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Competitive Dynamics: Competition as Action-Response

Competitive dynamics research has emerged in the strategic management literature over the last decade or so. Though geared primarily to an academic audience, this line of research also has strong practical implications.[1] It has two basic premises:

- Competition (or the rivalry between firms) can best be understood and managed at the action-response level.
- Competitor analysis, with the ultimate purpose of predicting how a firm will act or react against its opponent(s), should be carried out in pairs.

The dyadic or pair-wise approach enables focused analysis that complements Michael Porter's conventional industry structure and its extension, the strategic groups approach. In so doing, it expands strategists' understanding and management of competitive engagements at the most basic level.

The study of competitive dynamics, summarized in **Figure 1**, involves four basic analyses:[2]

1. Competitor analysis through a pair-wise comparison between firms along market and resource dimensions (an approach that acknowledges the varying degrees of tension inherent in each competitive relationship)
2. Analysis of the three behavioral drivers of interfirm rivalry: awareness, motivation, and capability
3. Analysis of interfirm rivalry itself, or the exchange of competitive actions and responses between rivals
4. Analysis of the outcome of the rivalry using market and financial performance measures

Of those four basic analyses, the most fundamental—indeed, the one on which competitive dynamics research was built—is interfirm rivalry (or action and response).

[1] Ideas and findings from this line of research, summarized in Smith, Ferrier, and Ndofor, have been used widely in leading strategic management textbooks (e.g., Hitt, Ireland, and Hoskisson), trade books (e.g., D'Aveni, 1994; D'Aveni, 2001), and business articles (e.g., MacMillan, van Putten, and McGrath).

[2] The framework is adapted from Ming-Jer Chen, "Competitor Analysis and Interfirm Rivalry: Toward a Theoretical Integration," *Academy of Management Review* 21, no. 1 (1996): 100–134.

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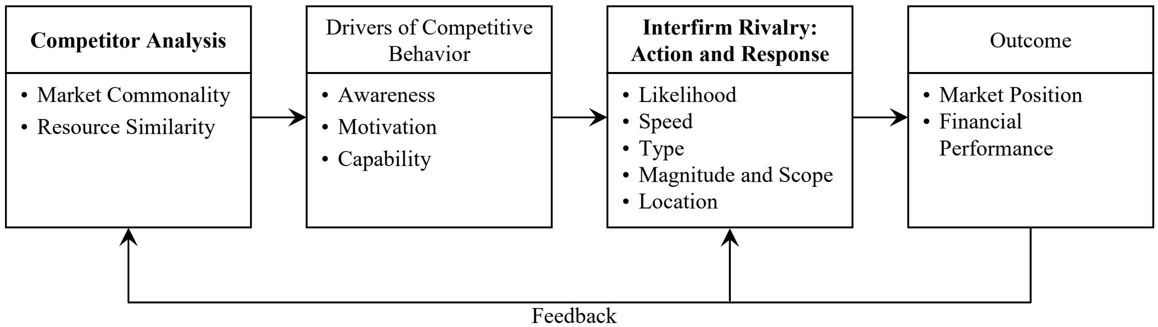
Figure 1. A framework of competitive dynamics.



Source: Created by author, adapted from Chen, 1996.

This note draws from key concepts, frameworks, and findings in competitive dynamics research. The objective is to foster an integrative strategic perspective by exposing readers to a coherent set of vocabularies, concepts, and tools for analyzing both competition (or interfirm rivalry)—the building blocks of competitive dynamics—and competitors.

