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Backward Compatability

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Definition A term originally used in the context of computer software and systems architecture to refer to the ability of later versions of software to accept data from (or files created by) earlier versions of the software, even if the later version also has capabilities that were not present in the earlier version.

The term as defined above has been applied in other contexts as well, such as telecommunications systems. When colour TV was introduced, broadcast standards were chosen so that black-and-white broadcasts could be received by colour TVs and interpreted as black-and-white signals. The colour broadcasts were 'backward compatible' with the installed base of black-and-white TVs. Other examples include game consoles, where manufacturers often wish to take advantage of a large 'installed base' of games for earlier consoles by making the new consoles backward compatible with the stock of existing games. Critics have complained that such a strategy can result in barriers to entry.

Backward compatability and ▶ forward compatibility are related but distinct concepts. Backward compatability is in many ways not an 'either–or' concept, but a matter of degree. For example, a newer version (say V3) of a word-processing program may be capable of handling certain data generated by an earlier version (V2) of the program but progressively less capable of handling data generated by a still earlier version (V1) of the program. In other words, backward compatability is not necessarily 'transitive'. At some point, many software vendors abandon the effort to make current versions fully backward compatible with older obsolete versions.

When making a current version backward compatible with an earlier version, the nature (and limitations) of the older version are already known. This makes achieving backward compatability easier than achieving forward compatibility, because in trying to plan for future compatibility, it is impossible to have complete foresight about the nature of the future version.

Backward compatability is especially important in the presence of an 'installed base' of users of the older system and (in particular) of files generated by the older software. If new products are not made backward compatible with such files, consumers may resist 'upgrading' to later versions (even though the later version may have desirable features) for fear of losing access to work generated using the older version.

The choice of the degree of backward compatability to build into a new product or system is, in part, a matter of technology and costs, but from a management and competition perspective, it is also to some extent a *strategic* choice that

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can affect the seller, sellers of competing products, sellers of complementary products (e.g., video games compatible with game consoles), the 'installed base' of existing users and new consumers.

In some instances, it is possible to use adapters/converters to allow old equipment/files to be used with new equipment/software.

The degree of forward and backward compatability can be especially significant in the presence of network externalities, ▶ lock-in effects and switching costs.

An intentional decision to eliminate (or reduce) the degree of backward compatability can result in 'stranded' investments or inefficiency. The privately optimal level of backward compatability is often significantly different from the socially optimal level.

From a management and competition perspective, there are both advantages and disadvantages to building products or systems that are backward compatible, and/or making a commitment to do so. Doing so tends to extend the useful economic life of the older product/system (and, in particular, files created using the older product), thereby both (1) increasing consumers' willingness to pay for the then current product (as this reduces the risk that their sunk investments will be rendered obsolete), and (2) making it more likely that customers will choose not to 'switch' to a competing product.

Achieving backward compatability can also be costly in that it may constrain the firm's future flexibility to adapt to changing technological or market conditions. Maintaining backward compatability often comes at a cost, as the new product must be capable of dealing with older (and possibly obsolete or obsolescent) files, possibly degrading performance relative to an alternative non-backward-compatible approach. For example, in the USA the original black-and-white TV broadcast standard, known as NTSC, was adopted in 1941. When colour TV broadcast standards were being chosen in the early 1950s, the desire to maintain backward compatability with existing black-and-white TV sets constrained the ability to adopt higher-resolution broadcast standards like the European PAL and SECAM standards.

See Also

- ▶ Forward Compatibility
- ▶ Lock-In Effects
- ▶ Switching Costs

Balanced Scorecard

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Abstract

The balanced scorecard, originally designed as a measurement system, has evolved into a comprehensive process to manage the execution of an organization's strategy. The framework uses measures to translate the strategic objectives into targets and initiatives while the management system creates focus, alignment and leadership. It is estimated that 70% of organizations use the balanced scorecard approach to management.

Definition The balanced scorecard was developed as a measurement system to help organizations expand their focus beyond the short-term cycles found in typical financial systems. The balanced scorecard (BSC), however, is more than a measurement system. Building on the rule of thumb that 'what gets measured gets managed', the BSC is the framework for a management system that focuses the energies and assets of an organization on its long-term strategic goals.

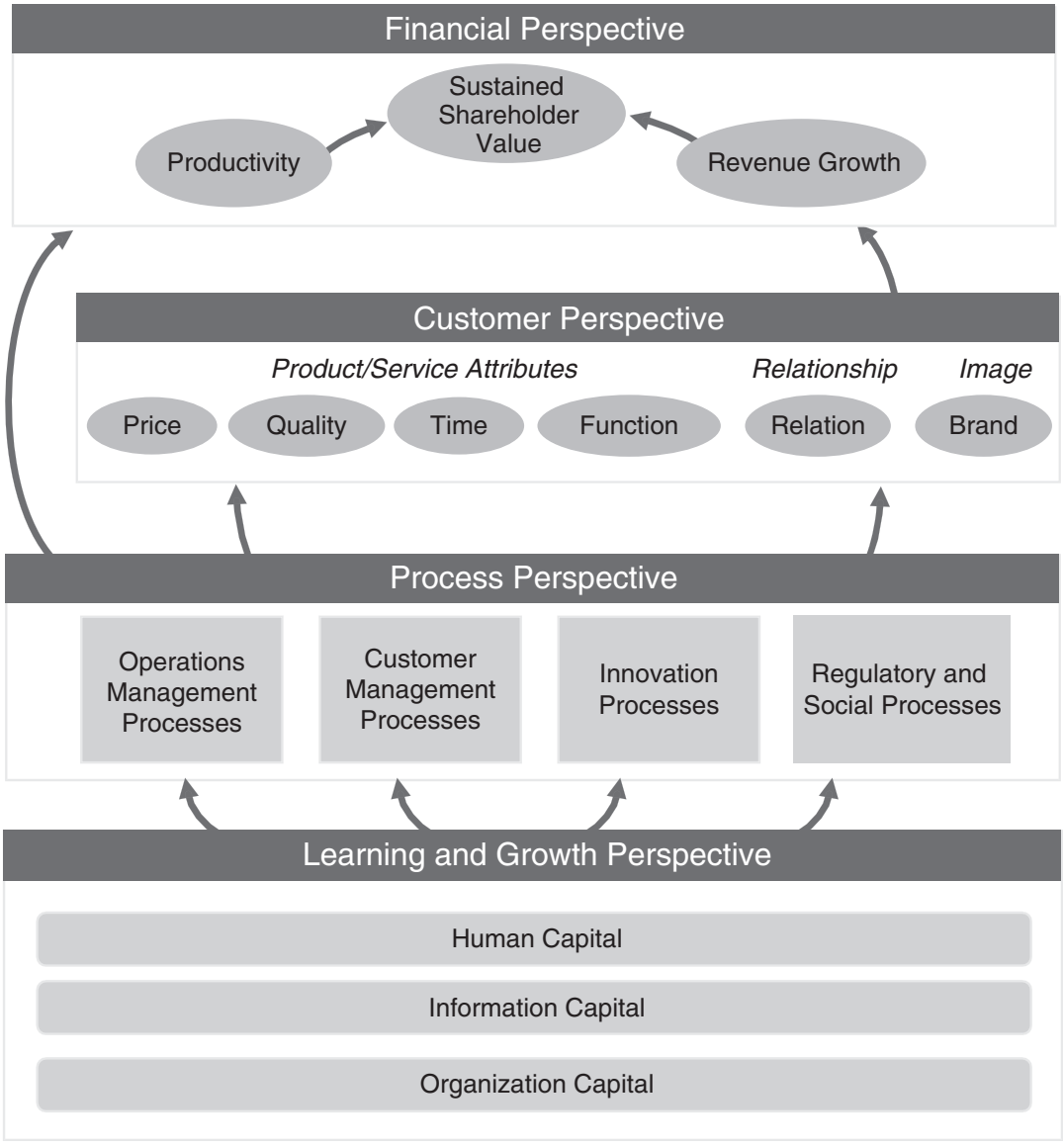
Robert Kaplan and David Norton (1992) estimated that over 70% of organizations use a BSC to manage the execution of their strategy (Rigby 2007). Applications can be found in almost every country, every industry, non-profits and government. Each application is built upon two foundations: (1) a measurement framework that translates the strategy into measures, targets and

