

# The AMC Framework – A strategic management Framework with great future research potential

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From 1994 on the Awareness-Motivation-Capability (AMC) Framework evolved from a social cognition model towards a strategic management Framework for identifying behavioral drivers of competitive dynamics. So far, the AMC Framework was empirically tested solely in a few general strategic management topics. Subsequently, credibility, reliability and validity of the AMC Framework are regarded as doubtful due to an early stage of research with few empirical researches available. The aim of this paper is to further evaluate and research the development of the AMC Framework from its origin to recent findings, state general empirical findings derived from strategic management literature and emphasize possible weaknesses of the Framework. Chen and Miller (2012) see a great potential in the AMC Framework to function as a multifaceted strategic management Framework linking topics of strategy and competition. Moreover and based on recent extensions, the AMC Framework shows great potential to be applied in certain decision points of supply chain management. Therefore, at the end of this paper, decision topics of strategic supply chain management will be linked with valuable insights of the AMC Framework and thus try to provide a supporting strategic management Framework for supply chain managers.

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## **Keywords**

AMC Framework, Supply Chain Management, Competitive Dynamics, Competitive Actions, Competitive Responses, Theory Evaluation.

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## **1. THE AMC FRAMEWORK: A MULTIFACETED FRAMEWORK WITH GREAT FUTURE POTENTIAL**

Today's markets are more and more dynamic and fast-changing. Furthermore, as competition increases due to globalization and more dynamic and fast-changing markets, "[...] the nature of the market has changed dramatically, with the basis of competition changing from availability, through price and quality to fashion and connectivity" (Ellram, Tate, & Feitzinger, 2013; Minderhoud & Fraser, 2005, p. 129). Increased dynamic competition and market volatility pressures companies to initiate fast competitive actions and responses in order to remain competitive within the market (Chen & MacMillan, 1992, p. 439; Ellram et al., 2013, p. 29). Competitive moves are supposed to yield to higher revenues, increased market share and expanding business which in turn positively affects a company's performance (Yannopoulos, 2011, p. 1). Subsequently, managers are encouraged to conduct a significant high number of competitive moves for defending and improving a company's competitive position in the market. Moreover, for positioning a company in a highly competitive environment it is of great importance to firstly identify and analyze competitors in the same industry based on their competitive behavior and capabilities (Chen, 1996, pp. 100-101). Therefore, competitor analysis and competitor identification are important methods for companies in order to remain competitive. The main focus of analysis hereby lays on the identification of most threatening competitors and the degree of competition a company has to face for defending the market position. In order to react to the volatility of the market and adapt to dynamic changes in competition, the Awareness-Motivation-Capability (AMC) Framework can be used as a supporting strategic management Framework for competitor analysis. The AMC Framework is supposed to identify behavioral drivers for competitive actions which in turn supports competitor analysis (Chen, Su, & Tsai, 2007, p. 104). Those identified behavioral drivers influence a firm's strategic decision to act on and respond to competitive moves of rivals. Furthermore, the AMC Framework induces companies to understand and comprehend why threatening competitors exercise specific competitive actions and responses (Livengood & Reger, 2010, p. 50). Hence, the AMC Framework seems to be a suitable supporting Framework for making strategic decisions in strategic management and for remaining competitive in a highly dynamic and fast-changing market.

Not only in strategic management, but also in other areas of management it is important to react to increased volatility of markets and competitive dynamics. As supply chain management is an important and valuable function within a company, it is of great importance to consider competitive dynamics on a buyer-supplier's level. Supply chain managers are supposed to conduct supplier analyses with the aid of the AMC Framework for identifying behavioral drivers of competitive moves of suppliers. Based on this it is of great importance to mention that so far strategic supply chain management literature hardly realizes that competitive moves in a dynamic market are of great importance for an effective supply chain management strategy. Conclusively, companies fail to integrate the AMC Framework and the concept of competitive dynamics while conceptualizing supply chain management strategies and making strategic decisions. Consequently, supply chain managers take the risk of making wrong strategic decisions while ignoring the AMC Framework in strategic supply chain management. Furthermore, no empirical findings of the AMC Framework in relation to

competitive dynamics can be found in strategic supply chain management literature so far. Contrarily, the literature stream on competitive actions and responses— competitive dynamics – in strategic management has become an active research field. Nevertheless, the AMC Framework still is an under researched topic in the field of a growing literature body of competitive dynamics. Therefore, the aim of this paper is to further evaluate and research the AMC Framework more in depth in order to support (supply chain) managers in their strategic decisions in today's volatile and highly competitive markets.

The paper will be organized as follows: In the paragraphs of section 2. the AMC Framework will be described based on strategic management literature. The research will start with a general description of the AMC Framework. Subsequently, the development from a social cognition model towards a strategic management Framework will be evaluated. Afterwards, underlying assumptions will be stated. For introducing the empirical part of the paper, main variables and hypotheses derived from strategic management literature relating to the AMC Framework will be discussed. Thereafter, empirical findings of the AMC Framework from strategic management show that the AMC Framework has the great ability to link topics in competition and strategy (Chen & Miller, 2012, p. 157). In the last paragraph (section 3.) of the research the AMC Framework is connected to decision topics in supply chain management for emphasizing the great future research potential of the AMC Framework as a multifaceted strategic management Framework and to highlight its ability of linking topics in competition and strategy. Afterwards, the discussion and conclusion paragraph recaps the most important statements in form of a discussion. Conclusively, the limitation and future research section emphasizes indications for limitations and highlights again the great future research potential of the Framework.

## **2. COMPETITIVE MOVES DETERMINED BASED ON THE AMC FRAMEWORK**

The AMC Framework identifies the cognitive aspects and behavioral drivers of competition (Livengood & Reger, 2010, p. 50). Moreover, the Framework "[...] has been championed to explain the antecedents to competitor actions and reactions" (Livengood & Reger, 2010, p. 49). As Chen and Miller (2015) stated "[t]he AMC perspective is central to our understanding of the sources and consequences of both competitive actions and a wide range of other types of firm actions[...]" (Chen & Miller, 2015, pp. 759-760). The three variables awareness, motivation and capability (AMC) are supposed to identify behavioral drivers for competitive actions just as they influence a firm's strategic decision to act and respond to competitive actions of rivals (Chen et al., 2007, p. 104). Chen, Smith and Grimm (1992) defined a competitive action "[...] as a specific and detectable competitive move, such as a new product introduction, initiated by a firm to improve or defend its relative competitive position" (Chen, Smith, & Grimm, 1992, p. 440). Regularly, companies undertake offensive and defensive competitive actions in order to remain competitive within the market (Chen et al., 1992, p. 439). Offensive competitive actions most certainly provoke responses from market participants (Chen et al., 1992, p. 439). The response of a company to competitive actions of rivals is supposed to be a certain and datable counteraction which is initiated in order to "[...] defend or improve its share or profit position in its industry" (Chen & Miller, 2012, p. 142).

Livengood and Reger (2010) evaluated that competitive actions and responses are determined based on three conditions, “[t]he extent of awareness, the level of motivation, and, finally, the capability to respond” (Livengood & Reger, 2010, p. 49). Awareness represents a company’s perception of its rivals and its competitive environment; motivation refers to a firm’s encouragement to react and respond to competitive actions of specific rivals; and capability depends on a company’s resources and decision making endowments in order to successfully compete with rivals (Chen et al., 2007, p. 102). In general, Chen (1996) stated that “[a]wareness and motivation are conditioned mainly by market relationship, and capability depends largely on strategic or resource endowments” (Chen, 1996, p. 105). It is of great importance for companies to analyze and understand the behavioral antecedents to competitive actions and managerial decision making of competitors in order to incorporate efficient competitive responses in their strategy against competitor attacks (Livengood & Reger, 2010, p. 48). Moreover, the AMC Framework induces companies to understand and comprehend why rivals exercise specific competitive actions and responses (Livengood & Reger, 2010, p. 50). Summarizing, the AMC Framework identifies behavioral drivers of competitive actions, gives input for the conceptualization of organizational strategy and helps to position a company within the market. Furthermore, the AMC Framework supports the company while analyzing and predicting possible competitor responses. Chen and Miller (2012) described the AMC Framework as an ‘action- and competitor-specific’ strategic decision Framework which varies according “[...] the action of interest and the competitor under consideration” (Chen & Miller, 2012, p. 139).

After the introduction of the AMC Framework, the next paragraph discusses the origin of the AMC Framework and evaluates the roots from which the AMC Framework was derived in order to give a better understanding of the context and thus background information for the later provided application in decision topics of supply chain management.

