G

Game Theory

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Abstract

Game theory is a theoretical investigation of the optimal strategies of rational actors in interactions marked by conflict. It attempts to identify optimal strategies for all the parties involved, given their counterparts' strategies. Game theory's theoretical domain is neither descriptive nor normative; it neither describes ordinary people's actions nor tells them what to do. Rather, it is analytic: it analyses the formal implications of various levels of mutual rationality in strategic situations. Theoretical game theory analyses limited problems in specifically bounded domains and solves them mathematically. Its emphasis on strategy makes game theory a natural choice for testable applications in strategy research. The field of game theory asks the following question across a variety of contexts: 'What would someone who is rational and profit-maximizing do in this situation?' Game theory also investigates what a second rational and profit-maximizing person or party should do in anticipation of and/or in reply to this question. In particular, it attempts to identify optimal strategies for all the parties, given others' strategies. Game theory has made and is making remarkable advances, in no small part because theorists and empiricists have begun to effectively exchange information to their mutual advantage.

Definition Both words in the term 'game theory' are unfortunate descriptors. 'Game' implies playfulness; 'theory' implies a single organizing idea. Yet game theory addresses matters as weighty as international nuclear strategy (e.g., Poundstone 1992), global environmental concerns and world economic issues. Moreover, it is not a singular theory. Instead, its models consider a variety of structural conflicts, ranging from cooperative to non-cooperative, two- to n-party, complete to incomplete information, and static to dynamic.

The 'game' in game theory refers to strategic interactions in which parties' outcomes are interdependent (Rapoport 1973). Depending on the definition, game theory is the study of (1) the problem of exchange (von Neumann and Morgenstern 1944), (2) decisions in conflict situations (Rapoport 1973), (3) how players make decisions that affect each other (Hamburger 1979), (4) the interaction of rational decision makers (Myerson 1991) or (5) multi-person decision problems (Gibbons 1992). 'The essence of a "game" . . . is that it involves decision makers with different goals or objectives whose fates are intertwined,' writes Shubik (1964: 8).

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Since issues of exchange, conflict and interdependence are pervasive in organizational and social life, game theory's domain might appear universal. Game theory's potential applicability is indeed farreaching, but it restricts its analytic approach considerably.

Game theory has developed two overlapping domains. Its first, original domain is strictly theoretical. A game theorist makes assumptions, considers their logical consequences and proves theorems which, given the assumptions, are true. Theoretical game theory uses applied mathematics and economic logic to analyse the interplay of informed, calculating actors via formal, analytic theoretical models; it is precise and clean. Like the physical sciences, it investigates human interaction as if in a vacuum, and its greatest successes produce truly beautiful, elegant models.

Game theory's second domain concerns the application of its principles to actual human behaviour. Here, its theoretical assumptions cannot be completely fulfilled, and its hypotheses and propositions, like those of other social sciences, can only be investigated probabilistically. The messy realities of everyday interactions make this domain (and most other social scientific endeavours) problematic.

The confusion created by game theory's two domains has often led to inappropriate criticisms. For example, Raiffa (1982: 21) writes, 'Game theorists examine what ultrasmart, impeccably rational, super-people *should* do in competitive, interactive situations.' Although it is true that game theory may not describe the behaviour of the general public, its attention to sophisticated, strategic actors and its attempts to accommodate non-equilibrium behaviour are arguably more informative than the study of mundane actors.

Game theory is a complex, dynamic elaboration of decision theory. It might be called 'the theory of interdependent decision-making', as it investigates the interdependent interaction of rational decision makers. And, like decision theory, it can enrich the study of organizations (e.g., Bazerman 1990).

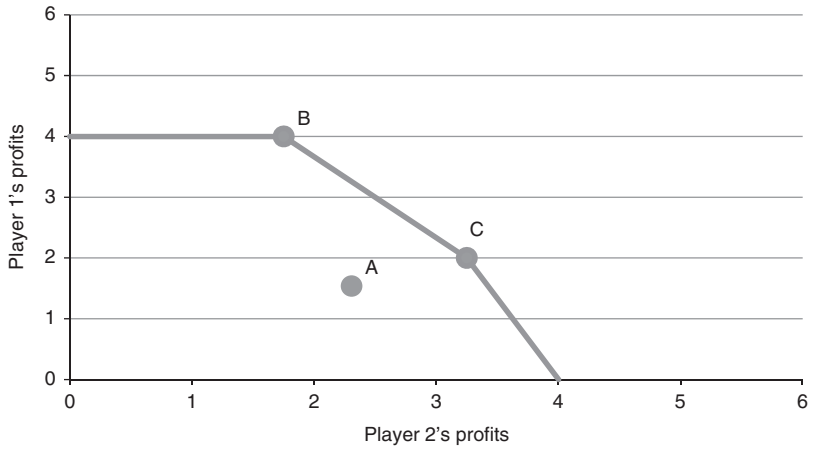
Game theory's original goals were to analyse interactions by highly strategic parties who are acting in their own best interests. More recently, it has expanded its goals towards the *general* analysis of potentially conflictual interactions. Applicability was neither its original theoretical intent nor its current state of empirical sophistication. Instead, theoretical game theory restricts its analysis to tractable (quantifiable, economic) interactions among parties who can formulate appropriate and sometimes intricate strategies. We know from a wealth of research on decision-making (e.g., Dawes 1988; Bazerman 1990) that these strategies can be beyond the scope of most human intelligence. But, as Raiffa (1982) and others have persuasively demonstrated, understanding game theory's intricacies allows researchers to understand when and why people depart from its prescriptions. Its strong theory provides potent tools for advancing our research on and understandings of conflict and power.

Assumptions and Basic Concepts

Game theory expects that people will act in their own best interests. Many game-theoretic models also assume that the parties' choices of actions and outcomes can be unambiguously defined; that the consequences of their joint choices can be precisely specified; and that choosers have distinct, clear and consistent preferences. Game theory seeks equilibrium outcomes in which none of the parties are motivated to unilaterally change their strategic choices.

Although its assumptions may require a pristine theoretical environment, the realm of game theory sounds much like the domain of organizational politics. Among game theory's advantages for the study of organizational strategy are its ability to provide a formal structure for analysing competitive interactions via strong theoretical prescriptions.

Pareto optimality (or Pareto efficiency), for example, is an old game-theoretic concept. Decades before game theory existed, an Italian philosopher defined Pareto optimality as the final outcome of an interaction that would not allow one party to improve its outcome without reducing another party's outcomes. Thus, when two firms negotiate, they should achieve an agreement



Game Theory, Fig. 1 The Pareto frontier. The solid line in this figure depicts the Pareto frontier – a set of outcomes that cannot be improved upon for one player without leading to a loss for the other. Note that player 1 can do better if they move from A to B but this would cost player 2. Player 1 and player 2 can do better if they move from A to C. They can also both do better than A any time player 1 gets more than 1.5 and player 2 gets more than 2.3 – which is not only possible but far more efficient than settling at a non-Pareto outcome, A

on the Pareto frontier (see Fig. 1), jointly attaining as much as they can from their interaction. If they fall short of the Pareto frontier, they can both improve by moving towards the frontier.

Although this seems to be a simple notion, it's very powerful. Von Neumann and Morgenstern's (1944) original formulation of game theory was motivated, at least in part, by the search for optimal (rather than simply satisficing) strategies (e.g., Simon 1947). Early research by Siegel and Fouraker (1960) found that, over time and with feedback, people moved towards Pareto-optimal outcomes in bilateral monopoly negotiations (one seller versus one buyer, with neither having any other options).

A second basic concept in game theory is the Nash equilibrium. If the analysis of an upcoming interaction indicates that two of the many possible strategies are each party's best response to each other, the combination of these strategies is a Nash equilibrium. For rational players, discovering these strategies completes the game, for neither will be motivated to change. If one party does not discover its predicted Nash equilibrium strategy, then feedback should lead it to change its strategy to increase its outcomes. Thus, even if both parties do not have the mathematical or analytical ability to calculate their Nash equilibrium strategy, they may still discover it over repeated play by seeking to better their own outcomes. This often happens in primitive biological systems (e.g., Smith 1978).

The logic of Pareto optimality and Nash equilibrium strategies can be roughly but easily translated into the language of strategy: (1) get as much as you can out of a deal, and (2) find the best response to your opponent's action. Pareto optimality and a Nash equilibrium both express these maxims cleanly and clearly, so there can be little confusion about their exact meaning. Herein lies their beauty and their power.

Consider another example, one where a game-theoretic solution may be surprising. In the original 'Battle of the Sexes' game, a man and a woman must decide what they will do on their only evening together. They prefer to go out together rather than separately, but each person's preference as to where to go is the opposite of the other's.

If these issues are transferred to the case of two competing organizations, the conflict might concern the format of a new product and whether the two companies will standardize to one another's format or compete not only on products but on format. Among the three most prominent options, Company #1 prefers option A to option B to option C, and Company #2 prefers option C to option B to option A. Both companies know that

they can compromise on option B, and, in fact, this would lead to the greatest growth in the product's overall market. This would also satisfy cooperative social norms and be in the customers' and maybe even both companies' shareholders' best interests.

But if Company #1 is ready to go to market before Company #2, it can make a strong competitive move by selecting option A. Company #2 may have realized that it was behind and, as a result, invested in developing option B or option C. Its best option in terms of profits, however, may be to follow the lead of Company #1, even if this relegates it to second place in terms of market share. Thus, game theory suggests that, in this context, being the first mover can give one company an almost unassailable advantage if it acts individualistically. This choice may not, however, engender future cooperation within this industry.

Limitations

Game theory has suffered a number of spectacular failures in predicting people's behaviour (even though doing so was never its original intent). For instance, John von Neumann, the father of game theory, advised the leaders of the United States to use the atom bomb as soon as it was developed. According to Poundstone (1992), his recommendation came from his analysis of the ▶ prisoner's dilemma game: since both sides have an incentive to defect that is independent of their expectations of the other side's actions, it is important to be the first defector, especially when the payoffs are so severe. In essence, he expected that, if the United States did not drop the bomb first, its competitor would. That a nuclear war has not transpired (and that people often cooperate in finite Prisoner's Dilemma games, experiments and real-world analogues) is one of game theory's major predictive failures.

Another failure was the early analysis of monopoly and veto games (where one powerful party needs either no partner to make a decision or cannot be excluded from a group's final decision). Game theory predicts that the monopolist or veto player will reap all of a game's possible benefits. This rarely happens. As Rapoport (1973) notes, even in the business world, such extremely cold-blooded competitiveness almost never occurs. Experimental research (e.g., Murnighan 1985) has also shown that factors such as meeting face to face severely depress monopolists' and veto players' outcomes. But while these predictions failed, subsequent models (e.g., Shapley and Shubik 1954; Roth 1987) made much more accurate predictions (Murnighan and Roth 1980).

Game theorists have recently been incorporating more socially relevant factors, including uncertainty, into their models, such as the unexpected cooperation so frequently observed in Prisoner's Dilemma games, thus increasing their predictive ability. Kreps and colleagues (1982), for instance, showed that, with some uncertainty about an opponent's strategy (i.e., he or she may or may not value cooperation) or whether defecting provides an opponent with higher short-run payoffs than cooperation, cooperative choices may be expected theoretically (at least until the endgame). At the same time, it seems clear that a host of social factors, including myopia, altruism and social norms, lead people to choose much more cooperatively than game theory predicts.

In contrast, Camerer's (1991) argument for the usefulness of game theory in the field of strategic management suggested that most business strategy decisions fit within the broader scope of game theory and that researchers who have derided game theory have not rejected an old version of the beast as long outdated. Dynamics, communication and differential perceptions of the game are now part of game-theoretic investigations, making it much more applicable to research in organizational behaviour and strategy.

Although game theory uses assumptions of rationality to generate equilibrium solutions to conflictual interactions, many models do not require much rationality. Even when they do, communication, adaptation and/or evolutionary processes can lead to equilibria; rational decision-making is not the only path to 'rational' actions. Camerer (1991) refers to game-theoretic reasoning 'as a mathematical shortcut' that theorists use to determine what intelligent, adaptive players will do.

Game theory's theoretical domain is neither descriptive nor normative: it neither describes everyday people's actions nor does it tell them what to do. Instead, it's *analytic*: 'game theorists analyze the formal implications of various levels of mutual rationality in strategic situations' (Aumann 1991: 6). Theoretical game theory analyses limited problems in specifically bounded domains and solves them mathematically. Its emphasis on the strategic makes game theory a natural choice for testable applications in strategy research.

Finally, game-theoretic models now incorporate the findings and observations reported in recent empirical work, particularly experimental economics. As Rubinstein (1991: 912) suggests, 'If games exist only in the mind of a player, the minds of players are a useful place for an empiricist to be.' Thus, reiterating Reger (1992), the combination of game theory and social cognition holds considerable research promise.

See Also

- ▶ Bargaining Models
- ▶ Coalitions
- ▶ Prisoner's Dilemma

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Garbage Can Metaphor

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Abstract

The strategy field has seen a variety of perspectives since the 1980s, including the ▶ resource-based view and ▶ dynamic capabilities. Many of these new developments build implicitly or explicitly on some of the classic scholars in organizational behaviour (see, e.g., Rumelt, R. P., Schendel, D. J., and Teece, D. J. eds. Fundamental research issues in strategy and economics. *Strategic Management Journal*

12(special issue), 1994). This should come as no surprise, since ideas on how firms develop and implement strategies is to a very large extent an organizational issue. Thus, many concepts and ideas central to the strategy field today have their roots in the organizations area. The garbage can model (GCM) of decision-making is an example of a concept rooted in organization science. It is associated in particular with a seminal article and other writings by ▶ James March and colleagues (Cohen, M. D., March, J. G., and Olsen, J. P. A garbage can model of organizational choice. *Administrative Science Quarterly* 17, 1–25, 1972).

Definition The garbage can metaphor views organizations as 'organized anarchies' characterized by problematic preferences, unclear technology and fluid participation, where decision-making involves the interaction of independent streams of problems, actors, solutions and choice opportunities.

The strategy field has seen a variety of perspectives since the 1980s, including the ▶ resource-based view and ▶ dynamic capabilities. Many of these new developments build implicitly or explicitly on some of the classic scholars in organizational behaviour (see, e.g., Rumelt et al. 1994). This should come as no surprise since ideas on how firms develop and implement strategies is to a very large extent an organizational issue. Thus, many concepts and ideas central to the strategy field today have their roots in the organizations area. The garbage can model (GCM) of decision-making is an example of a concept rooted in organization science. It is associated in particular with a seminal article and other writings by ▶ James March and colleagues (Cohen et al. 1972).

The garbage can perspective, which is both a model and a metaphor, conceptualizes organizations in terms of time-dependent flows of participants, opportunities, solutions and problems. Organizations serve the important function of structuring the interaction among these different objects and thereby explain how joint decisions actually come about. Organizations are seen as collections of ideas looking for problems; issues and feelings looking for decision situations; solutions looking for problems; and decision makers looking for decisions. Cohen, March and Olsen chose the name 'garbage can' because they see the decisions facing organizations as being more like a garbage can (in which various solutions and issues are dumped) than any 'rational' perspective. It thus has more in common with the perspectives in organizations and strategy emphasizing issues such as 'muddling through', ▶ satisficing, and trial and error learning, than more neoclassical perspectives on decision-making. And although the garbage can was first developed in the context of decision-making in a university setting, it has also generated a literature in the larger organizations and strategy field (see, e.g., Padgett 1980; March and Olsen 1983; Levitt and Nass 1989; Eisenhardt and Zbaracki 1992; Deyle 1995; Eisenhardt 1997). For example, with regard to strategic decision-making, Eisenhardt has noted the significance of improvisation and the possible relevance of garbage can processes.

Garbage Can as Example of Organizational Simulation

The work on the garbage can demonstrates how the research of James March has been important not only to the development of theories, ideas and concepts but also with respect to methodologies, computational methods and simulation. This was, in fact, already prominent in Cyert and March (1963), which is often seen as pioneering the use of computational models in economics, organizations and strategic management. In particular, their computational model of a duopoly was arguably the first computational model that installed organizational constructs within a substantial theoretical framework (Augier and Prietula 2006).

In an early article, Martin Shubik (1960) cites work by Cyert and March (a number of their early articles on behavioural theory that led to their *Behavioral Theory of the Firm* book), and a number of contributions relating to their work on simulation of the firm and issues relevant to such models (Shubik 1960: 912–913): (1) Simulation provides a new econometric device to produce

models based on empirical investigation. (2) It serves as a computational aid and alternative to analysis in theory construction. (3) It may be used as a data-organizing device. (4) It may serve as a tool for anticipation and planning. March's early work with Cyert, in particular, was a path-breaking contribution belonging to the first two categories. These, Shubik found most interesting to academic economists, rather than those doing applied work. Cyert and March's (1963) book became highly influential, and the innovative use of computational modelling eventually spawned a huge cross-disciplinary field, including specialist journals on computational economics and simulation.

As computers became more powerful, easier to use and less costly, the development of computational methods continued with considerable influence from March's later work, while co-authors Cohen et al. (1972) extended the use of simulation methods with the garbage can model of organizational decision-making, which complemented their observations of university administration. Subsequent simulation work has included updated versions of the FORTRAN model in Cohen, March and Olsen's original 1972 paper. Fioretti and Lomi (2008) developed a simulation model that validates and extends the findings of the original GCM simulation model. The authors stated that 'our main goal in this paper was to re-interpret the original GCM as an agent-based model and verify whether the new representation would reproduce the insights that the original formulation supported' (Fioretti and Lomi 2008: 7.1). They found that the properties of the GCM observed in simulation do not drive from the model, but that they emerge from patterns of interaction among the agents.

Some Key Issues and Applications

The original paper on the garbage can was published in *Administrative Science Quarterly* in 1972. It viewed organizations (or all decision situations) as 'organized anarchies' and as being characterized by three general properties. First were problematic preferences, preferences that are often ill defined and inconsistent:

> The organization operates on the basis of a variety of inconsistent and ill-defined preferences. It can be described better as a loose collection of ideas than as a coherent structure; it discovers preferences through action more than it acts on the basis of preferences. (Cohen et al. 1972: 1)

The second property was unclear technology. Organizations manage to survive and produce, but processes are not understood by members. 'It operates on the basis of simple trial-and-error procedures, the residue of learning from the accidents of past experience, and pragmatic inventions of necessity' (Cohen et al. 1972: 1). A third property was fluid participation:

> Participants vary in the amount of time and effort they devote to different domains; involvement varies from one time to another. As a result, the boundaries of the organization are uncertain and changing; the audiences and decision makers for any particular kind of choice change capriciously. (Cohen et al. 1972: 1)

These properties are often characteristic of any organization in part – part of the time; thus, 'a theory of organized anarchy will describe a portion of almost any organization's activities, but will not describe all of them' (Cohen et al. 1972: 1).

The garbage can model explains organizational decision-making – or a portion of it at least – under conditions of ambiguity as the result of the partially random coupling of independent streams of problems, policies and politics. Problems are joined to policies in such settings as a result of their coming to the fore at the same time, rather than as a rational calculation that the solution was an optimal response to a pre-existing problem. The model also reemphasized the role of ambiguity in decision-making, with actors not having a clear understanding of their goals, preferences or problems.