initiatives, and (2) a management system that creates focus, alignment and leadership.

Measurement Framework

It is easy to criticize organizations for measuring the wrong thing (short-term financial performance, for example). It is something else to describe and measure the multi-dimensional strategy that an organization uses to create financial results. The concept of a 'strategy map' is used to accomplish this. As shown in Fig. 1, the strategy map uses a four-level framework to describe the process of value creation.

- *Financial perspective*: To succeed financially, how will we appear to our shareholders? The financial perspective generally covers three topics: growth, profitability and shareholder



Balanced Scorecard, Fig. 1 A strategy map describes how the enterprise creates value for shareholders and customers

value (note: for government and non-profit organizations, the financial perspective is replaced by a 'mission perspective' that identifies the objectives of the key stakeholders). These high-level mission objectives generally cover the topics of growth and productivity or efficiency and effectiveness.

- *Customer perspective*: Who is the customer and how do we appeal to them? Business strategies are built around a customer value proposition (e.g., lowest price, best service, most innovative products). The strategy map forces one to clarify this value proposition.
- *Internal processes*: What business processes must we excel at to satisfy our customers and shareholders? Businesses have hundreds of processes (such as managing inventory, meeting payroll, etc.) The strategy map forces one to identify the critical few processes that will create the biggest impact on the customer and the financial objectives.
- *Learning and growth*: How will we sustain our ability to change and improve? The ultimate source of value emanates from people and technology and how they are applied. Culture is one of the most important regulators of change. These intangible assets are not found on a balance sheet, but they are the real source of competitive differentiation.

The four perspectives shown in Fig. 1 are linked together in a chain of cause and effect. Financial and customer measures are *outcomes*, process and learning measures are *drivers*. One begins to create value in the future by investing in the drivers today. For example, we train our people in quality to improve our manufacturing processes to create lowest cost products for our customers who, in turn, will buy more from us, thus boosting financial growth, profitability and shareholder value.

The strategy map helps define the logic of the strategy. A strategy map creates a set of *objectives* (e.g., the creation of customer partnerships) that can then be translated into a set of measures (e.g., products per customer). Each measure is supported by a target and gap which, in turn, are supported by a set of strategic initiatives (e.g., training programme) needed to close the gaps. The execution of strategy is managed by executing the strategic initiatives.

Executing the Strategy

Research over the past decade has consistently shown that the 'ability to successfully execute strategy' is CEOs' major concern (Conference Board 2010). Research also shows that 70–90% of organizations fail to execute their strategies (Kiechel 1982). The balanced scorecard provides a framework and a set of methods to deal with this execution gap. Through the 'Balanced Scorecard Hall of Fame' programme', a study has been made of the management approaches used by successful organizations (Kaplan and Norton 2011). Five principles have emerged (Kaplan and Norton 2001).

- *Executive ownership*. The execution of strategy requires the management of change. A good strategy will require new products, new skills, new incentives, new investments, new partners and so on. Changes of this magnitude can only be managed by those at the top. Thus, a strategy execution process must be sponsored by and actively managed by the top management team. The balanced scorecard is effective because it helps executives to manage change. Building a strategy map, for example, forces an executive team to debate the strategy and come to a consensus. Having a shared model of the business, with shared measures, targets and initiatives is an essential foundation for successful strategy execution.
- *Translate the strategy*. At the highest level, a strategy begins with a vision that is decomposed into three to five strategic themes. (For example, 'innovation to increase revenues from new products'.) A strategic theme provides direction but doesn't cover 'how'. The BSC helps organizations to execute their strategies by providing the framework that links strategy to operations (i.e., the 'how'). A strategic objective is translated to a measure, then a target and, finally, a set of initiatives that

will drive performance and achieve the objectives.

