

Sharpening supply management strategies 'the AMC-framework in competitive supply markets'

Author: Nick Praas
University of Twente
P.O. Box 217, 7500AE Enschede
The Netherlands
n.h.j.praas@student.utwente.nl

The focus of competitive dynamics literature lies mostly on competition in product markets, while competition is possible in every part of the supply chain. As a result, competition in supply markets is much less researched. This thesis sets out to give improvements to strategies for gaining competitive advantage in supply markets. Such strategies are based on interaction between two firms. The dyadic relationship in competitive dynamics is based on action and response and a good predictor of response is the AMC-framework. This thesis gives improvements to strategies used in supply markets by applying the AMC-framework on these strategies and comparing them with the competitive dynamics seen in product markets. The purpose of using these strategies is gaining and sustaining a competitive advantage over competitors. This paper is build up in three parts: an extended literature review on the AMC-framework, a comparison between competitive dynamics in product markets and factor markets showing similarities and differences between the two, and the used strategies and the influences of the AMC-framework on these strategies. The result is a number of propositions on how to increase the effectiveness of the strategies by taking into account the factors of AMC.

Supervisors:

Dr. Ir. Niels Pulles

Frederik Vos MSc. MSc.

Keywords

Competitive dynamics, supply management strategies, AMC-framework, action/response dyad, supply markets

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. To copy otherwise, or republish, to post on servers or to redistribute to lists, requires prior specific permission and/or a fee.

5th IBA Bachelor Thesis Conference, July 2nd, 2015, Enschede, The Netherlands.

Copyright 2015, University of Twente, The Faculty of Behavioural, Management and Social sciences.

1. INTRODUCTION

Current literature on strategic supply management fails to acknowledge that effective execution of a strategy depends on the actions and reactions by intelligent rivals (Pulles, Vos, & Veldman, 2014). Competitive dynamics researchers found that to be able to predict the actions and reactions of a competitor in the product market, the AMC-framework can be used. AMC stands for the *awareness* of an action, the *motivation* to react to that action and the *capability* to respond to that action. The AMC-framework provides an integrative platform for identifying key behavioral drivers of interfirm competition (Chen & Miller, 2014; Yu & Cannella, 2007).

However, not the product market is the focus of this study, but the supply market. Specifically, supply management strategies that improve the competitive position of a firm relative to its rivals on the supply market. Competition is not only present within firms that compete over customers in product markets. Competition can be seen in any level within a firm’s value chain. (Markman, Gianiodis, & Buchholtz, 2009). Because there is very little literature on the influence of AMC on supply management strategies, this study proposes a number of improvements to these strategies. To make propositions about improvements to current supply management strategies, this study will apply the AMC-framework on strategies relevant to the competitive dynamics in the supply market.

The AMC-framework was introduced by Chen in 1996. He described *awareness*, *motivation* and *capability* as ‘drivers of competitive behavior’. These drivers influence the likelihood of competitive attack and response (Chen, 1996, p. 110). Since then, others have used the AMC-framework to illustrate how *operating capacity* (Baum & Korn, 1999), *attack volume* (Smith, Ferrier, & Ndofor, 2001), and *contest capability* strengthen inter-firm tension (Chen, Su, & Tsai, 2007). These are only a few examples, but “even a detailed review of this literature shows that resources occupy only marginal consideration in theories of competitive dynamics” (Markman et al., 2009, p. 425). This leaves a gap for a research on the influence of the AMC-framework on competitive dynamics in supply markets. This thesis not only treats the AMC-framework as a means to predict competitive actions towards, and reactions from competitors, but the influence on interaction between for example buyers and suppliers is researched as well.

Competitive dynamics offers an approach to understanding what firms do when competing with rivals. It examines the interactions between competitors, not only the actions taken but also the responses given (Chen & Miller, 2012). Competitive dynamics are present in both product markets and factor markets.

The focus of this research will lie on finding constructs of the AMC-framework that are applicable to strategies used to gain and sustain a competitive advantage over competitors in a part of the factor market: the supply market. This focus resulted in the following research question: *What supply management strategies can be formulated by applying the AMC-framework on the competitive dynamics in supply markets?* The results this question gives come in the form of propositions in chapter four. To help providing propositions and answering the main research question, there are three sub-questions. Each of these is focused on one part of the AMC-framework and describes the influence of that part on the known strategies elaborated in chapter 3.3. These sub-questions encompass one factor of the framework and focus on improving the supply market strategies used in supply management and the influence this factor has on competitive interaction in general.

How does focusing on the awareness-factor improve supply market strategies?

How does focusing on the motivation-factor improve supply market strategies?

How does focusing on the capability-factor improve supply market strategies?

To answer these questions, I examine literature and theories on the subjects of supply management, competitive dynamics in product markets and factor markets, the AMC-framework and factor market rivalry.

First, chapter two gives an in depth introduction to the theme and to the AMC-framework in particular. The chapter is based on the 2012 article by Chen and Miller and shows current theories and literature on competitive dynamics that are influenced by the AMC-framework. Most, if not all, of these theories are based on competition in product markets. Because the ultimate goal of this thesis is formulating propositions on improving strategies for the supply market, chapter three closes in on the differences and similarities between competitive dynamics in product markets versus those in factor markets (of which the supply market is a part of). It then shows several forms of rivalry in factor markets before exploring the supply market strategies that are being considered in chapter four. Chapter four contains an analysis on basis of the AMC-framework of the supply market strategies found in chapter 3.3. The result of this analysis comes in the form of propositions that try to improve these supply market strategies. The last chapter will contain the conclusions and a discussion, followed by references to used literature. Figure 1 shows the connection between the different chapters in this thesis.