Methodologically, the garbage can model introduced agent-based modelling to organization studies – that is, the use of computers to capture essential variation in the behavioural and cognitive traits of human actors. The model has been highly influential in stimulating research on organizational decision-making (including strategic decisions) in educational institutions, public bureaucracies and business firms.

One empirical study has examined the evidence of the GCM in the context of Japanese business firms and found evidence for new kinds of ambiguity: fluid participation, divorce of solution from discussion and job performance rather than subjective assessments (Takahashi 1997). Others have applied the garbage can idea to studies of military decision-making. For example, Crecine (1986) studied the application of garbage cans applied to military procurement and argued that the command, control, communications and intelligence capabilities in the NATO forces in the 1980s suffered from serious deficiencies due to physical vulnerabilities, unrealistic rehearsal, failure to simulate wartime processes during peacetime and so forth. Pointing to the organizational issues in military planning of forces and structures and operations, Crecine discusses the differences between tightly and loosely coupled organizations in terms of information processes. C3 procurement involves three tightly coupled processes in a broad garbage can model, and the 'organized anarchy' of solutions, problems and participants and decision opportunities are organized by these processes. Thus, the C3 procurement process fits garbage can perspective by involving problematic preferences, uncertain technology and fluid participation of decision makers. Similar studies of information processes in business firms might lead to insights important to strategy formulation and implementation.

Closing Thoughts

Perhaps somewhat surprisingly, the garbage can has been applied beyond issues of business organizations and military organizations to issues in water management, political science, international relations and even climate change. For example, one article argued that the United Nations fits the conception of an organized anarchy because it has all the defining characteristics of problematic preferences, unclear technology and fluid participation (Lipson 2007). And one of the more interesting applications of the garbage can to international relations is a study on applying the model to US decision-making during the Cuban Missile Crisis (Anderson 1983). We mention these examples not because the field of strategy will necessarily extend itself to such issues; but rather because those studies show the multiple ways in which using the garbage can as a metaphor to understanding real-world decision-making processes can lead to new insights important to understanding strategic decision-making as well as to the field of strategy itself. At the foundational level, too, the similarities in terms of the behavioural assumptions in the garbage can, and some of the newer contributions to strategy (dynamic capabilities, learning perspectives) indicate the relevance of the garbage can framework for understanding strategic issues.

See Also

- ▶ Computational Simulation
- ▶ Dynamic Capabilities
- ▶ March, James G. (Born 1928)
- ▶ Resource-Based View
- ▶ Satisficing

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General Electric

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Definition General Electric (GE) is a very prominent US company that owns businesses in a wide range of industry sectors such as power generation systems, medical imaging equipment, lighting, aircraft engines, plastics, appliances, financial services and television production.

General Electric (GE) is a prominent US company that owns businesses in a wide range of industry sectors such as power generation systems, medical imaging equipment, lighting, aircraft engines, plastics, appliances, financial services and television production. GE has generally performed well financially over its long history, and this has posed a puzzle for strategic management theories. The reason is that, from the 1980s, the strategic management literature increasingly emphasized the importance of business relatedness based on 'core competence' as necessary for financial success (e.g., Rumelt 1974; Teece 1982; Porter 1985; Prahalad and Hamel 1990). General Electric seems to defy this prediction.

GE's success in the 1950s and 1960s has been ascribed to the first-mover advantages it achieved after the Second World War in capital-intensive industries with high barriers to entry (e.g., Lieberman and Montgomery 1988, 1998). Those advantages began to narrow in the late 1960s as new competition emerged from Europe and Japan. In response, the company created a new ▶ strategic planning process that, many believed, helped sustain its performance in the 1970s and early 1980s. This process involved grouping together those businesses that were most related to each other into 'strategic business units'. In some cases, these units corresponded to divisions, but in others they corresponded to groups of divisions or subunits of divisions (departments). ▶ Strategic business unit (SBU) developed strategic plans that better recognized the points of relatedness between businesses, in order to better identify new business opportunities, and to leverage the company's diversity. The plans were evaluated by top management using newly popular portfolio planning models developed by consulting companies (Aguilar and Hamermesh 1993).

In 1981, Jack Welch was appointed as the new CEO of General Electric. After an initial period of divestitures and severe cost-cutting through massive layoffs, Welch refocused the company on growth. During the late 1980s and 1990s, the company achieved outstanding financial performance, and Welch became a management legend. During his two decades as CEO, GE's market value increased from $13 billion to as much as $300 billion.

Much has been written about the various organizational structures and management practices that Welch instituted, and that have been credited with the company's superior performance during the second half of his tenure (e.g., Tichy and Charan 1989; Welch 1998; Slater 1999a, b; Tichy and Sherman 1999; Welch and Byrne 2001). One purpose of Welch's changes was to encourage and empower employees to identify and eliminate bureaucratic rules that had accumulated over decades, and that created inefficiencies

and other constraints on the company's growth. A major example of how this was accomplished was the company's 'WorkOut' programme. Employees would meet offsite to develop proposals aimed at challenging organizational rules and practices that were inefficient. They would then present these proposals to their superiors, who would be required – on the spot – to accept each proposal, reject it with an explanation, or respond to it by a certain date. The superiors would be observed in this process by still higher level superiors. Argyres and Mui (2007) used a game theoretic model to interpret this practice in terms of developing a credible commitment to support constructive employee dissent.

Other examples of organizational innovations at GE under Welch include high-level executive councils in which executives were rewarded for sharing best practices, and for candidly offering constructive criticisms of each other's business plans. GE was also an early adopter of 'Six Sigma': a detailed set of guidelines for reducing the variability in the quality of production. GE's effective use of Six Sigma helped to spur thousands of other companies to adopt the system, though few experienced GE's level of success with it.

General Electric under Welch was no stranger to controversy. In 1983, the New York State Attorney General sued to force GE to pay for the cleanup of chemicals from its Waterford, Connecticut, plant that GE had dumped into the environment. In 1999, the company agreed to pay $250 million to settle claims that it had polluted the Housatonic River and other sites. In 2002, GE was ordered to clean up a 40-mile stretch of the Hudson River it was found to have contaminated. In addition, Welch and GE were criticized for the size and composition of Welch's retirement package.

General Electric's financial performance has waned since Welch's retirement. Competition, especially from Asian companies, continued to grow in many of its industrial businesses. This, in part, led GE to become increasingly dependent on its financial services division for a significant share of its profitability. This dependency became particularly problematic during the financial crisis of the late 2000s, when that division suffered large financial losses.

See Also

- ▶ Conglomerates
- ▶ Diversification
- ▶ Leadership
- ▶ Multiproduct Companies
- ▶ Organizational Culture
- ▶ Strategic Business Unit (SBU)
- ▶ Strategic Organization Design
- ▶ Strategic Planning

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General Management

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Abstract

General management is a comprehensive term describing the responsibilities of organizational positions and the behavioural roles of those filling them. Although general management positions exist in all organizational settings, including not-for-profit organizations and government agencies, for-profit organizations are our focus. However, this focus does not preclude the potential applicability of our arguments within other settings.

To explain general management, we examine the responsibilities and tasks required to fulfil management roles. In doing so, we seek to illuminate how theoretical and empirical research informs general managers' decision-making efforts, many of which are concerned with positioning a firm for competitive success in dynamic and complex global marketplaces. We conclude by briefly considering the debate regarding the professionalization of management, using the context of managerial roles to do so. We seek to make two primary contributions: (1) developing an integration of a firm's strategy, leadership and operations with managerial roles by hierarchical level, and (2) informing the current debate about the professionalism of management.

Definition Comprehensive in scope, general management describes the responsibilities and tasks associated with the positions people fill while operating at multiple levels within organizations. Commonly, managerial positions are divided into three primary levels (or operations) – top, middle and lower. This division corresponds, respectively, with the primary responsibilities of strategic framing and decision-making, leadership and operational effectiveness responsibilities.

As a term, 'management' is used in multiple ways, thereby creating potential confusion about its interpretation. Typically, general management is used to describe the responsibilities of a position as well as the behaviours (roles) expected of those filling these positions. In more specific terms, general management is associated with numerous activities, including the strategic management process, establishing corporate vision, leadership practices, and organizational effectiveness and the roles individuals fulfil to complete these activities. In this article we suggest that general management is concerned with the responsibilities and roles that describe the work with which top-, middle- and operating-level managers are involved, as they engage in actions related to choosing and implementing strategies, practising ▶ leadership and pursuing operational effectiveness.

Responsibilities and Roles of General Management

General management is an integration of multiple responsibilities and roles required for successful business operations. Strategy, leadership and operational effectiveness are managers' primary responsibilities; however, these responsibilities are commonly divided by hierarchal level, with top management being associated primarily with strategic issues and decisions, middle management primarily with leadership activities, and lower or operational management primarily with operational effectiveness. To accomplish each set of primary responsibilities, managers engage in a variety of roles.

Information flows are at the centre of all managerial roles (Mintzberg 1973; Floyd and Lane 2000). Gathering and disseminating information is common to all managers; however, the content of information and the objectives associated with using it varies by hierarchical level (Floyd and Lane 2000). Research suggests that variations in managers' information flows in terms of content and processes result from different functional levels and positioning in different business units and/or departments (Walsh 1988).

The probability of long-term firm success increases when each level of management is able to simultaneously balance exploitation and exploration processes as the foundation for maintaining the adaptiveness that strategic renewal requires. Strategic renewal is an 'iterative process of belief, action, and learning, with the purpose of aligning the organization's strategy with changing environmental circumstances' (Floyd and Lane 2000: 155). Floyd and Lane (2000) highlight competence definition, competence modification and competence deployment as the three primary renewal subprocesses.

They linked strategic roles to the subprocesses of strategic renewal. Based on these links, they developed a model of information flows that are divided by management level and renewal subprocess. The ten roles are consistent with earlier arguments (Mintzberg 1973; Kiesler and Sproull 1982) in that they involve information processing and subsequent action that facilitates organizational adaptation (Floyd and Lane 2000: 158). We draw from multiple sources to develop our arguments regarding managerial roles. In particular, Floyd and Lane's positions are instrumental to our work. For additional insights about managerial roles, see Mintzberg (1973, 1978).

Setting and Influencing Strategy by Top-Level Managers

Strategy is the purpose of a firm; it defines what a firm will do and, as importantly, what it will not do (Porter 1996; Montgomery 2008). How a firm views its competitive environment in turn influences its competitive positioning. In this sense, 'strategy doesn't just position a firm in its external landscape; it defines what a firm will be' (Montgomery 2008: 55).

These characteristics remain integral to the breadth of strategy; however, integrating economics into the domain of strategy has generated additional depth and applicability in organizations (Montgomery 2008). These outcomes are a result of both academics and practitioners developing and extending conceptualizations of strategy and its applications to include many more refined and robust models that firms use when engaging competitors in the marketplace. With the subsequent development of theory and empirical evidence, strategy formulation and corporate planning processes became the foundation for using formal systems and standards to complete strategic analyses (Montgomery 2008).

Today, the decisions and actions taken to form a firm's strategy are more widely dispersed throughout the organization. Nonetheless, the responsibility to effectively use the strategic management process remains with a firm's primary strategist, the CEO. This responsibility demands daily attention and analysis, in that a firm's strategy and market position must be matched with and developed in the light of evolving external and internal environmental conditions and realities.

In terms of managerial roles, top-level managers are responsible for ratifying, recognizing and directing a firm's strategic actions (Floyd and Lane 2000). The actions flowing from these roles deal primarily with decision-making responsibilities, but also include aspects of communication and reaction. As a firm's strategy constantly evolves in response to changing conditions, the roles associated with top management reflect the creation, modification and deployment processes that are inherent in daily executive decisions.

Ratifying, the first primary role of top management, is concerned with the exploration aspect of the top-level managers' responsibilities; it involves communicating vision and strategic intentions to the rest of the firm (Floyd and Lane 2000). Monitoring, endorsing and supporting actions are also necessary in the ratification role. Focusing on observing and reacting to others in the organization is central to the exploration process in strategic decision-making.

Selective adaptation is one of the most difficult aspects of top management's roles: it involves continual trade-off decisions (Porter 1996). Strategy modification processes must be a balance of adherence to a central position while maintaining sufficient flexibility to compete in the current environment. Recognition is the second main

role of top management, encompassing behaviours such as observing and understanding the strategic potential of various possibilities, setting strategic direction, and empowering and enabling others. These roles are largely decision activities; however, they also incorporate communication with and reaction to others within the firm, and externally in the market.

Firm success cannot be achieved without expositing a firm's strategy and competitive advantages (Sirmon et al. 2007). Top-level managers' directing role satisfies this need by focusing on strategy implementation activities. Top-level managers must plan strategic actions, deploy available resources effectively and command the processes throughout the organization (Floyd and Lane 2000).

Leading by Middle-Level Managers

Leadership by middle-level managers operationalizes a firm's strategy by guiding and developing it through information, understanding and communication. In this respect, middle-level managers' leadership-related behaviours constitute a dynamic process for dealing with a changing environment (Montgomery 2008).

Middle-level leadership mediates the tension created by the forces of a dynamic environment and bureaucratic momentum (Mintzberg 1978). Put differently, middle-level managers have a unique leadership role in that they are at the nexus for both vertical (upward and downward) and lateral information flows. Middle-level managers lead the development of the firm's organizational learning abilities, given their unique position that makes it possible for them to evaluate incoming and outgoing information flows.

Additionally, middle-level managers' position at the nexus of information flows within an organization's communications is an important aspect of their leadership role. Championing, for example, is a behaviour through which these managers advocate for intriguing ideas when interacting with top-level managers. Synthesizing behaviours, including categorizing issues, selling issues to top-level managers and blending strategic and operational information to maximize their competitive potential are behaviours through which middle-level managers move information upward in the organization (Floyd and Lane 2000). Facilitating behaviours move information downstream and involve nourishing adaptability as well as sharing information, guiding adaptation and facilitating learning. Finally, deploying behaviours are used by middle-level managers to implement top-level managers' directives. Collectively, middle-level managers' leadership role involves revising and adjusting as well as motivating and inspiring operational-level managers.

Operational Effectiveness by Lower-Level Managers

Without operational effectiveness, a firm lacks the ability to exploit an advantage over competitors, regardless of a unique strategy and position. Operational effectiveness is defined as 'performing similar activities better than rivals', which is in contrast to the definition of strategy: 'performing different activities from rivals or performing similar activities in different ways' (Porter 1996: 62).

In certain situations, operational effectiveness can be the source of competitive advantage as in the case of Japanese car manufacturers in the United States in the 1980s. However, across time, focusing on operational effectiveness finds firms 'regressing to the mean' in performance and becoming more 'alike' than 'different'. When this happens, any advantage on the basis of operational effectiveness dissipates. Sustainable advantages are a product of a firm forming a strategy on the basis of the value it creates through its unique ability to complete activities differently or to complete different activities (Barney 1991; Porter 1996).

Lower-level (operating) managers are responsible for driving and maintaining the effectiveness of execution and implementation tasks. These managers interact daily with the firm's competitive environment, product markets and factor markets. These interactions drive their contribution to the strategic renewal processes as they capture and import data and

knowledge that the firm can absorb for decision-making purposes. The roles of operational-level managers focus on balancing new data and knowledge with activities currently being taken to reach established objectives (Floyd and Lane 2000). Experimenting, the exploratory role of these managers, focuses on capturing new data and knowledge for the firm through learning from others and improving current processes, linking technical ability with need and initiating autonomous initiatives. In the modification subprocess, the operational managers' role is adjusting; the managers must respond to the objectives given and suggest improvements for future consideration. Finally, in the deployment subprocess of renewal, the operational managers' role is conforming, meaning that managers must support current objectives and be 'good soldiers' (Floyd and Lane 2000: 159).

Professionalism of Management

Each generation of managers 'wrestles' with issues about the purpose it seeks to serve (Rosenzweig 2010). Currently, part of this debate centres around the potential need to professionalize general management and the benefits that might accrue to various stakeholders if this were to happen.

Debating about the professionalism of management is not a new phenomenon (Callan 1922); however, recent institutional failures and ineffective managerial performances appear to be stimulating the intensity of the dialogues about whether management should or should not become a formal profession, as well as the value managers should create while discharging their organizational roles. The issue of understanding and defining management's purpose, as well as the behaviours they should exercise to reach that purpose, concerns all managerial levels (lower, middle and top).

Khurana and Nohria (2008) are recognized for their analysis of and commitment to the need to professionalize management. They argue that establishing management as a 'true' profession (with requirements and conduct similar to those evidenced in the medical and legal professions) would be the foundation on which managers could build practices that would generate trust-based interactions with stakeholders. The heart of their argument for professionalism is establishing and adhering to a code of ethics (Khurana and Nohria 2008). The authors address concerns about the effects of professionalizing management, such as creativity suppression, by arguing that having a body of common knowledge would not stifle innovation, but instead increase growth through better communication and understanding. Such an outcome would be similar to what occurred in the medical field (Khurana and Nohria 2008). However, as is often the case with energetic debates, others have passionately advanced arguments against professionalizing management (Gill 2009; Wall 2009; Barker 2010).

Given Peter Drucker's position that management is one of the most important, if not the most important, innovation of the twentieth century, and in the light of recent debates regarding the value that should accrue to each stakeholder through managers' decisions and actions, the possibility of professionalizing management as a topic of the day is perhaps not too surprising. With respect to our analysis of general management, we note that the outcome of today's debate regarding professionalization has the potential to affect the shape and nature of future managerial roles as well as the organizational structure within which those roles will be carried out. Thus, as is the case historically, today's dialogues about the purpose of management are indeed interesting. While we cannot yet know how today's debate about the appropriateness of professionalizing management will be resolved, what we can note with confidence is that, because of the vital role management plays in terms of organizational performance, debates about management, its shape and its purpose will always occur and will remain the foundation on which a contextual understanding of general management is based.

See Also

► Leadership

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General Motors

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Definition General Motors is a US automobile producer that at its peak was the largest corporation in the world.

From its founding as an automobile company in 1908, General Motors (GM) became one of the most prominent companies in the world. During the 1950s and 1960s, it was often listed as the world's largest non-governmental employer. Its US market share in cars and trucks peaked in the early 1960s at about 50%. GM has been widely analysed by journalists, historians, strategy scholars and, famously, by one of its early leaders, ► Alfred Sloan.

Sloan's 1964 book, *My Years with General Motors*, is arguably one of the most comprehensive and penetrating descriptions of the evolution of a major corporation ever written by a corporate executive. Its most lasting contribution is its description of how Sloan designed an organizational structure for the company that, on the one hand, retained features of the decentralized decision-making that had prevailed as the company was formed through a series of acquisitions, and, on the other, developed a central office that coordinated and controlled the decisions of the company's product divisions.

By the 1920s GM had surpassed its great rival, the Ford Motor Company, because its strategy recognized that consumers increasingly desired variegated car models with different features. Henry Ford, the Ford Motor Company's autocratic founder, famously resisted this trend. Sloan's structure enabled GM to produce a variety of car models in a cost-competitive way. This was accomplished by, on the one hand, allowing the company's product divisions to pursue models that their own marketing research recommended, but, on the other, guiding the divisions to agree on standardizing certain important components, sharing manufacturing techniques and transferring technological know-how.