- *Align the organization*. Organizations are made up of hundreds or thousands of people. These people are organized by departments, divisions, functions, teams and so on. While theoretically each person and each structure has the same ultimate goal, practice indicates quite the opposite. Because people are not aware of the strategy, they sub-optimize performance around their departmental or local goals (known as silos). The BSC, through the strategy map, creates a holistic view of the organization. By creating a strategy map at the top, a template can be used to align different parts of complex organizations to common goals. Standard approaches found in practice include vertical cascading/alignment through the 'chain of command', horizontal alignment to support units, and external alignment with suppliers or partners. Some organizations have developed scorecards jointly with their customers to define the elements of a 'win-win' relationship.
- *Align the people*. In 'knowledge economy' organizations, strategy is formulated at the top but executed at the bottom. Call centre operators, delivery lorry drivers, solution engineers are typical jobs in modern organizations. Each has routine contact with customers, suppliers and partners. If strategy is to succeed, the front lines of the organization must play a lead role. The BSC helps to achieve this. First, the organization can be *educated* about the strategy. Strategy maps provide a vehicle for continuing communication and education about the strategy. Second, the organization goals can become *personal goals*. Looking at the organization strategy, an individual can determine 'where can I help' and adjust their personal goals accordingly. Third, incentives can be designed to further motivate the workforce. Many organizations have discarded traditional bonus schemes in favor of a multi-dimensional bonus tied to the measures on the balanced scorecard. And finally, new strategy will require new competencies in the workforce. *Training* and development can be updated to reflect this. The strategy map provides a road map for these new requirements.
- *Double-loop governance process*. Strategy is a hypothesis. The strategy map requires one to define the cause–effect relationships between the financial/customer outcomes and the process/people drivers. The initial design will be based on the intuitions and experience of line managers. Once the strategy is activated, real world experiences will test these hypotheses and provide a basis for organization learning. The top management team should meet on a monthly basis to review performance and to make adjustments as required. These meetings not only provide a chance to test and monitor the strategy; the discussions engendered by these routine management meetings provide an opportunity and a necessity to define the new culture required by the strategy. The strategy map and scorecard provide the agenda for this executive team development.

Achieving Results

It has been almost 20 years since the original Kaplan–Norton work on the balanced scorecard was published. The idea introduced at that time has grown to a fully integrated process for managing the execution of strategy. One recent study, comparing the performance of publicly traded companies that manage with the balanced scorecard, found that BSC companies achieved 3-year growth in shareholder value of 45% compared with only 15% for non-BSC managed companies (Crabtree and DeBusk 2008). Another survey, conducted on the Balanced Scorecard Hall of Fame companies (a group that was pre-selected because they were successful), showed an average 3-year growth in shareholder value of 150% (Norton 2012).

These results reflect the value of successful strategy execution – a phenomenon that we call the 'Execution Premium' (Kaplan and Norton 2008). More broadly, the results show the power and value of *alignment*. Organizations have evolved over time into paragons of complexity, unable to see beyond the boundaries of

their narrow units. The BSC provides a way to simplify this through the use of instruments like maps and measures. These simple basics have allowed the balanced scorecard framework to be used successfully in some of the most complex organizations in the world. The balanced scorecard has allowed organizations to make strategy everyone's job.

References

Conference Board. 2010. Research report CEO challenge 2010 top ten challenges.

Crabtree, A.D., and G.K. DeBusk. 2008. The effects of adopting the balanced scorecard on shareholder returns. *Advances in Accounting* 24: 8–15.

Kaplan, R.S., and D.P. Norton. 1992. The balanced scorecard: Measures that drive performance. *Harvard Business Review* 70: 71–79.

Kaplan, R.S., and D.P. Norton. 2001. *The strategy focused organization: How balanced scorecard companies thrive in the new business environment*. Boston: Harvard Business School Press.

Kaplan, R.S., and D.P. Norton. 2008. *The execution premium: Linking strategy to operations for competitive advantage*. Boston: Harvard Business School Press.

Kaplan, R.S., and D.P. Norton. 2011. *Strategy execution challenges: The palladium balanced scorecard hall of fame report*. Cambridge, MA: Palladium and Harvard Business Publishing.

Kiechel, W. 1982. Corporate strategists under fire. *Fortune*, 27 December.

Norton, D. P. 2012. Successful strategy execution-Part 1: What does it look like? *Balanced Scorecard Report*, January–February, vol. 14, no. 1.

Rigby, K. 2007. *Management tools 2007: An executive's guide*. Boston: Bain & Company.

Banking Industry

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Abstract

We start by providing a description of banks' main activities, the key functions played by the banking industry in an economic system, and the main types of banks. We then examine the main distinctive features of banking services. Next, we look at bank regulation, its main objectives, tools and historical evolution, and briefly examine the main Basel III reforms, which were approved after the recent financial crisis. Finally, we look at bank strategies and business models after the financial services crisis, highlighting the main factors distinguishing resilient banks from the less resilient banks.

Definition The banking industry is composed of institutions that play a number of key functions for the economic system, such as providing payment-system products and services, credit intermediation, maturity transformation, and credit analysis through screening and monitoring.

A bank is a financial intermediary that transfers financial resources from capital surplus units – typically households whose savings exceed investment needs – to capital deficit units – typically households, firms, governments and other entities whose investments needs exceed savings. This fundamental activity is performed either directly – by raising funds through deposit taking and lending money by granting loans – or indirectly – through the capital markets.

In addition to this basic intermediation activity, banks offer a wide range of other products and services, such as payment systems, risk management (forward contracts, options, swaps), capital raising (assisting clients in their bond and equity issues), project financing and asset management.

Banks play a number of key roles for the well functioning of an economic system:

- Payment-system products and services: banks issue money in the form of banknotes (central banks) and current accounts that can be used as means of payment, as they represent claims on banks that are repayable on demand.
- Credit intermediation: banks borrow and lend on their own account, and therefore enable the accumulation of savings and the financing of real investments.
- Maturity transformation: banks typically borrow for the short term, which offers liquid products to savers, and lend for the long term, which offers stable financing to borrowers.

- Credit quality analysis through screening and monitoring: banks screen and monitor the credit quality of borrowers, thereby reducing the informational asymmetries between borrowers and investors.

Different types of banks exist according to the nature of their activities:

- Commercial banks: these primarily focus on the traditional intermediation business of deposits and loans. The term 'commercial bank' was introduced in the US in the aftermath of the Great Depression, when the Glass Steagall Act of 1933 separated the business of banking from that of securities trading. Commercial banks were therefore distinguished from investment banks and prohibited from engaging in securities trading. After the progressive removal of most restrictions separating commercial banks from investment banks, most large banking groups now have a universal banking model.
- Investment banks: these typically underwrite bond and stock issues, trade different types of securities and derivative instruments on their own account, engage in market making, and advise corporations on capital market activities, such as mergers and acquisitions.
- Merchant banks: these were traditionally engaged in trade finance. The modern definition refers to banks that provide capital to firms in the form of equity capital rather than loans.
- Savings banks: these were originally founded in Europe in the nineteenth century to provide easily accessible savings products. They have kept their focus on retail banking (individuals, or small and medium-sized enterprises).
- Universal banks: these operate in all range of activities, including deposit-taking, loan-granting, securities-trading, market-making and asset management.