Interfirm Rivalry: A Dyadic View of Competition

Analyzing competition as an action-response dyad is critical because it is at that level that competitive engagement occurs—where competitors enact their strategies, test their opponents' mettle and capabilities, defend their reputations, and signal their toughness. Simply put, the action-response dyad is the building block of competitive dynamics, because any competitive action eventually provokes responses from competitors.[3]

Companies place considerable emphasis on strategies to improve their competitive position. Strategies are executed through tactics involving market actions that have a direct impact on the customer, or through internal actions that affect firm capabilities or operations. Market actions include entries into new geographical markets, acquisitions, pricing changes, or new product offerings; internal actions may take the form of research and development, a global sourcing initiative, or a new organizational structure, among others.[4]

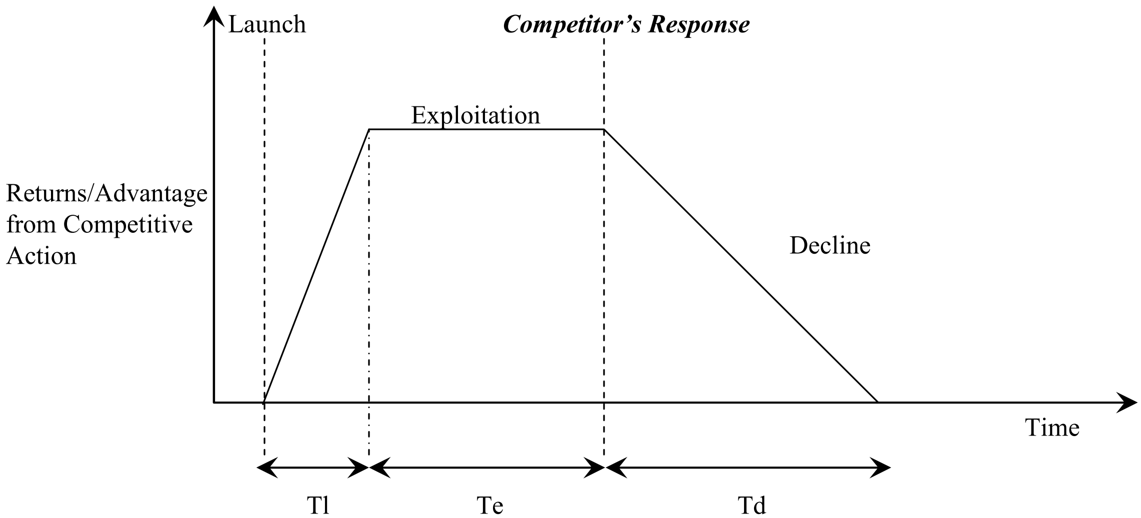
The reality, however, is that any advantage a company gains from a competitive action will be negated over time by a competitor's response—that is, competitive advantage is time-dependent and ephemeral. For instance, a new product offering by one company, if successful, will be followed eventually by similar product offerings by rival companies. Similarly, a price cut initiated by one firm will be copied or undercut by another. We can describe that relationship by plotting a graph of the economic returns from a company's competitive action against time (**Figure 2**).[5]

[3] Ming-Jer Chen and Ian C. MacMillan, "Nonresponse and Delayed Response to Competitive Moves: The Roles of Competitor Dependence and Action Irreversibility," *Academy of Management Journal* 35, no. 3 (1992): 359–70.

[4] Most attention focuses on market actions, which can be organized broadly into six general types: pricing, marketing, new product offerings, capacity- and scale-related types of action, service and operation change, and signaling (Smith, Ferrier, and Ndofor).

[5] Adapted from MacMillan, 1988.

Figure 2. Graph of economic returns from competitive action against time.



Source: Created by author, adapted from MacMillan, 1988.

A competitive action's life cycle includes the following three phases: *Launch* (T_l), when the action is being initiated; *Exploitation* (T_e), when the action has been established and is generating economic returns; and *Decline* (T_d), when a competitor retaliates and starts to weaken the returns from the initial action. **Figure 2** illustrates that the total value an attacking company gains from a competitive action depends on its ability to maximize the length of its exploitation phase, or T_e. It should be noted that even in the decline phase there are positive returns, and thus the entire trapezoidal area constitutes economic returns generated by a competitive action.

A central problem for strategists, then, is to determine and understand the features of competitive actions and responses to better manage their engagements with rivals, both as attackers and as defenders.[6]

Characteristics of Competitive Actions and Responses

The study of competitive actions allows us to predict the various characteristics of competitive response, of which the most important are likelihood and speed of response(s).[7] Conversely, the analysis of competitive response(s) is imperative because, as **Figure 2** shows, decreasing the likelihood and speed of a response enables the attacker to derive maximum value from its initial action.