## **2.1 The AMC Framework’s development from social cognition model towards a management Framework**

Literature agrees upon the fact that the AMC Framework originates from social cognition (Chen & Miller, 1994; Chen et al., 1992; Livengood & Reger, 2010). Over the years the AMC Framework refined to a strategic management Framework and a lens for identifying behavioral drivers for competitive actions, competitive tension and rivalry in the economic area (Chen, 1996, p. 113; Chen & Miller, 2015, p. 759; Chen et al., 1992, pp. 442-443; Chen et al., 2007; Livengood & Reger, 2010, p. 49). In 2012, Chen et al. retrospectively examined the AMC Framework based on several past theoretical and empirical studies in order to identify economic components on which the AMC Framework was built on. Those economic components include the ‘dyadic examination of dynamic competition’, the ‘investigation of interfirm rivalry in human resources’ as well as the ‘study of asymmetrical rivalry between strategic groups’ (Chen & Miller, 2012, p. 151). Moreover, related contributions to economic components of the AMC Framework come from the studies of the ‘verification of competitive asymmetry based on consumer survey data’, the ‘study of market and resource antecedents of rivalry among MNEs’, the ‘exploration of the psychology of rivalry’ and the ‘examination of the impact of competitor analysis on engagement between rivals with essential positions in a multimarket context’ (Chen & Miller, 2012, p. 151). According to the examination of components of the AMC Framework, the main economic component of the

AMC Framework originates from studies of competitive dynamics and rivalry (Chen & Miller, 2012, p. 151). Furthermore, Chen et al. (2012) claimed that the general competitive dynamics research in strategic management as a crucial economic component for the AMC Framework started in 1985 with the work of MacMillan, McCaffery & Van Wijk (1985) and continued with the research of Bettis & Weeks (1987) (Chen & Miller, 2012, p. 138). Significantly later “[...] scholars in other fields adopt the term to refer to this line of research” (Chen & Miller, 2012, p. 138). As seen, the origin of the economic component of the AMC Framework is identified, whereas the deduction of the social cognition component seems to be in disagreement among researchers. Therefore, divergent views occur among literature when it comes to the original social cognition component on which the AMC Framework is based on. Subsequently, the following paragraph evaluates the general development of the AMC Framework over the years from its social cognition origin in combination with the economic component.

In 1992 Chen et al. derived the social cognition origin of the AMC Framework from the stimulus-response model (Chen et al., 1992, pp. 442-443). The stimulus-response model originated from social cognition scholars and was first defined in 1925 by Kohler (Cameron, McEwan, & Temple, 2015, p. 28). Moreover, Chen et al. (1992) claimed that “[t]hese elements of the stimulus-response model—awareness, motivation, and capability—provide a theoretical underpinning for studying the relationships between characteristics of actions and response” (Chen et al., 1992, pp. 442-443). Therefore, the stimulus-response model is a useful model for linking competitive actions and responses to a coherent picture in order to understand why competitors exercise specific competitive actions and responses (Chen et al., 1992, pp. 442-443). In order to be able to efficiently respond to competitive moves, companies firstly need to be aware of the stimulus which triggers the action. Conclusively, awareness is a requisite for identifying the stimulus of competitive moves. Once companies are aware of the stimulus and motivated enough to react to it, they need to analyze whether they are capable of responding to competitive actions based on their resource and capability endowments. According to Chen et al. (1992), the stimulus-response model was the first plausible social cognition component for comprehending the relationship between competitive actions and responses (Chen et al., 1992, p. 443). In 1994, Chen and Miller (1994) continued the research on the AMC Framework. To date “[...] the interplay between the actions of a strategist, the responses they provoke and the ultimate performance implications of this interaction have barely begun to be explored empirically” (Chen & Miller, 1994, p. 85). The work by Chen and Miller (1994) is the forerunner of the AMC Framework and the very first research which combined the perceptions of competitive dynamics in relation to cognitive scholars for the AMC Framework (Chen & Miller, 2012, p. 153). Additionally, Chen et al. (1994) believed that the implemented perceptions of competitive dynamics explain the competitive behavior of companies (Chen & Miller, 1994, p. 86). In order to include the perceptions of competitive dynamics in relation to cognitive scholars, Chen et al. (1994) made use of the expectancy-valence motivational Framework (Chen & Miller, 1994, p. 85). The expectancy-valence Framework is used to understand individuals and their behavior in specific situations (Chen & Miller, 1994, p. 86). Furthermore, it is a Framework which is based on managerial perceptions (Chen & Miller, 2012, p. 153). With the combination of the expectancy-valence Framework and competitive dynamics, Chen et al. (1994) tried to construct a model “[...] to predict the features of

a competitive attack that would minimize the chances of retaliation” (Chen & Miller, 2012, p. 153). The incentive to respond to competitive attacks depends on the reward or ‘valence’ for initiating countermoves. Chen et al. (2012) assigned the valence of the expectancy-valence Framework to the motivation (or ‘M’) variable of the AMC Framework (Chen & Miller, 2012, p. 153). Furthermore, expectancy was coupled with the capability endowment (or ‘C’) and the awareness component (or ‘A’) of the AMC Framework. Chen et al. (1994) assumed “[...] that 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. 153). Contrarily, in 2010 Livengood et al. claimed that the AMC perspective was originated from the salience model in social cognition and later on combined with literature of organizational change in a dynamic environment (Livengood & Reger, 2010, p. 49). Originally, the salience model was defined to understand an organizations strategy, in particular stakeholder interaction (Myllykangas, Kujala, & Lehtimäki, 2010, p. 65). By using the stakeholder salience model a company has the possibility to prioritize stakeholders, conceptualize a corporate social responsibility strategy and “[...] to measure and assess stakeholder influence[...].” on companies strategic decisions (Myllykangas et al., 2010, p. 66). Stakeholder influence and importance is measured based on three variables; power, legitimacy and urgency (Myllykangas et al., 2010, p. 65). The combination of the three variables allows the preparation of a classification of stakeholders including the importance for strategic management decision making (Aaltonen, Jaakko, & Tuomas, 2008, pp. 510-511). Power of the stakeholder is expressed through the possession of resources or capabilities crucial to be aware of for a company in order to remain competitive in the market (Desai, 2010, p. 267). Managers are supposed to be more aware of competitors with threatening resources and capabilities representing great power compared to resources and capabilities of competitors which do not directly constrain organizations (Desai, 2010, p. 267). Legitimacy conceptualizes the feasibility of competitive actions from a company in adherence to rules, norms and legislations. The variable decides whether the action is “[...] desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (Myllykangas et al., 2010, p. 66). Conclusively, legitimacy defines to which extent a competitive action or reaction is capable of being executed and still is regarded as socially acceptable and adheres to the law (Desai, 2010, p. 66). The last variable of the salience model is urgency. The variable classifies competitive actions according to the degree to which the action of a competitor would immediately attack and threaten a company’s key markets (Myllykangas et al., 2010, p. 66). The higher the threat of a company’s key markets the higher the motivation of a company to respond and to protect the competitive position (Desai, 2010, p. 66). Nevertheless, Livengood et al. (2010) argued that so far “[...] the theoretical underpinnings supporting the AMC perspective have not been well-articulated” (Livengood & Reger, 2010, p. 51). Conclusively, the theoretical underpinnings, especially for the origin of social cognition component of the AMC Framework, cannot be certainly stated.

Following the historical development of the AMC Framework, the subsequent paragraph will state assumptions and requirements about the AMC Framework made in strategic management literature in order to understand the context of application of the AMC Framework.

## 2.2 Underlying Assumptions of the AMC Framework

As analyzed earlier, Chen et al. (2012) examined past theoretical and empirical studies of economic components with perceptions of competitive dynamics in order to identify the economic origin of the AMC Framework (Chen & Miller, 2012, p. 153). The economic origin of the AMC Framework originates from studies of competitive dynamics and rivalry (Chen & Miller, 2012, p. 151). Subsequently, competitive dynamics is assumed to be a basic requirement for applying the AMC Framework. Competitive dynamics is the evaluation of rivalry among competitors “[...] based on specific competitive actions and reactions, their strategic and organizational contexts, and their drivers and consequences” (Chen & Miller, 2012, p. 137). Conclusively, one of the underlying assumptions of the AMC Framework in order to be feasible is the condition of a dynamic competition which in general consists of competitive actions and responses (Chen & Miller, 2012, p. 137). Moreover, competitive dynamics focuses on specific and measurable elements including “[...] actions and responses, speed and magnitude of reaction, and interaction among a few direct rivals” which can be detected from competition (Chen & Miller, 2015, p. 760). Competitive dynamics includes an action-based focus and behavioral orientation which assemble together with the organizational strategy a set of comprehensible decisions and actions against dynamic competition (Chen & Miller, 2012, p. 140). Irrefutably, competitive dynamics in general contains strategy formulation and implementation. Within a highly competitive market, firms are supposed to act on and respond to competitive actions of rivals in order to remain competitive. Competitive actions and responses are assumed to “[...] determine survival and long-term performance” of a company in a dynamic environment (Chen & Miller, 2012, p. 137). Furthermore, the underlying organizational forces are assumed to predict company’s behaviors and counteractions in the market (Chen & Miller, 2012, p. 138). For example, it is assumed that companies are more willingly to react or respond to competitive actions when awareness of the competitive moves exists and motivation and incentive to react to it are provided (Chen et al., 1992, pp. 443-444). The assumption is enhanced when the competitive actions directly impact a company’s key market (Chen et al., 1992, pp. 443-444). Additionally, Chen et al. (1992) expected that a company is encouraged to capture quicker and greater counteractions if the actions are classified as highly threatening and harming for key markets (Chen et al., 1992, p. 444). Furthermore, it can be assumed that the higher the competitive impact or threat for companies in key markets, the more aware and motivated companies are to counteract (Chen et al., 1992, p. 443). Summarizing, competitive actions and its reactions depend heavily on the degree of threat in key markets and the strategic importance for the affected company. Most interesting and contradictory is the assumption of Chen in 1996. Chen (1996) made up the “[a]ssumption that market relationships are constant and not dynamic” (Chen, 1996, p. 105). If indeed market relationships would be static and not dynamic, the purpose of the AMC Framework would be irrelevant. Also, all competitive actions and responses would have to be homogeneous. Nevertheless, in later research Chen (2015) acknowledged that dynamic competition cannot be denied and homogeneity of market relationships does not exist due to competitive forces and dynamics (Chen & Miller, 2015, p. 758). Therefore, Chen et al. (2012) disproved the statement of constant market relationships and redefined the assumption that market relationships are considered “[...] to be a dynamic market process rather than a static market condition” (Chen &