The Distinctive Features of Banking Services

Most prescriptions of how to manage firms cannot easily be applied to banks. A large part of contemporary management theory has been developed based on empirical data from manufacturing firms. The (strategic) management of banks requires careful reconsideration of basic concepts like the value chain (a more adequate tool might be the value net), ▶ competition (most banks do business with each other), and the organizational structures and systems of coordination and control (requirements for effective risk management create barriers to decentralization). What has proven effective for industrial multinationals has been less successful for financial services multinationals, partly because of the latters' greater strategic complexity and the characteristics of their services.

Although banking and insurance both have reputations of being people businesses, it is not always strictly necessary for the client to meet face to face with a financial services consultant. New distribution channels, such as the Internet and the telephone (mobile or fixed), make the need for physical proximity obsolete. When trust is not an issue for the client (e.g., when borrowing money), financial services can easily be exported within the limits of the legal frameworks in place.

Some schemes classify services according to their relative involvement of physical goods and their degree of commitment in a foreign country (Vandermerwe and Chadwick 1989), their degree of tangibility, the degree of face-to-face contact with the client (Patterson and Cicic 1995), and the possibility of separating production from production. These complementary classification schemes supports the contextualization of managerial issues. However, financial services cannot be pressed into these classification schemes as a homogeneous block. For example, serving high net worth individuals requires more face-to-face interaction and less standardized products but lower resource commitment than starting operations in a foreign country as a full-fledged retail bank. The high diversity of products within a universal bank is a major source of complexity. Financial services distinguish themselves from physical products in several ways:

- Inseparability of production and consumption: services are often produced and consumed at

the same time, as and when required by the customer.
- Heterogeneity of service offerings: services are usually tailored to the needs of individual consumers. They are created and delivered differently to cater to individual preferences, and they comply with national regulatory frameworks.
- Intangibility: this refers to the degree of 'touch and feel' that is required to experience a particular service. In most circumstances, services can neither be seen nor transported in a conventional way, as physical goods can be.
- Perishability: services cannot be easily stored and consumed at a later time. Consumption and production of financial services do not fully overlap.

Bank Regulation

The crucial role played by banks in the smooth functioning of an economic system explains why the banking industry is highly regulated. The general goals of banking regulation are the stability and efficiency of the banking system. Accordingly, three main types of instruments, which have been used with different intensities over different historical periods, can be used by regulators:

- Prudential regulation, mainly represented by tools – such as risk-based capital requirements – aimed at limiting the amount of risk taken by banks and at ensuring that their capital is consistent with their risks;
- Structural regulation, mainly represented by tools – such as barriers to entry, direct limitations of banks' activities or geographical extensions – aimed at limiting competition among banks operating in different geographical areas or in different businesses;
- Protective regulation, mainly represented by tools – such as deposit insurance and the central banks' lender of last resort function – aimed at preventing an individual bank's crisis from spreading to other financial institutions.

Structural regulation tools were most common in the US and in some European countries in the period following the Great Depression, when banks were prohibited from owning non-financial companies and from expanding their activities into other states. Since the 1980s, bank regulators have progressively removed structural regulations and increasingly strengthened prudential regulation, mostly in the form of risk-based capital requirements. The latter have been introduced at an international level by the Basel Committee of Banking Supervision, a committee established in late 1974 by the governors of the central banks of the G10 countries to serve as a forum for discussion and cooperation on matters of international banking supervision. Minimum risk-based capital ratios require banks to hold a given amount of capital for each major type of risk:

- Credit risk: the risk of an unexpected deterioration of the credit quality (default risk or migration risk) of a counterparty to which the bank is exposed;
- Market risks: the risk of losses resulting from unexpected changes in market factors (interest rates, foreign exchange rates, equity prices or commodity prices);
- Operational risk: the risk of losses resulting from inadequate or failed internal processes, people and systems, or from external events.

The first set of rules concerning risk-based capital requirements were introduced in 1988 and then replaced in 2007 by the so called 'Basel II' New Capital Accord. The 2008 international financial crisis highlighted some important weaknesses in the Basel II capital-adequacy framework. The Basel Committee explicitly acknowledged these deficiencies, effectively summarizing them in a single sentence:

> One of the main reasons the economic and financial crisis became so severe was that the banking sectors of many countries had built up excessive on- and off-balance sheet *leverage*. This was accompanied by a gradual erosion of the level and *quality of the capital base*. At the same time, many banks were holding *insufficient liquidity* buffers. The banking system therefore was not able to absorb the resulting *systemic trading and credit losses* nor

> could it cope with the reintermediation of large off-balance sheet exposures that had built up in the shadow banking system. The crisis was further amplified by a *procyclical deleveraging* process and by the *interconnectedness of systemic institutions* through an array of complex transactions. (Basel Committee on Banking Supervision 2009)

Following this diagnosis, a significant reform of the prudential regulatory framework was approved by the Basel Committee in 2010. This new set of rules – known as 'Basel III' – will be gradually implemented over the 2013–2019 period and envisages the following major changes:

- A greater emphasis on high-quality bank capital (i.e., capital with a stronger ability to absorb losses);
- The introduction of an additional '*capital conservation buffer*' aimed at ensuring that banks keep a capital cushion to absorb losses in periods of economic and financial stress;
- The introduction of a non-risk-based maximum leverage requirement;
- The introduction of two new liquidity requirements, aimed at guaranteeing banks' liquidity even in periods of stress;
- The strengthening of market-risks capital requirements and the introduction of new counterparty risk capital requirements.