Alfred Chandler was the first to conceptualize Sloan's contributions in his 1962 classic, *Strategy and Structure*. Chandler set GM alongside several other US corporations that adopted the so-called 'multi-divisional form (M-form)' in the 1920s and 1930s. Chandler explained the efficiency benefits of the M-form over the functional or unitary form (U-form), and thereby helped explain why so many corporations followed the pioneers in abandoning the U-form for the

M-form. In his 1975 and 1985 books, ▶ Oliver Williamson developed what he called a 'transaction cost' perspective on organizational form, which offered an economic theory to explain the widespread adoption of the M-form.

GM stumbled badly during the 1970s. The company failed to act upon the change in consumer tastes towards smaller, more fuel-efficient vehicles in the wake of the 1973 and 1979 oil shocks. Many analysts attribute the company's failure to a culture of complacency created by years of industry dominance and therefore lack of intense competition. Others argue that, during the 1960s, the company's top executives were increasingly drawn from the finance function, which robbed it of the influence of marketers and engineers, and led to myopic focus on short-term profits at the expense of long-term investment (e.g., Fligstein 1990). GM insiders claim that the Federal Fuel Efficiency Standards favoured European and Japanese competitors who were already making small cars, and that the efforts of the US car industry to accelerate downsizing in response to regulations led to a massive degradation in quality and a concomitant loss in brand value (Lutz 2011).

In the 1980s, the company's effort to increase efficiency by copying Japanese manufacturing techniques was a major failure, accounting for hundreds of millions of dollars in loses. In part, this failure was due to the company's organization structure becoming more decentralized over time, which was, in part, aimed at accommodating more financially based decision-making. This made it difficult for divisions to cooperate on common technological approaches. Another reason is that that company's historically close relationship with the United Autoworkers, its powerful union, began to deteriorate as the company's fortunes declined in the 1970s. The union resisted automation, and divisions failed to cooperate, leading to a near disaster. This failure of cooperation between divisions, and between the company and the union, also led its innovative Saturn division to atrophy. Argyres and Liebeskind (1999) analysed how pressures from entrenched division managers and labour unions can constrain an organization from moving towards efficient management practices and governance arrangements.

GM was able to recover from intensifying Japanese competition by identifying and responding to another shift in consumer tastes, albeit more slowly than Ford, its major American competitor. That change in tastes was towards large vehicles such as sports utility vehicles and pick-up trucks. Profit margins on these vehicles were significant, and Japanese producers were weaker in these kinds of car models. As fuel prices rose during the mid-2000s, however, these fuel-inefficient vehicles became less popular, and GM's advantage eroded. By the end of the 2000s, the company was in such a weak position that the financial crisis in those years led to a drop in demand that sent the company into bankruptcy in 2009. The company was rescued from bankruptcy by the US government's Obama administration. At the time of writing, GM had reorganized significantly and was performing well again.

See Also

- ▶ Decentralization
- ▶ Organizational Design
- ▶ Product Market Strategy
- ▶ Sloan, Alfred P. (1875–1966)
- ▶ Transaction Cost Economics
- ▶ Williamson, Oliver E. (Born 1932)

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General-Purpose Technology

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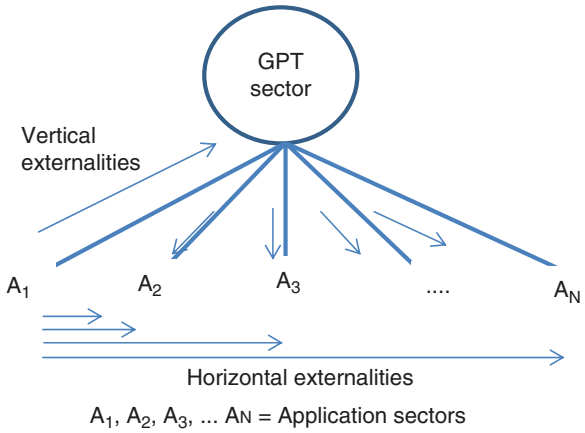
Abstract

Technologies are defined as general purpose (GPTs) when they can be applied, with low adaptation costs, to different products or industries. This implies that the benefit of an innovation, when general purpose, propagates across markets and industries. GPTs are more likely to be developed by diversified firms, or when downstream markets are composed of many specialized users rather than a few large customers. In cases such as these, when downstream markets are fragmented, GPTs are more likely to be licensed. They enable upstream technology-specialist companies to increase their rents by extending the number of ▶ licensee, rather than relying on their limited bargaining power.

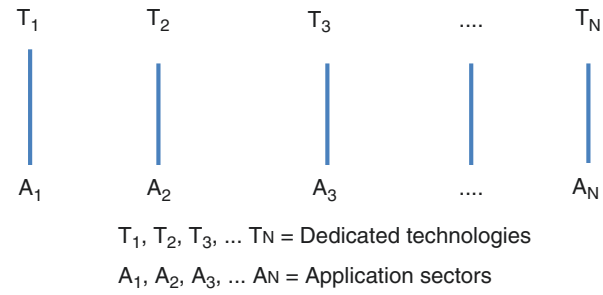
Definition A general-purpose technology can be used for different downstream applications. In contrast, a dedicated technology commands high adaptation costs when it is applied far from the context or the objectives for which it was produced.

In discussing the development of the US machine tool industry in the nineteenth century, Nathan Rosenberg (1976) noted that in the early part of the century the weapons industry relied on technical change that generated machines which performed several metalworking operations. When new industries emerged, like the bicycle industry, or sewing machines, or even the automobile industry later on, they all relied on similar machine tools. This is because even if the products of the new industries were considerably different – both among themselves and from the original weapons industry – they required similar metalworking operations (gridding, polishing, shaping etc.). Note that the benefits did not arise from production. The new machines had to be manufactured, and thus the costs of satisfying the growing demand were scaled up accordingly. The real source of benefit was that the fixed cost that was necessary to produce the knowledge of metalworking processes, and the basic machine designs, occurred when inventing the machines for the weapons industry. Simply put, the inventions did not have to be reinvented later on.

Following Rosenberg (1976), Bresnahan and Trajtenberg (1995) define GPTs as technologies that can be applied to different downstream products or industry domains at low adaptation costs. As shown in Figs. 1 and 2, they distinguish between a GPT's industry structure, in which a GPT's sector produces the GPTs for several downstream sectors, and an industry structure featuring dedicated technologies, in which each application sector produces its own technology. They argue that a GPT's industry structure is characterized by a *vertical* and a *horizontal externality*.



General-Purpose Technology, Fig. 1 An industry structure with general-purpose technologies (GPT)



General-Purpose Technology,
Fig. 2 An industry structure with dedicated technologies

Key to their analysis is the idea that the R&D investments of the downstream and upstream sectors – or any investment for producing the inventions – are complementary, in the sense that the benefits of the investments of one sector increase with the investments of the other sector, and vice versa. The vertical externality arises when shocks improve the efficiency of an application sector. The higher downstream efficiency (whether in the downstream sector technology or demand) induces a greater investment in invention in the downstream sector, which raises the investment in invention of the upstream sector because of the complementarity. The horizontal externality arises because the shock to an application sector induces investments for improving the quality of the GPTs by the upstream sector, and this induces improvements, and investments in downstream R&D, in other application sectors. Thus, a shock to one application sector propagates horizontally to the other sectors that are linked to the original application sector through the GPTs. Note that this propagation does not occur in an industry structure characterized by dedicated technologies. In this case, the shock to the application sector remains within the vertical structure (that is, we only observe the vertical externality) because there is no link between the upstream sector and other downstream industries.

These externalities mean that GPTs are more likely to be developed by diversified firms. These firms internalize the externalities, while separate upstream and downstream firms in the market do not take into account the benefits of the upstream firm or the other downstream firms when choosing their investments in technology development following the shock that they experience. Bresnahan and Trajtenberg (1995) then argue that collaborations among application sectors, or between upstream and downstream sectors, can help to increase the investments of the system in technology and GPTs, as they make the incentives of the parties closer to those of a diversified firm. The argument is similar to Nelson (1959), who noted that large diversified firms are more likely to invest in basic research, whose spillovers fall onto several products of the company. Large chemical firms are good examples of companies that internalize the production of GPTs (e.g., Hounshell and Smith 1988).

Bresnahan and Gambardella (1998) maintain that large downstream firms discourage the production of GPTs. Their scale is large enough to invest efficiently in the production of technologies customized to their needs. In contrast, industries characterized by many different firms or submarkets encourage the production of GPTs. This is because their scale is not large enough to develop a dedicated technology, and they are willing to buy GPTs even if the GPTs are more standard technologies, not perfectly suited to their needs, which then require adaptation costs. Bresnahan and Gambardella show that in industries with several smaller firms, or several small market niches, we are more likely to observe GPTs rather than dedicated technologies, and vice versa in industries featuring large downstream firms or subsectors. For example, they show that during the 1980s, the US featured many personal computers (or several small users of computers), while in Japan there were relatively more mainframes (large-scale computer users). As the theory predicts, we observed that packaged software diffused in the US vis-à-vis customized software in Japan. Interestingly, the situation was reversed in robotics during the same years. Japan featured many small firms employing

robots in many sectors, while in the US robots were generally used by a few large car manufacturers. Accordingly, Japan developed compact generalpurpose robots while the US developed robots dedicated to automobile production.

Gambardella and Giarratana (2013) argue that firms are more likely to license GPTs when product markets are fragmented, that is, when they are characterized by different submarkets. When a technology is dedicated to a specific application, the seller can only sell it to buyers who want to use it for that application. However, if the seller also operates in that product market, they may not be willing to sell the technology to nurture a competitor (Arora and Fosfuri 2003). Whether markets are homogenous or differentiated does not make a big difference because the technology can only be used in the product market of the ▶ licensor. In contrast, if the technology is GPT, the licensor can license it to a ▶ licensee who could use it in a non-competing product submarket different from the product market in which the licensor operates. In this case, the licensor is willing to license the technology, because there is no direct competition with the licensor's product business, and the licensee is willing to buy it, because the GPT can be used in a different submarket, unlike a dedicated technology. Now, a fragmented rather than homogenous product market does make a difference. If the product market is homogenous, the GPT, which could be used in a distant niche, can only be used in direct competition with the licensor's product business, because there are no distant niches. On the contrary, if the market is fragmented, there are distant submarket niches, and thus both buyers and sellers are willing to exchange technology that can be used in different submarkets, where the producers are sheltered from one another.

Gambardella and McGahan (2010) consider a situation in which firms have to sell their technology in technology markets (Arora et al. 2001). If the technology is dedicated, it can only be sold to an individual buyer. Typically, such buyers are large manufacturing firms, with considerable bargaining power, while the technology suppliers are small technology-specialist companies. Most often, this means that the technology suppliers can only hope to enjoy a limited share of the gains from trade. In contrast, if the technology is GPT, even when the technology specialist enjoys limited rental fees per transaction, they can enter in many transactions by selling the technology to distinct user firms. As a result, they can switch the source of rents from something that they can hardly control (bargaining power) to something that they can control – that is, their ability to develop a technology that can be applied to a larger number of applications.

A few studies have discussed interesting examples about the development of GPT and its implications for company strategy (e.g., Maine and Garsney 2006; Thoma 2009). In addition, Feldman and Yoon (2012) have developed an empirical test for assessing whether the Cohen–Boyer r-DNA technology is a GPT.

See Also

- ▶ Innovation Diffusion
- ▶ Licensee
- ▶ Licensing
- ▶ Licensing Strategy
- ▶ Licensor
- ▶ Markets for Technology
- ▶ Strategic Factor Markets

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Generic Strategy

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Abstract

The concept of generic strategy was first defined by ▶ Michael Porter in his book *Competitive Advantage* (1985). A strategy of cost leadership involves seeking the lowest cost structure in the industry; a strategy of differentiation is based on providing a product/service offering that is unique and has higher than average value in the marketplace; and a focus strategy targets a specific segment within an industry. The primary intention is to serve this segment in an exemplary fashion; in so doing the firm may achieve a low-cost advantage, a differentiation advantage or (rarely) both.

Definition Generic strategy refers to three alternative methods that can be used to position firms competitively within an industry, through decisions made regarding market scope and the economic basis for competitive advantage. These choices result in three generic strategies at the business unit level: cost leadership, differentiation and focus.

Generic strategy refers to three alternative methods for a firm to position itself competitively within an industry: cost leadership, differentiation and focus. The concept of generic strategy is first defined by ▶ Michael Porter in his book *Competitive Advantage* (1985). Porter conceptualizes ▶ competitive strategy in terms of the relative position of a firm within an industry. The underlying postulate is that profitability differences among firms in an industry stem from differences in cost structures or in abilities to influence the demand curve (i.e., willingness to pay). According to Porter, a firm can outperform competitors either by positioning itself in the marketplace with a cost leadership strategy, or with a differentiation strategy. These dimensions (low cost vs. differentiation) are the basis of a firm's relative competitive advantage. In addition, the firm can pursue a focus strategy by targeting a specific segment within a market. The combination of choices in market scope and in the economic basis for competitive advantage results in three generic strategies at the business unit level: cost leadership, differentiation and focus.

A strategy of cost leadership involves seeking the lowest cost structure in the industry; higher-than-average profitability would then exist due to the resultant cost savings that the firm enjoys relative to its competitors. Furthermore, by definition, there can be only one firm with the 'lowest' cost position in the industry. This is supported by industry economics. Since most cost advantages stem from scale and/or experience, the largest firm in the industry usually has the benefit of economies of scale in one or more key functions of the business, such as manufacturing (e.g., automotive), R&D (e.g., pharmaceutical) or marketing (e.g., beer and soft drinks). A firm can utilize multiple sources of cost advantage to achieve its cost leadership position in the industry. For example, Wal-Mart has a cost leadership strategy. It has significantly lower costs than its competitors across a variety of business operations including

purchasing power, distribution economies of scale, information technology scale efficiencies, as well as reduced inventory and holding costs due to higher turnover. However, cost leadership can also stem from a narrow product offering that requires little or no R&D or marketing costs, as exemplified by private label products (typically the lowest priced offerings in an industry).

A strategy of differentiation is based on providing a product/service offering that is unique and has higher than average value in the marketplace. It is unique in that the buyer perceives it as different from what is offered by other firms in the industry, and it is of higher than average value in that the buyer is willing to pay a price premium. A differentiation strategy can result in higher than average profitability, as the firm enjoys a higher price point than do its competitors. The bases for differentiation in the marketplace can be varied and multiple: quality and product design (luxury cars), technology (smartphones), brand (athletic shoes), service (financial advisors) or product array (department stores). Multiple firms within an industry can pursue differentiation strategies, as exemplified in the luxury watch industry where each firm has its own unique marketplace position based on brand image, engineering and innovation, product design and quality, distribution, price and product array, to list several.

A focus strategy targets a specific segment within an industry. The primary intention is to serve this segment in an exemplary fashion; in so doing the firm may achieve a low-cost advantage, a differentiation advantage or (rarely) both. The ability of the firm to achieve a competitive advantage through the pursuit of a focus strategy is predicated on the assumption that the targeted segment of the market is underserved by firms competing for the broader market.

These three different generic strategies form Porter's conceptualization of competitive strategy at the business unit level. Each represents a distinctly different competitive position in the marketplace. Porter argues firms that attempt more than one risk being 'stuck in the middle', excelling at none. He generally views cost leadership and differentiation as mutually exclusive, as it is difficult for a firm to do both well; the resultant lack of a clearly defined strategy leads to buyer confusion in the broader marketplace. The pursuit of a focus strategy is a decision to address the needs of a select target market. Generic strategies thus represent alternative competitive strategies by which a firm can earn higher than average profitability within an industry.

Porter's concept of generic strategies has been criticized by strategy scholars as overemphasizing the role of the external environment, in that the simple choice of a strategic position in the industry does not, in and of itself, guarantee a sustainable competitive advantage. Having a strategy that results in a distinctively different competitive position in the marketplace also requires barriers to imitation and replication. Thus, a cost leadership strategy in an industry can only result in a superior competitive position if there are barriers (e.g., economies of scale, purchasing power, market power) that prevent other firms from pursuing such a strategy. Similarly, a differentiation strategy requires barriers to imitation and replication (e.g., patents, proprietary knowledge) to ensure a superior competitive position in the marketplace. Without barriers to imitation and replication, the competitive advantage of a strategy is not sustainable. The establishment of such barriers to competition requires the development and deployment of a unique bundle of resources (Penrose 1959).

Resource-based theory (the resource-based view of the firm) emphasizes the role of a firm's resources and capabilities as the basis for achieving a competitive advantage in the marketplace (Barney 1991; Peteraf 1993; Collis and Montgomery 1995). For these resources to support a sustainable competitive advantage, Barney (1991) argues that they must be rare, valuable, difficult to imitate and non-substitutable. Peteraf (1993) further contends that competitive differentiation in the marketplace requires that resources be heterogeneous across firms, imperfectly mobile between firms, and described by conditions that limit competition for such resources both before and after the firm has established itself. Finally, according to Collis and Montgomery (1995), the basis for a sustainable competitive advantage rests on the degree of inimitability, durability, appropriability, substitutability and competitive superiority that a

firm's resources possess. Resource-based theory thus maintains that the choice of a generic competitive strategy, though necessary, is not sufficient to establish and sustain a superior competitive position within an industry. The success of the competitive strategy is itself dependent upon a firm's acquisition and deployment of a unique bundle of resources and capabilities which possess characteristics that retard the ability of competitors to usurp the firm's position within the marketplace.

See Also

- ▶ Business Strategy
- ▶ Competitive Strategy
- ▶ Porter, Michael E. (Born 1947)

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Geocentric Staffing

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Abstract

Multinational corporations (MNCs) can staff their subsidiaries with parent country nationals (employees from the home country), host country nationals (employees from the subsidiary location), third country nationals (employees from a country other than the home or host country) or some mix thereof. The debate regarding the value of each of these groups originated with Perlmutter, who suggested that an MNC can hold an ethnocentric, polycentric or geocentric managerial orientation. This framework has become a guiding model in the field of global staffing. Here we trace the evolution of the debate, beginning with Perlmutter, moving on to strategic international human resource management and the tension between global integration and local responsiveness, and finally to current issues regarding knowledge creation and transfer. We conclude with a discussion of the implications of MNCs' choice of managerial orientation on global staffing.

Definition Geocentric staffing refers to the choices that multinational corporations make regarding the staffing of their subsidiaries, whether they use parent country nationals (employees from the home country), host country nationals (employees from the subsidiary location), third country nationals (employees from a country other than the home or host country) or some mix thereof.