Miller, 2012, p. 137). Another assumption underlying the AMC Framework is “[...] that firms belonging to the same strategic (or competitive) group will face comparable degrees of competition and hence compete similarly” (Chen et al., 2007, p. 102). This implies the assumption that all competitive actions and responses within the same industry are expected to be similar or even homogenous. Here, the distinction lies in the perceptions of competitive tension among competitors. Competitive tension is described as the competitive pressure between a company and a specific competitor “[...] that is likely to result in the firm taking action against the rival” (Chen et al., 2007, p. 102). A company acknowledges different grades of competitive tension based on “[...] the extent to which the firm would consider a given competitor as a primary competitor, from each of its competitors [...]” due to variations in resources, strategy and capability endowments (Chen, 1996, p. 104). Supporting the previous assumption, Chen et al. (2007) also stated that the differences lie in the perceptions of managers of competitive tension (Chen et al., 2007, p. 104). This implies that perceptions and reactions to competitive tension in the market depend on individuals’ perceptions. The previous mentioned assumptions are supported by the presumption that competitive actions and responses will not affect equally competitors due to competitive asymmetry (Chen & Miller, 2012, p. 140). Therefore, it is very unlikely “[...] that two rivals will perceive every competitive action or relationship in the same way [...]” (Chen & Miller, 2012, p. 140). Besides being aware of competitive tension and differences in perceptions, strategists of companies need to be aware of underlying organizational forces. Those forces are expected to additionally describe and influence companies behavior or counteractions in the marketplace (Chen & Miller, 2012, p. 138). Therefore, the AMC Framework is not assumed to only analyze competitive movements in the marketplace but also to identify the initiator of those competitive movements like an organizations leader or a company’s human agency (Chen & Miller, 2012, p. 138). Most recently it is assumed that the AMC Framework can also be used as a cooperative perspective and not solely in a competitive perspective. According to Chen et al. (2015) “[...] an action may have the potential to be both competitive and cooperative [...]” based on the alliance to the partner in question and agreed partnership goals (Chen & Miller, 2015, p. 765). The shift of usage from a competitive perspective towards a cooperative perspective will be important for the application of the AMC Framework in topics of supply chain management later on in this paper.

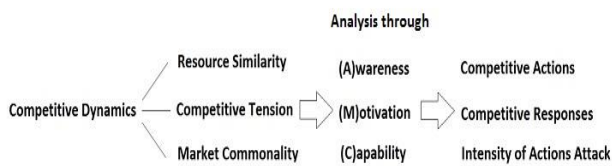
After discussing and evaluating the assumptions underlying the AMC Framework, the following paragraph will capture the previous stated assumptions in relation to hypotheses and main variables of the AMC Framework.

### **2.3 Main variables and hypotheses of the AMC Framework derived from general management topics**

As evaluated earlier, the most fundamental variable and requirement of the AMC Framework is competitive dynamics. Again, the concept of competitive dynamics describes competitive actions and reactions of companies participating in a competitive business environment within a particular industry (Chen & Miller, 2012, p. 137). Consequently, a precondition for applying the AMC Framework is the existence of competitive dynamics in the market. Without competitive dynamics the consequential main variables would not exist and could not be analyzed through the AMC Framework as shown in Figure 1.

The main variable competitive dynamics creates consequential main variables and hypotheses of the AMC Framework which are based on the market, resources and capabilities. Chen (1996) emphasized that “[a]wareness and motivation are conditioned mainly by market relationship, and capability depends largely on strategic or resource endowments” (Chen, 1996, p. 105). Subsequently, resource similarity, market commonality and competitive tension are created through competitive dynamics and will be analyzed through the AMC Framework. Based on the analysis of the main variables through AMC Framework, competitive responses can be created, intensity of actions attack will be evaluated and possible competitor actions can be estimated (see Figure 1). Furthermore, those main variables are supposed to influence the conceptualization of organizational strategy and strategic decisions in different ways. The first consequential main variable resource similarity is described as the extent to which a competitor owns strategic capabilities and resource endowments comparable to a company’s own resource and capability endowments (Chen, 1996, p. 107). Resource similarity is important in order to obtain competitive advantage because companies with similar resource and capability endowments “[...] are likely to have similar strategic capabilities as well as competitive vulnerability in the marketplace and market commonality [...]” (Chen, 1996, p. 107). Consequently, the analysis of resource similarity through the AMC Framework impacts the conceptualization of competitive actions and responses in a distinctive way. For example, companies with a high degree of resources similarity need to prioritize their resource allocation differently than their competitors for gaining a competitive advantage. The next consequential main variable of competitive dynamics concerning the AMC Framework is market commonality. Market commonality is conceptualized to be the stake that a competitor captures and shares with the company in the same market (Chen, 1996, p. 106). The competitors market commonality with the company is shaped by “[...] the strategic importance to the focal firm of the shared markets and by that competitor’s strength in these shared markets” (Chen, 1996, p. 106). Consequently, resource similarity and market commonality are important for strategic decisions. Moreover, Chen (1996) found that resource similarity and market commonality predict the number of competitive attacks and responses (Chen, 1996, p. 110). It is hypothesized that companies with similar resource and capability endowments are more likely to respond to a competitors attack than companies with different resources and capability endowments (Chen, 1996, pp. 114-115). Another main variable which is supposed to have an impact on strategic decisions and organizational strategy based on the AMC Framework is competitive tension. Again, competitive tension is defined as the pressure between a company and its competitors to which a company “[...] is likely to result in the firm taking action against the rival” (Chen et al., 2007, p. 102). Moreover, competitive tension results from the asymmetry of information based on differences on competitive perceptions and motivations from companies executive managers’ (Livengood & Reger, 2010, p. 51). Subsequently, competitive tension is the result of the asymmetric exploration and analysis based on perceptual and objective considerations of competitive dynamics. The last variable attack intensity, which will be influenced through the analysis of the AMC Framework like competitive actions and responses, is described as the extent to which a competitive action captures a competitor’s key markets (Chen et al., 1992, p. 448). Chen et al. (1992) assumed that “[...] the greater the extent of the markets affected, the stronger the attack” (Chen et al., 1992, p. 448). Furthermore, the stronger an attack of the

competitor on key markets of the company the greater the total amount of responses against the strong attack initiated by the competitor (Chen et al., 1992, p. 444).



**(Figure 1: Simplified overview of the main variables which are used in combination with the AMC Framework)**

The most recent variable which is analyzed with the AMC Framework but not displayed in Figure 1 is the cooperative perspective within companies' collaboration. The cooperative orientation of the AMC Framework helps a company to identify cooperative partners and not only threatening competitors (Chen & Miller, 2015, p. 772). Moreover, cooperative analyses and applications help to identify the best cooperative partners in order to reach the best possible company performance (Chen & Miller, 2015, p. 772).

All in all, the AMC Framework functions as a Framework for analyzing and understanding behavioral drivers of competitive dynamics and at the same time it empowers the development of competitive responses. Moreover, competitive dynamics creates subsequent main variables like competitive tension. Additionally, the created variables through competitive dynamics are supported by the strategic decision variables of resource similarity and market commonality in order to find the most suitable strategic decision for counteractions or for conceptualizing an organizational strategy. The AMC Framework will mainly be applied during the analysis of resource similarity, market commonality and competitive tension in order to develop competitive responses and to define the intensity of actions attack and to evaluate competitive actions.

After stating main variables and hypotheses derived from strategic management literature, the next paragraph is going to evaluate if the AMC Framework can be named as a theory in purchasing and supply chain management.

## 2.4 No Theory in Purchasing and Supply Chain Management

Strategic management literature does not explicitly describe the AMC Framework as a theory. Instead the AMC Framework is always described as a model, framework or a construct for analyzing behavioral drivers of competitive actions and predicting competitor responses (Chen & Miller, 2012; Chen et al., 2007; Livengood & Reger, 2010). Therefore, it is of great interest to test whether the AMC Framework is a theory in purchasing and supply chain management. According to Vos and Schiele (2014), a theory in the management area is supposed to describe "[...] reality from a scientific viewpoint, but also improve managerial practice by improving company performance and support the management profession as well as other stakeholders" (Vos & Schiele, 2014, p. 3).

For evaluating if the AMC Framework is a theory in purchasing and supply chain management, the research of Vos and Schiele (2014) will be used (compare Appendix A). Their research aims to close the gap for analyzing theories by "[...] the creation of a comprehensive list of characteristics to evaluate the validity and

level of development of theories" (Vos & Schiele, 2014, p. 2). The determining list of characteristics is separated into two categories. The first category 'theory construction' states the given components for the conceptual development, while the second category 'empirical construction' sets requirements and possibilities for testing the theory empirically (Vos & Schiele, 2014, p. 4). Once the elements of the categories are fulfilled, the AMC Framework is supposed to be a theory in purchasing and supply chain management. The category 'theory construction' includes five specific elements: *units*, *laws*, *boundaries*, *system states and why*, while the category 'empirical construction' contains the elements: *propositions*, *hypotheses*, *empirical indicators and empirical research* (Vos & Schiele, 2014, p. 5).

