

Competitive Dynamics Research Program: An Introduction*

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Building a Balanced Research-Centered Academic Career:
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*This note was prepared as an introduction to the 12 publications on competitive dynamics by Ming-Jer Chen (see Exhibit 1).

Competitive Dynamics Research Program

Competition is a central element of strategy. Yet little research has been done to move beyond a simple and static characterization of competition (much work relies on such approaches as industry structure analysis) toward a detailed analysis of competitive behavioral patterns. My research has addressed three fundamental strategic questions: 1) How do firms compete? 2) Why do they compete in certain ways? and 3) How do their competitive behaviors relate to organizational performance?

In contrast to the approaches traditionally taken to study these issues, my research approach is rooted in the competitive actions of the firm. Using the individual competitive move as the basic unit of analysis, I have integrated ideas and theories from an array of disciplines to develop new theories, variables, and measures at this level.

My research has explored four distinct cohesive research themes, each of which has made a significant contribution to our understanding of strategy and the behavioral dynamics of competition. These themes are: 1) the action/response dyad; 2) firm- (business-) level competition; 3) conceptual and methodological issues in competitive studies; and 4) corporate-level competition. (Please see Exhibit 2: Competitive Action-based Research, which shows how these four themes are linked.)

The Action/Response Dyad

Using the action/response dyad as the unit of analysis, my initial research began by highlighting the importance of response in competitive dynamics and by examining the predictors of response. This focus is of theoretical consequence because it is at this level that

competitive engagement occurs. Before my original work, this level had not been used in the field of strategy as a focal point for analysis.

Working with a number of colleagues, including Ken Smith and Ian MacMillan, I completed four studies using this method of analysis, three of which were published in premier journals (*Academy of Management Journal (AMJ)*, *Management Science*, and *Strategic Management Journal (SMJ)*). This work has made two contributions: it has built a coherent theory of competitive response, and it has examined empirically the role of irreversibility in competitive dynamics.

Predicting competitive response. Using a diverse set of theoretical perspectives (e.g., expectancy-valence theory, game theory, and organizational theory), I first directed my efforts toward conceptualizing and measuring key attributes of competitive response: the likelihood, the number, and the speed of responses, and the extent to which the response matches the initial action. I then demonstrated empirically that these attributes of response are functions of three different types of characteristics: a) the attributes of the attack (e.g., “visibility” or the degree of industry attention, “implementation difficulty” or the amount of effort and time required for execution, and “specificity of attack” or the number of targeted competitors, per #11); b) the characteristics of the attacker (e.g., the degree of organizational commitment to the attack, contributing to its “irreversibility,” per #7), and c) the characteristics of the defender (e.g., “competitor dependence” or the defender’s stake in the market under attack, per #10). The research also demonstrates the performance implications of competitive interactions.

Specifically, these studies have shown, for instance, that strategic (as opposed to tactical) actions, as well as those that require lengthy execution time and those that are less visible, tend to reduce the number (#11) and speed of rivals’ responses (#7). Second, both competitor dependence and action irreversibility are significant predictors of response. They also interact in

affecting response. When attacked in their key markets, competitors *in general* tend to act decisively (i.e., high likelihood of response) but slowly, to signal their willingness to defend their stake and at the same time their desire to avoid escalation. On the other hand, if an attacker makes a highly irreversible move against a defender's key markets, the defender is likely to react both decisively and swiftly, to signal toughness and to defend its reputation (#10). Third, competitive interactions have *direct* implications for performance, as evidenced by market share gains by attackers and early responders (#10). There also appears to be a real incentive to minimize competitors' retaliation, given its negative association with performance (#7).

Role of irreversibility. Another important contribution is the formal introduction of irreversibility to the field of strategic management and his empirical testing of the impact of this variable on response. My *Academy of Management Journal* paper with Ian C. MacMillan (#10) was the first in his field to argue that irreversibility extends well beyond those tangible economic investments and capital assets emphasized in previous research, to include broadly organizational, psychological, political, and socio-economic sources. More important, these diverse sources of irreversibility have very different effects on competitive response, as demonstrated in a companion study.¹ This study identified two kinds of irreversibility of a competitive move: internal (e.g., the amount of inter-departmental coordination required to execute the move) and external (e.g., the degree of top management's public endorsement for the move). The research found that external irreversibility tends to escalate competition (great likelihood of response, great response speed, and high probability that the response will match the initial action), while internal irreversibility tends to have exactly the opposite effect of de-

¹ M-J Chen, S. Venkataraman, S. Black, and I. MacMillan. 2002. "The Role of Irreversibilities in Competitive Interaction: Behavioral Considerations from Organization Theory," *Managerial and Decision Economics*, 23:187-207.

escalating competition. These findings stand in contrast to previous research in other disciplines, which considered irreversibility as an unitary construct and expected it to be generally likely to suppress competition.

Finally, the methodology used in this research represents in itself a significant and unique contribution to the field—a feature that has earned widespread recognition for the creativity and exceptional enterprise of this research stream. An extensive database, incorporating all competitive moves made daily in the airline industry over an eight-year period, was painstakingly created through detailed content analysis of the industry’s most thorough and well-respected publication. Serious efforts were also made to verify the comprehensiveness and reliability of the data source, as well as to explore such questions as the attributes of competitive moves. The field of strategic management had historically been held back by a lack of large-scale, reliable data and by the shortage of appropriate methodologies in studying the dynamics of competition. The research has ingeniously and creatively surmounted these problems, and this line of work has set a standard for future research.

Firm- (Business) Level Competition

Unlike the first research stream outlined above, the focus here is on firm-level examination, although both streams share the common thread of using the individual competitive move as the basic unit of analysis. All the data used in this second stream of research were aggregated and derived from arrays of competitive moves that firms undertake in engaging their rivals over time. The overall theme is the investigation of organizational and external factors affecting a firm’s “strategic competitive behaviors” and “competitive strategy repertoires” as well as the ensuing performance outcomes.

Strategic competitive behaviors: Antecedents and outcomes. This line of research (which resulted in two *AMJ* papers and one *Administrative Science Quarterly (ASQ)* paper) attempts to capture strategic behaviors directly from a systematic analysis of the attributes characterizing the firm's actual competitive actions and responses. Through this lens, important behavioral properties of the firm such as propensity for action, responsiveness, action (or response) execution speed, and action (or response) visibility have been brought--for the first time in the strategic management literature--sharply into focus. Drawing on multiple theoretical perspectives (e.g., upper echelons theory and institutional theory), the research empirically demonstrated the significance of firm size (#6), the firm's information processing capacity (#12), and the firm's top management team characteristics (#3) in explaining the competitive behaviors of the firm, which in turn have important implications for performance.