▶ Multinational corporations (MNCs) can choose to staff their subsidiaries with parent country nationals (PCNs) (employees from the home country), host country nationals (HCNs) (employees from the subsidiary location) third country nationals (TCNs) (employees from a country other than the home or host country) or some mix thereof. The debate regarding the value of each of these groups in staffing international subsidiaries originated from the work of Perlmutter (1969). Perlmutter suggested that an MNC can hold an ethnocentric, polycentric or geocentric managerial orientation, and this framework has become a guiding model in the field of global staffing (Collings and Scullion 2006). In this entry, we trace the evolution of these concepts as they relate to international staffing, beginning with Perlmutter's original interpretation, then move on to strategic international human resource management

(SIHRM) and the tension between global integration and local responsiveness, and finally look at current issues regarding the role of knowledge creation and transfer. The entry concludes with a discussion of the specific implications of MNCs' choice of managerial orientation on global staffing.

Perlmutter's Original Classification

Perlmutter (1969) identified an *ethnocentric* orientation within an MNC as resulting from the attitude that PCNs are more trustworthy, intelligent, capable and reliable than are HCNs or TCNs in both headquarters and subsidiaries. Managers are recruited from the home country, trained for key positions around the world, and are infused with the culture from headquarters, resulting in substantial control over subsidiaries. As such, home standards are often applied to evaluate individual and subunit performance across all subsidiaries regardless of local differences. A *polycentric* orientation stems from the attitude that host cultures are difficult to understand, and as a result local managers know what best to do and should be left alone, as long as the subsidiary's performance is satisfactory. Top management within subsidiaries consists of trustworthy HCNs with intimate knowledge of the host culture and government. As subsidiaries act as relatively autonomous units, polycentric MNCs often consist of loosely connected groups of subsidiaries. Local nationals are developed for key positions within their own countries, and performance standards, incentives and training methods may differ substantially from those at headquarters. MNCs with a *geocentric* orientation set worldwide objectives and standards, but at the same time, view subsidiaries as making a unique contribution to the firm as a whole. Diverse regions are integrated through global policies that establish universal standards, but also allow for local variation. MNCs with a geocentric orientation will seek the best individual for the job anywhere in the world, regardless of nationality, and have reward systems that reflect the worldwide objectives of the firm. Finally, Perlmutter and Heenan (1974) suggested the addition of a regiocentric orientation in which MNCs draw staff from a broad area or region, such as a common market. The MNC will recruit, develop and assign managers on a regional basis, in an orientation that is part polycentric and part geocentric (see Rugman and Verbeke 2004 for the economic rationale underlying a regiocentric approach).

Strategic International Human Resource Management

Perlmutter (1969) suggested that companies can be conceptualized as being at varying stages on a route to geocentrism, thereby supposedly implying a natural trajectory for MNCs to become more geocentric and thus more internationally competitive. This idea is reflected in the SIHRM literature that became popular in the 1990s. Taylor et al. (1996: 961) define SIHRM as 'human resource management issues, functions, and policies and practices that result from the strategic activities of multinational enterprises and that impact the international concerns and goals of those enterprises'. As such, effective SIHRM should align an MNC's business strategy with its human resource management (HRM) practices as well as the external operating environment (Adler and Bartholomew 1992). A key aspect of SIHRM is addressing the tension between global integration and local responsiveness (Bartlett and Ghoshal 1989) so that subsidiaries can operate effectively within the local environment (Adler and Bartholomew 1992; Schuler et al. 1993). Adler and Bartholomew (1992) suggest that firms pass through four phases (domestic, international, multinational and transnational), with the international phase (high global integration and low local responsiveness) being almost identical to Perlmutter's ethnocentric orientation, and the transnational phase (high global integration and high local responsiveness) being highly similar to Perlmutter's geocentric orientation. It is suggested that transnational managers must have a global business perspective, must be knowledgeable about many cultures and how to work with individuals from those cultures, must be able to adapt and live in a foreign culture,

and must interact with foreign colleagues as equals with no cultural hierarchies (Adler and Bartholomew 1992).

Global Staffing and Knowledge Transfer

The creation and transfer of knowledge is emerging as a key issue in global staffing, with knowledge transfer becoming a key motive for transferring personnel to various positions within the MNC's headquarters and subsidiaries (Bonache et al. 2001; Hocking et al. 2004). Downes and Thomas (2000) suggest that staffing subsidiaries with PCNs has traditionally been a way to transfer knowledge from headquarters to subsidiaries, thus highlighting the role of PCNs as a mechanism for global integration, required by both an ethnocentric and geocentric orientation. SIHRM theorists suggest that MNCs utilize various HR practices to enhance learning, innovation, flexibility and corporate integration (Schuler et al. 1993; Welch and Welch 1997; Harzing 2001), thus reflecting the synergies that may result when MNCs have a geocentric perspective on staffing. Given the importance of SIHRM and knowledge transfer in the literature on global staffing issues, this entry will now highlight the current staffing issues that are present when an MNC holds an ethnocentric, polycentric or geocentric orientation.

Ethnocentric, Polycentric and Geocentric Approaches to Staffing

Ethnocentric Staffing

MNCs with an ethnocentric orientation have a high need for global integration, which suggests a reliance on PCNs as agents of control (Harzing 1999, 2001). In an ethnocentric MNC, PCNs are believed to have greater technical knowledge, managerial talent and loyalty to the organization than do HCNs (Banai 1992). However, in addition to PCNs, MNCs may use TCNs or HCNs who have been socialized at headquarters and have a strong fit with the parent firm's culture and values (Schneider et al. 2000). In this sense, SIHRM practices based on an ethnocentric orientation would largely focus on finding suitable expatriates for foreign subsidiaries. MNCs would likely impose policies regarding staffing, compensation and performance management that reflect the practices of the parent firm with little regard for local operating customs or practices (Banai 1992). The strengths of an ethnocentric approach to staffing would include having individuals who are familiar with the corporate culture at headquarters, an increased ability to effectively communicate with headquarters and an increased ability to maintain control over the various subsidiaries (Schuler et al. 1993). However, there are numerous weaknesses or costs associated with an ethnocentric orientation towards staffing. PCNs on foreign assignments are generally more expensive than are HCNs, as MNCs must make foreign assignments sufficiently attractive to PCNs (Scullion and Collings 2005). Besides the obvious financial costs of an ethnocentric orientation, other costs include top management being reserved for PCNs, thus blocking the career advancement of HCNs and TCNs, unequal rewards for PCNs on an expatriate assignment, resulting in feelings of injustice experienced by HCNs, centralized HRM policies that limit the ability of local managers to select, recruit and train employees of their choice, and above average turnover of frustrated HCNs and TCNs (Banai 1992).

Polycentric Staffing

MNCs with a polycentric orientation would grant a high degree of autonomy to subsidiaries managed by trusted HCNs. Each subsidiary thus has the power to develop and implement HRM practices and policies that best suit the local environment, and subsequently these policies are generally not useful to other subsidiaries or the home firm (Schuler et al. 1993; Tarique et al. 2006). A ▶ polycentric staffing policy entails low global integration and considerable regard for activities in the local operation, thus suggesting the appropriateness of employing HCNs or regionally similar TCNs as opposed to PCNs. A polycentric orientation and the primary use of HCNs may be beneficial to the MNC as HCNs have familiarity with the cultural, economic, political and legal environment

of the host country, and HCNs also have the ability to effectively respond to the operational requirements of the host country (Caligiuri and Stroh 1995; Tarique et al. 2006). Further, the use of HCNs is generally less costly than utilizing PCNs, allowing many subsidiaries to compete more effectively with regard to reduced costs (Caligiuri and Stroh 1995). Perlmutter (1969) suggests some of the limitations of a polycentric orientation to global staffing, such as the inefficient use of the home country's expertise as well as excessive regard for local traditions coming at the expense of global growth opportunities of the MNC. Additionally, Caligiuri and Stroh (1995) suggest that a polycentric orientation prevents PCNs from gaining global work experience and prevents the HCNs from becoming socialized to the home firm's organizational culture, thus suggesting a lack of opportunity for knowledge creation and transfer.

Geocentric Staffing

In MNCs with geocentric staffing policies, PCNs, HCNs and TCNs can be found in key positions throughout the organization, as these MNCs attract, select and retain employees who demonstrate the best demand-ability fit (Tarique et al. 2006). Gong (2003) suggests that this heterogeneous staffing policy facilitates innovation and organizational learning by allowing for opportunities to develop relationships with colleagues and relevant stakeholders within headquarters and various subsidiaries. Benefits of a geocentric orientation include having an increased talent pool from which to recruit and select (Caligiuri and Stroh 1995) as well as knowledge creation and transfer, which can be valuable, rare, inimitable and non-substitutable, thus leading to a sustained competitive advantage (Colakoglu et al. 2009). However, Colakoglu et al. (2009) point out that a geocentric orientation utilizing PNCs and TNCs may still diminish the subsidiary's ability to compete on cost.

Adler and Bartholomew (1992) provide a detailed description of the influence of a transnational approach to HRM with regard to recruiting, development, retaining staff and utilizing staff. Given that a transnational approach (high global integration and high local responsiveness) is almost identical to Perlmutter's (1969) geocentric orientation, Adler and Bartholomew's discussion is particularly relevant to geocentric staffing.

Recruiting. MNCs recruiting policies must be guided by world-class standards and seek out the most competent people from anywhere in the world. To do this, firms must understand the needs of their global businesses and recruit people with a global understanding of many different operating environments. Recruitment and selection must be attractive to candidates from a variety of nationalities, and incentives must also have a broad range of appeal.

Development. Trainers must prepare staff to work anywhere in the world with people from any place globally. Training systems must not be culture specific and should involve staff from all parts of the world.

Retaining. Career paths must be identified that consider the MNC's worldwide operations. Incentives and rewards must meet world-class standards or the MNC may lose its most competent individuals.

Utilization. The MNC must ensure that the problem-solving skills of the geocentric manager are utilized to enhance the firm's worldwide operations. Managers and executives from all subsidiaries should be included in critical operating and strategic planning teams.

See Also

- ▶ Geographic Scope
- ▶ Global Strategy
- ▶ Human Resources
- ▶ Multinational Corporations
- ▶ Polycentric Staffing

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Geographic Scope

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Abstract

A multinational enterprise's (MNE's) geographic scope refers to the international reach of (a) firm-level sales and (b) firm-level bundles of value-added activities. Its significance for corporate strategy, structure and performance depends upon the relative importance of these foreign activities vis-à-vis the size of sales and bundles of value-added activities conducted inside the home country. This can be measured by the MNE's 'degree of multinationality' (DOM), which is a multifaceted concept often framed in terms of size-related or diversity-related metrics. The lack of a universal definition and definitive measures has resulted in conflicting perspectives regarding geographic scope's linkages with MNE strategy, structure and performance. What matters most is that the metrics adopted effectively answer the specific research questions at hand and have managerial relevance.

Definition A multinational enterprise's geographic scope refers to the international reach, beyond home country borders, of (a) firm-level sales and (b) firm-level bundles of value-added activities. Its significance for corporate strategy,

structure and performance depends upon the relative importance of these foreign activities vis–àvis the size of sales and bundles of value-added activities conducted inside the home country.

A multinational enterprise's (MNE's) geographic scope refers to the international reach, beyond home country borders, of (a) firm-level sales and (b) firm-level bundles of value-added activities. The significance of an MNE's geographic scope for corporate strategy, structure and performance depends upon the relative importance of these foreign activities vis-à-vis the size of sales and bundles of value-added activities conducted inside the home country. This relative importance can be measured by the MNE's 'degree of multinationality' (DOM). DOM, as the operationalization of the MNE's geographic scope, is a complex and multifaceted concept.

The lack of a universally agreed upon operational definition of DOM, as well as the absence of definitive measures of this concept, have resulted in a multitude of empirical studies that offer conflicting results in terms of geographic scope's linkages with MNE strategy, structure and performance. Conflicting results as regards statistical outcomes and managerial prescriptions are visible especially in studies that try to link DOM and firm performance (Sullivan 1994; Verbeke and Brugman 2009; Verbeke and Forootan 2012).

Early research that examined DOM and performance, such as the Harvard Business School's Multinational Enterprise Project, adopted a simple approach, with companies based in the US qualifying as multinational if they had six or more foreign subsidiaries outside the US and qualified for Fortune's largest 500 US Industrial Corporations (e.g., Vaupel and Curhan 1969; Vernon 1971). At around the same time, Perlmutter (1969) and Wind et al. (1973) added an additional dimension to the meaning of geographic scope, by suggesting that a firm's DOM should be assessed based on managerial attitudes towards foreign subsidiaries. Such attitudes could take the form of a home county (ethnocentric) orientation, a host country (polycentric) orientation, a regional (regioncentric) orientation or a global (geocentric) orientation. Here, any prediction of a linkage with MNE performance became even more elusive. The divergent conceptualizations of DOM largely reflect an ongoing debate regarding the utility of simple metrics that measure the relative size of engagement abroad and at home, versus more complex metrics that allow decomposing further the observed foreign engagement level; that is, measuring how it is dispersed across different countries (Ietto-Gillies 1998; Rugman and Oh 2011).

Simple Versus Complex Measures

Simple, size-related metrics consist of various firm-level measures of the MNE's international activities, and generally compare some degree of home activity with the degree of foreign activity. Common measures to determine the degree of multinationality are foreign sales over total sales and foreign assets over total assets (Sullivan 1994; Verbeke and Brugman 2009). Recent work has suggested the importance of regions in the study of geographic scope (see Rugman and Verbeke 2004; Ghemawat 2007), thus highlighting the utility of measuring intra-regional sales (the ratio of home region sales to total sales) as well as intra-regional assets (the ratio of home region assets to total assets) (Rugman and Verbeke 2008; Rugman and Oh 2011).

More complex metrics, focused on decomposing DOM, attempt to define geographic scope by considering the international distribution of operations, and assess, for example, the number of countries in which the MNE has operations or the regional dispersion of activities (Ietto-Gillies 2009). However, these measures must be interpreted carefully. As one example, it could be argued that the number of countries in which the firms have operations captures neither the actual importance of these foreign operations nor the 'distance' involved in the intra-firm MNE network. 'Distance' refers to the geographic, cultural, institutional and economic differences between the home country and the various host countries where the MNE operates (Kogut and Singh 1988; Tung and Verbeke 2010). However, it can also be viewed more generally as the extent

to which the MNE's activities are dispersed across a number of countries, each of which has a particular distance vis-à-vis all other countries involved in the intra-firm network. Overall, compounded distance in the internal network is likely to affect the linkages between geographic scope on the one hand, and strategy, structure and performance on the other (Hutzschenreuter et al. 2011; Rugman et al. 2011).

In line with Perlmutter's early insight, Sullivan (1994) further suggests that geographic scope may not only include the physical scope of MNE operations but also attitudes towards internationalization held by top managers within the firm. An attitudinal dimension of geographic scope could therefore include, for example, managers' international experience as well as the overall ▶ psychic distance characterizing the MNE's international operations (Ronen and Shenkar 1985; Tung and Verbeke 2010).

Both simple and more complex measures of DOM are required if any credible linkage between geographic scope and MNE strategy, structure and performance is to be established, and managerial prescriptions formulated: simple measures typically provide indicators of the size of international operations vis-à-vis overall operations, whereas more complex measures typically give information about the diversity level characterizing these operations, and thereby about 'distance' in the MNE network to be addressed by the firm's management.

Single Variables or a Multidimensional Composite Index

A final issue when trying to determine the MNE's geographic scope is whether a single variable is appropriate, or whether geographic scope is best captured by the use of a multidimensional composite index. As one example, Sullivan (1994) has suggested that DOM could best be determined by a five variable index consisting of foreign sales over total sales, foreign assets over total assets, overseas subsidiaries as a percentage of the total number of subsidiaries, top managers' international experience and psychic dispersion of international operations (i.e., the dispersion of the firm's subsidiaries across ten 'psychic' zones in the world, each having a unique cognitive map of the principles of management). Ramaswamy et al. (1996) also suggest utilizing a composite measure of DOM, but argue that Sullivan's aggregated index results in the loss of the conceptual meaning of each of the individual variables. The 1995 World Investment Report published by the United Nations Conference on Trade and Development (UNCTAD 1995) calculated DOM utilizing three ratios: foreign assets to total assets, foreign sales to total sales and foreign employment to total employment. These ratios were then averaged to create the Transnationality Index (TNI), published annually. Ietto-Gillies (1998) suggested multiplying the TNI by the ratio of the number of foreign countries in which the MNE is active vis-à-vis the total number of possible countries. The resulting indicator, called the Transnational Activities Spread Index (TANi), would thus include both size-related and diversity-related components of geographic scope.

Essence of the Debate

The debate around the MNE's DOM can be framed in terms of the utility of simple, size-related metrics versus more complex, diversity-related ones as well as the use of univariable versus multivariable indices. A review of the most cited papers examining the link between DOM and performance by Verbeke and Forootan (2012) identifies the use of both types of metrics as well as univariable and multivariable indices. Geographic scope can thus be examined from different perspectives. What matters most is that the metrics adopted effectively answer the specific research questions at hand and have managerial relevance.

See Also

▶ Firm Size and Boundaries, Strategy
▶ Global Strategy
▶ Home–Host Country

- ▶ International (Cross-Border) Operations
- ▶ Multinational Corporations
- ▶ Psychic Distance
- ▶ Scope of the Enterprise

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Geography of Innovation

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Abstract

The geography of innovation refers to the spatial clustering of innovative activity and the advantages conferred by co-location. Economic actors realize gains when located to places with abundant resources, well-developed social networks and the chance for serendipitous encounters: all factors that increase the probability of recognizing opportunity and easily solving problems. Location can lower search costs through localized knowledge spillovers and provide access to external scale and scope economies. Firms are one mechanism for organizing economic activity and social networks are another; geography provides an alternative platform that easily brings together resources external to firm and augments social networks through face-to-face interaction.

Definition The geography of innovation refers to the tendency for innovative activity to cluster

spatially and the advantages conferred by co-location with abundant resources, well-developed social networks and the chance for serendipitous encounters. It also relates to innovation clusters spatially due to lower search costs realized through localized knowledge spillovers, the increased probability of recognizing opportunity and easily solving problems, and access to external scale and scope economies.

One of the most striking features of ▶ innovation is its pronounced tendency to cluster both spatially and temporally. Throughout human history we observe that creative activity has been concentrated in certain places and at certain times: consider Florence under the Medici, Paris in the 1920s, Britain during the Industrial Revolution and Silicon Valley in more recent times. For every generation, there is some location that captures the imagination as a locus of creative activity and opportunity.

Alfred Marshall noted the geographic clustering of economic activity in his 1890s *Principles of Economics*, citing three primary reasons: an infrastructure of related and supporting industries; the presence of specialized skilled labour pools; and the presence of non-pecuniary externalities or ▶ knowledge spillovers. Taken together these factors are referred to as industrial clusters, ecosystems or innovative milieus. Ellison and Glaeser (1999) use a dartboard approach to find that geographic concentration is ubiquitous among industries; however, most industries are only slightly more concentrated than would be expected by a random draw. Some of the most extreme cases of industry agglomeration are due to natural advantages, such as transport routes. In other cases, historical accidents lead to spatial clustering. Most critically, once these processes begin there is a reinforcing tendency due to increasing returns.

Of all economic activity, innovation benefits most from location. Even after controlling for the geographic distribution of production, innovation exhibits a pronounced tendency to cluster spatially (Audretsch and Feldman 1996a). Innovation is the ability to blend different types of knowledge into something new, different and often unexpected. Like art, innovation is a creative expression. However, unlike art, the measure of innovation is not in the eye of the beholder, but in acceptance within the marketplace that brings commercial rewards to the innovating entities and returns to society in terms of economic prosperity and growth.