Indeed, a premise of competitive dynamics research is that competitive actions and responses can be analyzed. In general, the following attributes characterize competitive actions and responses.

- **Likelihood**: The probability that a firm will initiate an attack or that a given defender (a firm being attacked) will retaliate.
- **Speed**: The timing of the action or response, in terms of *announcement speed* and *execution speed* (elaborated below).

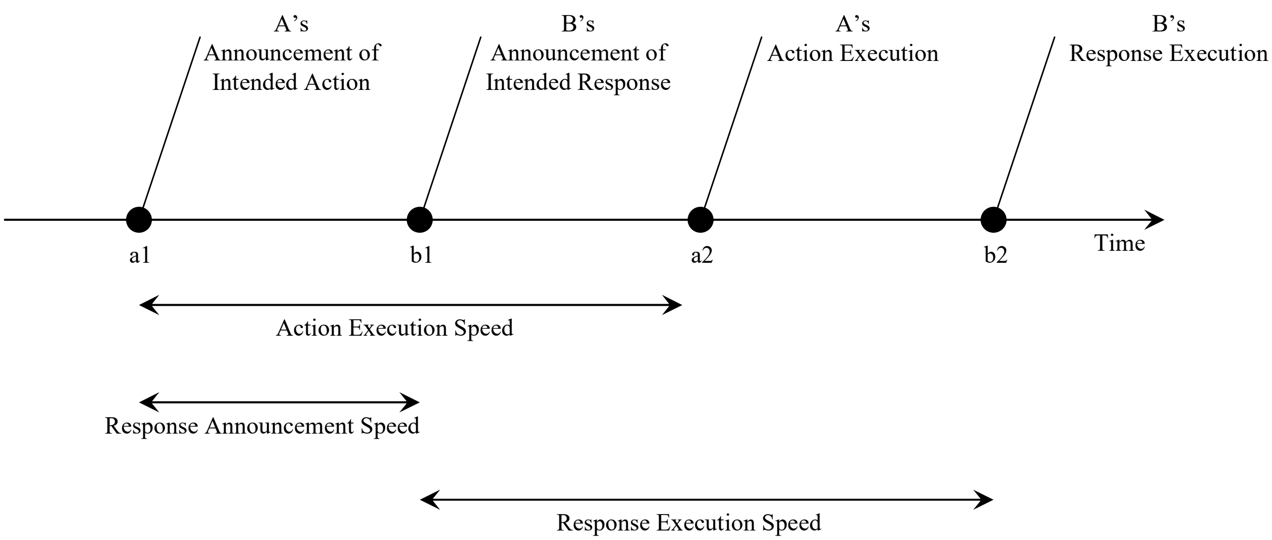
[6] For simplicity of exposition, this note presents competitive interaction from the point of view of the attacker. It is not difficult, however, to reverse the arguments to conceive the defender's position.
[7] Ming-Jer Chen, Ken G. Smith, and Curtis M. Grimm, "Action Characteristics as Predictors of Competitive Responses," *Management Science* 38, no. 3 (1992): 439–55.

- **Type**: Actions or responses can be dichotomized into strategic or tactical; they can also be organized broadly into six general types: pricing, marketing, new product offerings, capacity-related and scale-related types of action, service and operation change, and signaling.[8]
- **Magnitude**: Designates, for instance, the percentage of price cut, the increase in advertising expenditures, or the number of products involved in an action or response.
- **Scope**: Designates, for instance, the number of product lines or geographical markets involved in an action or response.
- **Location**: The market(s) where the action or response is taken, with special emphasis on whether a response is offered in the same or different market(s) where the action is initiated.[9]

Consider Gillette, for example. On January 28, 1990 (Super Bowl Sunday), Gillette launched its Sensor razors in 17 countries behind a $175 million marketing campaign and after investing $270 million in R&D. The company priced the Sensor at 25% higher than its Atra lines. The timing, magnitude, and scope of the Sensor launch were quantifiable and consequential. From a competitive viewpoint, Gillette's marketing prowess and the Sensor razor's technical superiority paid off: Schick introduced its Tracer razor, an indirect response to Gillette's Atra (not Sensor), some eight months after Sensor's launch, while BIC did not retaliate at all because it did not perceive Sensor as a threat to its disposable products. In fact, the Sensor launch was so successful that when Gillette introduced its Mach3 razor in 1998, it closely followed the pattern of the Sensor introduction nearly a decade earlier.