In an *Academy of Management Journal* paper (#6), "Speed, Stealth, and Selective Attack: How Do Small Firms Differ from Large Firms in Competitive Behavior?" Donald Hambrick and I tested for the first time an array of long-held suppositions about the distinctive competitive behaviors of small firms in an industry. The study found that small firms differ significantly from large firms in their strategic competitive behaviors: First, small firms tend to initiate more attacks, and are relatively fast in execution, yet remain low-profile in their attacks (approximating guerrilla behavior). Second, when attacked themselves, small firms are less likely to respond and slower to do so. Third, firms perform well to the extent that their competitive behaviors adhere to the typical behaviors for firms in their size group: Deviations from size-group patterns (e.g., a small airline behaving like a large airline) tend to impair performance.

Competitive strategy repertoire. In a set of three papers written with Danny Miller (published in *SMJ*, *ASQ*, and *Social Forces*, a top sociology journal), this work conceptualizes

competitive strategy as a repertoire of micro-competitive behaviors. A firm's competitive repertoire is made up of the entire range of its competitive moves (e.g., new market entries, major price initiatives). This conception differs fundamentally from approaches previously adopted by most strategy researchers, including Porter's well-known "generic strategies" of low cost/differentiation focus.

Certain vital firm attributes can thus be teased out from the study of competitive repertoires: overall activity level (or "inertia," per #8), diversity of the types of moves (or "simplicity," per #4), and degree of departure from industry norms (or "nonconformity," per #5). By using the repertoire approach, the research has contributed to the strategy field by offering a new conceptualization of these three critical theoretical constructs, which have traditionally fallen within the realm of organization theorists and sociologists but which also have great promise for strategy research. The research integrates market-level variables (e.g., diversity, growth, and uncertainty) with firm-level variables (e.g., size, age, and past performance) in explaining these three key constructs, which in turn are shown to have important performance implications.

Theoretical and Methodological Concerns

Theoretical considerations. Competitor analysis has been a very important subject in the field of strategy. However, previous studies have tended to focus on static strategic profiles or firm capability, which often have little bearing on actual competitive behavior in the market. To address this concern, my 1996 *Academy of Management Review* paper (#2) "Competitor Analysis and Inter-firm Rivalry: Toward a Theoretical Integration," proposed two firm-specific, theory-derived constructs: market commonality, developed from the literature on multiple-point competition, and resource similarity, derived from the resource-based theory of the firm. The

premise is that each firm has a unique market profile and strategic resource endowment and that a pair-wise comparison with a given competitor along these two dimensions will help to illuminate the tension between the two firms and to predict how they might interact in the market.

The joint consideration of these two constructs points to three essential antecedents that affect a firm's competitive activity: its awareness of the other firm's move, its motivation to act (or respond), and its capability to act (or respond). For example, it is proposed that the greater a rival's market commonality with a focal firm, the less motivated that rival will be to initiate an attack against the firm, for fear of retaliation across multiple markets; and, the greater a rival's resource similarity with an attacking firm, the greater its capability of responding to that firm's attack.

Applying Tversky's seminal work on the features of similarity, which argues that the commonly-accepted symmetry axiom underlying the metric distance function is not valid in capturing the concept of similarity—that is, $d(a,b) \neq d(b,a)$ —this paper further proposes that the competitive relationship between firms is not symmetrical: that is, any two firms are unlikely to have identical degrees of market commonality and of resource similarity with each other. The concept of competitive asymmetry is likely to explain behavioral and performance variations in sequences of competitive exchanges, and suggests ways of going beyond assumptions of homogeneity and smooth flows of information in explaining competitive dynamics.

The paper also represents an important theoretical corrective. The resource-based view of the firm, which focuses inwardly on the firm's unique endowments, has within a very short period of time risen to become a prominent approach in the field of strategic management, in much the same way that Porter's paradigm, which focused on external market forces, influenced the field during the 1980's. This study integrates both the firm and the market perspectives, the

internal and the external, in a timely reminder that maintaining a balanced focus is the ultimate challenge of strategic management research.

Methodological considerations. As a researcher committed to putting theory to empirical test, I have been concerned with the methodological and measurement issues in studying competition. My work is distinctive in that all the research, including the conceptual papers (#1 and #2), is amenable to operationalization, measurement, and empirical examination. This distinction renders contributions of this line of work especially valuable and influential. The innovative contributions and rigorous standards have also set a benchmark in the field, changing expectations about research on this subject. Thus, in addition to their substantive contributions, all papers may serve as important methodological guides. More important, the findings of my prior empirical studies all contribute towards the development of a coherent theory of micro-competitive behavior, as evident in the two conceptual papers.

First, the selection of the concrete, specific competitive move as the linchpin of all my research represents in itself a methodological breakthrough. It is at this analytical level where the study of competitive dynamics becomes most fruitful, where strategic competitive behavior is most reliably captured, and where the analysis of competitors becomes most pertinent. Because of the selection of this level of analysis and the new measures developed specifically for this level, my research has been able to make a distinctive methodological contribution. The field has widely recognized this contribution, and more and more researchers have begun to adopt this level of analysis in their studies of strategy and competition.

An additional important issue involves the measurement of attributes used to capture micro-competitive behavior, which I explored in a paper published in the Special Research Forum on Methodological Issues in Management Research of the *Academy of Management Journal* (#9). This paper empirically examines the “expertness” of several groups of outside

informants (those not employed in the firm being studied) in assessing the characteristics of actual competitive moves taken by firms, in terms of interrater reliability and the accuracy of ratings compared to those provided by inside senior executives. Results found that security analysts were the most accurate and were highly reliable, and informed academics were highly reliable and as accurate as consultants and stakeholders (e.g., suppliers and regulators). This research is quite significant to empirical researchers, since outside informants have been used extensively in organizational research, yet the degree of their expertise has rarely before been assessed.

Corporate-Level Competition

My *AMR* paper with Rita McGrath and Ian Macmillan (#1) extended the above paradigm to theorize corporate-level competition. The paper proposed that a firm's resource allocations can divert competitors' resource allocations, thus enhancing the firm's own sphere of influence without precipitating an all-out competitive war.

In particular, this paper put forth the idea that firms competing in multiple markets find equilibrium through spheres of influence and mutual forbearance, but imperfect competitive information may give one firm an incentive to influence rivals' behavior and uncover information. In this case, the allocation of resources may be used in place of destructive "head to head" competition. This paper defines the stratagems *thrust*, *feint*, and *gambit*, and comes to the conclusion that corporate strategy decisions can only be imperfectly understood if competitive interaction is not taken into account.

Contributions to the Field of Strategic Management

Over the last 15 years, I have been working on issues related to strategy and competition. In a rapidly evolving field, I have made an effort to put my own and others' ideas to empirical test, and ultimately to develop new concepts and build a coherent theory of strategy to facilitate further empirical investigation. In a field that stands at the confluence of numerous other disciplines, I have strived to be both a "boundary-spanner" and a "bridge-builder" by drawing from fields as diverse as organizational theory and behavior, sociology, industrial organization economics, and game theory—without losing sight of my own field's unique emphasis on the perspective of the general manager.