Innovation begins rather humbly as scientific discoveries, suggestions by product users or suppliers, or the novel idea from an entrepreneur. Geography aids by providing a platform to advance the idea. Initially, when the commercial potential is unknown, only a few experts or lead users may appreciate the significance of a specific innovation. Translating the discovery into commercial activity and realizing its economic potential entails a process that involves building an appreciation of what is possible among potential investors, customers and employees, and organizing suppliers and customers into a value chain. Increasingly, there is recognition that what matters for place-specific industrial development is not necessarily resources or initial conditions, but the social dynamics that occur within a place and define a community of common interest around a nascent technology or emerging industry (Feldman and Zoller 2012).

Location matters most at the earliest stage of the industry lifecycle. The propensity for innovative activity to spatially cluster is subject to the industry lifecycle, which indicates that there is a direct link between the localization of innovation and the maturity level of particular industries within a territory (Audretsch and Feldman 1996b). Early stages of the industry lifecycles are characterized by the importance of tacit knowledge. Once a product has become standardized and demand will support mass production, it is easier for an industry to disperse geographically.

The natural tendency for innovation activity to agglomerate spatially has significant implications for firm strategy. Location allows small firms to easily access external resources that augment their internal capabilities (Feldman 1994). The strongest empirical study to date finds that the most important theorized determinants of regional variations in entrepreneurship are proximity to

suppliers and thick specialized labour markets (Glaeser and Kerr 2009), confirming Marshall (1948).

On the other hand, larger firms are often the source from which knowledge spillovers emanate. Large firms balance the potential gains from an abundant supply of skilled labour and other non-pecuniary benefits against the leakage of ideas. Alcacer and Chung (2007) find that less technologically advanced firms favour locations with high levels of industrial innovation, while technologically advanced firms choose only locations with high levels of academic activity and avoid locations with industrial activity to distance themselves from competitors.

Geography provides advantages such as pooling of demands for specialized labour, reduced transport costs and knowledge spillovers. The literature suggests that innovation is no longer best analysed at the level of firm in isolation from spatial context. Geography provides a platform to organize resources and provides gains to innovative activity.

Foundations

Zvi Griliches (1979) introduced the knowledge production function in which research and development (R&D) activity is an input. Firms engage in R&D to produce new knowledge that becomes the basis of ▶ competitive advantage. Of course, knowledge production creates non-pecuniary externalities due to its non-exclusive and non-rival characteristics. Knowledge spillovers result when the economic agent who utilizes knowledge is distinct from the producer of that knowledge. While the costs of transmitting codified information is invariant to distance, the cost of transmitting tacit knowledge is lowest close to its source. Thus, knowledge spillovers and the ways in which they benefit recipient firms are localized.

Adam Jaffe (1989) expanded the knowledge production function to consider external sources of knowledge in an article provocatively entitled 'The real effects of academic research'. Using patents that are a measure of knowledge production, Jaffe found empirical support for the notion of localized knowledge spillovers from university and industrial research laboratories – two knowledge-producing entities. Using a direct measure of innovative activity and new product introductions in the market, Acs et al. (1994) demonstrated that the knowledge production function held. Feldman (1994) extended the model to consider other knowledge inputs important to the commercialization of new products, such as the local presence of knowledge inputs from related industries and specialized business services. In investigating the location of firms that introduced new products to the market, Feldman (1994) demonstrated a pronounced tendency for innovative activity to cluster spatially for a wide range of industries. Empirical results confirmed a greater propensity for innovative activity to cluster spatially in industries in which industry R&D, university research and skilled labour are important inputs. Of course, the location of innovation may be an artefact of the propensity for production to be concentrated in space. Audretsch and Feldman (1996b) control for the location of production; they find that the propensity of innovative activity to cluster geographically tends to be greater in industries where new economic knowledge plays a more important role.

Breschi and Lissoni (2009) claim that the research on the geography of innovation in the last 20 years has largely engaged with two basic questions: Does knowledge tend to flow more easily across spatially proximate agents than across distant agents? And to what extent can localized knowledge flows be characterized as spillovers that enhance positive externalities rather than market transactions? The conclusions are that R&D and other knowledge spillovers not only generate positive externalities, but also that such knowledge spillovers tend to be geographically bounded within the region where the new economic knowledge was created.

Few studies have been able to rigorously assess the extent of these spillover activities, given data limitations and the inherent endogeneity of location attributes. Greenstone et al. (2010) find convincing evidence that the location of large 'million

dollar plants' has a significant effect on the total factor productivity for incumbent firms in the same country, when compared with the robust counterfactual of locations that were considered finalists but did not receive the bid to be the site of a large new manufacturing plant. The evidence suggests that agglomeration economics do produce positive spillovers – specifically in terms of cheaper and faster supply of intermediate goods and services, proximity to workers or consumers, better quality of the worker–firm match in thicker labour markets, lower risk of unemployment for workers and lower risk of unfilled vacancies for firms following idiosyncratic shocks – and they also provide knowledge spillovers.

Paper Trails via Patent Citations

Krugman (1991: 53) argues that scholars should abandon any attempt at measuring knowledge spillovers, because 'knowledge flows are invisible, they leave no paper trail by which they may be measured and tracked'. However, Jaffe et al. (1993: 581–583) point out that knowledge flows sometimes leave a paper trail in the form of patented inventions and new product introductions. Building on Trajtenberg (1990), it is possible to link a patent application to the other patents that reference or cite that patent as prior art. Jaffe et al. (1993) examine the geographic relationship between the originating and citing patents to examine knowledge spillovers, using a control group of similar technology and timing. They find that patents cite other patents originating in the same city with higher frequency: citations are five to ten times more likely to come from the same city. Thompson and Fox-Kean (2005) find that these results are not robust at the local level and depend on the method used to select the control group and the level of patent aggregation. Thompson (2006) finds modest evidence of local spillovers using an identification methodology that uses citations added by patent examiners. In general, patent citations are considered a noisy, but useful, measure of the extent and direction of knowledge flows (Jaffe et al. 1998; Alcacer and Gittelman 2006; Harhoff et al. 2006).

Mechanisms of Knowledge Spillovers

Understanding the mechanisms underlying knowledge spillovers is obviously crucial for a comprehensive theory of geography of innovation and to design effective innovation policies. For example, when a skilled employee changes his job (an example of labour mobility) (Almeida and Kogut 1997), founds a new firm (an example of spin-off) (Klepper 2009) or exchanges knowledge informally with employees in other companies (an example of informal networks) (Dahl and Pederson 2005) then knowledge is transferred. Song et al. (2003) argue that learning-by-hiring is mostly useful for innovation beyond the firm's current technological and geographic boundaries. These spillover mechanisms are spatially bounded.

Another potential mechanism of knowledge spillovers is social networks. Diffusion of knowledge tends to be local, particularly for technologies characterized by relatively high degrees of tacitness and complexity, and thus cannot be completely codified into blueprints, contracts and journal articles. When tacitness and complexity are relatively high, repeated face-to-face contact and personal interaction become increasingly essential to effective knowledge transfer. Repeated interactions promote development of informal networks that serve as conduits for information exchange about important technological developments and emerging market opportunities (Saxenian 1994; Stuart and Sorenson 2003).

Many social networks dedicated to the production of knowledge are geographically bounded, since spatial proximity can help the network members to communicate more effectively and monitor each other's behaviour. The literature suggests that social relationships facilitate knowledge spillovers. Spatial proximity is more important for mediating social relationships between individuals from different fields. Bercovitz and Feldman (2011) argue that geography is likely to be less important in mediating social relationships between individuals in the same field since they have various alternative mechanisms through which to establish relationships and, once relationships are established, individuals can work

together even when they become geographically separated.

Breschi and Lissoni (2006) argue that spatial proximity is used by most localized knowledge spillover studies as a proxy for social proximity. To the extent that many social networks are concentrated in space, spatial proximity would appear as a significant determinant of access to knowledge spillovers. If this is true, by replacing spatial proximity with direct measurers of social proximity we diminish the importance of geography as an explanatory variable of spillovers. Breschi and Lissoni (2009), after controlling for patent inventors' mobility and for the resulting co-invention network, find that the residual effect of spatial proximity on knowledge diffusion is greatly reduced for invention.

The limitations of patents as an indicator are well known (Scherer 1984; Griliches 1990). Patents are geographically concentrated, which reflects a concentration of research and development (R&D) activity. However, patenting does not necessarily translate into economic advantage for firms or for geographic places. Studies that draw inferences about innovation by focusing on invention should be interpreted with caution. The lack of good data on new product introductions has hindered further enquiry.

Implications and Future Challenges

The theory and finding on the issue of geography of innovation has been extremely influential in policy. On one hand, evidence of spatially bounded knowledge flows has contributed to shifting the attention away from traditional policies targeted to sustain less advanced regions and towards a new set of enabling policies aimed at nurturing the birth and growth of new high-tech clusters (Breschi and Malerba 2005). On the other hand, the importance of localized knowledge flows has prompted the intervention of regional and local policymakers in support of R&D activities at local universities and public research centres.

There is often a temptation to analyse firms, institutions and actors individually; however, the geography of innovation literature considers the larger context. Of course, once the analysis is open to consider geography there is a need to understand history, building a deep contextualized understanding of a place and the firms located there.

Causality is always difficult to discern: the attributes associated with places that are the loci of innovation are the result of their success, not the underlying cause. There is evidence that the creation of the conditions conducive to innovation is the result of a social process (Braunerhjelm and Feldman 2006). Indeed, many of the factors associated with success, such as venture capital or active university involvement, lag rather than lead industrial viability (Feldman 2001). In the most successful places, entrepreneurs build institutions and shared resources that develop the cluster as they build their firm. The effect of large firm strategy on the development of external resources important to innovation and the creation of conditions conducive to innovation warrants further investigation.

See Also

- ▶ Competitive Advantage
- ▶ Innovation
- ▶ Knowledge Spillovers

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Global Business

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Definition Global business refers to the transacting of economic activity across a large number of geographies.

'Global business' refers to transactions between different locations around the world and is generally used to emphasize the fact that, where these become large in terms of scale and scope compared with total transactions, participants and stakeholders need to take account of the interactions between national markets in order to make informed decisions. Thus, as the importance of cross-border transactions grows, then markets, industries and firms all become 'global' in the sense that the behaviour of participants in one

location has important implications for business in other locations. The fact that this 'interrelatedness' between markets is the critical feature of global business is often ignored or misinterpreted.

The term 'global business' is often used carelessly in popular media and commentary to describe everything from 'global companies' or 'multinationals' through to the collective ranks of the world's business leaders. Some executives wrongly describe their businesses as 'global' simply because they operate subsidiaries in many different countries. Some critics of the related notion of 'globalization' implicitly assume that global business implies standardization of products or processes around the world. Such misinterpretation of the term mostly arises when we ignore the defining feature of global business: that transactions between different locations around the world play such an important part in a particular economic activity that what happens in one location impacts the conduct of the same activity in other locations. Therefore a business, industry, market or company is not global because its activities take place in many parts of the world; it is global only if these activities are in some way, interrelated.

These economic interrelationships between different locations can take many forms including trade in products, services, or knowledge; foreign direct investment to establish capacity in other locations; cross-border mergers and acquisitions; and other forms of alliance and networking between participants in different locations; or even immigration (Head and Ries 1998).

Global business is not new: archaeologists have found evidence of long-distance trade dating back to the Stone Age (Diamond 1991); products and ideas were exchanged between Asia and Europe for centuries (Chinese silk was reported in Rome in the first century AD; Smith 1973); long-distance trading companies have existed at least since the British East India Company was founded in 1600 and the Dutch East India Company, established in 1602. Since global business arose before modern nation states, it is preferable to think of it in terms of economic interaction between locations rather than cross-border transactions (Helliwell 1998). Many businesses have, however, become more global in recent years because of the relative decline in transport costs and the improvement in communications technologies that have paved the way for a greater scale and intensity of interaction between economic actors in different locations (Rauch 2001).

Measuring the extent to which business is global is not as straightforward as it might at first appear. We can measure interactions such as trade, foreign direct investment, and so on, with a reasonable degree of accuracy. On the basis of analysing these kinds of measure, Ghemawat (2003) had argued that, despite increasing market integration, they remain in a state of incomplete cross-border integration which he refers to as 'semiglobalization'. In this case internationalization strategy still needs to pay close attention to location-specificity or resources and knowledge and to try to capitalize on residual barriers to cross-border integration. But business may also become more global because of a change in the behaviour of economic actors. If, for example, managers start to pay more attention to the actions of their potential competitors in other locations in devising their strategies (leading to what is sometimes termed 'multipoint competition' (Karnani and Wernerfelt 1985), or multinational companies increase the numbers of employees they rotate between locations, then the business will become more global. The importance of behaviour in determining the extent to which a business is global means that ethnic ties, diaspora, and shared values, beliefs and methodologies may all have important impacts (Kotkin 1992). Some business activities, such as hairdressing for example, would not normally be described as global because this activity needs to take place in the presence of the customer and there are currently few global hairdressing chains. But to the extent that newly fashionable hairstyles sweep around the world, propagated by an increasingly global media, then even hairdressing becomes, in some aspects, a global business.

See Also

- ▶ Business Strategy
- ▶ Trade Creation/Diversion

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Global Strategy

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Abstract

Global strategy differs from domestic strategy in terms of content and process as well as context and structure. The content of global strategy can contain five key elements, while the process of global strategy can have six major stages. These are expounded below. Global strategy is influenced by rich and complementary local contexts with diverse resource pools and game rules at the national level to form a broad ecosystem at the global level. Further, global strategy dictates the interaction or balance between different entry strategies at the levels of internal and external networks.

Definition *Global strategy* refers to a general pattern of major decisions and actions by a multinational enterprise in its pursuit of its overall strategic goals at the global level, including goals and courses of action which define both 'spatial' contents and temporal processes of MNE evolution from a local player to a global player.

While traditional research on the multinational enterprise (MNE) recognizes the centrality of the MNE's unique strategy, there is little clarity concerning the unique natures and features of global strategy as compared with those of local strategy. The fundamental differences between MNE and local firms lie in the specific contents and processes of global and local strategies. Such differences derive from the contextual issues of resource pools and game rules across the levels of each nation and global network as well as from the firm-specific choices of major decisions and actions for the content and process of global strategy across the levels of each firm and its alliance network.

An Integrative Framework of Global Strategy

MNE evolution can be best explained as a strategic phenomenon with both content and process dimensions. The dimension of strategic content consists of five '*spatial*' *content* factors (Li 2003; cf. Jones and Coviello 2005). The first factor is ultimate intent, which refers to the firm-specific long-term vision, mission and strategic intent to guide strategic choices and behaviours. The second factor is external context, which refers to the demand and supply conditions at both home and host countries, including both industry-specific and country-specific conditions. The third factor is internal profile, which refers to the firm-specific internal resources, including both tangible and intangible resources. The fourth factor is strategic choice, which refers to the firm-specific decisions and behaviours to compete in the global market with the four concrete elements of strategic target or goal, strategic thrust or orientation, strategic posture or position, and strategic mode or mechanism. The last 'spatial' factor is market effect, which refers to the firm-specific

performance in the market, including both financial results and learning results.

In addition to the five 'spatial' factors, there are three *temporal process* factors. The first factor is simultaneity, which refers to the temporal pattern of events taking place at the same moment. The second factor is directionality, which refers to the sequential process of the events. The last 'temporal' factor is rhythm, which refers to the tempo of events (e.g., slow or fast as well as accelerated or decreasing). The dimension of temporal process has often been neglected.

By integrating the two dimensions an integrative framework of MNE evolution can be developed to guide theory-grounded case studies (Li 2003; Ramamurti 2009). Specifically, the whole process of MNE evolution can be broken down into six major stages: pre-export (no export yet), immature export (irregular export), mature export (regular export), infant MNE (initial foreign direct investment (FDI)), teenage MNE (immature/unstable FDI), and mature MNE (stable/experienced FDI). The first three stages are the pre-MNE phases, while the last three are the MNE phases. All the 'spatial' content factors are analysed in the temporal context of the six specific stages of MNE evolution. Further, within and between these six stages, the temporal factors of simultaneity for concurrent events, directionality for the sequential events, and rhythm for the tempo or pace of all events are all analysed with the contents of such events.

To open the *black box* of strategy in general and global strategy in particular, a set of four strategic components can be identified: (1) *strategic targets* (market share and profit margin as the primary ends); (2) *strategic thrust* (low cost and high value as the primary orientations to achieve the strategic targets); (3) *strategic posture* (board or narrow industry coverage, high-end or low-end market segment coverage, local or global in geographical coverage, and multiple or single functional coverage in terms of R&D, production and marketing as the primary functions), and (4) *strategic mode* (internal structural designs and external structural designs in terms of strategic alliances).

To integrate the above points, the specific content and process of global strategy can be linked via two notions as the core of global strategy: (1) cross-border learning trajectories as the overall objectives, and (2) entry strategies as the concrete mechanisms.

The Typology of Cross-Border Learning Trajectories

Exploitative and exploratory learning can be identified as the first dimension for the typology of learning trajectories. *Learning trajectory* refers to a pattern or path of learning delineated by both learning motive and learning capability. *Exploratory learning* is a path-breaking trajectory of learning in terms of transferring extant knowledge from the external sources or creating novel knowledge by oneself or by a joint effort, while *exploitative learning* is a path-dependent trajectory of learning in terms of deepening or applying one's extant knowledge (March 1991). Using the central theme of cross-border learning, we can reframe the specific patterns of international evolution among different species of MNE as their unique learning trajectories. For instance, while the learning trajectory of MNE early movers is a path-dependent exploitation of *ex ante* advantages, the learning trajectory of MNE latecomers (MNE newcomers to a lesser extent) tends to be a path-breaking exploration of *ex post* advantages. Further, though a balance between ▶ exploration and exploitation is required (March 1991), this balance is a challenge because the two types of learning constitute a duality that mutually affirm and mutually negate (Gupta et al. 2006). The balance is especially challenging for MNE latecomers (Li 2010), similar to the situation of new start-ups relative to incumbents in a domestic context.

Further, unilateral and bilateral learning can be identified as the second dimension of learning trajectory. Specifically, *unilateral learning* refers to a trajectory of active learning by a single firm, either internally or externally from other passive parties via a learning race or other modes of knowledge transfer, such as licensing, M&A and equity joint venture. In contrast, *bilateral learning* refers to a trajectory of joint learning with active partners, either to jointly utilize the complementary

resources from co-specialized partners, or to jointly create novel assets (Li 2010).