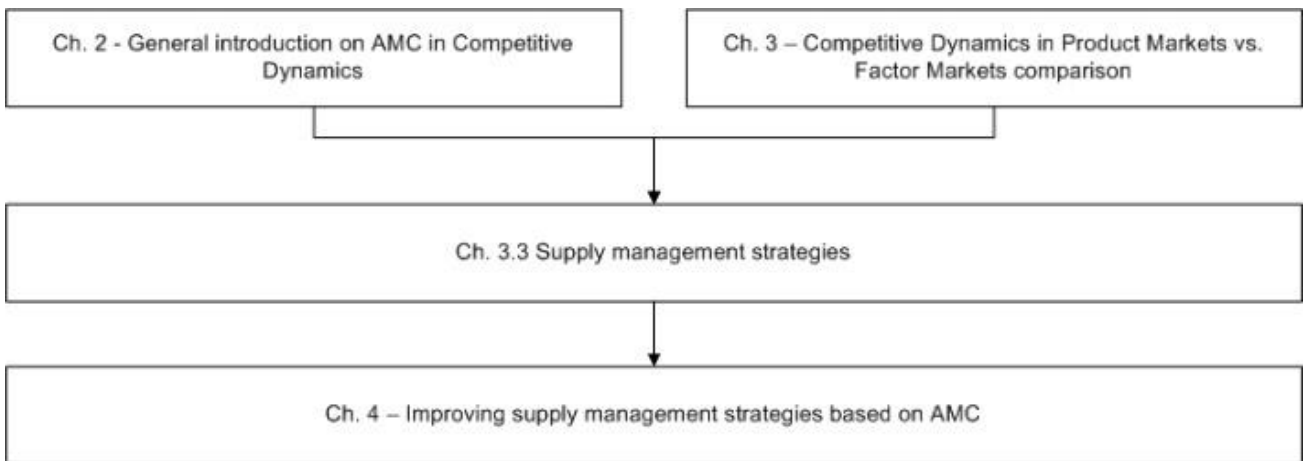


Figure 1 – Connection between chapters

2. THE AMC-FRAMEWORK IN CURRENT COMPETITIVE DYNAMICS LITERATURE

“The AMC-model has emerged as the theoretical framework with perhaps the greatest potential to connect a wide range of topics in competition and strategy.” Chen and Miller (2012, p. 32) state this in their paper ‘*Competitive Dynamics: Themes, Trends, and a Prospective Research Platform*’. This chapter is mainly based on the work of Chen and Miller and will address the AMC-framework as it is described in current literature on competitive dynamics. The chapter is an extended introduction to the theme and can be seen as a literature review of the AMC-framework in the current literature on competitive dynamics.

The AMC-framework consists of three key constructs: *awareness*, *motivation*, and *capability*. This framework provides a model of the three key drivers that facilitate competitor’s actions and their responses. A competitor will only be able to respond to an action if it is *aware* of the action, *motivated* to react and *capable* to respond. The AMC-framework is useful in analyzing and predicting potential responses by competitors. It differs with every action and competitor. An action is defined as “a specific and detectable competitive move initiated by a firm, (...) that may lead to the firm acquiring its rivals’ market shares or reducing their anticipated returns. Similarly, a response is a specific and detectable countermove, prompted by an initial action, that a firm takes to defend or improve its share or profit position in its industry” (Chen & Hambrick, 1995, p. 456).

This literature study of the AMC-framework is based on five core themes of competitive dynamics. Chen and Miller (2012) categorized these themes as follows: I. *Competitive Interaction*, II. *Strategic Competitive Behavior and Repertoire*, III. *Multimarket-business Competition*, IV. *Integrative Competitor Analysis* and V. *Competitive Perception*. Because the following parts of this chapter are based on competitive dynamics, the current theories that are influenced by AMC are categorized according to the themes Chen and Miller (2012) proposed in their article.

2.1 Competitive Interaction Based Theories

Before the work of MacMillan, McCaffery, and Van Wijk (1985), the so-called action/response dyad (the combination of actions and reactions) had not received much attention in strategy or organizational studies. The focus had been on firms, strategic groups, industries, and communities and population. Competitive dynamics operates more at a ‘micro-level’, which still is its primary distinguishing feature.

To characterize and predict competitive responses, competitive dynamics scholars conceptualized key attributes of competitive response: the *likelihood* of response, the *number and speed* of responses and the extent to which a response *matches the initial action* in breadth and severity (Chen & Miller, 2012). These key attributes are based on theoretical perspectives such as expectancy-valence theory and game theory.

Expectancy-valence theory as described by Chen and Miller in 1994 shows that retaliation (a response by a competitor) is a function of the subtlety of an attack. Subtlety consists of three variables: *visibility*, *difficulty* and *centrality*. These three variables show great similarities to the AMC-framework. The higher the *visibility* of an attack, the greater the chance of retaliation by competitors. This corresponds to *awareness*. The more *difficult* for a competitor to respond, the lower the chance of retaliation. This corresponds to *capability*. Finally, the greater the *centrality* of the attack, the higher the chance of retaliation. Centrality is about the importance of the market that is attacked to the competitors (Chen & Miller, 1994). This construct

corresponds to *motivation*, the more important the market, the more motivated the competitor is to retaliate.

In game theory, two variables are present, *competitor dependence* and *action irreversibility*. Both are predictors of a response. Competitor dependence shows that the more a defender is dependent of the market under attack, the lower the likelihood of non-response. This variable matches with the *centrality*-variable in the expectancy-valence theory. Both predict if a defender will respond or not respond. Action irreversibility states that, if the cost for reversing the move is too high for the attacker, it is more likely to keep the attack going and the chance for the defender to win when responding is lower. This means that the more irreversible an action, the greater the likelihood of no response (Chen & MacMillan, 1992).

Another theory describing responses by competitors is the stimulus-response model as described by Chen, Smith and Grimm in 1992. They state that “responses are influenced by the characteristics of the actions that evoked them” (Chen, Smith, & Grimm, 1992, p. 439). They found that *attack intensity* and *competitive impact* increase the number of responses by competitors. These two variables are similar to awareness and motivation in the AMC-framework. On the other hand, higher *implementation requirements* (the degree of effort a firm requires to execute an action) reduce the number of responses and slow them down (Chen et al., 1992). This variable shows similarities with AMC’s capability. Competitive interaction based theories show a great amount of influence from the AMC-framework. This means that these theories are potentially useful when comparing with supply management strategies.

2.2 Strategic Competitive Behavior and Repertoires

The second competitive dynamics theme is Strategic Competitive Behavior and Repertoires (SCBR). Contrary to the previous focus on individual competitive moves, studies in this stream want to examine the organizational and contextual antecedents that drive competitive behavior and competitive repertoires (Chen & Miller, 2012). Several theoretical perspectives, such as upper-echelons theory, institutional theory and information processing theory have contributed to demonstrate the importance of a firm’s information-processing capacity, size, and top management team (TMT) characteristics (Chen & Miller, 2012). These qualities show to be important in the behavioral properties of a firm such as responsiveness, execution speed and action visibility. These behavioral properties correspond highly with the factors in the AMC-framework. Responsiveness, or the ability to respond to stimuli, is dependent on the awareness of these stimuli. Execution speed is influenced by motivation, the higher the motivation, the quicker the response is executed.