In any number of examples, we see that the characterization of actions and responses can provide invaluable insights for competitive dynamics analysis and for the identification of patterns of competitive behaviors. Let's use timing (or speed), one of the key action-response attributes, as an example and go one step deeper.

Figure 3. Illustration of action and response speed.



Source: Created by author.

[8] Smith, Ferrier, and Ndofor.
[9] Rita McGrath, Ming-Jer Chen, and Ian C. MacMillan, "Multimarket Maneuvering in Uncertain Spheres of Influence: Resource Diversion Strategies," *Academy of Management Review* 23, no. 4 (1998): 724–40.

Following **Figure 3**, Firm A at time a_1 announces that it intends to initiate a market move (say a price cut) effective at time a_2.[10] Recognizing the potential threat of this action if executed, Firm B announces at time b_1 that it intends to match the action at time b_2. Action (or response) execution speed is reflected by the lag between a_1 and a_2 (or b_1 and b_2), while response announcement speed is captured by the lag between a_1 and b_1. Naturally, in business competition, the configuration (and sequence) of a_1, a_2, b_1, b_2 can be much more complex; for instance, B can directly counter A's market move at time b_2 without making any announcements (i.e., $b_1 = b_2$).

In the analysis of competitive actions and responses, all four of these temporal points—a_1, a_2, b_1, and b_2—are strategic parameters that managers can (and should) manage in competitive engagements. For instance, an attacker may want to maximize shock effect by minimizing the time between a_2 and a_1. In other situations it may be to the attacker's advantage to maximize the time between a_1 and a_2. That was the case, for example, in a pre-announcement by Microsoft of a new model some 18 months ahead of its formal release to preempt rival models, or in an airline's typical two-month lead time between its price increase announcement and execution, in the hope that its competitors will follow suit.

Predicting Competitive Responses: The Awareness-Motivation-Capability (AMC) Perspective

As **Figure 2** suggests, the ultimate effectiveness of any competitive initiative depends largely on whether it goes unchallenged, or, if it does not, on whether (and by how much) the response is delayed, because a firm generally benefits most from actions that prevent or delay response. An important issue for any (attacking) strategist, then, is to anticipate the competitive response(s) (or lack thereof) by each rival affected, directly or indirectly, by its action.

To predict a competitive response, it is essential to understand how a competitive action affects the internal behavior of the defending organization. The Awareness-Motivation-Capability (AMC) perspective[11] provides an integrative understanding of the three key components of internal behavior that eventually define a competitor's response. Each of the AMC components is discussed below. (The **Appendix** provides a guide for AMC assessments.)

Awareness

Awareness refers to a defender's cognizance or knowledge of the competitive action (or attack) and its relationship with the attacker. Naturally, a company that, for whatever reason(s), is completely unaware of a particular action taken by a rival won't respond to it. The greater the company's awareness that the rival is initiating a competitive action, the greater the likelihood that it will respond. Some actions, such as price cuts in a price-sensitive market, may be so overt and visible as to invite an immediate response. Other actions, such as improvement in service level or product quality or a confidential contract with a supplier or distributor, are more subtle or even hidden, and are therefore less likely to provoke retaliation.

Awareness also facilitates prediction of the speed of competitive response. A competitor facing a highly publicized attack on its core market may be compelled to make an immediate public announcement of a response in order to retain customers and defend its reputation.[12]

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[10] Notice that the announcement per se can be considered a signal move as the company can affect its timing and content to influence the competitive dynamics and (hopefully) improve its competitive position. See Ming-Jer Chen and Donald C. Hambrick, "Speed, Stealth, and Selective Attack: How Small Firms Differ from Large Firms in Competitive Behavior," *Academy of Management Journal* 38, no. 2 (1995): 453–82.