The Links Between Learning Trajectories and Entry Strategies

Applying the above typology of learning trajectories to cross-border entry strategies, a set of generic and specific propositions can be developed concerning the potential links between learning trajectories and entry strategies by highlighting the motive and capability of cross-border learning as the primary drivers of strategic choice. The specific learning trajectories and entry strategies can be regarded as the concrete components of one generic learning trajectory and one generic entry strategy, while the generic ones can be taken as the overarching frameworks of the specific ones. All learning trajectories and entry strategies are ideal types as the general rules for the most likely connections between learning trajectories and entry strategies. Specifically, *four ideal-typical entry strategies* can be identified as the applications of four learning trajectories: (1) the *initial entry strategy* for bilateral exploitation; (2) the *first intermediate entry strategy* for unilateral exploitation; (3) the *second intermediate entry strategy* for unilateral exploration; and (4) the *mature entry strategy* for bilateral exploration.

Further, entry strategy is related to the defining notion of global-local balance in terms of market diversity and institutional diversity as well as the notion of reactive-proactive balance in terms of cross-border entrepreneurial strategies. While market diversity is concerned with the macro-level role of *resource pool* related to the micro-level function of asset configuration (e.g., the interplay between internal and external assets), institutional diversity is concerned with the macro-level role of *game rule* related to the micro-level function of task coordination (e.g., the interplay between formal and informal governance modes). *Resource pool* refers to a collection of supply and demand factors within a nation and a group of nations for MNE to tap into, while *game rule* refers to a collection of formal and informal institutions within a nation or a group of nations for MNE to interact with (Li 2003; cf. Peng 2009). While the former is related to the organizational dimension of asset configuration, the latter is related to the organizational dimension of task coordination.

The mechanism connecting learning trajectories and entry strategies is cross-border transaction value as a special application of transaction value perspective (TVP) to MNE (Li 2010; cf. Zajac and Olsen 1993; Dyer 1997; Madhok 1997; Coviello and McAuley 1999). TVP differs from the extant MNE models and generic theories to the extent that it treats alliance as a unique network form, rather than a hybrid of market form and hierarchy form. It can also regard the decentralized and highly autonomous strategic business units as another network form. TVP posits that transaction involves not only cost but also value; with inter-unit synergy as its theme, transaction value lies in the duality of unifying resources from diverse partners via shared trust for long-term commitment. TVP also stresses alliance learning, both reactive exploitation and proactive exploration. This is co-exploration that can avoid the *core rigidity* of hierarchy form, the inherent inertia of reactive exploitation at the expense of proactive exploration. The *hierarchy cost* of core rigidity, however, has been largely ignored by transaction cost economics and the resource-based view. In other words, the extant theories of the firm are too narrowly focused on each firm in isolation without taking the firm's partners at the alliance level into consideration. This is why we need TVP to explain the essence of global strategy.

See Also

- ▶ Exploration and Exploitation
- ▶ Learning and Adaptation
- ▶ Multinational Corporations

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Globalization

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Abstract

A rapid globalization of economic activity from the 1960s has significantly changed the world's economy. However, the term 'globalization' has not been well or clearly defined. For some, it refers to the choices and strategies of transnational corporations (TNCs), which emphasize standardization and the fragmentation of production. Globalization is the outcome of the behaviour of TNCs and the liberalization of economies. It can be seen to lack legitimacy, accountability, organization and transparency. Globalization's proponents point to higher productivity and efficiency, increased average wages, greater competition, lower prices and increased product variety and quality; critics point to the socio-economic costs: increasing income gaps and inequality, uprooting of local brands, environmental degradation and so on. With no agreed definition of the term, the confusion in discussions and analysis looks likely to continue.

Definition The term 'globalization' has not yet been well or clearly defined. The term began to be used more commonly in the 1980s, reflecting technological advances that made it easier and quicker to complete international trade, production and financial transactions, hence it may be equated in certain economic contexts with standardization.

The *Oxford English Dictionary* defines globalization as the action, process or fact of making global; especially (in later use) the process by which businesses or other organizations develop international influence or start operating on an international scale, which is widely considered to be at the expense of national identity. For some economists, globalization refers to the choices and strategies of transnational corporations. 'Globalisation has been defined in business schools as the production and distribution of products and services of a homogeneous type and quality on a worldwide basis. Simply put – providing the same output to countries everywhere' (Rugman and Hodgetts 2001: 333). The emphasis is on the standardization influence that firms have on those that they deal with internationally. Ethier defines globalization as 'the vertical fragmentation of production across countries' (Ethier 2011: 132). The fragmented production process makes it possible for firms to operate at various and dispersed international locations. At the same time, there is an increased interdependency among various parts of the firm, as well as among various geographical locations.

The past decades have witnessed a rapid globalization of economic activity, which has significantly changed the outlook of the world economy. An increasing number of firms, countries and other economic actors take part in today's global economy, and all of them have become increasingly connected across borders. Globalization results in a different allocation of resources across countries and may generate welfare effects, including higher productivity and efficiency, increased average incomes and wages, greater competition, lower prices and increased product variety and quality. At the same time, the process of globalization also raises concerns in many countries and industries, and needs to be well managed to ensure its benefits are widely distributed.

Globalization of the economy and production is an immaterial and impersonal force and process that is the outcome of the behaviour of TNCs; their organization; takeovers; changing technology that allowed fragmentation of the value chain and spatial spread of production and distribution (unbundling of production chains and re-linking of tasks and skills); control and finance; ▶ standards; as well as economies of scale. In part, it is also the consequence of a change in the behaviour of consumers (fickleness and declining loyalty to certain national producers, products and brands) and liberalization of national and international economies for trade, production and finance.

The fragmentation of production and creation of long and complex global supply chains allowed for a substantial reduction in production costs and a drop in prices for a number of goods and services. However, it created new risks and hazards. For example, Boeing underestimated management problems with its complex subcontracting supply chain for components for its 787 Dreamliner, which led to significant delays.

Because globalization is immaterial and impersonal, it may not be located in a defined geographical space, it cannot be taxed or prosecuted, but it governs, to an extent, the lives of people that it touches. Therefore, the current wave of globalization is just a subset of huge structural changes that are the outcome of the Schumpeterian evolution in technology, spatial intensity and scope of interactions between many actors at all levels of the economy.

As a process primarily driven by technology and the actions of TNCs (power is shifted from states to firms), globalization has four weak elements: lack of legitimacy, lack of accountability, lack of organization and lack of transparency. Many are suspicious about corporations and their increasing power over everybody's life and behaviour. An obvious example is the influence of large pharmaceutical TNCs on governments and the World Trade Organization (WTO).

The process of globalization reduces the importance of spatial proximity to inputs or markets for a firm's output. It widens boundaries and deepens space for the geographical location of production and consumption because of the declining costs of getting goods and services to the market. A rapid expansion of ▶ foreign direct investment (FDI) is the key component of this process. Capital market liberalization and increased capital mobility have radically reduced the influence of governments in the monetary sphere. However, governments have gained increased control in other areas. For example, computers and information technology have greatly increased potential for data collection and processing, and, consequently, control over firms and citizens, which is relevant for tax and other purposes.

Globalization Waves

Globalization has had many waves, which may be identified according to the purpose of analysis: technology, geographical discoveries, banking, politics, religion and so on (Jovanović 2010, 2011). Two waves are referred to here. The first wave (1850–1914) was when globalization was imposed on the rest of the world either by gunboat diplomacy or through colonial control. The second wave (from the 1960s) was principally based on advances in technology.

Both waves were supported by technological revolutions that included the fragmentation (unbundling) of the production process and value chain, transport and communication.

The first one involved steamships, railways, telegraph and the opening of the Suez Canal. The second one includes container transport, mass air transport, cheap and reliable telephone services and the Internet.

The second wave of globalization brought important novelties. Hence the two waves have certain differences:

- During the first wave, technology primarily affected industries and firms. This permitted spatial separation (unbundling) between the location of production and the place of consumption of goods. The second wave of globalization brought an additional possibility for fragmentation of production: certain operations within the same factory can be unbundled and performed elsewhere. There is trade in specific tasks. Some services also became tradable.
- Tariffs were much higher during the first than during the second globalization wave.
- Non-tariff barriers (NTBs) are higher during the second wave than was the case during the first one.
- The first wave included inter-industry trade (primary commodities for manufactured ones). During the second wave, an increasing share of trade is intra-industry. Intra-firm trade is highly important during the second wave.
- FDI flowed to the developing countries during the first globalization wave, but now the principal FDI flows are among the developed countries. There are noted flows from the developing to the developed world and to other developing countries.
- The first wave of globalization involved huge migrations of people. Such migrations are now closely controlled and restricted.
- The second globalization wave has a strong Asian dimension.
- There are difficulties in predicting winners and losers during the second wave. This wave introduced swift business reactions. Jobs that seemed to be 'safe' some 3 years ago may go abroad. Bank computer programming may migrate, for instance, from Europe to India or Russia (Marin 2011: 309).
- There is a 'high resolution' impact on jobs during the second wave: some tasks or jobs in a firm/factory may be affected by globalization, while others in the same firm/factory may not be influenced (yet).
- There is a mix of liberal and mercantilist policy effects during the second wave. 'Suppose that home nation forbids outsourcing of data-entry jobs in an attempt to "save jobs". If other nations allow their firms to offshore, the home nation firms will find themselves at a competitive disadvantage. The expected result from this would be a reduction in home firm's production, so in the end the policy could end up indirectly "destroying" even more data-entry jobs rather than off-shoring would "destroy directly"' (Baldwin 2009: 18). In a number of cases, especially in services, the fear of losing jobs to foreign countries was a successful threat used by firms in the developed world to moderate salary-related demands by the middle-class workers.

The spirit of globalization might remain the same in both globalization waves, but there are important space-related differences in their actual attainment. During the first wave, the north (Europe and the US) industrialized, while the south (especially China and India) deindustrialized. There was an expansion of trade and factor movements (both labour and capital), while incomes between the two regions diverged. In the second wave of globalization, it was the south (East Asia) that industrialized, while the north deindustrialized. Trade and capital mobility expanded (mass labour migration was small by first-wave standards), while incomes between the two regions generally converged. Urbanization remained an important feature in both north and south during both waves of globalization (Baldwin and Martin 2004: 2707–2708).

An alternative view about globalization argued that it contributed to the flattening of the world and gave certain arguments to the 'death of distance'. The 'flat world' school argues that there are rapidly diminishing differences, greater homogeneity and more equality among various geographical locations for production. Based on

comparative advantages, state-led globalization 1.0 (1492–1800) shrank the world from a size large to a size medium; based on internalization of business within TNCs, TNC-led globalization 2.0 (1800–2000) shrank it from medium to small; while individual-led globalization 3.0 (from around 2000) 'is shrinking the world from a size small to a size tiny and flattening the playing field at the same time' (Friedman 2006: 10).

Globalization 3.0 is based on the assumption that global trade is free and costless. There is neither theoretical nor practical support for such a stance. Hence, according to this view, geographical distance is neither a prevailing feature of the world economy nor an important economic barrier (this has a certain rationale for information technology, but extrapolation across the manufacturing and services board is inappropriate). A flat and shrinking geographical space (weightless economy) is preferred and necessary for the mathematical modelling of the economy and spatial location of firms and industries by those analysts who are searching for the solution within equilibrium.

The actual shape of the world is not flat, and spatial distance still plays a role for the location of production and trade, although perhaps not as much as it used to in the past. Since the First Industrial Revolution (1750–1850), the costs of transport had, in general, a downward-sloping trend. Policymakers have been slowly dismantling certain policy barriers (tariffs, quotas) that facilitated and simplified trade and contributed to the flattening of the world. However, certain other policy barriers (NTBs) have proliferated. This, together with an increasing complexity of goods and services, as well as an understanding of the complicated information, is keeping and making the world somewhat big and rugged.

The essential spirit of the most recent wave of globalization does not bring much that is new. 'Critics of "globaloney" are right to assail the historical illiteracy that marks most claims of novelty associated with these conceptions of globalisation' (Scholte 2008: 1477). The general quest is for international openness: more freedom for trade in goods and services, and for capital mobility. The economic role of national frontiers declines as national economies merge (integrate) in a single interdependent 'global' unit. In a nutshell, the idea is to return to the essentials of the system that was prevailing during the first big wave of globalization (1850–1914).

For and Against Globalization

Supporters of globalization say that it has the potential to promote global economic growth, create jobs, make output by firms more competitive and lower prices to consumers. Globalization may accelerate development process and improve welfare. What took 150 years in the industrialized countries, the East Asian countries achieved in just over 25 years. Proponents point at the benign effects of globalization: increased economic opportunities and growth, and potential decrease in inequality and poverty among the countries around the world (but not necessarily within countries). They argue that globalization as a new phenomenon cannot be compared with previous phases of capitalist development, as this one has nothing to do with the past. Certain income disparities may be acceptable if they are merited and if they support a general economic progress. Labour has to pass through continuous adjustments, as it is, according to this school, better to have a mobile than an equal society. This group announces the 'death of distance' and 'weightless economy' (as spatial distance is no longer one of the main characteristics of the world economy), the 'death of national economic policy' (particularly trade, industrial and monetary) and the 'collapse of the nation-state'. This group emphasizes the central role of TNCs in the globalization process as they shape the international geography of production with their decisions to invest in certain locations or to leave them. They produce global, that is, standardized (identical), goods and services for consumers all around the world. Production becomes detached from consumption in national economies as they are both homogenized and integrated in the global system.

Globalization spreads useful ideas. Following a period of rapid expansion during 1990s, air travel in China became among the most dangerous

in the world. After a big crash in the region in 1994, Boeing offered free training workshops to traffic controllers and the staff of air transport companies. A new rulebook followed, with the support of both Boeing and Airbus. The 2008 Olympics in Beijing gave another impetus to China to improve safety in air transport. The outcome is that the accident rate in China is now among the lowest in the world (Romer 2010: 11).

Sceptics, on the other hand, refer to the socioeconomic costs of globalization: increasing income gaps and inequality around the world, uneven and unfair geographical and social distribution of gains, uprooting of local brands, social tensions, environmental degradation and growing intolerance towards political diversity. They argue that any potential gains of the current phase of globalization are largely overblown. Is globalization 'truly global'? There are large swaths of the globe which globalization did not touch. Tens of millions of people have never made a phone call. Elsewhere, in clusters, local forces are still strong and play a significant, useful and meaningful role.

The task and influence of the state is not diminishing: it is evolving alongside globalization and it is changing its role and authority. It is true that the behaviour and actions of TNCs shape globalization to a large extent, but investments and sales of TNCs are mainly concentrated in specific geographical areas (principally the developed world). To operate successfully, TNCs need certain preconditions, including appropriate infrastructure and educated labour. They also need the security of property and person that is normally provided by state authorities. Large-scale production, efficiency and homogenization of tastes and consumption patterns are exaggerated by the promoters of globalization. Local and individual tastes and preferences, particularly if compounded with an increase in income, become reinforced. Consumers search for differentiated, often custommade, goods and services, and many are able, ready and willing to pay for them. Despite grand talk about globalization, even the biggest TNCs generally sell most of their output in the domestic market of the country where they produce.

While there was a huge increase in absolute volume of FDI in the world, as well as liberalization of capital markets, one important global thing did not happen. Contrary to the situation around the start of the twentieth century, the new wave of globalization had not achieved freedom of labour movement at the turn of the 21st.

The expectation and promise that financial globalization would allocate capital in a superior way compared with controlled markets remained largely unfulfilled. Many countries, especially in South East Asia, piled up huge foreign currency reserves after their credit crunch in 1997 and became important global creditors.

Economic nationalism (buy domestic campaigns) skews demand towards home goods, while an ageing population tilts demand towards many services that can be provided only locally (cleaning, cooking, rehabilitation, medical and social care). An ageing population and the linked change in the structure of demand would notably contribute to a change in global connections.

Another cost of globalization can be found in the examples of countries such as Mexico, Thailand, Indonesia, South Korea and Russia, which suffered financial crises in the second half of the 1990s. Without the exposure to global capital markets, the crises would not have developed as they did. There are no safe havens from economic storms in a globalized world. Critics of this view argue that these countries would not have experienced such rapid development before the crises without such global exposure.

Certain global tendencies were present well before the current wave of globalization. For example, there was (for whatever reason and by whatever means) a spread of certain European languages outside Europe; a spread of Islam in Africa, Asia and Europe; and a spread of Christianity in Latin America. This was often linked with a profound subordination of the conquered population and annihilation of the local culture in favour of the 'global good'.

Globalization has never been either uniform or fully universal. It is also reversible. Just recall relatively recent disintegration phases in the world economy during the 1930s, the closing of the Soviet Union and China when they became

communist, or the wide pursuit of import substitution policies during 1960s and 1970s in many developing countries. Following the global credit crunch of 2007–2009, faith in pure neoliberalism and self-regulating market fundamentalism evaporated on many fronts.

When oil prices were $20 per barrel in 2000, it cost only $3000 to ship a container from China to North America. At prices of $200 per barrel, it will cost $15,000 in transport costs to ship a container from China to the east coast of the US. If demand for liquid fuels continues to grow without increased efficiency in fuel consumption, without new technologies, without new oil deposits, trade costs would increase. Similarly, new technology based on highly automated production processes reduces the share of labour in manufacturing. New jobs may be few but highly sophisticated. Production may need to be close to demanding and sometimes whimsical clients. Such tendencies are working in favour of the developed countries, as firms such as General Electric, Ford or Caterpillar started 'reshoring' parts of the production process to the US in 2013. Proximity to clients, sophistication, skills, training and knowledge of workers, rather than labour costs, gain in importance for certain new lines of production.

Market liberalization and new technologies contributed to globalization and the 'flattening' of the world, but increasing costs of energy and transport, as well as technologies linked with a high level of automation where labour costs play a minor role, would partly reverse the flattening process and 'crumple its surface'. Lipsey (2011: 235) noted that this might bring 'a resurgence of many forms of local production'. This is to say that certain aspects of the current phase of globalization can be undone; just as was the case with previous globalization phases.

The debate about globalization is often about jobs (the social dimension). Supporters argue that it is beneficial and that it creates jobs, while critics argue the opposite and say that jobs migrate to trading partners and competitors, and that globalization destroys the natural balance in the environment. Certain segments of labour in all countries are suspicious of globalization, as they no longer perceive the national government to be a guaranteed protector of their concerns against external threats. The protectionist 'buy domestic' campaigns of 2009 by certain national industries reversed these fears. To counter fears that come from globalization, the best long-term policy response may be to advance the possibilities for education and training, as technical progress and globalization have a strong bias against unskilled workers. Lifelong education is necessary, as many of the most in-demand qualifications did not exist a decade ago. Such a trend may continue.

How globalized are the largest 100 companies in Europe and the US? The OECD (2007: 32) found that they were largely similar. These TNCs generate two-thirds of their revenue in their home area and one-third abroad. Rugman and Oh (2011: 82) report similar findings. Hence, data demonstrated evidence that globalization, as popularly understood, does not exist (Rugman and Oh 2008: 13). Certain economic data (trade, sales) regarding globalization may be exaggerated and misinterpreted, while others, such as growing restrictions on global labour migration, may be ignored or overlooked.

Even though globalization spreads symbols of dubious value, such as Coca-Cola, McDonald's, MTV, Halloween, chewing gum or reality shows, it also spreads basic values, such as the rights of women and children. However, it is unfortunate that the latter takes place at a much slower pace. Globalization also provides an opportunity, as it has pulled out of deep poverty (but not more than that) hundreds of millions of people in the developing world.