Competitive repertoires are made up of the total of a firm’s competitive moves. This view is consistent with the long-held view of strategy as a pattern in the stream of decisions (Mintzberg, 1978). Because competitive interaction theory focuses on individual competitive actions and reactions, and SCBR theories focus on the combination of these actions at the firm level, both streams complement each other. This also means that whereas competitive interaction theories focus on the characteristics of an action and consequently are influenced by the AMC-framework, competitive behavior and repertoires are combinations of individual actions and are harder to attribute to AMC characteristics.

2.3 Multimarket and Multibusiness Competition

Multimarket competition and competitive dynamics are related but distinct research streams (Chen & Miller, 2012). As

with the SCBR theory, multimarket and multibusiness competition research is not focused on individual actions and reactions. Therefore, theories in this research stream are barely influenced by the AMC-perspective. An important theory in this area is the so called ‘mutual forbearance’, which is the idea that when firms are operating in the same markets, they will recognize their dependence on each other and will consequently minimize risks of retaliation and escalation (Edwards, 1955; Gimeno & Woo, 1996). The application of competitive dynamics and AMC in the international setting has shown that, for example, the speed of an MNE’s response to a rival’s attack is influenced by both resource-related factors (e.g. geographic distance and government constraints) and market-related factors (e.g. strategic importance of the country and portfolio of multimarket contracts) (Yu & Cannella, 2007).

Another example of a study on multimarket contact is the one by Baum and Korn (1999). They did research on the dyadic competitive interaction between firms in multiple markets in the US Airline industry. By focusing on pair wise relationships between firms, they found that for example an airline’s rates of entry into and exit from each other’s markets were both low when the multimarket contact was high enough to recognize their mutual interdependence (Baum & Korn, 1999).

2.4 Integrative Competitor Analysis

Analyzing competitors has been an important part of strategic and organizational studies. Traditional research in this area has primarily focused on static firm characteristics and often these analyses barely have any link to actual competitive behaviors (Chen & Miller, 2012). In 1996, Chen addressed this challenge by proposing a model uniting two firm-specific constructs derived from theory: *market commonality* and *resource similarity*. “Market commonality is defined as the degree of presence that a competitor manifests in the markets it overlaps with the focal firm” (Chen, 1996, p. 106). Simply stated, *market commonality* means the degree of commonality between two firms (the focal firm and the competitor) in the same market(s). “Resource similarity is defined as the extent to which a given competitor possesses strategic endowments comparable, in terms of both type and amount, to those of the focal firm” (Chen, 1996, p. 107). This means that *resource similarity* is the degree of similarity between the resources of two different firms. This suggests that each firm has a unique position in the market and a unique set of resources. These unique variables help when comparing two firms and predict how these firms might interact in the market. Chen (1996) integrated the internal mechanisms of a firm (*resource similarity*) with the external mechanisms of the market (*market commonality*). It was the integration of these two constructs, and consistent empirical support from prior competitive dynamics studies, that led to the three essential antecedents that are the focus of this thesis: *awareness*, *motivation*, and *capability*. For example, the greater a competitor’s market commonality with the focal firm, the less motivated this competitor will be to initiate an attack against the firm, for fear of retaliation across multiple markets. Also, the greater a competitor’s resource similarity, the greater its capability to respond to an attack.

The three AMC antecedents of competitive interaction are used to predict the levels of competitive tension between firms that managers perceive (Chen et al., 2007). This study has drawn more attention to the *perception* of competitive behavior (see chapter 2.5 on Competitive Perception) rather than the *objective* aspects that were the focus before that. This also led to the development of the ‘rival-centric’ approach, in which being able to see through the eyes of the competitor became a key-requirement for competitive analysis (Capron & Chatain, 2008; Tsai, Su, & Chen, 2011).

2.5 Competitive Perception

The four research streams covered so far concentrated on the actual behavior involved in competition. They showed the competitive actions and responses that occur at the level of action/response dyads and (multi)businesses. Not covered are the motivations and cognitions of the individual actors involved who initiate and respond to competitive actions, or: the people behind the firms. Because the components of the AMC-framework can only have implications for actions via the perception of managers within the involved firms, subjective judgments from these managers are key to the strategies followed by the firms in consideration.

The first incorporation of perceptions in the research on competitive dynamics began with a forerunner of the AMC-framework, the paper by Chen and Miller (1994). By using an expectancy-valence framework, the authors developed a model that could predict the chances of retaliation after a competitive attack. Key part of the theory on retaliation is the competitor’s perceived reward or “valence” for responding successfully. This corresponds with the motivational component of AMC. Together with the competitor’s perception of its capability to respond (the ‘C’ part of AMC), they form the basis of a competitor’s probability to respond. The third component completed the model: visibility or ‘awareness’. The prediction of the model was confirmed: “less visible attacks, or actions attacking more peripheral markets and/or requiring more cost and disruption to respond to, elicited the fewest competitive responses” (Chen & Miller, 2012, p. 27). Human perception is vital to the AMC-framework and its components: *awareness* involves perception, *motivation* is driven by perceptions and *capability* cannot lead to an action if the capabilities are not perceived to be adequate. This shows that the entire framework is driven by perceptions.

Research in this domain focuses on individual perceptions of managers or directors and has led to a number of new concepts, such as competitive tension, identity domains and competitive acumen. These concepts have been developed to show the importance of perception. Competitive tension can best be described as a sort of equilibrium of latent strain between competitors. As soon as the competitive forces build up so the balance is disturbed, competitive tension explodes into competitive actions. Chen et al. (2007) proved that the objective indicators of the AMC-framework can predict perceived competitive tension between competitors, and that this can influence future market behaviors.

Identity domains are defined as a “cognitive competitive space that holds psychological value for a focal firm’s management” (Livengood & Reger, 2010, p. 48). This means that an identity domain can be anything from a geographically important location (like an international headquarters) to the most economically important market that the firm operates in. Identity domain theory states that firms are focusing more on their core business in these domains and can therefore recognize competitive threats earlier. On the other hand, by focusing on a limited number of things, threats to the firm outside identity domains are recognized relatively late and opportunities can be missed (Livengood & Reger, 2010).