The *units of attention* in the AMC Framework are competitive dynamics which consists of competitive actions and counteractions (Chen & Miller, 2012, p. 153). Moreover, Vos et al. (2014) indicate that "[...] scientists should only include those units that can be clearly stated and are capable of being operationalized" (Vos & Schiele, 2014, p. 4). So far no empirical research about the AMC Framework within purchasing and supply chain management literature has been conducted. Hence, the units of attention for the AMC Framework are not clearly acknowledged in purchasing and supply chain management literature. The *laws* required in order to operate efficiently in strategic management is the fulfillment of the three conditions (AMC) on which competitive actions and responses are determined (Livengood & Reger, 2010, p. 49). The compliance to *laws* of the AMC Framework for being a theory in purchasing and supply chain management cannot be stated due to missing theoretical and empirical evidence in literature. *Boundaries* are set while answering the questions *who*, *when* and *where* (Vos & Schiele, 2014, p. 4). Applied to strategic management literature companies (*who*) apply the AMC Framework in threatened or attacked key markets (*when*) *where* competition is highly dynamic (Chen & MacMillan, 1992, p. 448; Chen & Miller, 2012, p. 153). Again, as the AMC Framework is not tested in purchasing and supply chain management literature yet, the *boundaries* characteristic is not fulfilled. The determining characteristic of a *system state* requires the implementation of *inclusiveness*, *determinant variables* and *consistency* (Vos & Schiele, 2014, p. 4). As *inclusiveness* is fulfilled with the compliance of the three conditions on which competitive dynamics are determined, *determinant variables* are not clear stated due to missing literature and empirical findings in the purchasing and supply chain management research area. Furthermore, *consistency* in research cannot be confirmed due to the fact that no research of the AMC Framework in the area of purchasing and supply chain management was conducted in previous years. Based on the fact that the determining characteristics for validating a theory in purchasing and supply chain management are not fulfilled, the AMC Framework is assumed not to be a theory in purchasing and supply chain management. Moreover, this also emphasizes the early stage of research of the AMC Framework and shows potential for future research in purchasing and supply chain management. The complete evaluation through the determining list of categories can be found within 'Appendix A'.

After analyzing that the AMC Framework is not a theory in purchasing and supply chain management yet, the next paragraph emphasizes the main statements about the AMC Framework from strategic management literature.

## 2.5 Main Statements of the AMC Framework found in Strategic Management Literature

The main statements of the AMC Framework found in strategic management literature say that the AMC Framework was conceptualized to explain and understand behavioral drivers for competitive actions and counteractions (Livengood & Reger, 2010, p. 49). Moreover, “[...] inter-firm behaviors in a competitive market have been theoretically and empirically studied from the AMC perspective” (Wan-Yu & Sheng-Tsung, 2010, p. 397). Not only is the identification of the likelihood of competitive attacks and counteractions underpinned by the AMC Framework, the variables in turn also seem to encourage the likelihood of competitive attacks and responses (Chen, 1996, p. 110). The AMC perspective further proposes the need to comprehend why specific competitive actions and counteractions are conducted on the basis of subjective perceptions and beliefs of managers (Livengood & Reger, 2010, p. 50). Companies are supposed to react solely to stimuli of which they are aware, motivated to work on and having the capability to react to (Livengood & Reger, 2010, p. 51). “[s]imply stated, a competitor will not be able to respond to an action unless it is aware of the action, motivated to react, and capable of responding” (Chen & Miller, 2015, p. 759). A company’s motivation will be supported by “[...] organizational incentives, industry crises and transformations, and cultural mores” (Chen & Miller, 2015, p. 766).

After identifying the most important statements of the AMC Framework from strategic management literature, the next section is going to discuss empirical findings based on strategic management literature related to the AMC Framework, strategic supply chain management and the way how the literature and the empirical findings were approached.

## 2.6 Empirical Findings of the AMC Framework

### 2.6.1 Method: Literature Review Approach

Based on the fact that literature about the AMC Framework in strategic management is relatively little available, this section aims to provide a review of empirical findings of the past and current state of strategic management research based on a systematic research process. The systematic research is conducted through specific selection criteria in order to obtain valid and reliable empirical findings and knowledge. The selecting criteria of articles are based on the relevance for the topic, the year of publishing and the variety or compliance of empirical results. Based on the fact, that while searching for the term AMC Framework not much literature can be found, related key words relevant for the literature research are used. Hence, relevance for the topic is highly important. Furthermore, the literature collection only contains articles which are not older than 1990. Consistency and less variety in empirical results are important in order to get a reliable and valid outcome of the literature research, also because relatively little research in strategic management is available. To obtain the necessary data and knowledge, Google Scholar and Scopus were used as search engines. Due to the fact that not many relevant articles were found when searching for the key word ‘Awareness-Motivation-Capability Framework’ (Google Scholar revealed 319 results and Scopus 4 revealed results), it is necessary to expand the key word research to a broader the research field. Therefore, the following key words with the search engine ‘Scopus’ were used in order to gain necessary data and knowledge for conducting this literature research paper; ‘Competitive Dynamics’, ‘Competitive Actions’, ‘Competitive

Tensions’ and ‘Rivalry’. The results gained from the search engine were sorted in relation to the above mentioned selecting criteria of articles for research. The general table of searching results in which the used key words are present can be found within ‘Appendix B’.

### 2.6.2 Empirical Findings of the AMC Framework in Strategic Management

As Chen et al. (1992) stated in the early 1990’s by then “[...] almost no attempt has been made to examine directly actual competitive interaction” (Chen & MacMillan, 1992, p. 540). The development of increasing literature in strategic management of the AMC Framework lasts from the early 1990’s till today (Chen, 1996; Chen & MacMillan, 1992; Chen & Miller, 1994; Chen et al., 1992). Since then, few researches, mainly in strategic management, were conducted in order to test the AMC Framework empirically (Chen, 1996; Chen & Miller, 1994, 2012; Chen et al., 1992; Livengood & Reger, 2010). The AMC Framework “[...] has emerged as the theoretical framework with perhaps the greatest potential to connect a wide range of topics in competition and strategy” (Chen & Miller, 2012, p. 157). The latest extension of the AMC Framework was made by Chen et al. (2012), concerning the relationship of competitive tension as an outcome of competitive asymmetry. Chen et al. (2012) evaluated with a literature research the development of the AMC Framework over the years and the extensions that have been made. The components of the AMC Framework are used in order to evaluate “[...] the levels of interfirm competitive tension that managers perceive” (Chen & Miller, 2012, p. 151). Competitive asymmetry, which triggers competitive tension, is expressed through differences in opinions and perceptions of a company’s manager on the industry and its competitors (Chen & Miller, 2012, p. 154). Due to competitive asymmetry “[...] a competitive action may not affect each of the A-M-C components equally for all given competitors” (Yang & Liu, 2010, p. 8). Also, Chen (2007) empirically tested and validated that different levels of perspectives including competitive tension, rivalry and competitive dynamics, have different impacts on the components of the AMC Framework (Chen et al., 2007, p. 104). Due to the fact that each of the components of the AMC Framework has a vital perceptual characteristic, the components of the AMC Framework have significant implications for competitive actions based on perceptions of managers (Chen & Miller, 2012, p. 153). This implies that the likelihood of competitive actions or responses is influenced by competitive tension. Hence, it is of great importance to analyze the roots of competitive tension and detect the asymmetric relationship between a company and its competitors (Yang & Liu, 2010, p. 8). Furthermore, the combination of competitive perceptions and competitive asymmetry helped the development of setting up a ‘rivalcentric perceptual approach’ (Chen & Miller, 2012, p. 152). Seeing the company through the eyes of a competitor is supposed to be “[...] a key requirement of competitive analysis” (Chen & Miller, 2012, p. 152). This extension gives companies a significant opportunity to analyze a competitor at an individual level (Chen & Miller, 2012, p. 152). Conclusively, the AMC Framework significantly helps “[...] linking micro- and macro-organizational research and studies in competition and cooperation” (Chen & Miller, 2012, p. 157). In 2010, Livengood et al. conducted a literature research based on the question how organizational identity influences the AMC Framework and subsequently defines competitive actions and reactions of a company. Organizational identity is defined as the common understanding among employees and managers of “[...] who and what we are as an organization and what do we want to achieve together” (Livengood & Reger, 2010, p. 47).

The general empirical finding is that organizational identity significantly influences competitive actions and counteractions through the AMC perspective (Livengood & Reger, 2010, p. 53). Organizational identity has proven to increase awareness within the competitive environment according to the principles of organizational identity. Everything which lies outside “[...] the formation, threat, and/or strengthening of the identity domain [...]” is not necessary to be aware of according to the literature research (Livengood & Reger, 2010, p. 50). Furthermore, motivation is significantly influenced by psychological and emotional characteristics of the organizational identity (Livengood & Reger, 2010, p. 50). Organizational identity increases the motivation of companies to act on and respond to competitive moves of competitors within the same identity domain (Livengood & Reger, 2010, p. 50). The association between organizational identity and “[...] strategic decisions via capital allocation and other corporate- and business-level actions increases the capability of the focal firm to be competitive in a particular domain while directing resources away from other, perhaps even more economically promising, arenas” (Livengood & Reger, 2010, p. 50). Furthermore, organizational identity determines the allocation of resource and capability endowments to a particular area which is more efficient for the company. For example, when companies feel that their organizational identity is at risk, they are more likely to compete in certain situations with the usage of their resource and capability endowments (Chen & Miller, 2012, p. 154). Another example can be an automotive manufacturer and its organizational identity of delivering the most safety-driven products in the automotive market. In order to deliver the most safety-driven products to their customers, the company will do its best while investing in highly safety-driven standards for their cars. The emphasis on organizational identity increases the awareness of the automobile manufacturers environment concerning the safety-driven aspect in order to defend or strength the organizational identity (Chen & Miller, 2012, p. 154). Customer loyalty and purchasing decisions of customers are supposed to be based on the safety-driven aspects provided by the car manufacturer. This in turn is proven to enhance the motivational component of the AMC Framework for securing the safety-driven organizational identity of the automobile manufacturer (Chen & Miller, 2012, p. 154). Management decisions concerning the organizational identity are expressed through the increased attention of resource allocation and capability decisions (Chen & Miller, 2012, p. 154). Summarizing, organizational identity has a significant impact on the AMC Framework and subsequently on the conceptualization of competitive actions and counteractions.