Globalization may be a favourable force, which may contribute to the maximum viable economic activity that might create resources necessary to achieve other valuable social goals. The idea is to put limits on globalization. What kind of globalization is desirable, and how is it to be achieved?

Conclusions

Globalization was supposed to be one of the grand ideas in 'post-modern society'. Has it been so? The answer depends on what you mean by

'globalization'. As there is no generally accepted or standardized definition, the term means different things to different people, which may introduce confusion in discussions and analysis. If globalization is principally the process driven by the behaviour of TNCs that also influence the policies of governments, then globalization is still limited mostly to the developed countries and the newly emerging economies. Many countries in the world are strongly touched by globalization, but sizeable parts of the world population are still not affected obviously and positively by this process. Globalization tries to expand and impose its standards on new areas. When it expanded into new areas, it often encountered a palpable and stubborn resistance. This was because of the perception that it might not bring obvious benefits to the locals and because it might harm the local culture, damage the environment and have a negative impact on income distribution. Globalization is also fragile. An unexpected event, for example, a volcanic eruption in Iceland, can create havoc – in that case in transport and business throughout Europe in April 2010. The Pacific Ocean tsunami and the Fukushima nuclear disaster damaged important global supply chains in 2011. Earlier, the global credit crunch (2007–2009) significantly reduced trade and FDI, and contributed to 'buy domestic' campaigns.

As globalization allegedly flattened the world by reducing distances (in financial, communication and organizational terms), some may accept and argue that spatial location of production no longer matters too much for players in the national and international economy. Transport and other trade costs are reduced, hence the actual location of production matters less than was previously the case. But, by making firms more footloose, globalization makes them sensitive to small differences that prevail in various locations. Because of a high mobility of TNCs, a small initial difference in a footloose world may have a profound longer-term impact on location and clustering of mobile economic activity. Physical distance and geographical location still matter for the location of economic activity even in a 'globalized', footloose and evolutionary world, as the efficient use of technology often depends on the accumulated local talents and experiences (Jovanović 2009).

See Also

- ▶ Foreign Direct investment (FDI)
- ▶ Multinational Corporations
- ▶ Standards

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Governance

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Abstract

Governance arrangements determine how an activity or entity is owned, controlled, monitored and maintained for the long run. At the most general level, 'governance' can be accomplished by boards (in-house monitoring) or by arm's-length contractual arrangements. The former are exposed to bureaucratic inefficiencies, the latter to (market) recontracting hazards (Williamson, O.E. *Markets and hierarchies*. New York: Free Press, 1975; Williamson, O.E. *The economic institutions of capitalism*. New York: Free Press, 1985). Intermediate forms of governance, such as joint ventures typically occur in longer-term settings. Networks of firms such as R&D consortia and platform-based ecosystems also require some type of governance. Corporations have internal governance systems, usually a board of directors that seeks to monitor management. Regulations generally favour a goal of limiting managerial discretion over ensuring that management is pursuing a strategy consistent with the long-term profitability of the firm. The reason is that the latter is very hard to do, as business judgement is quite hard to assess and evaluate until results are evident.

Definition Governance arrangements are the system by which an activity is owned and controlled, including the incentives to align the goals of the parties involved and the mechanisms to manage disputes. Governance can be analysed at different levels, relating to, for example, a transaction, a corporation, an ecosystem or a nation. Corporate governance issues are those that are directly relevant to the business enterprise.

Governance is the arrangement under which an activity is owned and controlled. The 'activity' can range from a single transaction, to a whole company, to a ▶ business ecosystem or a nation. The governance arrangements determine the extent to which the goals of the parties involved can be aligned and good stewardship perpetuated for the long run.

Transaction-Level Governance

The governance of individual transactions is the subject of the field of ▶ transaction cost economics (Williamson 1975, 1985). The issue is how the transaction is most likely to be conducted smoothly, so that efficiencies are captured and disputes avoided. A typical example is a make-or-buy decision. Another is the invest or outsource choice for starting a sales effort in a new geographic market.

The simplest transaction governance choice is binary. Two parties can transact either in the market (i.e., negotiating a price in a contract) or within a firm (i.e., using command and control). The former relies on arm's-length contracts, enforced by the courts if necessary, for the activity to proceed. In the latter case, governance is maintained through managerial oversight. The objective is to find the right balance between the potential costs of bureaucracy (in the managerial oversight case) and recontracting hazards (in the contract case).

One problem that the economics literature explores is the recontracting problem (Williamson 1985). To the extent that one of the parties to a transaction must make transaction-specific commitments of resources and what Williamson calls a 'small numbers' condition is present (or likely to be present in the future), the other party may 'recontract' and opportunistically endeavour to extract more of the economic rent from the relationship. This can result from the exploitation of contractual ambiguities. If this problem is expected to be severe, the two parties may not be able to arrive at a mutually acceptable initial contract, leading the transaction to be internalized, either by acquiring the other party or by internally replicating its productive capability.

When the relationship involves repeated transactions over the long term, the two parties may build up norms, shared structures, relationship capital or 'constellations of safeguards' (Figueiredo and Teece 1996: 550) to help govern the ongoing relationship (Williamson 1979). Relational contracting that lies somewhere between arm's-length contracts and full-on integration can also arise. Intermediate forms of governance, such as strategic alliances, began to receive greater attention in the 1990s as such arrangements became more common (e.g., Ring and Van de Ven 1992). This line of research expanded away from the strict (but bounded) rationality of transaction cost economics to incorporate sociological concepts such as trust (e.g., Zaheer and Venkatraman 1995).

Network-Level Governance

Governance is also an important concern for multifirm networks, such as firms coming together for the purpose of research or standard setting. Governance is also needed for the common network form of the supply chain, in which a hub firm contracts with its suppliers and coordinates their activity (Jarillo 1988).

Intermediate (and mixed) forms of governance are common within multi-firm networks because of their long-term nature. As opposed to an arm's-length supply contract that limits itself to specifications and prices, an alliance contract may include a myriad of features including risk sharing, knowledge transfers and institutional structures (Mayer and Teece 2008). In cases where full specification and monitoring of the goods and services involved are particularly difficult, a multilateral alliance may even adopt the administrative trappings of ▶ vertical integration in the form of an equity ▶ joint venture (Oxley 1997).

A network requires some level of overall strategic planning (Thorelli 1986). This is particularly true of a business ecosystem that is based on a platform managed and modified by one of the member firms, serving as the 'ecosystem captain' (Teece 2012a: 106). The governance of business ecosystems is a mix of transaction-level governance decisions (which activities will be owned by the platform owner) and network-level governance (how control is to be exercised among ecosystem members).

Company-Level Governance

The internal governance of a company is the manner in which it is owned and controlled. 'Control' refers to the allocation of decision-making authority. Governance structures can range from a sole proprietorship to a multidivisional corporation in which ownership belongs to a fragmented group of shareholders, and management control is exercised by professional managers (who often also own shares in the company) under the supervision of a board of directors. Cases where ownership and control are separated are modelled in the economics and finance literature as agency problems, where the 'principal' (the owners) tries to incentivise the 'agent' (the managers) to exert the maximum effort and dissipate the least amount of the profits (e.g., Jensen and Meckling 1976). In the management literature (e.g., Teece 2012b), management is instead seen primarily as the creator of profits (by creating and exercising dynamic capabilities) and also the guardian of profits (protecting 'rents' from being appropriated by competitors).

Corporate governance very much implicates the board of directors, who are supposed to represent the interests of the shareholders. In the agency perspective, the proper role of the board is to keep a tight rein on managerial discretion and a sharp eye on corporate performance, both of which tend to favour short-term strategies. In the capabilities view, which has developed in the strategic management field, the primary role of the board is to ensure that a capable CEO has been selected and is pursuing a coherent strategy favouring the long-term growth of the enterprise. This latter approach requires that boards have sufficient resources to properly evaluate strategy. However, boards seldom have the needed resources and are forced to rely on management for technical expertise and strategic perspectives.

Corporate governance is heavily regulated in most economies, at least for companies that are

publicly traded. The regulatory emphasis is generally on financial monitoring. Some regulatory authorities, including most states in the US, allow, or even require, directors to explicitly consider the interests of employees, customers, suppliers and others when making decisions (O'Connor 1991).

The percentage of outside directors is one variable that regulation often targets. As regulatory authorities seek greater involvement by independent directors, yet another interest group arises, namely, the independents themselves. While a greater number of outside directors may or may not improve the board's audit abilities, it almost certainly reduces the relevant body of strategic understanding of the risks and opportunities in the enterprise's business environment. Not surprisingly, the empirical relationship of common pro-shareholder governance measures to corporate performance is still unclear (e.g., Core et al. 2006).

See Also

- ▶ Agency Theory
- ▶ Business Ecosystem
- ▶ Innovation Networks
- ▶ Joint Venture
- ▶ Platform Innovation
- ▶ Risk and Uncertainty
- ▶ Transaction Cost Economics
- ▶ Vertical Integration

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Growth Share Matrix

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Abstract

With diversification, the firm faces a new corporate issue: how to allocate resources between competing units, typically the strategic business units (SBUs), for the greatest advantage of the whole firm. Each competing unit can potentially contribute to overall performance by some combination of current earnings and real growth, while at the same time competing for resources (especially capital) to fund its growth.

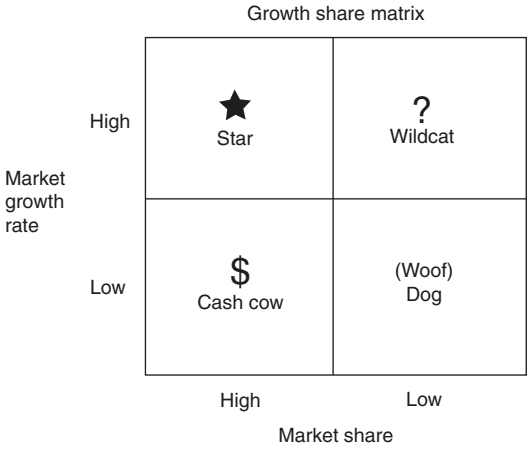
Definition The growth share matrix is a model of the competing units that comprise the portfolio of a diversified firm. This allows the manager to visualize the relative size and potential impact of the various business units on the firm's aggregate performance.

The growth share matrix is one of several models which emerged in the early 1970s when stagflation forced hard allocation decisions on many firms. It allows a manager to visualize the firm as a portfolio of units, emphasizing each unit's characteristic cash flow as a central concern while capital is constrained.

Allocating resources between competing units is a central strategic issue. A business firm may view this as a competition between functions, projects or geographies. With the emergence of the diversified firm as the dominant form, however, the shift from functional organizational structures to divisional structures emphasized the competition between strategic business units (SBUs) for resources. As Chandler (1962) and Rumelt (1982) have shown, from 1945 this shift accelerated for two decades.

The change in perspective created a need for new approaches to determine priorities between SBUs within the diversified firm. The result was the development of several models in the late 1960s, all of which analysed the 'portfolio' of the firm as if the SBUs were assets that could be traded independently of each other. The analogy is useful, yet dangerous. While the performance of any one asset in an investment portfolio is independent of the holding of another, this is rarely so in a diversified firm, where SBUs typically share elements of the value chain, brand or intellectual property.

Although numerous models emerged, two dominated the field. One was the growth share matrix developed by the Boston Consulting Group (BCG). The other, placing SBUs in a grid whose axes are industry attractiveness and the firm's competitive strength, was widely known as the GE-McKinsey screen (Thackray 1978); several others, such as those presented by Royal Dutch Shell and Arthur D. Little, are, broadly, variants of the latter. The two approaches rest upon sharply contrasting conceptual assumptions.



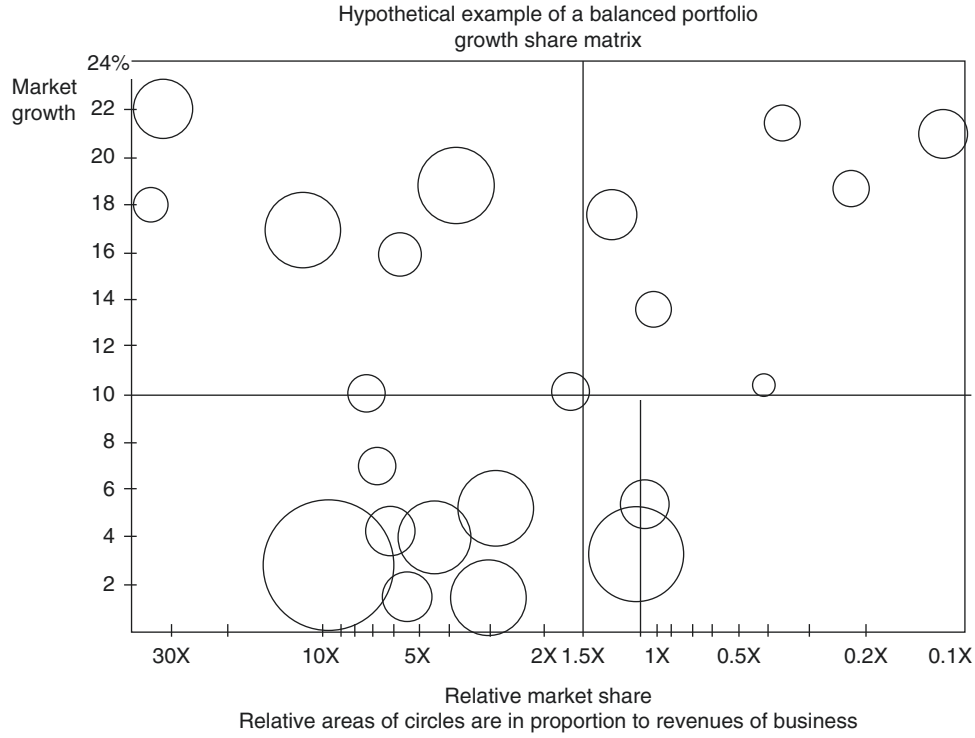
Growth Share Matrix, Fig. 1

In the BCG matrix, illustrated in Fig. 1, the vertical axis is the expected growth rate of the relevant market over the planning period (typically 5 years). The growth rate may be real (emphasizing capacity requirements) or nominal (emphasizing nominal asset growth and potential cash needs). The horizontal axis is the relative market share now held by the firm; it is measured relative to the market leader; the leader is plotted against its strongest competitor. This emphasis on relative market share is derived from the BCG perspective that, in most manufacturing and service businesses, experience and scale effects result in a systematic difference in cost position between competitors. Where that assumption holds, relative market share will determine the sustainable return and hence the cash generation capacity of the SBU (Stern and Stalk 1998). Where that assumption is demonstrably questionable, as in real estate development or mining, the matrix is inappropriate.

The BCG matrix provides insight into several issues. First, the axes are proxies for the cash requirements of growth and the potential cash generation from underlying cost advantage. This identifies a basic strategic issue: what combination of current free cash and growth (resulting potentially in free cash later) should this SBU contribute? The matrix encourages the firm to

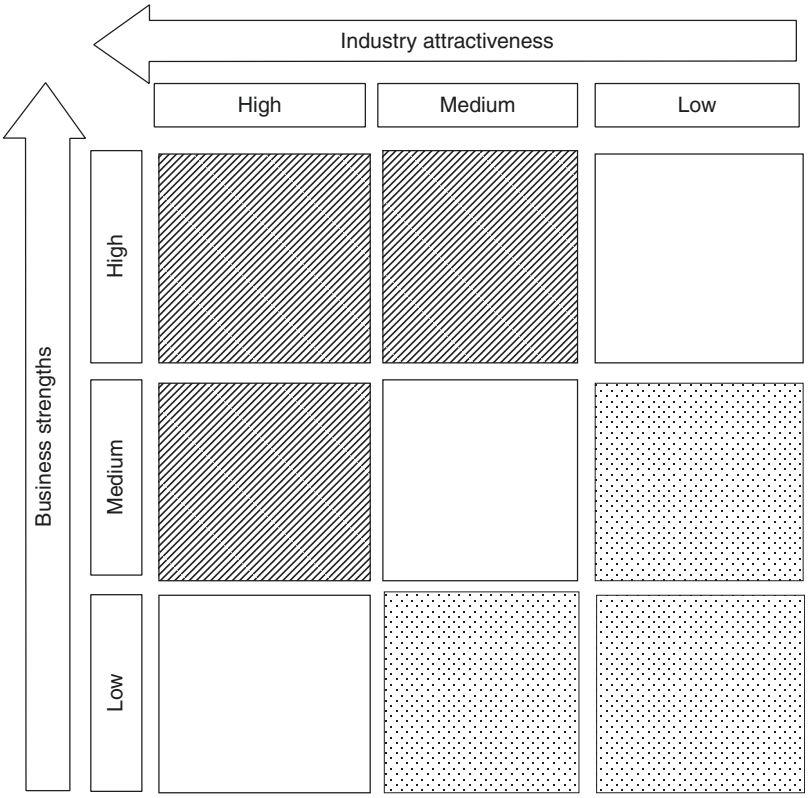
prescribe the balance it seeks and to set different control measures for SBUs according to their planned growth and underlying position. In practice, the matrix acts as a check on assumptions about relative share; if the actual past cash flows were inconsistent with the naive matrix prediction, this prompts re-examination of assumptions about the market definition or the determinants of relative costs. Second, the portfolio has an overall cash generation/use balance which is not necessarily in self-funding equilibrium. The rapid take-up of the BCG matrix in the 1970s was in part a reaction to the onset of stagflation and the sharp constraints on access to capital markets at that time. Understanding the portfolio's sustainability in financing terms was critical. Third, the definition of the axes allowed each SBU to be plotted graphically, as in Fig. 2, where the circle size indicates revenues or net assets. Where there is significant overlap with the portfolio of other firms, each can be displayed in a consistent way. With the addition of data about past movements (especially in relative market share), this allows one to visualize the pattern of multi-point competition now prevailing or likely to emerge in the sector.

At first glance, the GE-McKinsey screen model is apparently similar, although the axes are usually rotated 90°, as in Fig. 3. The underlying conceptual logic, however, is distinctly different. A single factor is used in the BCG matrix to determine the position of SBUs on each of the vertical and horizontal axes, respectively. In contrast, the measures in the GE-McKinsey model are composite. Industry attractiveness, for example, will be in regard to market growth, but would also incorporate a range of factors that might be anticipated to influence potential long-term profitability, such as cyclicality, capital intensity, unionization, barriers created by intellectual property rights and so on. Similarly, 'business strength' typically included market size and relative market share, but also more qualitative assessments of relative technical capability,



Growth Share Matrix, Fig. 2

Growth Share Matrix, Fig. 3



product differentiation, R&D capability and so on. In the more formalized systems applied by some companies, each factor would be scored, and a composite score derived by weighted addition.

In practice, the GE-McKinsey screen requires the active participation of managers in the SBU to define the factors and determine their weights. In effect, this is a disciplined form of SWOT analysis. Since the choice of factors and weights is judgemental, however, one might question whether identical factors and weights should apply to every SBU and whether the assumption that the scores are additive is valid (Hax and Majluf 1983). An alternative is to use the factors and weights generated by the PIMS (Profit Impact of Market Strategy) model (see Schoeffler et al. 1974; Buzzell and Gale 1987).