The ability to understand a competitor’s perceptions and to see things from their perspective is important for a firm, as argued by Tsai et al. (2011). Only then can a firm make the right competitive decisions. This is known as competitor acumen.

An overview of the most important theories mentioned in the above chapter is found in table 1.

Table 1 - Theory overview

Competitive dynamics domain	CD Theory	AMC Component(s)
Competitive Interaction	Expectancy-valence	A/M/C
	Game Theory	M
	Stimulus-response	A/M
Multimarket/ Multibusiness	Mutual Forbearance	M
Integrative competitor analysis	Competitor Analysis	A/M/C
	Competitive Tension	A/M/C
Competitive Perception	Identity domains	A/M
	Competitor Acumen	A

This chapter elaborated on the most important current strategies and theories of competitive dynamics with a basis in the AMC-framework or otherwise influenced by it. The next chapter will link the strategies and theories by making a connection between competitive dynamics in product markets and competitive dynamics in factor markets.

3. COMPETITIVE DYNAMICS IN PRODUCT MARKETS VS. FACTOR MARKETS

This chapter will bridge the gap between the AMC-framework reviewed in chapter two and the supply management strategies that will be explored in chapter four. By linking these two concepts, this thesis contributes to the literature on supply management strategies by proposing improvements to current strategies. The AMC-framework in its current form is mostly applied to competition in product markets. The focus of this chapter is to compare competitive dynamics in product markets with the competitive dynamics in factor markets. This is followed by an investigation of factor market rivalry. The final part of this chapter consists of current supply market strategies on which the AMC-framework will be applied in chapter four.

3.1 Product Markets vs. Factor Markets

3.1.1 Differences and similarities in characteristics

Traditional paradigms of competition tend to focus on an industry or product market view (Markman et al., 2009). This would mean that competition is normally limited to firms that operate in the same industry and in overlapping product markets, while producing the same or similar products and offering these to a similar group of customers. Although most of the observed competition between firms is indeed taking place in a common product market and with similar resources, evidence suggests that competition in factor markets exists under conditions of product market uncommonality (Markman et al., 2009).

To be able to compare both markets in terms of competitive dynamics, one has to look at the characteristics of either of the markets. In product markets, a clear symmetry can be seen among firms that are from a similar industry or from a strategic group competing in the same market. In factor markets, firms can compete without being in the same strategic group or even the same product industry. Both product market commonality and product market uncommonality can occur. This means that in factor markets, a firm can have unexpected competitors, like firms that use the same resources to create completely different

products. In comparison with product markets, even small actions can cause disproportionately large harm. In product market rivalry, small actions cause small harm and major actions cause major harm (Markman et al., 2009). These actions (and possible reactions) will always have effect on the same market space in product markets, but could go from one market space to another in factor markets. Rivalry in factor markets can be affected by competitive actions in product markets and vice versa.

In terms of competitive space, product market competition is located downstream of a firm's value chain, for example in customer-facing activities. In factor markets, competition can go either upstream or downstream, throughout the entire value chain of the firm (Porter, 1985). The focus of firms is also different in both markets: competition is based on 'access to customers', or selling the product, in product markets, versus acquiring resources (e.g., patents, technology or human resources) in factor markets.

3.1.2 Differences and similarities in strategies

On a business level, there are different strategies firms can employ to gain a competitive advantage over their competitors. Within a product market environment, firms use product related actions to gain this advantage. Price cuts, new product or service introduction, advertising campaigns, or product bundling (the combining of products into a bundle that is for sale as one product (Crawford & Cullen, 2007)) can be used to gain that competitive advantage. These strategies will not work on the factor market, for the simple reason that a firm does not offer any products on that market. In factor markets, firms have several other strategies or methods they can use to gain an advantage over their competitors. Radical innovation in internal processes tends to give new entrants a competitive advantage over incumbents in a market (Hill & Rothaermel, 2003). Poaching key personnel from other firms is another strategy used to gain an advantage over your competitors. If this does not strengthen the firm's own capabilities, it at least weakens that of the competitor. Disrupting the supply chain of a competitor, by being able to subvert, hold up, spoil, or destroy vital resources, can have disproportionately large negative effects on their profitability and ability to compete effectively in the product market (Hendricks & Singhal, 2005). Other strategies to impede competitors are purchasing real estate parcels or litigation over patents.

On the corporate level, strategies in product markets are quite similar to strategies in factor markets. Firms can engage in joint ventures, merger and acquisition and alliances with other firms. In the product market, a firm could choose for forward integration. Forward integration is a kind of vertical integration happening when a production firm decides to sell its products directly to the customers instead of through retail stores. Backward integration happens in factor markets, where firms can acquire their suppliers if this results in cost savings or improves efficiency. Market entry or exit is another strategy firms can use in both the product market and the factor market (Markman et al., 2009).

In conclusion, the focus of product markets in comparison with factor markets is particularly aimed at competition in product-related areas, like distribution, marketing and sales, while the factor market aims on competition for the means to create these products.

3.2 Factor Market Rivalry

Factor market rivalry (FMR) is defined by Markman et al. (2009, p. 423) as "rivalry over resource positions ... (that) can flare up at any level or link within a firm's value chain...". FMR theory has three general rivalry scenarios. The first type is when two firms use the same resources to create products for the same product markets (e.g. Ford and General Motors use many of the

same suppliers to produce cars that compete against each other on the product market). Most of these firms are aware of their competitors and that they are competing in both product markets and factor markets. This often leads to mutual forbearance between firms (Ellram, Tate, & Feitzinger, 2013).

The second rivalry scenario unfolds when two firms may use similar inputs and operate in similar industries, but are not competing because their product markets do not (significantly) overlap. This could lead to competition between the two firms when one of them expands and changes its products (Ellram et al., 2013). For example, Ferrari and Audi both manufacture cars but are in vastly different segments of the car industry. Ferrari produces supercars that are really expensive while Audi produces luxury cars for families and business. This changed when Audi introduced the R8, their supercar, and suddenly Audi was a competitor to Ferrari as they now make a car that fits into Ferrari's segment. These two types of competition between firms are the most researched as they are cases in which firms should be aware of each other as potential product market competitors.