The ideas I have developed provide essential links between the field's past emphasis on industry-level constructs (such as industry structure) and firm-level constructs (such as inertia of competitive repertoires). Specifically, I believe that three strains in my work, summarized below, are central to the future development of the field.

Transient competitive advantage. My approach has been to examine competition on the basis of firm-specific, path-dependent, managerially relevant variables, using the action/response dyad as the nexus of analysis. This approach has fundamentally influenced the way the field of strategy conceives of competitive advantage. I have worked to move the field of strategic management from a model of static, sustainable competitive advantage to a conceptualization of advantage as temporary, punctuated by moves and counter-moves. Today, in many industries, especially global ones, competition changes the parameters too quickly for traditional oligopolistic strategies to generate substantial rent streams, and any competitive advantage gained must be regarded as transient. Within increasingly competitive environments, we need to begin to understand competition on the basis of the nature of the move, who makes it, how it is perceived, etc. The key point is that it is competitive moves and countermoves, not

fortified competitive positions, which shape a firm's idiosyncratic performance outcomes. These basic premises demonstrated in my research have been taken to heart and popularized by such leading scholars as Richard D'Aveni, Kenneth G. Smith, Joel Baum, and Javier Gimeno.

Irreversibility. My research has drawn explicit attention to the issue of irreversibility, particularly in competitive dynamics. Almost all the key constructs highlighted in the studies of "strategic competitive behavior" represent in varying degrees manifestations of this important phenomenon of irreversibility. That is, firm heritage (size (#6), structure (#12), top management characteristics (#3), etc.) as well as firm repertoire (inertia (#8), nonconformity (#5), and simplicity (#4)) may all influence the path-dependence of a firm. Each strategic action undertaken by a firm is constrained by prior moves and, in turn, delimits future moves. Past investment and commitment will constrain a firm's range of strategic options in the future, as well as shaping its capability and performance in creating and adding value. The main implication of much of my work is that competition is not frictionless, nor is it commenced *de novo* in any new situation, and that history imprints itself on all competitive actions.

Predictive theory of competitive action. In an emerging field such as strategy, the empirical testing of theories is not only an end unto itself but also a way of further building the theories that will guide the field's future development. The unifying direction of my work, as clearly demonstrated in my '96 *AMR* paper (#2), is toward the building of a predictive theory of competitive action. Past strategic theories have helped elucidate, in a general way, the dynamics of a given industry. My work attempts to go beyond these theories to predict, in a given competitive context, which actions are likely to occur, which are likely to lead to successful results, and what impact managerial choice may have on such firm performance.

Extensions

The research program has made a few extensions to study global competition, to test the empirical significance of market commonality and resource similarity proposed in AMR '96 on competitive threat, and to explore the interface between competition and cooperation.

Global competitive dynamics. To extend from my work on competitive action-based research, particularly the two *AMR* papers that draw on multipoint competition research, I recently start exploring global competitive issues. My theoretical paper, "Multicountry Competitive Action: Toward Theoretical Development of Global Competition" (with John Michel and Kristin Stucker; under review at *AMR*), extends the multiple-point competition ideas derived from my '96 *AMR* paper (#2) into the global context. This conceptual paper was developed based on my teaching of the Gillette case. The premise of the paper is that global competition can best be understood by studying competitive engagements across various national markets contested by rivals. The paper proposes a new construct, defined by the extent to which a firm can and will undertake moves and countermoves across national markets. A set of strategic and organizational variables, such as information flow and ownership control, and cultural diversity between competitors, is hypothesized to affect readiness for cross-border competition, which in turn relates to firm performance. The paper uses the awareness-motivation-capability framework to develop the theoretical argument. This is one of the first studies to inject the dynamic nature of competition into global strategy research. It also offers some specific practical advice for multinational firms engaging with rivals from different national markets and cultures.

Competitive threat. This paper, "Competitive Threat and Its Antecedents: Market and Resource Concerns" (with Kuo-Hsien Su; under review at *AMJ*), conceptualizes competitive threat as a firm-specific concept and takes the view that a pair of firms may not pose the same

degree of threat to each other. It shows how a focal firm's market commonality and resource similarity with a given rival can be used to predict the competitive threat that this rival poses to the firm, and it offers empirical support for competitive asymmetry, suggesting that two firms may not pose an equal degree of threat to each other. The results of this research demonstrate that market commonality is a more significant predictor of competitive threat than is resource similarity or size disparity.

Competition and cooperation. Another extension, "Reconceptualizing the Competition-Cooperation Relationship: The Interdependence of Opposites," proposes that there are some elemental activities that can be simultaneously competitive and cooperative. A single firm action often contains both competitive and cooperative components. The paper sets out an integrative framework for conceptualizing these activities that goes beyond previous research efforts to address the dichotomy of opposites. By challenging the assumption of exclusivity and investigating the relationship between competition and cooperation through the lens of interdependence, the paper provides a means for transcending conventional notions of opposition. It seeks to contribute to the strategy literature by formalizing the link between competition and cooperation, and ultimately it aims to stimulate further research that spans the two constructs.

Reflections: Outcome and Process

My competitive action-based research has produced some significant results. Although I have been pleased by those outcomes, I believe deeply in—and value mostly—the primacy of the process. I derive the greatest joy from the challenges experienced in achieving the outcome. Below are some highlights of my work.

My 1988 dissertation, “Competitive Strategic Interaction: A Study of Competitive Actions and Responses,” is widely regarded as the starting point for taking a dynamic approach of studying competition in the business strategy literature as we know it today. This line of research has generated nearly 40 publications in leading management journals.² Some of my publications, especially my *AMR* ‘96 paper, have become required reading in major Ph.D. programs. (In some Ph.D. strategy seminars, students were required to read all the major papers of a few chosen leading strategy scholars. My work was included, along with that of much more senior colleagues such as Marvin Lieberman, Cynthia Montgomery, Robert Burgelman, Richard Rumelt, and Berger Wernerfelt.)

My work has twice received the “Glueck Best Paper” award (1993, 1995), the highest research distinction given by the Academy of Management’s Business Policy and Strategy Division (the winning paper is typically chosen from a pool of 300-400). “Competitor Analysis and Interfirm Rivalry: Toward Theoretical Integration” (#2) was recognized in 1996 with the *AMR* “Best Paper” award (the 1995 version received the “Glueck Best Paper” award). The *AMR* review committee commented: “This article merges two streams of research in strategy in a very imaginative way....The article could change the way we see the competitive process...It has all the ingredients of a major contribution. A unique contribution is its apparently paradoxical result. The author has found that the world of strategy is not symmetrical and it takes insight and courage to pose such a hypothesis. He/she is able to integrate the two major and until now competing paradigms in strategy. Either of these accomplishments would have made an outstanding contribution. Both in the same paper produce the award.” (Please see Appendix A: 1996 *Academy of Management Review* Best Paper Committee Comments.)