Bank Strategies and Business Models After the Financial Services Crisis

Despite regulatory efforts, the banking sector has been characterized by widespread strategic failures since the early 1990s. There were many reasons: excessive financial leverage (including the use of off-the-balance-sheet financial vehicles), ill-considered acquisitions, diversification based on dubious synergies, flawed risk management and governance systems, and problems of vertical and horizontal coordination along the value chain. The financial crisis pointed not just to the technical difficulties of modelling risk, but also raised the question of whether such risks may be inherently un-modelable. Commercial and management policies that were guided by short-term profitability objectives have led to the development of ever more complex, opaque and financial instruments that are difficult to evaluate. The problem of risk measurement turns into a problem of risk management (i.e., the governance models of actors involved). The speed with which trading in 'toxic assets' brought the interbank lending market to a standstill pointed not just to the inadequacy of ex post volatility as a proxy for ex ante volatility, but revealed a basic truth: the future will always be different from the past. If the sources and characteristics of risk are idiosyncratic and cannot be easily reduced to measurable statistical characteristics, the implication is that managing risk ultimately depends on local qualitative information and on interpretation that is based on deep insight into its sources. The tacit nature of this knowledge means that it cannot be readily transferred (let alone centralized) within a large financial services multinational. Moreover, geographical diversification does not appear to offer substantial protection from localized sources of risk, as the complexity and interconnectedness of the global financial system permits local disturbances to be both transmitted and amplified.

However, some banks have successfully navigated through the financial crisis. Among the most resilient banks (i.e., banks with a high 10-year average return on equity (RoE) and a low volatility of annual RoE), we find the Bank of Nova Scotia, Svenska Handelsbanken and BBVA; amongst the least resilient banks are UBS, Credit Swiss and Commerzbank. The following paragraphs highlight elements common among resilient banks, which distinguish them from less resilient banks. They:

- Invest time in serious forecasting exercises (e.g., scenario planning): management teams need to invest time in discussing potential market events and develop contingency plans.
- Diversify risk, but not into other geographical markets where risks might be spilled over but into products that are less cyclical and volatile (such as Deutsche Bank's diversification into retail banking). Many banks retreat from

international markets and focus on their core territory – sometimes completely burying their international growth ambitions. Not all banks need to become international.

- Avoid mimic behaviour: the inducements for mimetic strategies are reinforced by the fear of pre-emption. The rush of foreign banks into China and into Central and Eastern Europe (CEE) was hastened by fear of late-mover disadvantages, particularly in relation to the availability of attractive acquisition targets and alliance partners. The (late) rush into mortgage-backed securities of many local banks (such as the German Landesbanken) has resulted in several casualties.
- Develop strategy based on resources and capabilities, and not just on market opportunities. Austria's Erste Bank resisted the temptation of investment banking after it thoroughly analysed its core compentences. Its internationalization into geographically close Eastern European retail markets had a better fit with the firm's resource and capability endowments than other strategic options.
- Review the risk-management systems: the risk-management function needs to be truly independent and close to the risks.
- Bring independent and engaged (informed) shareholders back on boards: neither regulators nor disengaged board members are likely to control the risk appetite of senior bankers. As with anti-doping activists in cycling, agents (i.e., board members and regulators) are likely to be better informed, better motivated and outnumber the principals (i.e., board members and regulators). It was not only the many politicians on the boards of state-participated banks who had difficulties in understanding what was going on in the US mortgage-backed security market and why their banks invested into derivatives linked to these markets but also many other stakeholders.

See Also

- ▶ Competition
- ▶ Global Strategy
- ▶ Regulation/Deregulation
- ▶ Resilience
- ▶ Risk-Taking

References

Basel Committee on Banking Supervision. 2009. Strengthening the resilience of the banking sector. Consultative document, Dec.

Patterson, P.G., and M. Cicic. 1995. A typology of service firms in international markets: An empirical investigation. *Journal of International Marketing* 3: 57–83.

Vandermerwe, S., and M. Chadwick. 1989. The internationalisation of services. *The Service Industries Journal* 9: 79–93.

Bargaining Models

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Abstract

Negotiation is a pervasive feature of social exchange. Bargaining theory and its related models examine a problem in which rational individuals who pursue their own interests must reach an agreement to divide the gains from their cooperation. This article builds on two pillars of bargaining literature: Nash's (1950) axiomatic solution and Rubinstein's (1982) bargaining game with alternating offers. It also comments briefly on recent applications of bargaining and ▶ Cooperative and Non-cooperative Game Theory to strategy.

Definition Bargaining is the process by which two rational individuals who pursue their own interests attempt to reach an agreement about alternative ways to divide a given (and known) surplus, earned from their cooperation.

As recognized by Edgeworth (1881), the problems of contracting and bargaining are fundamental to economics. Bargaining is pervasive in economic interactions of many sorts, such as those between individuals who meet to exchange

economic goods, between firms that engage in strategic collaboration or form joint ventures, and among trading nations. The mechanism for determining the exchange price of a given resource – or other arrangements – through bargaining thus is as important as price-based mechanisms in the spot market or authority-based mechanisms in hierarchies. Bargaining theory, and more generally a cooperative approach to game theory, is an active area of research that provides useful tools for economists as well as strategists.

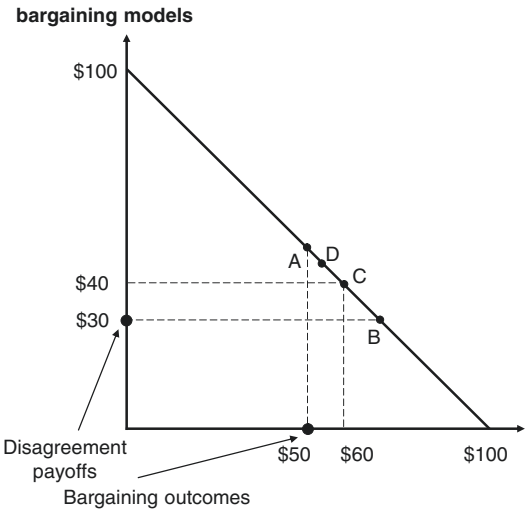
In neoclassical economics, the exchange of resources in a competitive market is pushed by an *invisible hand* that drives the economic system towards a social optimum, which economists call the competitive equilibrium. This neoclassical system provides an elegant framework for relating prices in a situation with a vast number of economic agents interacting in an anonymous market. Bargaining theory instead examines interactions between rational individuals who pursue their own interests and must agree about how to divide the surplus that results from their cooperation.

The absence of competition that is encountered in a market with many participants implies that a bargaining outcome is typically indeterminate within a certain range, in the sense that many Pareto optima are possible. This range is also known as the *core* or *contract curve*. Because of this indeterminacy, Edgeworth (1881) complained that economists had little to say about the outcomes of the typical bargaining situation. The problem was partially solved when Nash (1950) advanced his eponymous, axiomatic solution concept, which describes 'splitting the surplus' as a unique negotiation outcome. The solution to the bargaining game proposed by Rubinstein (1982) shed further light on the bargaining problem by examining negotiation manoeuvres by bargainers when they take turns making proposals to divide the surplus.

