do business elsewhere (Marston, 2008; Stuart & McCutcheon, 2000).

Focusing on productivity rather than value

A highly-functioning value chain is able to generate profits based on developing, producing and communicating consumers-recognized value (Beard, 2008; Marston, 2008). Focusing on productivity, particularly at the farm level, without giving due attention to the overall value chain will negatively impact competitiveness. However, this is exactly the approach that much of agriculture has historically followed (McDermott *et al*, 2008; Beard, 2008; Hart, 2005; EFPF, 2004; Curry, 2002). To put it bluntly, farming has been in the tonnage business, not in the value generation business. Changing industry mindsets toward creating value through innovation rather than simply 'producing more' is extremely challenging. This is particularly so as many current agricultural and agri-food industry policies, legislation and structures are not conducive to encouraging managers and businesses to more effectively adapt to rapidly changing business environments (Mason, 2009; McDermott *et al*, 2008; Tamilya & Charlebois, 2007; Harris & Rae, 2004; Hart, 2005; Curry, 2002).

A key reason many value chain initiatives fold after two to three years is that they have failed to address issues identified in the second part of this discussion. This severely limits their ability to learn and adapt, particularly once they face competitors that are replicating their own achievements. A successful value chain must prioritize its objectives by clearly identifying the desires of its target consumers, and translating that information into continually improved products and processes. Otherwise its ability to remain profitable through attaining a level of sustainable competitive advantage will be doubtful at best.

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