² K. Smith, W. Ferrier, and H. Ndofor, 2001, “Competitive Dynamics Research: Critique and Future Directions,” in M. Hitt, R.E. Freeman, & J. Harrison (eds.), *Handbook of Strategic Management*, pp. 315-361.

My work has been included eight times in the Academy's *Best Paper Proceedings*, a conference publication with an acceptance rate of only 5 percent. Over the last 13 years I have made on average two refereed presentations at the Academy's national meeting each year. (The acceptance rate is approximately 33 percent, and there is a rule limiting submissions to three papers.)

An Arizona State University report tracking scholars' publications in nine macro and micro management journals (*AMJ*, *Organizational Behavior and Human Performance*, *ASQ*, *Journal of Applied Psychology*, etc.) shows that my 11 publications between 1990 and 1999 earn a top-five ranking among scholars in all management fields. (Please see Exhibit 3: Ranking by Number of Publications in Premier Management Journals Between 1990 and 1999.) According to the "Social Science Citation Index" (SSCI) count (which records the number of times an author's work is cited, and is considered to be a standard indicator of a researcher's impact), my work has been cited 400 times. (Please see Exhibit 4: Listing of SSCI Count by Individual Papers: 1990-present.) I am pleased that at least eight of my papers have been cited 33 or more times by other researchers.

To put the SSCI count into context, Exhibit 5: SSCI Count: Comparison Among Strategy Peers lists individual scholars' SSCI counts and their position (full and/or chair) at the institution of his or her affiliation. As the exhibit shows, I rank as the third most commonly cited author among the 16 strategy scholars.

My research has generated interdisciplinary interest (as in Robertson, Eliashberg, & Rymon, *Journal of Marketing*, 1995, and Clark and Montgomery, *Journal of Marketing*, 1999; and Besanko, Dranove, and Shanley's book, *The Economics of Strategy*, 2000, among others). I was recently approached by Rajdeep Grewal and Wayne DeSarbo, who expressed interest in collaborating with me to test the competitive asymmetry proposition advanced in my *AMR* '96

paper. (DeSarbo, a renowned marketing scholar who sits on the Nobel Prize nominating committee, has developed a mathematical model that can be applied empirically to verify this idea.)

Numerous MBA and executive teaching sessions and programs have been developed based on this stream of research. This research program was used to design a well-received strategy seminar on competitive dynamics for MBAs (please see Exhibit 8). My *AMR* '96 competitive dynamics framework (#4), in particular, has been used extensively in many business schools across the country. Consulting firms such as Booz Allen Hamilton and the Strategic Pricing Group (Boston) have been implementing my work on competitor analysis and competitive dynamics for several years.

A chapter in an important advanced textbook, *Strategic Management: Globalization and Competitiveness* (West, 1998, 2003, by Michael Hitt, Duane Ireland, & Robert Hoskisson), draws heavily on and acknowledges the contributions of my research. Similarly, in his influential strategy book *Hypercompetition* (Free Press, 1994), Richard D'Aveni acknowledges how my work contributed to the development of his thinking on competition. In his recent book, *Strategic Supremacy* (Free Press, 2001), D'Aveni also draws from my work.

Certainly, measurable and tangible results are rewarding. I believe, however, that the most important and interesting advancements occur during the process leading to the outcome. I have shared this important learning with scholars in the field throughout my career, and I continue to do so with the newest generation of researchers. In the case of research, the process is rewarding even (or perhaps especially) during rejection and constant revision on the road to publication. I often use my publication record to illustrate the role played by persistence and faith in process, citing in particular my *SMJ* (#4) paper as an example. The paper was rejected twice by *ASQ*, twice by *AMJ*, and once by *MS* before it was published in *SMJ*—eventually

winning an award. (For a sample of the publication histories of a few papers, please see Exhibit 6: Breakdown of Review, Revision, and Publication Times for Selected Papers.)

In a recent Academy of Management presentation to junior colleagues in the field, I mapped out the course of my *AMR* '96 paper (#2) as an illustration of the patience required in the process and the potential reward (please see Exhibit 7: Moving Forward: From Idea to Publication). This paper followed a long path, from its initial idea generation in 1989 until its first-run acceptance by *AMR* in 1995. During that time I “played” with the paper, rethinking, researching, revising, and for five years I did not submit it to any publication. But the payoff was high: it received two best paper awards.

This paper went through several critical junctures, and the process of putting it together produced many learning points. The origin of the paper, for instance, was a critique I offered at a closely held, elite workshop at the New Jersey shore, organized by Wharton in 1989. I was asked to critique the then-popular strategic group literature, which that year alone produced 33 Ph.D. dissertations. The feedback was harsh, even “unkind” and “mean” in the words of one attendee. The experience was so “horrifying,” especially to a rookie among all those giants in the field, that I had to drive two hours to a small town to rebalance myself. While there I bought a painting of a ship in a stormy sea, which ever since has hung on the wall of my study. It serves as a reminder that though the journey can be turbulent and the process bumpy, if you remain on a steady course and keep a peaceful mind, eventually you will arrive at your destination.

My research experience and learning can be summarized in a personal credo I have shared over the years with future scholars and managers: “Put yourself into the process (research, publication, job, career, and life), and the process will carry you through.”