The third and final type of rivalry is between firms that use similar resources but don't compete on any product market or create similar products. An example of this is Amazon.com hiring key logistics personnel from Wal-Mart. Both active in different product-markets (online book store versus international megastore retailer), but both using, in this case, the same personnel. The last example is an example of rivalry under conditions of resource similarity and product market uncommonality. Actions in factor markets by competitors outside the common product market are often overlooked (Ellram et al., 2013).

Factor markets organize the purchase and sale of factors of production. These are inputs like capital, land, labor or raw materials. This last category is being traded on a supply market.

3.3 Supply Market Strategies

Before applying the AMC-framework to competitive dynamics in the supply market, these competitive dynamics are concretized by examining current supply market strategies. These supply market strategies are part of strategic supply management, a discipline "concerned with the management of external resources—goods, services, capabilities, and knowledge—that are necessary for running, maintaining, and managing the primary and support processes of a firm at the most favorable conditions" (Van Weele & Van Raaij, 2014, p. 57). Strategies are best measurable by looking at competitive actions resulting from a certain strategy. Competitive actions can best be described as "an externally directed, specific, and observable competitive move initiated by a firm to enhance its relative position in a supply market" (Pulles et al., 2014, p. 6).

There are a number of examples of potential strategies and/or competitive actions that affect a firm's position in the supply market. For example, a *preferred customer strategy* shows that firms are now competing with their competitors to become more attractive to their suppliers. They do this to obtain the best possible resources from their sellers (Schiele, Calvi, & Gibbert, 2012). This is quite an unconventional theory, because the classic marketing approach focused on the inversed relationship, that suppliers were competing to be the best alternative for potential buyers. Preferred customer status would be counterintuitive for the product market but it makes sense when looking at the supply market. Firms benefit from being a preferred customer through a "supplier ... providing privileged resource allocation to this preferred customer" (Schiele et al., 2012, p. 1181).

Another 'strategy' for obtaining a competitive advantage as a buyer is the so-called *supplier development* (SD). "Supplier development is a kind of cooperation between a buyer and a supplier to seek continuous improvement in supplier

performance and, at the same time, strengthen the buyer's competitive advantage" (Li, Humphreys, Yeung, & Cheng, 2012, p. 353). By increasing supplier performance goals, providing the supplier with training and equipment, exchanging personnel, and evaluating supplier performance, buying firms improve performance of their suppliers as well as the buyer-supplier relationship and studies have shown that this also improves the buyer's own competitive advantage (Humphreys, Li, & Chan, 2004; Krause, Scannell, & Calantone, 2000; Lettice, Wyatt, & Evans, 2010; Wen-li, Humphreys, Chan, & Kumaraswamy, 2003). Li et al. (2012) discovered seven influencing factors important to a successful supplier development program: *Top management support* (purchasing management needs encouragement and support from the top to expend resources on SD), *long-term commitment* (suppliers need to see buying firms as partners in SD), *strategic goals* (clear long-term goals improve effectiveness of SD), *effective communication* (open channels of communication increase understanding between the two parties), *supplier evaluation* (evaluation can provide insight in weaknesses that need improving), *supplier strategic objectives* (a close strategic match between the buyer and the supplier improve chances of success) and *trust* (trust between both parties diminishes risk and uncertainty).

Markman et al. (2009) discovered two related processes that facilitate *resource discontinuity*: 'resource leapfrogging' and 'resource captivity'. Resource discontinuity necessitates either substitution of resources or mounts a barrier to obtain resources. These two strategies can be used to block competitors from using resources vital to their production process. Resource leapfrogging requires a disruptive innovation rendering all current technologies obsolete and can topple market leaders. An example of a successful disruptive innovation is the change from chemical photofinishing to digital imaging in photography (Markman et al., 2009). By leapfrogging their competitors resource base, firms can render older resource endowments and operations uncompetitive, thus creating a relative advantage for the focal firm.

Resource captivity focuses on making resources partially or completely inoperable or inaccessible to competitors. Being able to destroy or spoil resources vital to the competitor's operations, can ultimately undermine their competitiveness. Even minimal disruptions in resource flow can generate enormous problems to running operations. This happens because firms combine several different factors of input in sequential and well-synchronized procedures. If one of these inputs fails or is unavailable, the entire process will fail. Resource captivity can also include the acquiring of those resources for the firm's own use. In that case it is a win-win situation as the competitor is weakened and the focal firm itself is strengthened. A good example of successful resource captivity is in the case between Microsoft and Borland. Microsoft hired thirty-four of Borland's key personnel. This resource captivity removed productive capacity from Borland and increased the gap between the two firms because Microsoft could redeploy the personnel hired from Borland.

These strategies and competitive actions are all opportunities for firms to increase their relative competitive advantage over competitors that are active in the same supply markets (and possibly the same product markets). The question that will be answered in the next chapter is: How can the application of the AMC-framework aid firms in improving their strategy in comparison with their competitors? The answers to this adapted version of the research question are formulated in propositions that propose improvements or adaptations to the current strategies and actions.

4. APPLYING THE AMC-FRAMEWORK TO COMPETITIVE DYNAMICS IN SUPPLY MARKETS

The application of the AMC-framework on the competitive dynamics in supply markets is done separately for all theories treated in chapter 3.3. After the step-by-step treatment, the importance of the separate parts of the AMC-framework on these theories are examined. The supply market strategies and competitive actions are first compared to their product market counterparts examined throughout chapter two. The theories and strategies with the most similarities and most similar characteristics to the supply market strategy are covered. What follows are propositions about improvements to the supply market strategy. These propositions aim to aid firms, and managers in particular, to more successfully make use of these supply market strategies. In the end, gaining and sustaining a competitive advantage over competitors is the target.

4.1 Supply market strategies

4.1.1 Preferred customer strategy

The strategic characteristics of a *preferred customer strategy* are in essence based on the attractiveness of the buying firm to the supplier. To be able to compete with other firms trying to become a preferred customer as well, the focal firm will need to be seen by the supplier as a reliable customer (Schiele et al., 2012) and will need to present an advantage to the supplier that other competitors do not have. By making the supplier aware of the firm's own needs and demands, the buyer can make a basis for a personalized relationship.