In 1996, Chen tested the variables resource similarity and market commonality aligned with the AMC Framework and how it affects competitive actions and counteractions. The research was conducted in form of a case study. Chen (1996) conducted a competitor’s analysis among airlines in order to evaluate how resources similarity and market commonality influence the conceptualization of competitive moves with the help of the AMC Framework. According to Chen (1996), the awareness of the resource and capability endowments of a competitor company compared to the resource and capability endowments of an attacked company to respond to it plays an important factor in the decision process of an attacked company (Chen, 1996, p. 114). An attacked company which is motivated to react to a competitive action needs to evaluate first its resources and capabilities endowments in order to evaluate if it is able to respond. The response is hypothesized to be conditioned by the comparison of resource similarity with the attack initiator and the chance of success with the attack (Chen,

1996, p. 114). Moreover, Chen (1996) assumed that “[...] sustained competitive advantage in the market is rooted in the firm’s internal resources and capabilities (Chen, 1996, p. 114). “[t]he organizational resources required for response have been found significant in the prediction of response [...]” (Chen, 1996, pp. 114-115). Furthermore, when the counteractions demand highly intensive “[...] resource commitment and major organizational restructuring, rivals are less likely to respond and will respond more slowly” (Chen, 1996, pp. 114-115). Hence, Chen (1996) evaluated that organizational conditions for counteractions are easily realizable for competitors with similar resource bases compared to the competitors with different resource and capability endowments (Chen, 1996, pp. 114-115). The likelihood of a competitive action and counteraction in combination with market commonality and resource similarity is relatively high to predict behavioral actions in competitive dynamics (Chen, 1996, p. 110). Chen et al. (2012) found out that the higher the share of market commonality with a competitor, the less motivated is the company for initiating a counteraction against a competitor (Chen & Miller, 2012, p. 150). The decrease in motivation for a counteraction is explained by the fear of a counterstrike by the competitor (Chen & Miller, 2012, p. 150). In general, Chen et al. (2012) found “[...] that there is a direct correspondence between the individual components of AMC and market commonality/resource similarity” (Chen & Miller, 2012, p. 151). Market commonality significantly influences the motivation component of the AMC Framework, whereas resource similarity affects the capability component of the AMC Framework (Chen & Miller, 2012, p. 151). Conclusively, Chen (2015) significantly emphasized the relationship between “[...] the individual components of AMC and market commonality/resource similarity” (Chen & Miller, 2012, p. 151). To conclude, a significant relationship between the individual components of the AMC Framework, market commonality and resource similarity exists. The last two empirical findings of the ACM Framework concern the intensity of actions attack and the effort to implement action requirements. Chen (1992) made use of ‘structured content analysis’ in order to understand when and why companies act on competitive actions (Chen et al., 1992, p. 446). The information Chen (1992) used was publicly available data. Thereby, he found that “[...] the stronger an actions attack on key markets of competitors, the greater the number of counteractions” (Chen et al., 1992, p. 450). Concerning the variable of effort in order to implement action requirements the following empirical findings were analyzed. First of all, the more a competitive actions requires to be implemented, the fewer are the number of responses to competitive actions due to resource intensive conditions (Chen et al., 1992, p. 450). Additionally, an action which needs more time to be executed directly results in a response lag for the counteraction side (Chen et al., 1992, p. 450). All in all, not many empirical findings of the AMC Framework can be found in strategic management literature due to the fact that relatively few literatures about the AMC Framework are available. Furthermore, all empirical findings are related to general management topics. Nevertheless, the AMC Framework still is situated in an early research stage which gives the inducement for further questions and future empirical research. An overview of the empirical results can be found within ‘Appendix C’.

After discussing the empirical results of the AMC Framework and related variables, the next paragraph enumerates empirical findings of the AMC Framework related to purchasing and supply chain management.



### 2.6.3 *No Empirical Findings of the AMC Framework Related to Purchasing & Supply Chain Management*

Currently there are no empirical findings of the AMC Framework related to purchasing and supply chain management due to its early stage of development in research (compare section 2.4). Nevertheless, Chen et al. (2015) recently emphasized that the AMC Framework can also be applied to the cooperative perspective. The combinations of competitive and cooperative perspectives of the AMC Framework give enough flexibility to link findings of supply chain management with the AMC Framework. In the following paragraph some examples, which can be tested in the future concerning purchasing and supply chain management research, will be applied. Additionally, the last section of this paper will discuss the application of the AMC Framework in decision topics of supply chain management in detail. The tendency to build up long term relationship with suppliers and the possession of multi firm networks give companies the opportunity for multiple strategic choices and partnering with “[...] specialist providers in an integrated supply chain [...]” (Miles & Snow, 2007, p. 460). Engaging in long term partnerships help companies to be aware of suppliers and identify weaknesses within their supplier portfolio. In this case the AMC Framework can function as an early warning system if performance of a supplier is about to get worse. Subsequently, the AMC Framework can help to develop a constant partnership with suppliers while detecting and analyzing weaknesses in effort, behavior and motivation leading to a reduction in efficiency of the partnership. The cooperative perspective puts emphasis on the competition shift from the ‘firm versus firm’ level to the ‘supply chain versus supply chain’ and the effective coordination of supply chains in order to be successful (Ketchen Jr & Hult, 2007, p. 573). How to make vital use of supply chains is most important in order to use them as a strategic weapon for gaining competitive advantage (Ketchen Jr & Hult, 2007, p. 573). The previous mentioned examples are a good start for future research of the AMC Framework in supply chain management.

After stating that the AMC Framework has limited empirical findings in strategic management and no empirical findings related to purchasing and supply, the next section is going to classify the AMC Framework into the Life-Cycle Approach of Theories.

### 2.6.4 *The AMC Framework and its early stage of development as a theory in Supply Chain Management*

As previously mentioned, the AMC Framework has a few empirical findings in strategic management and no empirical findings in supply chain management. Furthermore, in the field of purchasing and supply chain management, the AMC Framework is not validated to be a theory yet (compare section 2.4). Therefore, the following section emphasizes the early stage of theory development of the AMC Framework and its necessity of future research.

The Life-Cycle Approach of Theories is conceptualized “[...] on basis of their determining characteristics and virtues, but also on basis of their stage in a theory life-cycle model” (Vos & Schiele, 2014, p. 8). The aim of the Life-Cycle-Approach is to classify in which stage of development the theory is situated in due to the fact that for years of existence theories get further developed and tested on basis of new insights and knowledge in order to refine theories assumptions (Vos & Schiele, 2014, pp. 8-9). The first stage ‘Theoretical and Empirical Construction’ of the Life-Cycle Approach requires theories to fulfill the

determining characteristics of a theory evaluated in section 2.4. As seen, the AMC Framework does not meet the determining characteristics for being a theory in purchasing and supply chain management yet. Conclusively, this indicates that the AMC Framework is in an early stage of theory development and research. Moreover, the early stage of research and development indicate a pressing need for further research of the AMC Framework. Subsequently, great potential for future research of the AMC Framework is provided, especially in the field of supply chain management which will be discussed in the last section of this paper.

After emphasizing the early stage of theory development and its great potential for future research, the next section will state the critics of the AMC Framework found in strategic management literature.

## 2.7 **Critical Assessment of the AMC Framework**

The following section of the critical assessment highlights critiques of the AMC Framework partially cited from strategic management literature and partially concluded from strategic management literature in order to make managers aware of possible mistakes during the application of the AMC Framework in the decision process due to its early stage of development. The most apparent critiques of the Framework are: (1) differences in perceptions of managers, (2) inequality of impact on the components of the AMC Framework, (3) differences in perceptions of the AMC Framework due to differences in geographical aspects, norms and values of individuals and (4) difficulties to measure the variables due to inconsistency in perceptions.