Exhibit 1

List of Papers and Publications

Refereed Articles

1. McGrath, Rita G., Ming-Jer Chen, and Ian C. MacMillan. 1998. "Multimarket Maneuvering in Uncertain Spheres of Influence: Resource Diversion Strategies," Academy of Management Review, 23: 724-740.
2. Chen, Ming-Jer. 1996. "Competitor Analysis and Inter-firm Rivalry: Toward a Theoretical Integration," Academy of Management Review, 21: 100-134 (The 1996 Academy of Management Review Best Paper Award and the 1995 Glueck Best Paper Award; 1995 Academy Best Papers Proceedings).
3. Hambrick, Donald C., Theresa Cho, and Ming-Jer Chen. 1996. "The Influence of Top Management Team Heterogeneity on Firms' Competitive Moves," Administrative Science Quarterly, 41: 659-684 (1994 Academy Best Papers Proceedings).
4. Miller, Danny and Ming-Jer Chen. 1996. "The Simplicity of Competitive Repertoires: An Empirical Analysis," Strategic Management Journal, 17: 419-439. (The 1993 Glueck Best Paper Award and Academy Best Papers Proceedings).
5. Miller, Danny and Ming-Jer Chen. 1996. "Nonconformity in Competitive Repertoires: A Sociological View of Markets," Social Forces, 74: 1209-1234. (1995 Academy Best Papers Proceedings).
6. Chen, Ming-Jer and Donald C. Hambrick. 1995. "Speed, Stealth, and Selective Attack: How Small Firms Differ from Large Firms in Competitive Behavior," Academy of Management Journal, 38: 453-482.
7. Chen, Ming-Jer and Danny Miller. 1994. "Competitive Attack, Retaliation and Performance: An Expectancy - Valence Framework," Strategic Management Journal, 15: 85-102 (lead article).
8. Miller, Danny and Ming-Jer Chen. 1994. "Sources and Consequences of Competitive Inertia: A Study of the U.S. Airline Industry," Administrative Science Quarterly, 39: 1-23 (lead article).
9. Chen, Ming-Jer, Jiing-Lih Farh, and Ian C. MacMillan. 1993. "An Exploration of the 'Expertness' of Outside Informants," 1993. Academy of Management Journal (Special Research Forum on Methodology), 36: 1614-1632.
10. Chen, Ming-Jer and Ian C. MacMillan. 1992. "Nonresponse and Delayed Response to Competitive Moves: The Roles of Competitor Dependence and Action Irreversibility," Academy of Management Journal, 35: 359-370.
11. Chen, Ming-Jer, Ken G. Smith, and C.M. Grimm. 1992. "Action Characteristics as Predictors of Competitive Responses," Management Science, 38: 439-455.
12. Smith, Ken G., C.M. Grimm, M.J. Gannon, and Ming-Jer Chen. 1991. "Organizational Information -Processing, Competitive Responses and Performance in the U.S. Domestic Airline Industry," Academy of Management Journal, 34: 60-85.

Working Papers

13. Chen, Ming-Jer, Kristin Stucker, and John Michel. "Multicountry Competitive Action: Toward a Theoretical Development of Global Competition," under review at Academy of Management Review. (1997 Academy Best Papers Proceedings).
14. Chen, Ming-Jer and Kuo-Hsien Su. "Competitive Threat: Market and Resource Considerations," (under review at Academy of Management Journal).

Exhibit 2

Competitive Action-based Research

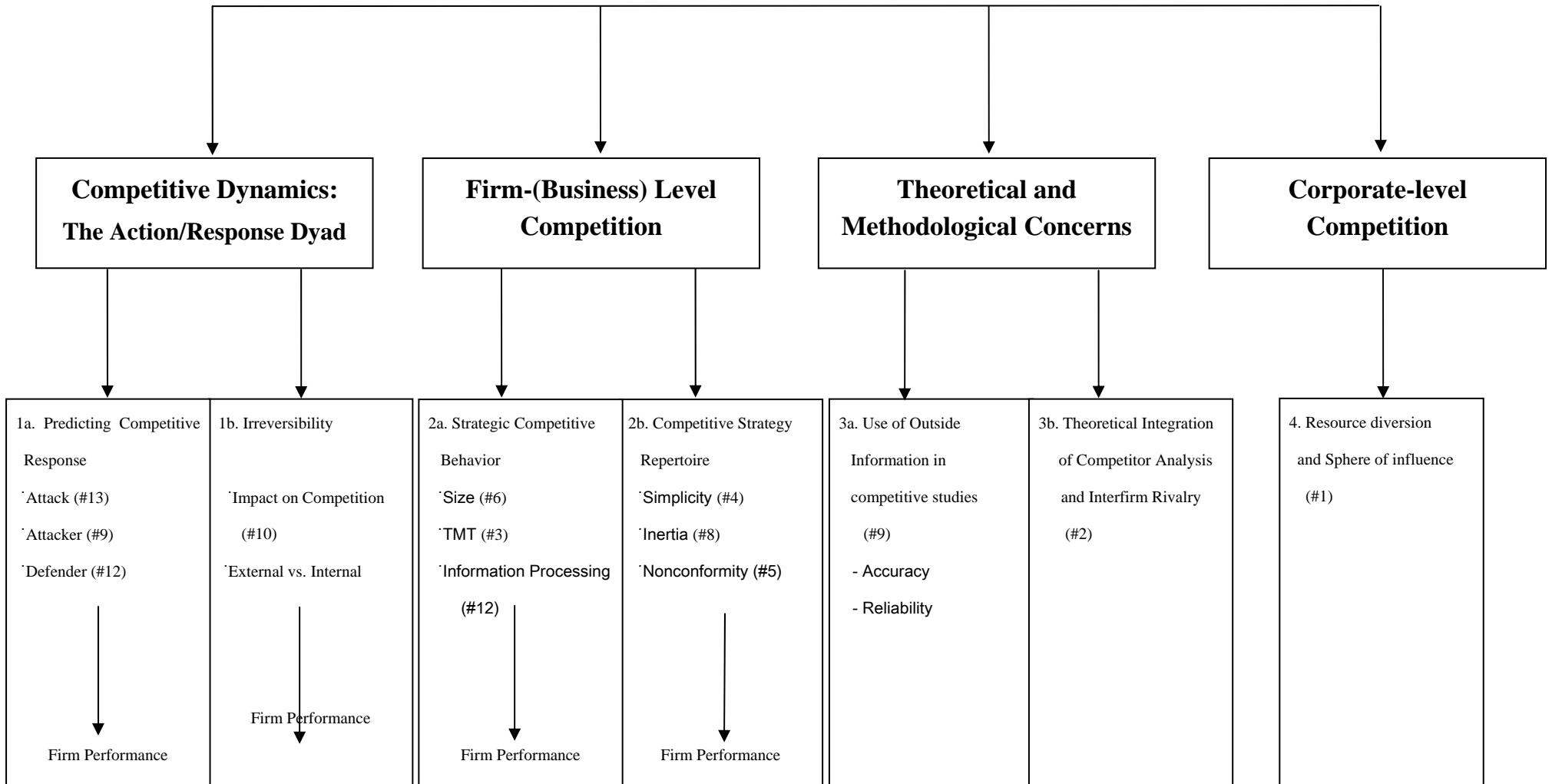


Exhibit 3

Ranking by Number of Publications in Premier Management Journals between 1990 and 1999