Proposition 1a: To gain a preferred customer status easier, buying firms should make suppliers (1) more aware of their positive relationship with them and (2) make suppliers more aware of the buyer's needs.

The first part seems obvious, but is essential to becoming a preferred customer. Schiele et al. (2012) argue that a positive expectation by the supplier is possible when the supplier is aware of the existence of the buyer and has knowledge of the buyer's needs. Supplier satisfaction is determined by the suppliers' expectations in comparison with the actual value that is obtained through the relationship with the buyer (Wilson, 1995). When the supplier is aware of the needs of the customer, an exchange relationship can be created. As long as the supplier realizes the customer can offer them an advantage as well, there is an opportunity to get a preferred customer status.

Proposition 1b: To gain a preferred customer status, buying firms should (1) motivate suppliers to engage in a preferred customer relationship and (2) should anticipate on the capabilities of the supplier.

Motivating the supplier to engage in a preferred customer relationship can for example be done by showing good results. By being able to anticipate on the capabilities the supplier has, a buyer could tailor their image to match the suppliers' desires, and thus seduce the supplier in engaging in a preferred customer relationship. Capability is in this case not used in the traditional sense as a measure of response to an attack, but as a means of tempting the supplier. It allows the buyer to assess the suppliers' capabilities and adjust their own demands to match these capabilities.

If the supplier is seen as a competitor, a competitor analysis would show its capability to respond to potential attacks from other firms. By treating the supplier not as a competitor but as a partner in such an analysis, one could predict the suppliers'

capabilities when making them an offer of partnership. This theory holds links with the stimulus-response model in a way that both predict a response by a second party based on characteristics of the first action. In this case, the supplier will only engage in a preferred customer relationship if the buyer meets the requirements of the supplier.

4.1.2 Supplier development

As seen in chapter 3.3, there are seven key influencing factors important to a successful supplier development program. Although this is not necessarily a strategy which involves competing with other firms, and as such does not necessarily have competitive actions and reactions, SD does include interaction with others. Through this interaction, AMC influences the behavior of both parties. For example, one of the influencing factors is *top management support*. According to Li et al. (2012), top management support is strongly related to the other influencing factors. The top management must recognize the possibility to create an SD program when this will lead to a competitive advantage. Therefore:

Proposition 2a: Higher awareness in top management raises possibilities of creating supplier development programs.

Recognition is all about being aware of the surroundings of the firm, including suppliers. This means buyers can motivate their suppliers in an earlier stage to do an SD program, so both parties start gaining advantages at an earlier stage.

To get a selected supplier motivated to engage in an SD relationship, the buying firm should show a strong long-term commitment. Without the buyer's commitment, the supplier might not be willing to change their operations in order to induce improvements. A strong long-term commitment increases chances of a successful SD program, thus increasing a firm's competitive advantage.

Proposition 2b: Showing a stronger long-term commitment to a supplier increases the supplier's motivation to get into a supplier development relationship with the buyer.

By presenting commitment, the buyer can motivate the supplier to engage in a partnership. A strong long-term commitment gives suppliers a confirmation of the buyer's goodwill. Regularly evaluating the supplier and the relationship can provide crucial information on weaknesses and possible improvements. This information can then be used to improve the relationship or the supplier's qualities. When clear and concise problems or opportunities are being addressed, firms are more motivated than when vague and difficult problems or opportunities are addressed.

Proposition 2c: Regular supplier evaluation improves the awareness of possible problems or possibilities and raises the motivation to act.

Motivation increases when the problems and possibilities are more obvious and accessible. Also, when supplier evaluations are done regularly and often, problems do not stack up but can be addressed immediately. Nothing demotivates more than a pile of problems that need to be solved.

4.1.3 Resource leapfrogging

There are two sides to this strategy, either from the viewpoint of the incumbent, or from the viewpoint of the market-entrant. In the first case, the incumbent can be overturned (or leapfrogged) by new entrants to the market, if this entrant develops a technology or new business model to render current resource endowments and operations obsolete. To counter this possible

scenario, or at least minimize damages, firms need to be aware of any new technologies developed in the market. Awareness of evolutions and developments by competitors (or partners) is crucial for recognizing threats. Leapfrogging can also occur when an incumbent knows about the technology but is just too late to implement it, or to counter it.

Proposition 3a: As incumbent in a market, increasing awareness will decrease chances of being leapfrogged by competitors.

On the other hand, the opposite is true for new players on the market.

Proposition 3b: As market-entrant, keeping visibility as low as possible will increase chances of a successful attempt to leapfrog the incumbent(s).

Low visibility gives market-entrants the chance to create and perfect their technology or business model while not being noticed by competitors. This corresponds to the expectancy-valence theory by Chen and Miller (1994) described in chapter 2.1, where it is said that higher visibility increases the chances of a response. This also means that chances of a response are lower when visibility is low. When visibility is kept low, competitors are less likely to be aware of your actions or plans and when executing these plans, the new firm can catch the incumbent by surprise, decreasing the chance of a response and thus increasing the chance of success.

4.1.4 Resource captivity

Markman et al. (2009) already state in their paper that firms that are aware of and motivated to capture competitors' resources will gain the competitive advantage. This means that by being aware and motivated to capture resources, firms can better their own position.

Proposition 4: Successful resource captivity diminishes the capability of the attacked competitor to respond.

A successful attack on a competitor's resources can disable that competitor when trying to retaliate. Game theory in chapter 2.2 showed that the more effort and money is put into a certain attack, the irreversibility for the attacking firm increases and might decrease the chance of a response by the defending firm. Putting in more effort and money would logically also increase the success of the attack. In this case, this is strengthened by the fact that the defending firm lost some of its capabilities due to the resource capturing of the attacking firm. Both factors attribute to the possibility of nonresponse, thus both an advantage over the competitor who just lost vital resources and less chance of a retaliation by this competitor.