The Bargaining Problem: Agreeing to Share the Surplus

Consider a situation in which John and Ariel, two rational bargainers who pursue their own interests, must divide a surplus of *$100*, which they create through their collaboration. The bargaining problem refers to the choice of agreement that John and Ariel prefer, over both disagreement (rationality) and any other agreement that they might prefer more (Pareto optimality). The largest payoffs that John and Ariel could obtain without collaborating are, respectively, *$30* and *$50*. These are the disagreement payoffs – also referred to as reservation utilities, outside options or threat points. Without adding more structure to the bargaining problem, the final outcome is indeterminate. Let s^J and s^A be John's and Ariel's shares of the surplus, and let their bargaining payoffs be $s^J \times \$100$ and $s^A \times \$100$. Individual rationality and Pareto optimality translate into the following conditions: $s^J \times \$100 \geq \$30, s^A \times \$100 \geq \$50$, and $s^J + s^A = 1$. As depicted in Fig. 1, without additional restrictions, the bargaining outcome can be anywhere in the segment AB.

To restrict the range of possible bargaining outcomes, it becomes necessary to add more structure to the problem. In their seminal works, Nash (1950), Rubinstein (1982) propose two approaches to find a unique solution. Nash examines the bargaining problem using an axiomatic method and establishes four properties that a bargaining solution should have: *scale*



Bargaining Models, Fig. 1 Bargaining outcomes

invariance, *efficiency*, *symmetry* and *independence of irrelevant alternatives*. He demonstrates that there exists a unique solution that satisfies those properties, the so-called *Nash bargaining* solution. To understand this solution, it is useful to introduce the concept of ▶ *quasi-rent*, which are the difference between the surplus that bargainers can create by collaborating and the disagreement payoffs. Nash's axiomatic solution simply states that bargainers share equally in the quasi-rents. For John and Ariel, the quasi-rents are $\$100 - (\$30 + \$50) = \$20$, so the Nash solution is that John obtains a payoff of $\$30 + \$10 = \$40$, whereas Ariel receives $\$50 + \$10 = \$60$. This solution corresponds to point C in Fig. 1.

A variant of the Nash solution captures situations in which bargainers have asymmetric positions and different abilities to negotiate, that is, different *bargaining powers*. Let John's and Ariel's relative bargaining powers be α^J and α^A, which are both positive, and $\alpha^J + \alpha^A = 1$. The generalized Nash bargaining solution is that John obtains a negotiation payoff $\$30 + \alpha^J \times \$10$, whereas Ariel obtains $\$50 + \alpha^A \times \$10$. For example, if $\alpha^J > \alpha^A$, the bargaining solution corresponds to point D, to the left of point C in Fig. 1. The solution of splitting the surplus corresponds to the case in which the bargainers have equal bargaining power, $\alpha^J = \alpha^A = 1/2$.

In this example, the bargainers' payoff is uniquely determined when their disagreement payoffs and relative bargaining power are known. The Nash axiomatic solution suffers the inconvenience of being silent on the details of the procedure used to reach agreement. By adding more structure to the bargaining problem, Rubinstein (1982) takes a strategic approach and sets up a game that accounts for the bargainers' negotiating manoeuvres and also specifies the bargaining details.

To illustrate, consider a case in which John and Ariel try to reach agreement about how to divide the surplus by alternating proposals. Assume both parties have a disagreement payoff of $\$0$. Let's say John makes the first proposal. Ariel can either accept John's proposal, in which case the game ends and the surplus of $\$100$ is divided accordingly, or he can reject the offer. In the latter case, time elapses, and the surplus reduces by a fraction $1 - \delta$, at which point it is Ariel's turn to make a proposal to John to divide the remaining surplus, $\delta \times \$100$. Then John may accept or refuse. The bargaining game continues, with bargainers alternating offers, until one of them accepts the other's offer. The version of the game that lasts only one period is also called the *ultimatum game*. The parameter $0 \leq \delta < 1$ captures the cost of any delay in reaching an agreement; it can be interpreted as a discount factor. If John and Ariel reach an agreement after T periods, such that they receive shares ${\alpha_T}^J$ and ${\alpha_T}^A$ of the remaining surplus, their payoffs are, respectively, ${\alpha_T}^J \times \delta^{T-1} \times \$100$ and ${\alpha_T}^A \times \delta^{T-1} \times \$100$.

As for Nash's axiomatic approach, the strategic approach by Rubinstein leads to a unique solution for the bargaining problem, such that John offers Ariel a share $\delta/(1 + \delta)$ of the surplus in the first period, and Ariel accepts this offer. Without any delay, the bargaining payoffs of John and Ariel are $(1/(1 + \delta)) \times \$100$ and $\delta/(1 + \delta) \times \$100$. Therefore, the bargainer who makes the first offer has a strategic advantage and obtains a larger share of the surplus. Note the remarkable fact that when δ tends towards 1, the cost of delaying an agreement vanishes, and the advantage of the first offerer disappears. In other words, the solution to Rubinstein's model of strategic bargaining tends to coincide with Nash's axiomatic solution of splitting the surplus. This was demonstrated by Binmore et al. (1986).

A vast research field now studies contracting and bargaining in different settings (see Osborne and Rubinstein 1990). The problem in which N individuals must divide a given surplus is frequently approached by the cooperative branch of game theory. For an N-person game, Shapley (1953) provides an axiomatic approach that leads to a unique solution, the so-called Shapley value.

Applying Theory to Strategy

Bargaining and cooperative applications receive increasing attention in strategy literature. From a bargaining perspective, business strategy pertains to managing resources to affect the division of the

surplus in the marketplace, without the help of market prices (Lippman and Rumelt 2003), in an environment in which all participants (buyers, firms, suppliers) negotiate. Using terminology from strategy literature, a business strategy must address the problem to both create and capture value. Brandenburger and Stuart (2007) offer an important theoretical advance: they propose a *biform* game in which the bargaining and cooperative environment depends on the initial uncooperative moves of the players. In their setting, a good strategy shapes the competitive environment to lead to a favourable bargaining position.