[11] Chen, Ming-Jer, Kuo-Hsien Su, and Wenpin Tsai. "Competitive Tension: The Awareness-Motivation-Capability Perspective," *Academy of Management Journal* (2007) (forthcoming).

[12] Other factors that determine speed of response may be firm size and resource bundles, but those are not discussed in detail here.

In general, awareness increases both the likelihood and the speed of a competitor's response.

Actions that generate high awareness include:

- Widely advertised price cuts
- Aggressive, name-calling advertising campaigns
- The global launch of a new product or service offering
- Publicly announced ambitious growth targets and strategies
- Acquisitions and mergers with other competitors
- Acquisitions of key suppliers or retailers

Actions that result in low awareness include:

- Incremental improvements in service and product quality
- Improvements in operational efficiency
- Internal reorganizations
- Investments in primary research projects
- Agreements with suppliers or retailers

Motivation

Motivation refers to the incentives that drive the defender's decision to retaliate. Typically, a company will be highly motivated to respond if either the returns from response or the losses from nonresponse are expected to be large (relative to its income base). For example, Firm B would be highly motivated to respond if Firm A launched a direct attack in its sizable or profitable market(s). On the other hand, Firm B would be less motivated to respond if Firm A attacked a less valuable, noncore market, as the returns from recapturing the market would then not likely be worth the effort required.

In general, motivation increases both the likelihood and the speed of a competitor's response.

Attacks that generate a high motivation to respond might be:

- Direct attacks on a competitor's core or central markets (e.g., largest, most profitable, or most strategically important markets)
- Direct attacks on a market that is noncore, but holds great potential for growth and future expansion

Attacks that generate a low motivation to respond might be:

- Attacks on noncore markets
- Attacks that establish a strong presence that would be difficult to dislodge
- Situations in which a response would result in a damaging battle (e.g., a price war) that destroys returns for all players

Capability

Capability refers to the defender's resource deployment and the decision-making processes that support its ability to engage with the attacker through competitive responses. Essentially, capability corresponds to the ability of a competitor, in terms of organizational resources, to mount an effective response to a competitive attack.

An action is more likely to evoke a response if it can be countered *simply*, *economically*, and *without much organizational disruption*. Thus price changes, for example, can be readily matched by competitors because they require little in the way of special expertise, complex coordination, unsettling disruption, or major resources. In contrast, attacks with new products or processes are less likely to elicit responses in kind, for a number of reasons. Such responses may require considerable managerial and financial resources or potentially complex coordination among departments or external constituencies, and can raise the possibility of disrupting existing systems and relocating personnel.

A competitor's capability also determines its *type* of response: a *differentiating response* (e.g., bundling of new services or a distinguishing product feature) or a *response in kind* (e.g., a matching price cut or a matching product feature). Likewise, capability also helps determine the response *speed* (or *timing*); responses that are more complex and require organizational changes not only are less likely to occur, but also take longer to execute.

Attacks that are more difficult to respond to include:

- Ones that leverage proprietary technology, skills, or resources to which competitors may not have access
- Ones that involve complex coordination among various functions within a company
- Ones that involve alliances with external partners

Attacks that are easier to respond to include:

- Price cuts
- Advertising campaigns
- Promotions

Competitive Asymmetry

It should be stressed that the strategist cannot assume that a competitive action will affect each of the AMC components equally for all given competitors. Competitive asymmetry, the notion that two firms may not view their relationship or interaction in the marketplace equally, is prevalent in business competition.[13]

Taking awareness as an example, it's unlikely that even a pair of rival firms would perceive every competitive action or relationship in the same way. For reasons such as differences in assumptions about the industry outlook (as in the case of archrivals Boeing and Airbus) and in organizational structures (as in the example of Gillette and Schick in the early 1990s), two rivals may view the competitive situation and

[13] Chen, 1996.

relationship differently, and any analysis should depend on which firm is considered the focal firm. Simply put, $d(a,b) \neq d(b,a)$.