(1) The AMC Framework is limited to three conditions; awareness, motivation and capability (Livengood & Reger, 2010, p. 49). The limitation to three conditions of the AMC Framework is in conflict with the dynamic environment the AMC Framework is situated in (Chen & Miller, 2012, p. 137). Hence, the perceptions of the components of the AMC need to be more flexible and adaptive to go beyond the comprehension of the three stated variables. The critic of limitation gets supported by the fact that “[...] competitive asymmetries will exist between different pairs of rivals: perceptions, motivations, and capabilities are apt to vary considerably between the parties” (Chen & Miller, 2012, p. 153). This means, that managers cannot expect to coherently understand why competitors initiated certain competitive actions and the background of competitive actions while being limited to three variables. It is necessary to broaden the context of competitive actions and to ask questions which go beyond the three limited conditions of awareness, motivation and capability. In addition, Chen (1996) also revised the assumption that market relationships are constant (Chen, 1996, p. 105). (2) Moreover, Chen and Miller (2007) empirically tested that the AMC Framework gets limited through the assumption that competitive actions and responses will not affect each component of the AMC Framework equally. This critic is supported by the empirical finding that different levels of perspectives including competitive tension, rivalry and competitive dynamics, have different impacts on the components of the AMC Framework (Chen et al., 2007, p. 104). Therefore, the limitation to the three components can be problematic when it comes to digging deeper into the understanding of context of competitive actions or answering why competitors initiate specific competitive movements. Subsequently, conceptualized counteractions or competitive responses based on results limited through the components of the AMC Framework tend to be not efficient or answering the

why. (3) Another critical factor of the AMC Framework is the geographical application in different markets among the component of the AMC Framework. The perception of each component varies among different markets due to differences in culture, values and norms. As Licht, Goldschmidt and Schwartz (2005) stated “[t]heorists, policy-makers, and practitioners share the intuition that corporate governance reflects national culture” (Licht, Goldschmidt, & Schwartz, 2005, p. 231). Due to differences in national cultures, legal systems and market forces the perception of each component and the conceptualization of counteractions varies (Jaggi & Low, 2000, p. 516). Therefore, it is critical for local companies to evaluate competition outside key markets. Conclusively, developed competitive actions or responses can have a different effect in foreign markets than in local markets. Additionally, Peteraf et al. (2003) argued that managers only recognize competitors which are close “[...]in terms of product type, geography, and other salient characteristics” (Peteraf & Bergen, 2003, p. 1028). Managers seem to ignore those competitors who are more distant. Subsequently, it should be critically questioned if the AMC Framework is applicable for geographically distant competitive dynamics in foreign markets. (4) In addition to every stated critical factor it needs to be questioned if the AMC Framework is reliable and valid to argue with. The critic of reliability, credibility and validity of measurement results from the differences in perceptions of managers, competitive asymmetry due to different levels of perspectives and the geographical aspect. Therefore, one could argue that the AMC Framework is not a credible, reliable and valid framework for identifying competitive threats and developing counteractions. In addition, less empirical research of the AMC Framework is available which in turn decreases credibility, reliability and validity. Moreover, in the available empirical research of the AMC Framework, the Framework is only measured on a qualitative base (compare section 2.6.2). Due to the fact that the Framework originated in the social cognition area and is supposed to identify behavioral drivers for competitive actions, it is difficult to find an appropriate measurement method besides the qualitative measurement. Hammersley (2007) argued that qualitative research “[...] does not serve evidence-based practice well” (Hammersley, 2007, p. 287). Furthermore, the author evaluated that qualitative research methods are of poor standard due to missing definitions of qualitative measurement criteria (Hammersley, 2007, p. 287). Hence, due to the lack of ‘evidence-based practice’ and missing definitions of qualitative measurement criteria, credibility, reliability and validity of the AMC Framework decrease.

After the critical assessment, section 2.8 is going to compare the AMC Framework with somehow substitutable theories and evaluates if the Framework can easily be replaced by those theories. Furthermore, the evolutionary tendencies and future perspectives of the AMC Framework will be presented.

## **2.8 Differentiation to Other Theories & Evolutionary Tendencies**

As Chen et al. (2015) pointed out the AMC Framework is supposed to facilitate the comprehension of reasons, sources, concerns and consequences of competitive actions (Chen & Miller, 2015, pp. 759-760). Moreover, input for the conceptualization of organizational strategy is provided through the AMC Framework and helps to position a company within the market. Besides the AMC Framework, other theories are used to either analyze the level of competition or to evaluate the sustainability of a company’s competitive advantage. Therefore, the question arises what the differences to other theories are. The comparison of the theories is based on the shared purpose

of remaining competitive in the market while using existing resources and capabilities better than competitors. One suitable theory for highlighting the difference to the AMC Framework is Porter’s Five Forces. For analyzing the level of competition within an industry, analysts usually make use of Porter’s Five Forces Model. The Five Forces model exists of five components; bargaining power of the buyers, entry barriers, rivalry, substitutes and bargaining power of the suppliers. Those five components are supposed to evaluate a company’s competitive position within a complex and dynamic strategic environment (Yunna & Yisheng, 2014, p. 799). Furthermore, the Porter’s Five Forces Framework is supposed to be “[...] relatively abstract and highly analytical” (Grundy, 2006, p. 214). Compared to the AMC Framework, Porter’s Five Forces Model solely focuses on economical and analytical drivers for competitive dynamics, whereas the AMC Framework analyzes the behavioral drivers of competitive actions and responses (Chen & Miller, 2015, p. 759; Kunz & Pfaff, 2002, pp. 275-276; Peteraf & Bergen, 2003, p. 1031; Yunna & Yisheng, 2014, p. 799). As mentioned in section 2.7, the lack of ‘evidence-based practice’ and missing definitions of qualitative measurement criteria in the analysis through the AMC Framework let credibility, reliability and validity decrease. Subsequently, it can be questioned if the AMC Framework is a reliable and applicable Framework for analyzing economic issues. Another suitable theory which can be compared to the AMC Framework is the Resourced Based Theory (RBT). The main aim of the RBT is to identify rivals “[...] on similarities among their products, resources and capabilities” (Peteraf & Bergen, 2003, p. 1029). Hence, the RBT has the same intention as the AMC Framework in combination with resource similarity (compare 2.3), which is to remain competitive in key markets with available resource and capability endowments. Nevertheless, both Frameworks reveal differences in their perspectives. The RBT solely concentrates on internal resources and capabilities of companies on a micro level perspective (Peteraf & Bergen, 2003, p. 1028). The micro level perspective of the RBT is crucial for the insufficient connection of the company to key markets (Peteraf & Bergen, 2003, p. 1028). Contrarily, the AMC Framework follows the “[...] prevailing approach among macro-management [...]” (Chen & Miller, 2012, p. 160). Hence, the Framework in combination with resource similarity strives to evaluate external resources and capabilities of competitors who provoke competitive actions in the same market. With the evaluation of external resource and capability endowments, the AMC Framework tries to understand the implementation of resources and capabilities in the context of the behavioral drivers of competitive dynamics and why competitors initiate certain competitive actions. Supporting this, Chen et al. (2012) empirically tested that the AMC Framework significantly helps “[...] linking micro- and macro-organizational research and studies in competition and cooperation” (Chen & Miller, 2012, p. 157). The main difference between Porters’s Five Forces, RBT and the AMC Framework lies in the origin of the models. The AMC Framework is based on cognitive components (compare 2.1), explaining behavioral drivers, whereas Porter’s Five Forces and the Resource Based Theory (RBT) are based on economic components and solely focusing on performance efficiency (Kunz & Pfaff, 2002, pp. 275-276; Peteraf & Bergen, 2003, p. 1031; Yunna & Yisheng, 2014, p. 779). Wan-Yu and Sheng-Tsung supported this difference by stating that “[...] empirical studies have shown that both resource scarcity and agency theory have theoretical insufficiency in fully explaining the firm behaviors” (Wan-Yu & Sheng-Tsung, 2010, p. 397). Contrarily, the AMC Framework is important for identifying cognitive aspects and behavioral drivers of competition which represents

the origin of cognition (Livengood & Reger, 2010, p. 50). To conclude, the AMC Framework is supposed to answer why competitors initiate certain competitive moves and to understand company's competitive behavior on cognition base, whereas Porter's Five Forces and RBT are supposed to enhance competitive performance efficiently without trying to understand or answering the why of competitive dynamics.

The evolutionary tendency of the AMC Framework developed during the years originally from the stimulus-response, salience model and expectancy-valence model towards a Framework trying to understand behavioral drivers of competitive dynamic, competitive actions and making strategic decisions in the economic field. Nowadays, the AMC Framework evolves from evaluating individual competitive moves to the evaluation of "[...] multifaceted sequences of actions and interactions, driven in part by researchers' interest in assessing constructs such as competitive aggressiveness over longer periods of time" (Chen & Miller, 2012, p. 159). Most recently, the AMC Framework is not only linked to competitive actions and responses, rivalry or competitive dynamics, but also to the cooperative perspective (Chen & Miller, 2015, pp. 759-760). Subsequently, the AMC Framework processes from a competitive perspective towards cooperative and non-market moves perspective. It can be summarized that the AMC Framework is still in progression and extension due its early stage of research.

The next paragraph applies the AMC Framework in decision topics of supply chain management on a practical level in order to emphasize its great potential of exploration in other research fields than strategic management.

### **3. THE AMC FRAMEWORK LINKED TO DECISION TOPICS IN SUPPLY CHAIN MANAGEMENT**

As already indicated in the previous sections, the AMC Framework was not researched in relation to purchasing and supply chain management to date due to its early stage of research and theory development. Furthermore, just a few empirical researches are available based on the AMC Framework in strategic management. Therefore, the AMC Framework is mainly analyzed on an academic level instead of a practical level. Nevertheless, the AMC Framework identifies drivers of competitive moves from partners and competitors which help to conceptualize and implement organizations' strategies. This is beneficial due to the fact that "[...] supply chain management has been viewed as a support function that helps organizations implement their strategies" (Ketchen Jr & Hult, 2007, p. 574). In order to clarify the relationship between supply chain management, organizational strategy and the AMC Framework, examples will be used to simplify the understanding.