The bargaining perspective also applies when examining relationships among firm stakeholders that compete for appropriable quasi-rents, as well as investigating the management of individuals who, because they are key to the firm's value-creation process, acquire bargaining power. Formal models of bargaining in these strategic fields have yet to be developed though (for details, see Panico 2009).

See Also

- ▶ Cooperative and Non-cooperative Game Theory
- ▶ Quasi-Rent

References

Binmore, K., A. Rubinstein, and A. Wolinsky. 1986. The Nash bargaining solution in economic modelling. *RAND Journal of Economics* 17: 176–188.

Brandenburger, A., and H. Stuart. 2007. Biform games. *Management Science* 53: 537–549.

Edgeworth, F.Y. 1881. *Mathematical psychics: An essay on the application of mathematics to the moral sciences*. London: Kegan Paul.

Lippman, S., and R. Rumelt. 2003. A bargaining perspective on resource advantage. *Strategic Management Journal* 24: 1069–1086.

Nash, J.F. 1950. The bargaining problem. *Econometrica* 18: 155–162.

Osborne, M.J., and A. Rubinstein. 1990. *Bargaining and markets*. New York: Academic.

Panico, C. 2009. Employment relationships in knowledge-based firms: Who should have power? *European Management Review* 6: 120–129.

Rubinstein, A. 1982. Perfect equilibrium in a bargaining model. *Econometrica* 50: 97–109.

Shapley, L.S. 1953. A value for n-person games. In *Contributions to the theory of games II*, ed. A.W. Tucker and R.D. Luce. Princeton: Princeton University Press.

B

Barnard, Chester I. (1886–1961)

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Abstract

Chester I. Barnard developed his organization theory based on his extensive management and executive experience, which he considered a new experimental condition enabling a science of cooperation. For Barnard, organization is so complex – entailing interplay of numerous dynamic internal and external, and subjective and objective, phenomena and forces – that it cannot be known in a scientific or even an ordinary sense. The only sign of organizational success is survival.

Barnard is unique for his stature both in organization theory – his work was a key source for ▶ Simon, Herbert A. (1916–2001) (O'Connor 2012: 153–157) – and in executive practice – he served as chief executive of New Jersey Bell Telephone from 1927 to 1948, director of the United Service Organizations during the Second World War, and president of the Rockefeller Foundation from 1948 to 1952. He formulated a new 'organic applied social science' to explain his experience of organization (O'Connor 2012: 157–170).

For Barnard, organizational survival is the exception and failure the norm. Successful organization is enduring organization. Drawing on his extensive organizational experience, he posits and probes a life-sustaining interplay between objective and subjective phenomena, and impersonal and personal forces. In particular, he rejects the fallacy that considers intangible phenomena characterized by relationships, such as organization, as

things; but he also links the attribution of concreteness to survival.

Barnard defines formal organization as 'a system of consciously coordinated activities or forces of two or more persons' (Barnard 1968: 81). Executive organizations, organs and functions must exert force such that the organization *sustains itself* (the fallacy is repeated for practicality). Executive functions do not refer only to official positions. They are exercised 'by all those who are in positions of control of whatever degree'. After his Second World War experience in voluntary organizations, Barnard concluded that responsibility is widely distributed (O'Connor 2012: 140–147).

Context

Barnard pursued theory that enabled 'a more effective conscious promotion and manipulation of cooperation among men' (1968: 74). He wrote his classic text, *The Functions of the Executive*, to remedy errors stemming from classical economics, which he thought accelerated organizational failure. Yet Barnard also said that his book failed 'to convey the sense of organization … which derives chiefly from the intimate interested habitual experience' (p. xxxiv). However, the book directly followed from his experience of 'sensing' organization: at the time of writing, he had been CEO of New Jersey Bell Telephone for 10 years. He had also led emergency relief programmes for the state of New Jersey and held leadership positions in many civic and philanthropic organizations (Wolf 1974).

Barnard embeds organization in 'the cooperative system', which facilitates 'purposeful change of the natural environment', education and 'invention of effective methods of human relationships' (1968: 54–55). Informal organization, whereby individuals influence each other in ordinary life, sets conditions for 'accepting a common purpose, of communicating, and of attaining a state of mind under which there is willingness to cooperate' (p. 116). Coordination first requires 'the disposition to make a personal act a contribution to an impersonal system of acts' (1968: 240–242).

The cooperative system contains material, social, individual and organizational economies. These enable assignment of utility values to physical materials, social assets, individual contributions and the organization, respectively. All but the latter can be specified: organization crosses all domains because it is 'the pool of values as assessed by the organization as a social system' (Barnard 1968: 242). Survival is the only measure of this quadruple economy.

Effectiveness follows from the relevance of the organizational purpose to the environment (another term that obscures phenomena characterized by relationship) and efficiency, which relates to the satisfaction of individual motives (Barnard 1968: 56), especially 'the intensity of attachment to the "cause"' (p. 84). Executive organization, organs and functions must secure contributions from individuals throughout changing objective and subjective conditions. In particular, the individual economy, in which individuals decide what, if anything, to contribute to organization, must run a surplus: 'If each man gets back only what he puts in, there is no incentive … no net satisfaction for him in cooperation' (p. 58). Barnard emphasized non-economic incentives in this regard (pp. 145–149).

Organization is so complex that it cannot be seen, only sensed; and proper sensing depends on a relationship to organization that is 'interested, intimate, habitual' (Barnard 1968: xxxiv). Fatal decision errors result because of 'the imbalance due to the difference in the precision of perception' as respects the various environments and economies (p. 286).

A key executive function is formulating, communicating and instilling purpose, a 'coordinating and unifying principle' (Barnard 1968: 95) that 'incites' cooperation (p. 86). To be effective, purpose must be accepted: '[T]here is initially something like simultaneity in the acceptance of a purpose and willingness to cooperate' (p. 86). Thereafter, formulation and definition of purpose are widely distributed because purpose obtains in the 'aggregate of action taken', especially by those 'who make the last contributions, who apply personal energies to the final concrete objectives' (p. 232). However, contributors must believe in a common purpose: 'An objective purpose that can serve as the basis for a cooperative

system is one that is *believed* by the contributors (or potential contributors) to it to be the determined purpose of the organization.' The quintessential executive function, then, is to inculcate 'belief in the real existence of a common purpose' (p. 87) – the basis for belief in the reality of organization.