LAST NAME	FIRST NAME	AMJ	AMR	ASO	JAP	MSC	OBHDP	OS	ROB	SMJ	TOTAL
Zajac	Edward	2	1	6	0	1	1	1	0	4	18
Lubatkin	Michael	3	1	0	0	0	0	3	0	8	15
Hitt	Michael H.	4	2	0	0	0	0	1	0	7	14
Hambrick	Donald C.	3	2	3	0	2	0	0	1	3	14
Dalton	Dan R.	4	0	1	2	0	0	0	0	5	12
Ghoshal	Sumantra	1	5	0	0	1	0	0	0	5	12
Chatterjee	Sayan	4	1	0	0	1	0	1	0	5	12
Hoskisson	Robert E.	4	2	0	0	0	0	1	0	5	12
Baum	Joel	3	0	4	0	1	0	1	0	2	11
Glick	William H.	5	2	0	0	0	0	2	0	2	11
Heath	F.R. (Chip)	0	1	0	1	0	6	0	2	1	11
Boeker	Warren	5	0	3	0	0	0	1	0	2	11
Levinthal	Daniel A.	1	1	2	0	3	0	2	0	2	11
Eisenhardt	Kathleen M.	0	2	5	0	0	0	2	1	1	11
Tushman	M.L.	2	0	2	0	2	0	1	3	1	11
Chen	Ming-Jer	4	2	2	0	1	0	0	0	2	11
Venkatrama	N.	2	0	0	0	4	0	0	0	5	11
Hill	Charles W.	2	2	0	0	0	0	2	0	5	11
Westphal	J.D.	2	0	7	0	0	0	0	0	1	10
Bromiley	Philip	4	0	0	0	1	0	1	0	4	10
Brett	Jeanne M.	4	0	0	3	0	1	0	1	1	10
Harrison	David A.	1	0	0	6	0	1	1	0	1	10
Ashford	Susan	4	1	1	1	0	2	0	0	1	10
Kogut	Bruce	0	0	0	0	3	0	5	0	2	10
Huber	George P.	3	1	0	0	0	0	4	0	2	10
Thomas	Howard	0	1	1	2	0	0	0	0	6	10
Raheer	Srilata	1	2	0	0	2	0	1	0	3	9
Finkelstein	Sydney	4	0	1	0	0	0	1	0	3	9
Smith	Ken G.	3	0	1	0	1	1	0	0	3	9
Goodstein	Jerry	6	0	0	0	0	0	1	0	2	9
Miner	Anne S.	1	1	3	0	0	0	2	1	1	9
Dean	J.W. Jr.	1	1	3	0	0	0	2	1	1	9
MacMillan	Ian C.	2	1	1	0	1	0	0	0	4	9
Van De Ven	Andrew H.	0	2	0	0	0	0	4	0	3	9
Miller	Danny	2	1	1	0	2	0	0	0	3	9
Nayyar	Praveen	3	1	0	0	0	0	0	0	5	9
Daily	Catherine M.	3	0	0	0	0	0	0	0	5	8
Liebeskind	Julia	0	2	0	0	0	0	2	0	4	8
Dutton	Jane E.	2	1	3	0	0	0	0	1	1	8
Gomez-Mejia	L.R.	5	1	0	0	0	0	0	0	2	8
Snell	Scott A.	5	2	0	0	0	0	0	0	1	8
Wright	Patrick M.	1	1	0	3	0	2	0	0	1	8
Brockner	Joel	2	1	2	0	0	1	0	0	2	8
Mitchell	William H.	0	0	1	0	0	0	0	0	7	8
Banker	R.D.	1	0	0	0	5	0	0	0	1	7
Miller	C. Chet	3	0	0	0	0	0	2	0	2	7
Wiersema	Margarethe	2	0	0	0	0	0	1	0	4	7
Kotha	Suresh	1	1	0	0	0	0	0	0	5	7
Bettis	Richard	0	1	0	0	0	0	1	0	5	7
Kim	W. Chan	1	0	0	0	1	0	1	0	4	7
Zaheer	Akbar	0	1	0	0	2	0	1	0	2	6
Mitchell	Will	0	0	1	0	1	0	1	0	3	6
Ingram	Paul	0	0	3	0	2	0	0	0	1	6
Ketchen	David	3	0	0	0	0	0	0	0	3	6
Greve	H.	0	0	4	0	0	0	0	0	2	6
MacGrath	Rita	0	3	0	0	1	0	0	0	2	6
Miller	Kent	2	0	0	0	0	0	0	0	4	6
Hennart	Jean	0	0	0	0	2	0	1	0	3	6
Sutcliffe	Kathleen	1	1	0	0	0	0	1	1	2	6
Park	Seung Ho	3	0	0	0	1	0	0	0	2	6
Swaminatha	Anand	1	0	3	0	1	0	0	0	1	6
Tyler	Beverly	0	0	0	0	0	0	1	0	5	6
Williamson	Oliver	1	1	1	1	0	0	0	0	3	6

AMJ - Academy of Management Journal
 AMR - Academy of Management Review
 SMJ - Strategic Management Journal
 ASQ - Administrative Science Quarterly
 MSC - Management Science
 OBHDP - Organizational Behavior and Human Decision Processes
 OS - Organizational Science
 ROB - Research Organizational Behavior

Exhibit 4

Listing of SSCI Count by Individual Papers: 1990~2002

Total SSCI Count = 400

(Times Cited)

- (5) McGrath RG, **Chen MJ**, MacMillan IC, “Multimarket maneuvering in uncertain spheres of influence: Resource diversion strategies.” *Academy of Management Review* 23 (4): 724-740 Oct 1998.
- (40) Hambrick DC, Cho TS, **Chen MJ**, “The influence of top management team heterogeneity on firms’ competitive moves.” *Administrative Science Quarterly* 41 (4): 659-684 Dec 1996.
- (6) Miller D, **Chen MJ**, “Nonconformity in competitive repertoires: A sociological view of markets.” *Social Forces* 74 (4): 1209-1234 Jun 1996.
- (18) Miller D, **Chen MJ**, “The simplicity of competitive repertoires: An empirical analysis.” *Strategic Management Journal* 17 (6): 419-439 Jun 1996.
- (41) **Chen MJ**, “Competitor analysis and interfirm rivalry: Toward a theoretical integration.” *Academy of Management Review* 21 (1): 100-134 Jan 1996.
- (33) **Chen MJ**, Hambrick DC, “Speed, stealth, and selective attack - How small firms differ from large firms in competitive behavior.” *Academy of Management Journal* 38 (2): 453-482 Apr 1995.
- (60) Miller D, **Chen MJ**, “Sources and consequences of competitive inertia – A study of the U.S. airline industry.” *Administrative Science Quarterly* 39 (1): 1-23 Mar 1994.
- (36) **Chen MJ**, Miller D, “Competitive attack, retaliation and performance - An expectancy -valence framework.” *Strategic Management Journal* 15 (2): 85-102 Feb 1994.
- (17) **Chen MJ**, Farh JL, Macmillan IC, “An exploration of the expertness of outside informants.” *Academy of Management Journal* 36 (6): 1614-1632 Dec 1993.
- (41) **Chen MJ**, Macmillan IC, “Nonresponse and delayed-response to competitive moves - The roles of competitor dependence and action irreversibility.” *Academy of Management Journal* 35 (3): 539-570 Aug 1992.
- (45) **Chen MJ**, Smith KG, Grimm CM, et al., “Action characteristics as predictors of competitive responses.” *Management Science* 38 (3): 439-455 Mar 1992.
- (58) Smith KG, Grimm CM, Gannon MJ, **Chen MJ**, “Organizational information-processing, competitive responses, and performance in the united-states domestic airline industry.” *Academy of Management Journal* 34 (1): 60-85 Mar 1991.