Taking a few steps back to gain perspective, we see that the two models are grounded in diverging views as to the primary determinant of expected return. The BCG matrix emphasizes the potential difference between competitors in any business as decisive for strategy; it rests on the view that the variance in return within industries is greater than the variance across industries. The GE-McKinsey approach draws on a traditional industrial-organizational perspective that emphasizes the differences in expected return across industries as a result of their industrial structure. In that sense, the two approaches can be as complementary as they are competitive.

See Also

- ▶ Conglomerates
- ▶ Consulting Firms
- ▶ General Electric
- ▶ Performance Measures
- ▶ Profit Centres
- ▶ Strategic Business Unit (SBU)

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Growth Through Acquisitions

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Abstract

Acquisitions are among the most powerful tools for achieving corporate growth. Carried out well, acquisitions can provide a strong platform for growth and survival. Carried out badly, acquisitions lead to quick decline and failure. It is therefore crucial to examine when acquisitions constitute the right tool to execute firm's growth strategy and how to manage them effectively.

Definition The term 'acquisition' refers to the acquisition by one corporation of another entire corporation or of a business from an ongoing corporation. An acquisition can be either friendly or hostile. When hostile, the acquirer approaches directly the shareholders of the target and actively purchases large stakes of the target company in order to have a majority stake.

The term 'merger' is a combination of two companies into one new larger company. It is a friendly transaction made through the Board of Directors. The shareholders of the old companies receive pro-rated shares in the new company.

Acquisition: A Powerful but Risky Tool to Achieve Growth

Firms constantly need to acquire new resources and capabilities or achieve greater efficiency and scale to survive in their competitive environment. To achieve their growth objectives, firms have to choose among different paths, such as internal development, licensing and partnerships or acquisitions. Most firms have a natural inclination to consider internal development, or organic growth, first. Internal development offers multiple advantages. The more the firm can grow on its own, the better it equips itself with resources that it can integrate and protect, while avoiding the cost and trouble of seeking, pricing, integrating and recombining resources from external parties (Dierickx and Cool 1989).

However, internal development is increasingly no longer sufficient to deliver growth in fast-moving environments. Firms often face resource constraints and social frictions within their organization as they develop new resources or obtain scale rapidly (Rosenkopf and Nerkar 2001). Acquiring already developed resources or businesses can therefore be crucial in closing a competitive gap or maintaining a leading position. External growth activities, in particular mergers and acquisitions (M&A), represent a quick path to obtaining the needed resources or scale, and ultimately achieving growth. Internal development is often much slower, incremental and with a higher uncertain outcome. Scale might also need to be achieved rapidly in order to recoup the resource investment: acquisition allows firm to expand its market share more quickly, making possible to amortize resource investments over a larger revenue base.

The literature on M&As shows that firms often seek targets which have resources in fields where the acquiring firm is weaker than its industry rivals, with the objective of redeploying the resources acquired (Capron et al. 1998). Through acquisitions, firms can both acquire resources to

reach competitive parity or gain a leading position by acquiring truly innovative resources that lead to pathbreaking changes (Ahuja and Katila 2001). In sum, acquisitions represent a unique opportunity for firms to overcome their resource deficiencies, allowing more distant search and much faster resource reconfiguration than internal development (Capron and Mitchell 2009).

Consider, for example, the pharmaceutical industry. Until the 1970s, the multinational companies in this sector emphasized in-house R&D, production and marketing resources. Their growth relied mainly on organic growth, missing contributions from external innovators. Yet during the past four decades, developments in biotechnology and genomics as well as the global spread of innovative resources have prompted many companies to reconfigure their R&D processes by developing relationships with external innovators through contracts, alliances and acquisitions. It is now common for major pharmaceutical firms around the world – such as Eli Lilly (US), Sanofi-Aventis (France), Teva (Israel), and Astellas (Japan) – to pursue innovation and research as much outside as inside their own laboratories.

Growing by acquisitions is not a novel strategy but a strategy that was already used in the nineteenth century to expand market and yield cost efficiencies, notably in industries that adopted new mass production technologies (Chandler 1977). Today, however, we are witnessing an increasing number of cross-border acquisitions that are no longer dominated by US or European firms but are actively initiated by firms from both developed and emerging countries. Firms pursue cross-border acquisitions to extend their global footprint while strengthening their capabilities and competitiveness. Although greenfield investments offer stronger benefits of protecting and coordinating the firm's development activities, cross-border acquisitions provides access to a broader set of resources and knowledge that can be potentially retrieved and used back in the acquiring firm's home market (Chung and Alcacer 2002). The Indian firm Tata Motors, for instance, upgraded its product development capabilities and moved towards more premium segments by acquiring the Korean Daewoo Motors in 2004, the British Jaguar Land Rover in 2008, and the Italian engineering firm Trilix in 2010.

In sum, growing through acquisitions constitutes an attractive path for many companies: a well-conceived and well-executed acquisition can leapfrog the firm's competitors by several years compared with what the firm could accomplish by pursuing internal development or more focused partnerships. However, M&As are costly ventures that often fail: as few as 30% achieve their goals, undermining the firm's ability to satisfy evolving resource needs and pursue its growth.

Two main reasons drive acquisition failure: (1) acquisitions are misused, and often overused – that is, they are used under conditions that would have required the use of another mode of growth such as licensing or alliances; (2) acquisitions are poorly executed – that is, poorly screened, priced or integrated. We explore those two sources of acquisition failure below.

When Is Acquisition the Right Tool to Grow?

Business acquisitions are a crude means of obtaining specific resources and pursuing growth. They often come with many unneeded resources that the acquiring firm needs to restructure and divest. They are costly and disruptive. An overreliance on acquisitions adds to the firm's risk and requires substantial financial and human resources. As a result, acquisitions have to be selected carefully once the firm has reviewed the other modes of growth. It is often preferable to reserve acquisitions in those cases for which internal development, purchase contracts and alliances are unsuitable

Some banks, for instance, have recently sought to increase their revenues by selling insurance products. Banks enjoy regular contacts with their customers that provide ongoing pipelines of sales opportunities physically (via branches) or virtually (via online banking) to cross-sell insurance-based products and services. Many banks have jumped to expensive M&As in order to acquire

quickly the product capabilities and scale they need in the insurance market, but very few banks have been able to cross-sell bank and insurance products successfully. Indeed, Citigroup, ING and others have been divesting their insurance arms. Such failures have led to a greater interest in contractual relationships and joint venture arrangements that recognize insurance as a complicated specialty that might not fit the business portfolio of a traditional bank.

The reason for not using modes that are more complex than strictly necessary is that the costs of a relationship with the resource partner increase with the strength of the linkage. Moreover, these costs can extend well beyond pure financial costs. For instance, as the firm deepens its relationship with its partner, it often needs to agree on strategic restrictions in terms of product or market scope. Managing a partnership relationship often drains management resources away from current activities, and the depth of engagement in alliances can actually put the firm at higher risk of resource leakage and copying than it would face in a basic contract. As for M&As, they often require massive resources and energy to manage the post-acquisition process while leaving the acquiring firm with the burden of combining, reshuffling, and eventually divesting resources from the target firm. It is therefore crucial to assess the conditions under which acquisitions represent the best way to grow (Capron and Mitchell 2010).

When to Buy Versus Build or Borrow?

Four questions guide the process of selecting among the different resource acquisition paths of internal development (build), contracts and alliances (borrow), and acquisitions (build). The questions are presented below in the step-by-step resource pathways framework (Capron and Mitchell 2012) (Fig. 1).

Are the Firm's Internal Resources Relevant?

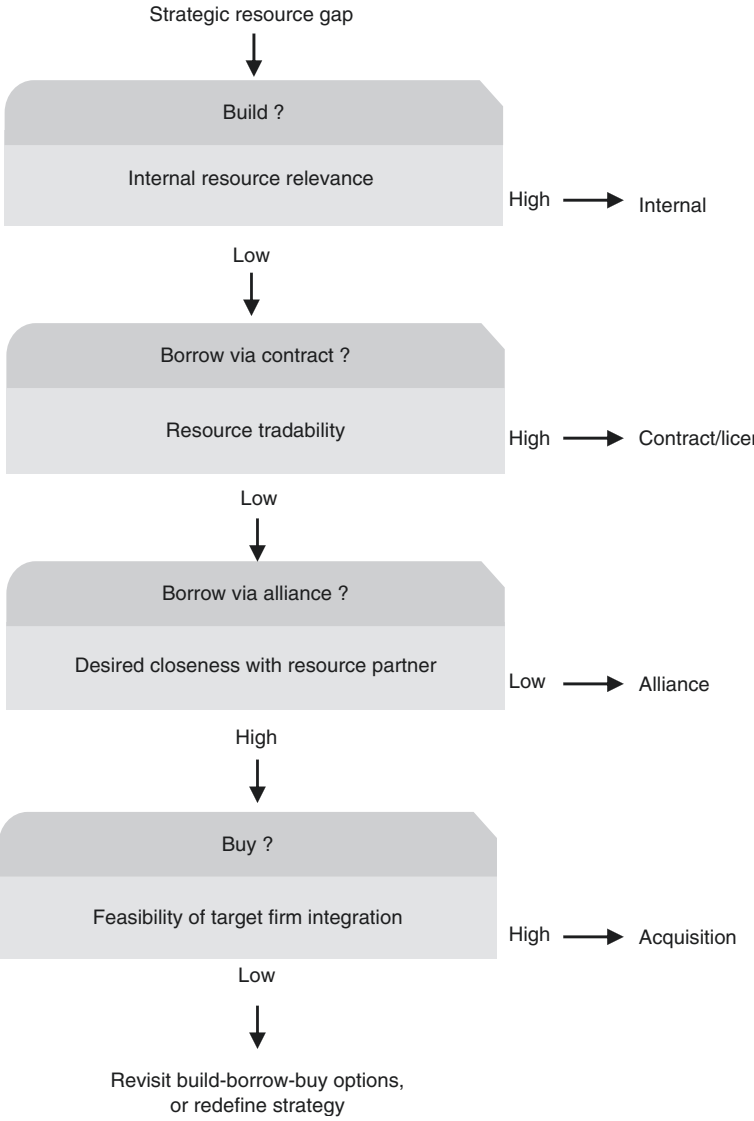
First, firms need to assess whether they can leverage their existing resources to satisfy their new resource needs in order to grow. Developing new resources internally is faster and more effective than obtaining them from external parties when the firm's existing resources (including knowledge bases, processes, and incentive systems) are similar to the ones needed and when the firm can outshine its competitors in the targeted area. In such cases, the internal resources are *relevant* to the development of the targeted resources.

Most companies start their resource search process by assessing whether their internal knowledge and organization will help them build the new resources. Yet many companies grossly underestimate the actual distance between their existing resources and the targeted resources. They risk becoming obsessed with internal development and failing to recognize the difficulties of conducting internal resource development projects.

Are the Targeted Resources Tradable?

Once the firm has determined that it needs to look externally for resources, it must then consider what kind of external sourcing mode to use. The first option to consider is contracting, which is a basic form of 'borrowing' resources that another firm has created. A contract such as a licensing agreement often provides a simple way to obtain resources externally. The benefit of a good licensing strategy – as opposed to more complex inter-firm combinations, such as M&As and alliances – is that the firm can cherrypick desirable resources from external partners without having to incur the costs of acquiring and integrating an entire organization or managing complex alliances. Licensing strategy is more effective when coupled with strong internal capabilities to assess and absorb the new knowledge.

It is therefore critically important to recognize conditions that suit purchase contracts before turning to more complicated, inter-firm combinations that require substantial managerial time and attention. The firm needs to assess whether the resources it seeks are tradable in an effective manner (Williamson 1975). Resource tradability requires clarity in defining the targeted resources and also an understanding of how to protect the value of the resources, including trust in the relevant legal system.



Growth Through Acquisitions, Fig. 1 The resource pathways framework as a decision tree

How Close Does the Firm Need to Be with Its Resource Partner?

When a basic, arm's-length agreement is not sufficient, the firms need to consider engaging in a more complex relationship with an external provider. A strategic alliance is a much more active form of borrowing resources from a partner. Strategic alliances usually involve licenses but extend well beyond those agreements. With co-development alliances, for instance, the alliance partners contribute to the joint further development of the intellectual property. Alliances can take many forms, ranging from R&D and marketing partnerships to freestanding joint ventures. All alliances involve ongoing interactions in which independent actors commit resources to a joint activity.

Alliances can be highly effective tools for achieving growth, including obtaining new resources or reaching desired scale in targeted markets. Alliances are particularly valuable when the firm and the partner have a focused relationship with limited points of contact and when they can align incentives (Gulati and Singh 1998). But if coordination needs are high because many parts of the partner

organizations are involved or if partners clearly have different strategic needs, then collaboration costs and difficulties usually become so high that acquisition makes more sense.

Can the Firm Integrate the Target Firm?

Many steps along the acquisition process will determine the level of your success; these steps include screening, deal making, distributing value between target and acquirer, and managing stakeholders. When it comes to creating value from the combination of the merging firms' resources, however, one step is fundamental: post-merger integration. Postmerger integration is hard work. Even firms that have become masters at this game face ongoing challenges as they integrate new targets, each of which is endowed with a unique set of resources, people and values. Post-merger integration is more a job-shop task than a standardized, assembly-line job, as it often requires a plan and sequencing of tasks that are customized to the target.

The core question to ask is whether the acquiring firm has the capability of integrating the target to an appropriate extent and within a reasonable time. Integration may occur within the target, in the acquirer's existing businesses, or in a newly formed business unit. Integration may occur soon after an acquisition or be phased in over time. In the end, creating value from an acquisition requires resource creation that draws on the skills of the combined firm. Without integration that creates new resources, the firm will almost always overpay for a target that merely continues to operate as before, as if your purchase of its shares was just a passive investment in the stock market.

If the firm decides that it will not be able to integrate properly, then it should reconsider less integrative options such as alliances or partial acquisitions, or potentially creating an internal experimental unit to develop new resources that cannot be integrated into the mainstream organization (O'Reilly and Tushman 2011). Ultimately, if the firm runs out of appropriate resource sourcing options, it can consider redefining its strategic roadmap.

Managing Post-Acquisition Integration Process

The integration task is arduous, especially in growth-driven acquisitions in which the acquirer must balance conflicting needs for autonomy and integration (Haspeslagh and Jemison 1991; Puranam et al. 2006). Post-merger integration will be feasible only if the acquirer can clearly map the integration process and manage the motivation of key people at both firms. Over-centralized control can harm cooperation between target and acquirer and destroy the value of the resource combination, yet insufficient control misses opportunities to create value.

Acquirers can make mistakes at either end of integration activity. A firm may simply be too slow and cautious about integrating targets because it is reluctant to disrupt the existing organizations and people that created the targets' value. Such firms end up paying acquisition premiums for resources that they do not use. Others end up destroying capabilities by being overly aggressive, restructuring and integrating the target firm's resources too quickly and coarsely. Acquirers often feel that they can whip a target firm into shape by getting rid of excess fat, divesting and stripping assets and selling off parts while they go about leveraging the target's core resources. In a large-scale research programme conducted on 250 acquisitions in US and European manufacturing industries (Capron 1999), the target's resources in R&D, manufacturing, marketing and sales were from three to five times more likely to be downsized than those of the acquirers, a process that often results in loss of valuable capabilities.

Post-acquisition integration often entails divestiture. Firms that carry out active post-acquisition reorganization inevitably are left with unneeded capabilities as remnants of the target or acquirers' original businesses. Divesting such unneeded resources allows the merging firms to focus on high-value opportunities because their attention is no longer diverted to peripheral activities. Unfortunately, firms sometimes avoid post-acquisition divestitures because they fear that sell-off will signal acquisition failure (Capron et al. 2001).

The feasibility of post-acquisition integration also varies with the nature of the institutional environment. The integration of national markets for corporate control has stalled even as barriers to trade and investment have tended to come down. In countries such as Germany and Japan, in which labour rights are relatively well protected, the classic clash of interests between shareholders and employees can slow down the phase of post-acquisition restructuring. By contrast, in countries in which shareholder rights reign supreme, the market for corporate control has become one of the most important ways to reallocate assets and restructure companies. The acquirer needs to carefully examine the balance of power between shareholders and labor so as to determine to what extent post-acquisition restructuring can actually produce the expected gains (Capron and Guillén 2009).

Integration becomes even more arduous if the firm embarks on an aggressive acquisition program that can stretch the company both organizationally and financially. Integrating target firms that are part of an aggressive acquisition programme requires extra efforts to avoid internal fragmentation of the company and protect it from financial fragility. In extreme cases, firms will have to pause their acquisition programme, digest the existing acquired businesses, build back organic growth before resuming their acquisitive strategy.

At this stage, it is worth noting that some acquisitions are made to block rivals' growth and pre-empt resources that might be valuable to competitors. In addition to making acquisitions that would reinforce its own resource position, firms can indeed decide to acquire firms to act against newly threatening resources or pre-empt resources that might be valuable to competitors (Capron and Chatain 2008). In such cases, the firm might not have a direct need of the newly bought resources and will 'hoard' them for a certain period of time; in extreme cases, the acquiring firm might decide to stop resource development. In their study of high- to medium-technology acquisitions, Cassiman et al. (2005) find that the termination of concurrent and non-concurrent R&D projects was mentioned by 50–56% of merging firms with similar technology specialization, suggesting that M&A partners with similar technology specialization tend to reduce their R&D efforts and face less technological competition after the acquisition.

Sequencing, Balancing and Revisiting Acquisitive Growth

Balancing growth across time and across the different growth modes is key. Firms that undertake multiple acquisitions too quickly and that lack time to digest them risk corporate bloat (Vermeulen and Barkema 2001). Pacing an acquisition programme is therefore crucial for active acquirers (Laamanen and Keil 2008). Cooper Labs, for instance, grew rapidly in the medical sector via a series of acquisitions during the early 1980s. The expansion succeeded as long as Cooper was able to integrate its growing set of business activities. But when it continued with the pace of acquisitions unchecked, the company surpassed its integration limits and foundered.

To achieve healthy growth, firms also need to balance their different modes of growth, in particular organic and acquisitive growth. If an active acquiring firm is already stretched because of integration activities related to recent acquisition deals, for instance, then making an additional deal might overwhelm the firm's resources and people. If the firm continues to make acquisitions regardless, then its organization will become bloated and will be unable to use the acquired resources for creating additional growth. At the other extreme, if the firm relies exclusively on internal development efforts to generate new resources, then the likely result is an inwardly focused organization that becomes rigid over time.

Lastly, it is important to revisit past acquisition decisions and assess whether acquired businesses should be divested. Divestiture is a way to correct prior acquisition decision mistakes or to adjust the business portfolio to new market conditions. Firms that have particularly successful acquisition strategies are almost as active in divestiture as in acquisition. In sum, acquiring firms need to exert active ownership on the different business units,

including the acquired units. Without such a discipline, the firm's resources are not allocated to their most valuable opportunities and the firm misses opportunities to free up resources and refresh its core capabilities.

See Also

- ▶ Innovation Policy
- ▶ Research and Development (R&D) Investment
- ▶ Resource Redeployment

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