4.2 Awareness

The general influence of the awareness-factor of the AMC-framework is high. Awareness in a firm is the basis for competitive interaction or interaction with (possible) partners. Either way, being aware of threats or opportunities is what can make a firm successful in both product and factor markets. Traditionally, the AMC-framework is used as a predictor for competitor's responses to a competitive action initiated by the focal firm. However, the previous part of this chapter shows that the factors of the AMC-framework are applicable to interaction between partners as well. This broadens the use of the framework. Awareness is relevant in all actions taken by a firm and leads to, for example, better communication between partnering firms or earlier recognition when dealing with attacks from a competitor. When looking at the preferred customer

strategy, raising awareness in the supplying firm is essential to the buying firm, for both the opportunity to gain a preferred customer status as well as wanting to satisfy their own needs. In a supplier development program, awareness can raise possibilities of initiating SD programs. When the top management of a firm is not aware of the chances for an SD relationship, there will not be an SD relationship. With the resource leapfrogging strategy, awareness works two ways, raising awareness as a defending firm decreases chances of being leapfrogged by competitors, while lowering visibility grants market-entrants a higher chance of success.

4.3 Motivation

Motivation in competitive dynamics literature has thus far been associated with the motivation to retaliate when being attacked by a competitor. In 4.1.2., motivation is being proposed as a factor within a supplier development relationship. When clear and concise actions are available, motivation to act is higher than when this is not the case. Supplier evaluation is contributing to the motivation-factor in a sense that clear problems or opportunities make it easier for both firms to start working on them. Also, a strong long-term commitment presented to a supplier will motivate that supplier into engaging in an SD relationship with the committed buyer. To gain a preferred customer status with a supplier, it is important for a firm to motivate the supplier in engaging in a preferred relationship. It is often not enough to just make them aware of the fact that the buyer is striving for a preferred customer status. This shows that motivation is important not only in a competitive relationship, but also in a partnering relationship. Both parties need to be motivated and stay motivated to create and sustain a successful partnership. Motivation is influenced by a perceived expected value of the action or reaction that is required at that moment, as stated in chapter 2.5 with the expectancy-valence theory. This goes for both retaliating against an attack as well as responding to an 'invitation' to cooperate. If a firm is attacked in a certain market and they deem that market important enough to react to that attack, it means they are motivated enough to react. This works the same in any interaction between firms, as soon as there is a perceived value when responding, firms are motivated to respond.

4.4 Capability

Being capable to respond to an attack is the essential third stage in defending against actions from competitors. But, being capable is not only important when trying to respond to competitors. A firm's capabilities when engaging in interactions with potential partners are crucial for an efficient relationship. In a preferred customer strategy, knowing the supplier's capabilities can be essential for a buyer. Being able to anticipate to these capabilities can ease the process of becoming a preferred customer, because the supplier will feel earlier that the supplier is competent for such a relationship. By reducing the capability of a competitor to respond to an attack, resource captivity increases the relative advantage the focal firm has in comparison with the competitor.

The three factors of the AMC-framework all have their influence on these supply management strategies. The propositions posed try to improve the strategies by giving managers a guide to successfully executing that strategy. There are of course more factors that contribute to potential success, but these strategies give a nudge in the direction to success.

5. DISCUSSION AND CONCLUSION

5.1 Discussion

The propositions posed in the previous chapter show the influence awareness, motivation and/or capability can have on

supply management strategies. Linking the AMC principles with strategy in a way different than before shows that awareness, motivation and capability are important factors in interaction in general. Not only competitive responses, but in partnerships and supplier-buyer relationships as well. Improving awareness of possibilities with potential partner-firms or on supply markets improves the firm's competitive advantage. On the other hand, decreasing visibility lowers a competitor's awareness, granting the firm an advantage. Motivation is linked with expected rewards as shown in the expectancy-valence theory. These rewards are similar in firms being under attack and deciding to retaliate, and firms 'invited' to collaborate and deciding to respond. Both become motivated when there is a positive expected value. Lowering the capabilities of a competitor is a good way to gain a relative advantage over them. Resource captivity can grant that advantage. The AMC-framework is greatly based on (competitive) perception as elaborated in chapter 2.5. This gives a human touch to the factors that have influence on the supply management strategies implemented by firms.

5.1.1 Managerial Implications

For directors, managers, and other employees in a firm, the propositions stated above can aid their strategy-building process in such a way that they can better adapt to possible interactions with buying or supplying firms as well as with firms competing in the same supply market. The propositions rely on recognition by managers and they are therefore important when executing the strategies. As stated in chapter 2.5, human perception is the basis for recognizing of and responding to attacks from competitors. This is not different when responding to partners or other firms that are of interest to the focal firm. Managers are essential in recognizing the opportunities and threats on the supply market.

5.1.2 Future Research

This research lacks any empirical evidence on the validity of these propositions, so a future research possibility is an empirical study of the actions of firms that actually implemented any of these propositions into their supply management strategies. Such a test could either prove or disprove these propositions. Additionally, not all available supply management strategies have been examined in this study, so another option for future research is to address different supply management strategies and apply the AMC-framework on those strategies.

5.2 Conclusion

This thesis consists of three key parts: an extended introduction to the theme in the form of a literature review on the AMC-framework in current competitive dynamics, a comparison between competition in product markets and factor markets, and the application of the principles of the AMC-framework onto current supply market strategies. The first part gives insight in the AMC-framework as it is described by different authors and in different settings. The competitive dynamics literature offers an abundance of strategies partially or completely influenced by AMC-factors. Characteristics of these theories and strategies are of importance when comparing product market theories and strategies to factor market theories and strategies. This comparison is essential to be able to apply the AMC-framework from competitive dynamics in the product market to strategies used in the supply market. The second part of this thesis shows the similarities and differences between competitive dynamics in the product market versus those in the factor market. In preparation for the third stage of this research, a conceptual comparison between the two markets provides a background for the actual strategies treated in the third part. These four strategies are used in gaining either a direct competitive advantage over competitors (resource captivity and resource leapfrogging) or a

stronger position in the market by partnering with a supplier (preferred customer strategy and supplier development). The application of AMC-factors to these strategies is done by investigating essential strategic steps in the strategies and relating them to competitive dynamic perspectives already investigated in the earlier chapters. The eight propositions resulting from this give a clear idea of the influence of the separate AMC-factors. These propositions can aid firms in formulating a fitting strategy for their firm, for both a competitor-related strategy or a supplier-related strategy. Gaining a relative advantage over competitors in the same supply markets gives firms the opportunity to improve their operations and for example reduce costs in the firm's supply chain, because in the end, a successful firm is the goal.