#### **3.1 The AMC Framework as a helpful strategic Framework for 'Make or Buy' decisions**

The 'Make or Buy' decision induces a firm to make or produce a product, process or service internally or to buy it from an external supplier (Moses & Åhlström, 2009, p. 894). Moses and Åhlström (2009) claimed that 'Make or Buy' decisions need cross-functional knowledge which in turn affect resource and capability endowments of a company (Moses & Åhlström, 2009, p. 894). 'Make or Buy' decisions include "[...] vertical integration, manufacturing processes, supplier choices and relations [...]" (Moses & Åhlström, 2009, p. 896). Furthermore, the required cross-functional knowledge implies the partition of strategy, the requirement for an internal and external fit as well

as the usage of resource and information exchanges (Moses & Åhlström, 2009, p. 896). The main difference between the 'Make or Buy' decision and the AMC Framework lies in the point in time of application during the decision process. While the 'Make or Buy' is a strategic decision which contains specific knowledge and planned investment and behavior, the AMC Framework acts as a strategic supporting decision Framework in 'Make or Buy' decisions which delivers the specific knowledge required to make 'Make or Buy' decisions. For example, after evaluating the availability of capabilities (C) of a firm to either produce in-house or outsource to external suppliers, the company needs to analyze through the AMC Framework if employees are motivated (M) enough to improve internal processes in order to efficiently produce in-house and to ensure control over processes. Further, it is of great importance for a company to be aware (A) of a producer who manufactures the outsourced product or service significantly cheaper and more efficient than the in-house production. If a company is aware (A) of manufacturers who produce cheaper than their in-house production and no internal capabilities (C) and employee motivation (M) are available for improving the internal organizational process, the company has to make the 'Make or Buy' decision for remaining competitive in the market. Subsequently, making use of the AMC Framework as a supporting decision Framework while making the 'Make or Buy' decision can be an improvement for companies' strategic decisions in order to be more efficient or to gain a competitive advantage.

Conclusively, the AMC Framework seems to be a useful and supportive strategic decision Framework for companies when deciding to either 'Make or Buy' products. The variable capability seems to be most important when it comes to 'Make or Buy' decisions due to the intensive consumption of capability endowments like cross-functional knowledge. The inequality of impact of the components of the AMC Framework like the importance of the capability component in 'Make or Buy' decisions gets supported by the empirical finding of Chen et al. (2007). The research found that different levels of perspectives have different impacts on the components of the AMC Framework (Chen et al., 2007, p. 104). An additional perspective for future research in the area of supply chain management can be the 'Make or Buy' decision. Hence, the AMC Framework has the possibility to shift from the level of academic research and move towards a practical level in supply chain management.

#### **3.2 Difficulties applying the AMC Framework in 'Sourcing Strategies' decisions**

Closely related to the 'Make or Buy' decision and another decision topic in supply chain management are 'Sourcing Strategies'. After a company decides that it is not capable, motivated or aware enough to produce a product or service in-house, the company needs to outsource or buy from external suppliers. A company can make use of several 'Sourcing Strategies' in order to obtain products or services from external suppliers. As already taken up in the critical assessment part, Peteraf and Bergen (2003) mentioned that companies are aware of competitors or suppliers which are "[...] relatively close in terms of product type, geography, and other salient characteristics" (Peteraf & Bergen, 2003, p. 1028). Therefore, it was proven that managers ignore external suppliers or sourcing partners who are more distant in terms of products, services and geography (Livengood & Reger, 2010, p. 1028). As a consequence, competitive dynamics within a supplier portfolio of sourcing from foreign suppliers cannot easily be assessed

with the usage of the AMC Framework due to different market characteristics and differences in managers' perceptions. As already mentioned in section 2.7, the differences in foreign market forces, cultures, values and norms occurring from sourcing in foreign markets makes the usage of the AMC Framework for 'Sourcing Strategies' more difficult. Actions and reactions from foreign sourcing partners can be perceived differently by managers than they were meant to be perceived (Jaggi & Low, 2000, p. 516). For example, English manufactures preferably source manufactured goods from countries like Germany, France and the Netherlands due to relatively close characteristics in foreign market forces, cultures, values and norms. Nevertheless, it needs to be mentioned that the AMC Framework still is in an early stage of academic research and development. Moreover, the lack of knowledge and the difficulties for applying the AMC Framework in 'Sourcing Strategies' indicates that the research of the AMC Framework needs to be extended in a more practical field in order to gain more knowledge and insights of the AMC Framework in decision topics of supply chain management.

### **3.3 The AMC Framework as a helpful strategic Framework for 'Supplier Strategies' decisions**

As Chen et al. (2015) already stated, the perspective of the AMC Framework was extended and now comprises the competitive perspective as well as the cooperative perspective. The cooperative perspective needs to be considered within 'Supplier Strategies' due to the fact that in today's business environment the focus lays on developing long term relationships with external suppliers (Prahinski & Benton, 2004, p. 39). After a company sources an external supplier, the company needs to conceptualize efficient 'Supplier Strategies' for securing supply and product quality. Besides securing supply and product quality, suppliers who are geographically distant are difficult to be trained and evaluated as evaluated in the previous 'Sourcing Strategies' section (Peteraf & Bergen, 2003, p. 1028). Hence, the buyer-supplier relationship has to take a cooperative perspective in 'Supplier Strategies'. In general, within 'Supplier Strategies' it is important to identify the behavioral drivers for cooperative actions instead solely identifying behavioral drivers for competitive dynamics due to the fact that companies want to develop long term relationships with their suppliers. While making use of the AMC Framework, companies can identify critical suppliers within their supplier portfolio and prevent a supply chain breakdown by taking preventive steps against it and develop collaborative strategies with suppliers. For example, with the usage of management techniques like "[...] benchmarking, business process reengineering, total quality, and best-practices [...]" which help to raise awareness in buyer-supplier relationships in order to "[...] achieve maximum efficiency across their network of suppliers and partners [...]" (Miles & Snow, 2007, p. 460). Further, the usage of management techniques is beneficial as many companies are cautious to make deals with 'untested suppliers' (Prahinski & Benton, 2004, p. 39). Therefore, managers first need to develop supplier relationships in order to meet certain performance objectives (Prahinski & Benton, 2004, p. 39). Whenever the supplier is unable to meet certain performance targets, the buying firm needs to resolve the issue with conceptualized actions through the AMC Framework. Awareness will be provided through analyzing the compliance of suppliers with the agreed performance targets. Prahinski and Benton (2004) stated one method to raise awareness among the supplier portfolio in order to identify critical supplier. "[t]he

buying firm develops the supplier evaluation, or report card, and communicates the results to its suppliers with the hope and expectation that the supplier will address noted shortcomings" (Prahinski & Benton, 2004, p. 40). If companies recognize that suppliers have difficulties with meeting performance targets, managers need to "[...] find a way to communicate the problem and motivate the supplier to change its results" (Prahinski & Benton, 2004, p. 39). Motivation to meet agreed performance targets can be increased by developing efficient supplier development programs or providing incentives. Some programs contain exchanging knowledge, high involvement of the supplier in processes, high level of communication, shared new product development and direct involvement by sending employees of the buying company to the supplier in order to improve processes. While increasing supplier's motivation to meet performance targets, buying firms simultaneously improve supplier's capabilities by implementing supplier development programs. Modi and Mabert (2007) summarized that "[t]he dynamic business environment today requires organizations to effectively use all available resources to remain competitive" (Modi & Mabert, 2007, p. 42). Hence, it is important for buying companies to develop efficient supplier strategies in order to identify critical suppliers, build up trust and develop supplier capabilities to remain competitive in the market.

Based on the previous stated example, the AMC Framework displays the greatest potential for being a successful strategic decision Framework within 'Supplier Strategies' shifting from an academic level of research towards a practical level. Finally, it can be said that the AMC Framework analyzes buyer-supplier relationships and influences the behavior of suppliers by using supplier score cards, incentives and supplier development programs.

### **3.4 'Contracting' decisions in supply chain management with the help of the AMC Framework**

Besides developing efficient 'Supplier Strategies', a good contract with an external supplier is fundamental to remain competitive, securing supply and production capacity (Li, Murat, & Huang, 2009, p. 831). Based on the fact that buying companies strive for long term relationships with external suppliers, contracting is closely related to 'Supplier Strategies' and the selection of suppliers. Therefore, literature for 'Contracting' increases as the pursuit for long term relationships in 'Supplier Strategies' increases. Moreover, the increasing literature has broadened the perspective on contracting likewise the extended perspective of the AMC Framework from a competitive towards a cooperative perspective. Again, the AMC Framework can support and help companies with 'Contracting' decisions as a strategic supporting decision Framework. For example, the buying company first needs to analyze if the perspective supplier is capable and motivated enough to engage in a relationship with the buying company. Subsequently, the variables of motivation and capability of the AMC Framework are used for the pre-phase of 'Contracting'. Both contracting parties can set up a contract in order to secure requirements and conditions. After the contract was signed, the buying company needs to be aware if the contracted supplier sticks to agreed requirements and conditions. For example, awareness can be increased by implementing performance measures or benchmarks similar to the performance targets for 'Supplier Strategies' in order to see if the contracting partner fulfills the conditions of the contract. Li, Murat and Huang (2009) emphasized that performance measurements "[...] such as quality, flexibility, and reliability [...]" are important for analyzing if the contracted supplier

meets all agreed conditions of the contract (Li et al., 2009, p. 832). By implementing performance targets, awareness increases and helps to satisfy the agreed targets and the conditions of the contract. Furthermore, motivation to satisfy the conditions of a contract can be increased by making use of fines or penalty clauses within the contract. Summarizing, the AMC Framework seems to be an important strategic decision Framework when it comes to 'Contracting' external suppliers. For example, awareness is represented through performance measurements which consequently will alert the buying firm when agreed requirements and conditions are not met from the contracted supplier. Furthermore, motivation and capability are an assurance for the buying firm that the contracted supplier is able to meet agreed requirements and conditions and assures a desired outcome for the buying company. To conclude, and based on the examples of analysis through the AMC Framework, the 'Contracting' decision is made and the potential of future research of the AMC Framework in supply chain management is highlighted.