Exhibit 5

Breakdown of Review, Revision and Publication Times for Selected Papers

Paper	Journal	Review Time (days)					Revision Time (days)					Publication Time (months)			
		n	Total	Avg	Max	Min	n	Total	Avg	Max	Min	Outcome	1 st Sub to Accept	Accept to Pub	1st Sub to Pub
#13	MS	2*	146	73	79	66	2	322	161	267	55	Acceptance	16.3	9.1	25.4
#14	AMJ	3	206	69	84	57	2	177	89	121	56	Acceptance	13.7	8.1	21.8
#12	AMJ	3*	138	44	48	40	3	201	67	153	11	Acceptance	13.7	9.4	23.1
# 9	ASQ	1	146	146								Rejection			
	SMJ	3	258	86	99	66	2	72	36	60	12	Acceptance	13.2	8.5	21.7
#11	AMJ	2*	162	80	92	68	2	50	25	39	11	Acceptance	8.2	7.9	15.1
# 6	ASQ	1	120	120								Rejection			
	AMJ	1	53	53								Rejection			
	MS	2	360	180	187	173	1	52	52			Rejection			
	ASQ	2	143	72	80	63	1	33	33			Rejection			
	AMJ	1	75	75								Rejection			
	SMJ	2	124	62	83	41	1	80	80			Acceptance	6.8	9.0	15.8
												(1993 Glueck Best Paper Award)			
# 8	AMJ	3*	187	62	91	55	3	121	40	76	15	Acceptance	12.5	9.0	21.5
# 4	OS	1	54	54								N/A			
	AMR	1*	87	87								Acceptance	2.9	9.1	12.0
												(1995 Glueck Best Paper Award; 1996 AMR Best Paper Award)			
#10	ASQ	2*	225	112	125	99	2	47	24	41	6	Acceptance	9.5	1.3	10.8
# 5	ASQ	2	186	93	120	66	1	102	102			Acceptance	9.5		
# 7	AJS	2	183	92	99	84	1	33				Rejection			
	SF	2	156	78	123	43	1	42				Acceptance	6.6	12.0	18.6

Exhibit 6

Moving Forward: From Idea to Publication

“Competitor Analysis and Interfirm Rivalry: Toward a Theoretical Integration”

Academy of Management Review (AMR) submission

First-run acceptance (04/07/95); AMR, 1996, 21(1), 100-134

1996 AMR Best Paper Award (08/12/97)

01/20/95



01/09/95

10/25/94

06/14/94

“Competitor Analysis and Interfirm Rivalry: Toward a Theoretical Integration”

“Beyond the Strategic Group: Competing against Competitors, not Competition”
TIMS presentation

05/18/93

01/01/92

01/15/91

“On A Clear Day You Can See Competitors”
(Academy 1991 Conference Submission (rejected))

Critique of Strategic Group Research
Wharton Workshop (Jersey Shore, 9/13-16)

09/14/89



“Competitor Analysis and Interfirm Rivalry: Toward a Theoretical Integration”
Academy 1995 Conference Submission (accepted)
The Glueck Best Paper Award; Academy 1995 Best Paper Proceedings (8/6-8/9)

“Rethinking Competitor Analysis and Competition”
Hypercompetition/Organization Science Conference (9/8-9/9)

“Competing Against Competitors, Not Competition”
Academy 1992 Conference Submission (accepted)