A comment some years ago by Scott McNealy, founder and CEO of Sun Microsystems, captured the asymmetry phenomenon. When asked who his competitors were, McNealy named Digital Equipment Corp., HP, and IBM. But what about NCR Corp., which was, at the time, the fifth-largest US computer maker and twice Sun's size? "We never see them," he replied.

Competitive asymmetry, present in all AMC components, has strong implications for the degree to which a defender is aware of an attacker's action and, consequently, both how much it is motivated to offer a response and how capable it is of doing so.

Conclusion[14]

Since rivalry occurs at the dyadic level (where opponents engage each other in a wide range of competitive moves), it is essential for strategists to analyze competition as action-response. By thinking of competition in that way—and by using this framework to predict competitive response—managers will more fully appreciate the dynamic nature of competition and thus be better able to secure and sustain any advantage resulting from offensive or defensive moves. Focusing on competitive response is critical because competitive advantage is temporal, and any initial advantage gained by a firm through a competitive initiative will, as time progresses, be weakened by a rival's response. The AMC perspective provides insight into the barriers to competitive response, by bridging interfirm rivalry and other analyses central to understanding how two firms compete at the most elemental level.

[14] The author would like to thank for their constructive comments Constantinos Nakos (MBA '06); ToTran Nguyen (MBA '05); Brian Kolle (MBA '05); John Michel, assistant professor, Belk College of Business, University of North Carolina-Charlotte; Gregory Fairchild, assistant professor of Business Administration, Darden School; Tieying Yu, assistant professor, Carroll School of Management, Boston College; and Hao-Chieh Lin, senior lecturer, National Sun Yat-Sen University.

Appendix

Competitive Dynamics: Competition as Action-Response

Assessing Awareness-Motivation-Capability[1]

The following questions are designed to help managers assess how a competitive action will affect each of the AMC components and, consequently, to anticipate how the defender(s) might respond and why.

Awareness. Awareness refers to a defender's cognizance or knowledge of a specific competitive action (or attack) and its understanding of the implications of the action for its own company and the industry as a whole.

1. Should the action be formally announced? If so, by whom and under what circumstances? How extensive should the industry and press coverage be about the action? How much information about the action should be made available?
2. To what extent should the action be kept secret before being introduced? (Gillette's Mach3, under development for eight years, was not even known to Gillette's largest shareholder, Warren Buffet, until nine months before its release.)
3. Is the defender taking any major strategic or organizational initiative that might distract it from paying due attention to the action?
4. Does the defender share similar assumptions about the industry outlook and competitive situation?
5. To what extent is the defender cognizant of the short- or long-term implications of the action for itself and other competitors?

Motivation. Motivation refers to the incentives that drive a firm's decision to respond to a competitive action. It centers primarily on gains and losses.

1. How specific is the attack? Does the action target a specific competitor, or is it a general move without any target?
2. From a financial and investment perspective, how important is the market(s) or business(es) under attack? How dependent is the defender on the market(s) under attack? A defender may consider a market (or business) critical for a variety of reasons: revenue or profit streams, market share, and growth potential, for example.
3. From a strategic and organizational point of view, how critical is the market(s) or business(es) being attacked? How vital is the market(s) given the defender's current strategy?
4. Symbolically, how vital is the market(s) or business(es)? (E.g., a company's original business may be deemed vital.) Have any of the firm's senior executives ever been in charge of (or made his/her career in) this market or business?
5. Is success (or failure) in the market central to the defender's reputation?

[1] Vikas Chawla, Scott Stemberger, and Jim Wininger, (all MBA '04) are credited for the development of the AMC assessment questions in this Appendix.

Appendix (continued)

Capability. Capability refers to a defender's organizational or financial readiness to mount a response.

1. Does the defender's organizational structure permit an effective response, if it decides to react?
2. Does the firm have the required war chest to retaliate? Would it be able to continue the war of attrition should its self-defense generate a counterresponse?
3. Does the firm have access to the resources and skills necessary to respond?
4. Are the opportunity costs of responding so high that the defender will forfeit—that is, not undertake a response?
5. Does the defender have the drive to fight back? Does it have the management talent for an effective response?

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