6. REFERENCES

- Baum, Joel AC, & Korn, Helaine J. (1999). Dynamics of dyadic competitive interaction. *Strategic Management Journal*, 20(3), 251-278.
- Capron, Laurence, & Chatain, Olivier. (2008). Competitors' resource-oriented strategies: Acting on competitors' resources through interventions in factor markets and political markets. *Academy of Management Review*, 33(1), 97-121.
- Chen, Ming-Jer. (1996). Competitor Analysis and Interfirm Rivalry: Toward a Theoretical Integration. *The Academy of Management Review*, 21(1), 100-134.
- Chen, Ming-Jer, & Hambrick, Donald C. (1995). Speed, stealth, and selective attack: How small firms differ from large firms in competitive behavior. *Academy of Management Journal*, 38(2), 453-482.
- Chen, Ming-Jer, & MacMillan, Ian C. (1992). Nonresponse and delayed response to competitive moves: The roles of competitor dependence and action irreversibility. *Academy of Management Journal*, 35(3), 539-570.
- Chen, Ming-Jer, & Miller, Danny. (1994). Competitive attack, retaliation and performance: an expectancy-valence framework. *Strategic Management Journal*, 15(2), 85-102.
- Chen, Ming-Jer, & Miller, Danny. (2012). Competitive dynamics: Themes, trends, and a prospective research platform. *The Academy of Management Annals*, 6(1), 135-210.
- Chen, Ming-Jer, & Miller, Danny. (2014). Reconceptualizing competitive dynamics: A multidimensional framework. *Strategic Management Journal*.
- Chen, Ming-Jer, Smith, Ken G, & Grimm, Curtis M. (1992). Action characteristics as predictors of competitive responses. *Management Science*, 38(3), 439-455.
- Chen, Ming-Jer, Su, Kuo-Hsien, & Tsai, Wenpin. (2007). Competitive Tension: The Awareness-Motivation-Capability Perspective. *Academy of Management Journal*, 50(1), 101-118.
- Crawford, Gregory S., & Cullen, Joseph. (2007). Bundling, product choice, and efficiency: Should cable television networks be offered à la carte? *Information Economics and Policy*, 19(3-4), 379-404.
- Edwards, Corwin D. (1955). Conglomerate bigness as a source of power *Business concentration and price policy* (pp. 331-359): Princeton University Press.
- Ellram, Lisa M, Tate, Wendy L, & Feitzinger, Edward G. (2013). Factor-Market Rivalry and Competition for Supply Chain Resources. *Journal of Supply Chain Management*, 49(1), 29-46.

- Gimeno, Javier, & Woo, Carolyn Y. (1996). Hypercompetition in a multimarket environment: The role of strategic similarity and multimarket contact in competitive de-escalation. *Organization Science*, 7(3), 322-341.
- Hendricks, Kevin B, & Singhal, Vinod R. (2005). Association between supply chain glitches and operating performance. *Management science*, 51(5), 695-711.
- Hill, Charles WL, & Rothaermel, Frank T. (2003). The performance of incumbent firms in the face of radical technological innovation. *Academy of Management Review*, 28(2), 257-274.
- Humphreys, Paul K, Li, WL, & Chan, LY. (2004). The impact of supplier development on buyer-supplier performance. *Omega*, 32(2), 131-143.
- Krause, Daniel R, Scannell, Thomas V, & Calantone, Roger J. (2000). A structural analysis of the effectiveness of buying firms' strategies to improve supplier performance. *Decision Sciences*, 31(1), 33.
- Lettice, Fiona, Wyatt, Clare, & Evans, Stephen. (2010). Buyer-supplier partnerships during product design and development in the global automotive sector: Who invests, in what and when? *International Journal of Production Economics*, 127(2), 309-319.
- Li, Wenli, Humphreys, Paul K, Yeung, Andy CL, & Cheng, TCE. (2012). The impact of supplier development on buyer competitive advantage: A path analytic model. *International Journal of Production Economics*, 135(1), 353-366.
- Livengood, R Scott, & Reger, Rhonda K. (2010). That's our turf! Identity domains and competitive dynamics. *Academy of Management Review*, 35(1), 48-66.
- MacMillan, Ian, McCaffery, Mary Lynn, & Van Wijk, Gilles. (1985). Competitors' responses to easily imitated new products—Exploring commercial banking product introductions. *Strategic Management Journal*, 6(1), 75-86.
- Markman, Gideon D., Gianiodis, Peter T., & Buchholtz, Ann K. (2009). Factor-Market Rivalry. *Academy of Management Review*, 34(3), 423-441.
- Mintzberg, Henry. (1978). Patterns in strategy formation. *Management Science*, 24(9), 934-948.
- Porter, Michael E. (1985). Competitive advantage: creating and sustaining superior performance. *New York: Free Press*.
- Pulles, Niels J., Vos, Frederik G. S., & Veldman, Jasper. (2014). *Competitor oriented supply management strategies*. Paper presented at the 23rd Annual IPSERA Conference Proceedings, Pretoria, South Africa.
- Schiele, Holger, Calvi, Richard, & Gibbert, Michael. (2012). Customer attractiveness, supplier satisfaction and preferred customer status: Introduction, definitions and an overarching framework. *Industrial Marketing Management*, 41(8), 1178-1185.
- Smith, Ken G, Ferrier, Walter J, & Ndofor, Hermann. (2001). Competitive dynamics research: Critique and future directions. *Handbook of strategic management*, 315-361.
- Tsai, Wenpin, Su, Kuo-Hsien, & Chen, Ming-Jer. (2011). Seeing through the eyes of a rival: Competitor acumen based on rival-centric perceptions. *Academy of Management Journal*, 54(4), 761-778.
- Van Weele, Arjan J, & Van Raaij, Erik M. (2014). The future of purchasing and supply management research: About relevance and rigor. *Journal of Supply Chain Management*, 50(1), 56-72.
- Wen-li, Li, Humphreys, Paul, Chan, LY, & Kumaraswamy, Mohan. (2003). Predicting purchasing performance: the role of supplier development programs. *Journal of materials processing technology*, 138(1), 243-249.
- Wilson, David T. (1995). An integrated model of buyer-seller relationships. *Journal of the academy of marketing science*, 23(4), 335-345.
- Yu, Tieying, & Cannella, Albert A. (2007). Rivalry between multinational enterprises: An event history approach. *Academy of Management Journal*, 50(3), 665-686.