#### **4. THE AMC FRAMEWORK: A DISCUSSION & CONCLUSION**

The main purpose of the AMC Framework is to identify behavioral drivers for competitive dynamics. As Livengood et al. (2010) stated "[t]he AMC perspective has begun to advance our understanding of the antecedents to individual firms' competitive action" (Livengood & Reger, 2010, p. 52). Due to the fact that the AMC Framework is supposed to find behavioral drivers of competitive dynamics, the question arises whether the drivers will be credible, reliable and valid based on different perceptions of managers and the measurement methods. Every human is different in their way of perception of information, acting on information and the way of thinking about information. Conclusively and as already stated in section 2.7, it is difficult to limit the analysis of competitive actions to three conditions and to generalize assumptions in order to remain competitive or even improve company's performance. Furthermore, Livengood et al. (2010) already regarded "[...] competitive interactions as richly economically and psychologically motivated behavior initiated by cognitively limited and differentially capable human actors [...]" (Livengood & Reger, 2010, p. 52). By using this quote one could even argue why researchers still give credibility to the AMC Framework even though they see a lack of credibility, reliability and validity due to cognitive limitations and differentiation in human behavior. Nevertheless, the AMC Framework gives significant rise for future research based on empirical findings (section 2.6.2) and the linkage to decision topics in supply chain management (section 3.). Similar to the discussion of credibility, reliability and validity is the argumentation that the AMC Framework is not that well known as substitutable theories like the RBT or Porter's Fives Forces evaluated in section 2.8. Supported by the lack of credibility due to difficulties in measurement it is doubtful that the AMC Framework will be used in future research when it comes to the evaluation of competitive moves. Moreover, the lack of credibility of the Framework can explain the relatively early stage of development and research due to the fact that researchers give less attention to Frameworks which are not reliable and promising. Furthermore, other theories are far more reliable and validated due to extensive empirical research and empirical findings compared to the AMC Framework. The difference between those theories is the argument that the AMC Framework is based on cognition and behavioral causes, whereas comparable theories are economic and long term orientated for a company's survival. Again, one could argue if the previous stated argument can be related to the difficulties of

measurement as discussed in section 2.7. Nevertheless, it needs to be emphasized that the AMC Framework still is in an early stage of research and development. Moreover, the AMC Framework is mostly based on a theoretical academic level instead on a practical academic level. Hence, the AMC Framework has great potential for future research, especially in the area of supply chain management as seen in the last part of the paper.

To conclude, the AMC Framework is a helpful strategic management Framework to identify behavioral drivers of competitive dynamics. With the identification of the drivers a company can tailor its strategy and strategic decisions in accordance with the identified drivers. Moreover, the Framework helps the company to position itself in the industry in order to remain competitive in a highly competitive environment. Nevertheless, the AMC Frameworks lacks of credibility, reliability and validation in literature and empirical tests. Subsequently, the tendency to generalize results and scenarios is also relatively high. Therefore, the AMC Framework should be used as a supportive strategic decision Framework for strategic decisions in combination with other theories in order to provide significant results as seen in the examples of decision topics in supply chain management.

#### **5. LIMITATIONS AND FUTURE RESEARCH TO THE AMC FRAMEWORK**

The AMC Framework gets limited through differences in perceptions and perspectives of competitive dynamics by managers. Inconsistencies in perceptions lead to faults while conceptualizing competitive moves or making strategic decisions. Consequently, the wrong conceptualization of competitive moves can have a harmful impact on a company's competitive position in the market. Making faults while conceptualizing competitive strategies can lead to inefficient strategies and the loss of competitive advantage. Moreover, those inconsistencies in perceptions of competitive dynamics can lead to confusion in conceptualizing units and variables in future research for the AMC Framework. In addition, inconsistencies in the identification of the original social component (compare 2.1) of the AMC Framework are another limitation. In turn, credibility, reliability and validity of the Framework are low. Another limitation of the AMC Framework is the fact that the research is only based on a few empirical findings from general strategic management studies. Again, the few empirical studies of the AMC Framework decrease the degree of reliability and credibility.

As visualized earlier with multiple examples in the paper, the AMC Framework is a multifaceted Framework with great future potential to link topics of competition and strategy in future research studies. Especially in important strategic management decisions, the AMC Framework has a great potential to be further researched like the decision topics of supply chain management. In supply chain management the most interesting research field seems to be the decision topic of 'Supplier Strategies' due to the extension from a competitive perspective towards a cooperative perspective (compare section 3). Moreover, further research of the social cognition component of the AMC Framework will solve the inconsistencies of previous researches. In general, strategic management decision researches help the AMC Framework to gain more credibility and reliability in the future. In addition, extensive future research helps the AMC Framework to shift from a theoretical academic level towards a more practical level.

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## 7. APPENDIX

### Appendix A. Complete overview of theory evaluation of the AMC Framework in Purchasing and SCM Literature

	Element	Description	Fulfilment	
			Yes	No
Theory Development	Units / What?	Subject matter of attention in strategic management is competitive actions and competitive responses which will be analyzed through the AMC Framework. Nevertheless, there is no empirical research about the AMC Framework in Purchasing and Supply Chain Management available which explicitly could state the units of analysis in the research area.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Laws / How?	AMC Framework requires the compliance to the three conditions (AMC) in order to derive an efficient outcome. A company needs to be aware of the attack, then the company needs to be motivated to counteract and afterwards capability endowments need to be available in order to react.	<input checked="" type="checkbox"/>	<input type="radio"/>
	Boundaries / Who, when & where?	Mainly companies apply the AMC Framework in threatened or attacked key markets where competition is highly dynamic.	<input checked="" type="checkbox"/>	<input type="radio"/>
	The system states	Inclusiveness: Compliance to the three conditions is required otherwise the AMC Framework is not able to be operated. If not applied as required consequences like unawareness will not reveal the stimuli. Determinant Values: Not stated due to the fact that no empirical research about the AMC Framework in Purchasing and Supply Chain Management was conducted till today. Consistency: No research about the AMC Framework available in Purchasing and Supply Chain Management.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Why?	Referring to the origin and assumptions part different scientific theories (stimuli-response, stakeholder theory, expectancy valence model) are based on the AMC Framework which lowers credibility. Those theories are mainly derived cognition and not from the economic perspective in which the AMC Framework is placed. Further, Purchasing and Supply Chain Management literature lacks of empirical research of the AMC Framework. Therefore, the why is not clearly answered in literature which can be due to the early stage of research in general.	<input type="radio"/>	<input checked="" type="checkbox"/>
Empirical Development	The propositions	In Purchasing and Supply Chain Management no empirical research of the AMC has been conducted till today.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Empirical indicators	In Purchasing and Supply Chain Management no empirical research of the AMC has been conducted till today.	<input type="radio"/>	<input checked="" type="checkbox"/>
	The hypotheses	In Purchasing and Supply Chain Management no empirical research of the AMC has been conducted till today.	<input type="radio"/>	<input checked="" type="checkbox"/>
	Empirical research	In Purchasing and Supply Chain Management no empirical research of the AMC has been conducted till today.	<input type="radio"/>	<input checked="" type="checkbox"/>



**Appendix B. Additional table for the section ‘Method: Literature review approach’**

Keywords	Initial Hits	Limit to 1990-2015	Hits only in relevant subject areas	Usable and assessed papers	Search Key
Competitive dynamics	12,091	11,701	1,145	5	TITLE-ABS-KEY ( competitive dynamics ) AND PUBYEAR > 1989 AND PUBYEAR < 2016 AND ( LIMIT-TO ( SUBJAREA, "BUSI" ) )
Competitive actions	18,918	14,244	1,257	2	TITLE-ABS-KEY ( competitive actions ) AND PUBYEAR > 1989 AND PUBYEAR < 2016 AND ( LIMIT-TO ( SUBJAREA, "BUSI" ) ) AND ( LIMIT-TO ( AU-ID, "Ferrier, Walter J." 6602560326 ) OR LIMIT-TO ( AU-ID, "Chen, Mingjer" 55733236400 ) OR LIMIT-TO ( AU-ID, "Grimm, Curtis M." 7101846095 ) OR LIMIT-TO ( AU-ID, "Smith, Ken G." 55704529300 )
Awareness-Motivation-Capability Framework	4	4	4	0	TITLE-ABS-KEY ( awareness-motivation-capability framework ) AND PUBYEAR > 1989 AND PUBYEAR < 2016
Competitive tensions	1,543	1,305	159	2	TITLE-ABS-KEY ( competitive tensions ) AND PUBYEAR > 1989 AND PUBYEAR < 2016 AND ( LIMIT-TO ( SUBJAREA, "BUSI" ) ) AND ( LIMIT-TO ( AU-ID, "Chen, Mingjer" 55733236400 ) )
Rivalry	6,624	5,840	607	3	TITLE-ABS-KEY ( rivalry ) AND PUBYEAR > 1989 AND PUBYEAR < 2016 AND ( LIMIT-TO ( SUBJAREA, "BUSI" ) ) AND ( LIMIT-TO ( AU-ID, "Chen, Mingjer" 55733236400 ) OR LIMIT-TO ( AU-ID, "Smith, Ken G." 55704529300 ) )

**Appendix C. Overview of Empirical Findings based on Strategic Management Literature**