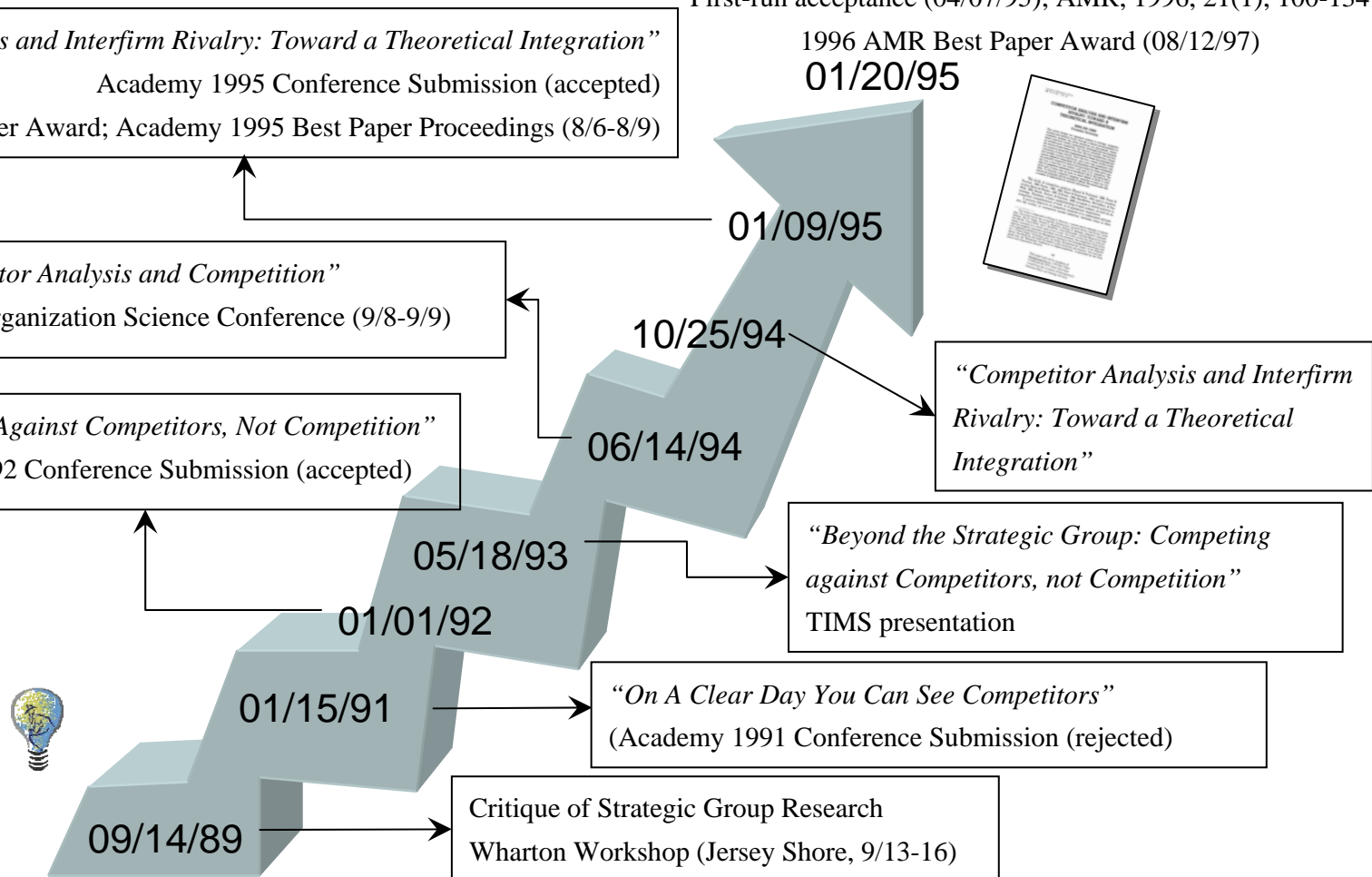


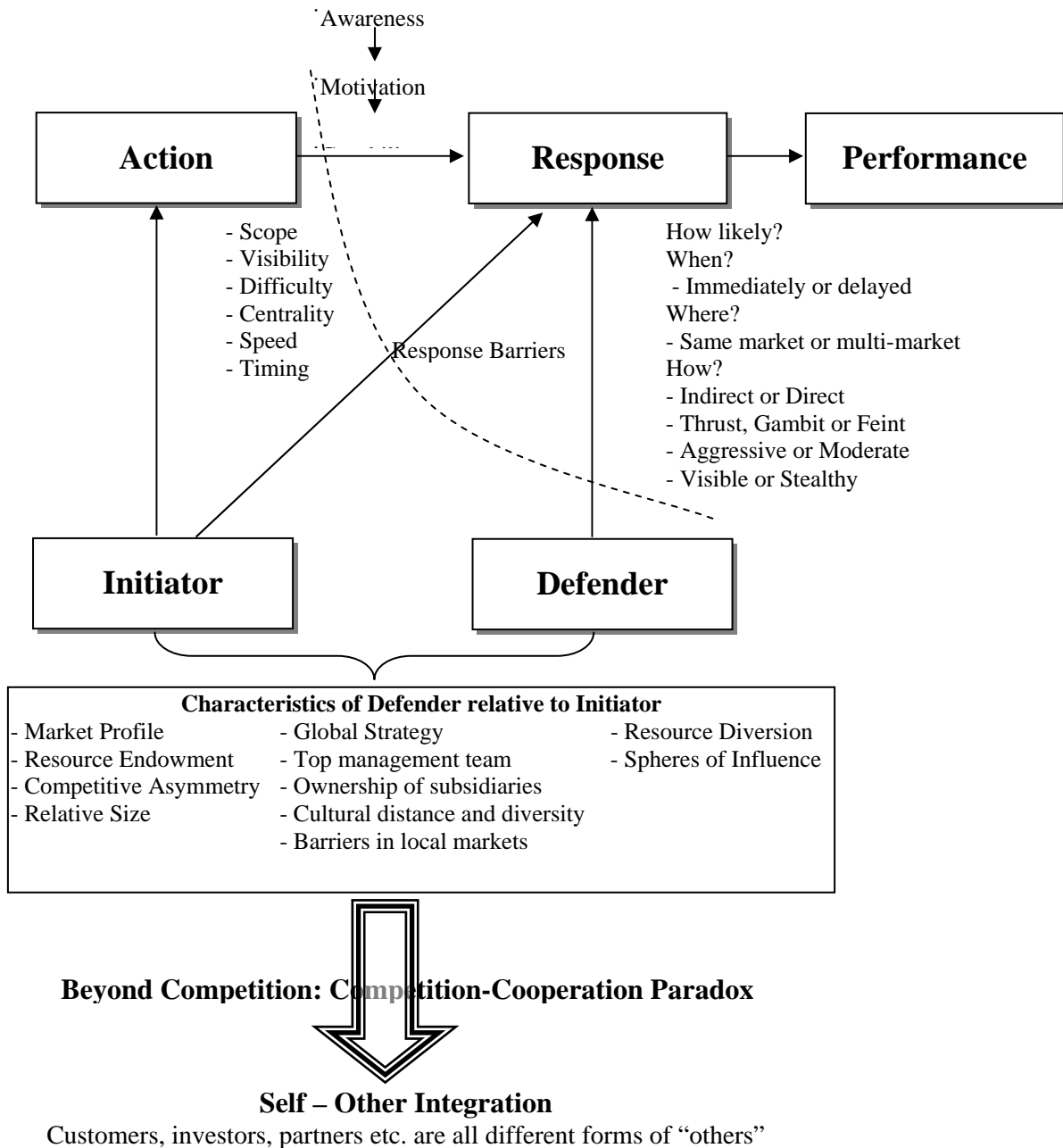
Exhibit 7

Course Design Framework: Competitive Dynamics Seminar

Competition: A dynamic and relative concept

Dynamics: The exchange of moves and countermoves in an Action/Response Dyad

Relativity: The pair wise comparison between a focal firm and a given rival



Note:

The above diagram provides one perspective and shows one link in the chain of the complex, fluid and iterative process of competitive dynamics.

Appendix A

1996 Academy of Management Review Best Paper Committee Comments

The Best Paper for the Academy of Management Review was selected from 30 papers accepted by Susan Jackson and published in 1996.

The selection committee included:

Chris Earley (London Business School),
Marc J. Dollinger (Indiana University),
Herminia Ibarra (Harvard Business School),
Duane Ireland (Baylor University),
Dev Jennings (University of British Columbia),
Martin Kilduff (The Pennsylvania State University),
Scott Poole (Texas A & M University),
Anat Rafaeli (The University of Michigan),
Dean Tjosvold (Simon Fraser University)

Tom Jones (University of Washington) was the chair.

The article merges two streams of research in the strategy field in a very imaginative way. It also employs an innovative analytical tool to gain insights into the competitive process, helping to explain why competing firms don't always view their rivalry in the same way and may, therefore, employ highly dissimilar strategies. The article could change the way we see the competitive process. ...It has all the ingredients of a major contribution.

A unique contribution for its apparently paradoxical result. The author has found that the world of strategy is not symmetrical and it takes insight and courage to pose such hypotheses. He/she is able to integrate the two major and until now competing paradigms in strategy. Either one of these accomplishments would have made an outstanding contribution. Both in the same paper produce the award.

The author combined two sets of theories that are central to our understanding of the strategic behavior and with them he generates testable predictions and measures about organizational action. Besides the usefulness of the article, what stood out, was clarity and logical flow of the writing.

By introducing and then explicating in a theoretically-rigorous manner the idea of competitive asymmetry, the paper yields significant insights regarding the argument that competitors may not pose the same degree of threat to each other. The breadth, depth, eloquence, and rigor of the analysis demonstrate clearly the difference between competitive behaviors and cooperative behaviors.

The 1996 AMR best paper award winner is titled "Competitor analysis and interfirm rivalry: Toward a theoretical integration."

The author is Ming-Jer Chen from the Wharton School, University of Pennsylvania.