The official executive who accepts and reliably executes subjective (personal belief-based) responsibility actualizes an 'ethical ideal': the 'willingness to subordinate immediate personal interest for both ultimate personal interest and the general good' (Barnard 1968: 293). This backs contributors' faith in organization (p. 296) and in their leadership *as this leadership substantiates and is substantiated by* organization. The ultimate basis of leadership is that of 'personal conviction – not conviction that [leaders] are obligated as officials . . . but conviction that what they do for the good of organization they *personally* believe to be right' (p. 281). However, this basis is also backed by contributors' belief in leadership's sincerity (pp. 281–283):

> the [leadership's] identity between personal and organizational codes of conduct carries 'conviction' . . . to that informal organization underlying all formal organization that senses nothing more quickly than insincerity. Without it, all organization is dying . . . it is the indispensable element in creating that desire for adherence . . . [from] those whose efforts willingly contributed constitute organization. (pp. 281–282)

Thus Barnard's credo, a profession of faith in organization (p. 296), captures the animating condition underlying his experience and his theory.

See Also

- ▶ Biological Analogies
- ▶ Dynamic Managerial Capabilities
- ▶ Simon, Herbert A. (1916–2001)

References

O'Connor, E. 2012. *Creating new knowledge in management: Appropriating the field's lost foundations*. Stanford: Stanford University Press.

Wolf, W. 1974. *The basic Barnard: An introduction to Chester I. Barnard and his theories of organization and management*. Ithaca: Cornell University Press.

Selected Works

Barnard, C.I. 1948. *Organization and management*. Cambridge, MA: Harvard University Press.

Barnard, C.I. 1968. *The functions of the executive*, 2nd ed. Cambridge, MA: Harvard University Press.

Barney, Jay Bryan (Born 1954)

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Jay B. Barney was born in California, USA. In his youth he was an avid skateboarder and surfer. Later on, he channelled his love for active sports that require balance and speed into being an ardent cyclist and a passionate skier. He is married to his college sweetheart, Kim, and continues to enjoy the outdoors, travelling and spending time with his family.

Barney received his BS in Sociology from Brigham Young University in 1975, with Summa Cum Laude distinction. By 1982, Jay had received his MA in Sociology and his Ph.D. in Administrative Sciences and Sociology from Yale University. He has received honorary Ph.D. degrees in 1997 from the College of Social Sciences, Lund University (Lund, Sweden), in 2008 from the Copenhagen Business School, (Copenhagen, Denmark), and in 2011 from the Universidad Pontificia Comillas (Madrid, Spain).

Barney's first academic position was with the Anderson Graduate School of Management, University of California, Los Angeles (1980–1986). He became a full professor while on the faculty of Texas A&M University (1986–1994), and for the ensuing 18 years held the Chair for Excellence in Corporate Strategy, in the Department of Management and Human Resources, the Ohio State

University. In 2012 he moved to the University of Utah as the Presidential Professor of Strategic Management and Lassonde Chair of Social Entrepreneurship in the David Eccles School of Business. He has also held several honorary academic positions at universities in New Zealand, the United Kingdom and China.

In addition to his academic positions, he is also a world-renowned educator and practitioner who engages in executive training and consulting for numerous organizations including Koch Industries, Hewlett-Packard Corp, McDonnell-Douglas Inc. and Nationwide Insurance. Barney also advises educational institutions such as the University of Mississippi, the Ohio State University, Columbus Public Schools, public–private partnerships such as Tech-Columbus and non-governmental organizations such as Choice Humanitarian.

Barney has been recognized, awarded and honoured for his excellence in research, teaching and service. He was elected a Fellow of the Academy of Management (2001) and Strategic Management Society (2007). Additionally, he is the winner of the Irwin Outstanding Educator Award presented by the Business Policy and Strategy Division of the Academy of Management (2005) and the Academy of Management Scholarly Contributions Award (2010). He serves on the editorial and academic advisory boards of the leading journals in the management field, and since 2009 is co-editor of *Strategic Entrepreneurship Journal*. He completed a 5-year leadership term for the Business Policy and Strategy Division, Academy of Management in 1997. He served as the president-elect and president for the Strategic Management Society (2008–2012) and he is a member of the Board of Trustees for the Strategic Research Foundation since 2009. Other than his formal leadership roles in the professional organizations, Barney regularly participates as an organizer, panelist and a discussant in the professional and paper development workshops for Ph.D. students, junior and mid-career faculty in the annual meetings organized by Academy of Management and Strategic Management Society and in specialized conferences around the world. He is generous with his time and expertise when it comes to the Ph.-D. students who reach out to him.

Scholarly Impact

Barney is the author of more than 100 articles and 6 books, the majority of which have been translated into other languages including Chinese, German, Hungarian, Italian, Japanese, Korean and Spanish. As a young organizational theorist, he demonstrated early on his creativity and intellectual boldness in questioning the validity of an existing paradigm, both of which are the defining characteristics of his scholarly work. His skills as a theorist flourished when he joined the faculty of Anderson School of Business, UCLA, as a freshly minted assistant professor. This was the early 1980s, and there were several forces that particularly influenced Barney's scholarship. First, there was a strong presence of organizational economists and sociologists such as Harold Demsetz and William Ouchi who theorized on the existence of firms and different ways of organizing economic activity. Second, Japanese companies were outperforming their US counterparts, a situation which challenged the conventional management practices at the time. Third, the strategy field was shaped by Michael Porter's prominent work on the importance of selecting attractive industries for higher performance (1980). Barney was already exposed to and intrigued by the new theories in organizations developed by Nelson and Winter (1982), Ouchi (1980), and Oliver Williamson (1975) while he was still a Ph.D. student. Given his broader context, interests, training and talent as a theorist he embarked on a journey of understanding the 'uniqueness' of organizations and was instrumental in developing the ▶ resource-based view (RBV) of the firm.

The RBV of the firm sheds light on the resources and capabilities of the firm as the sources of competitive advantage under certain conditions. Barney wrote two seminal articles that helped to establish RBV as the leading theoretical apparatus in the management of organization from the early 1990s. The first article, titled 'Strategic factor markets: expectations, luck, and business strategy', which was published by *Management Science* in 1986, is about the inner workings of ▶ strategic factor

markets (SFM). Barney recalls how he wrote the article as follows:

> The first outline was on a subway in Japan. I wrote the first draft of the paper assuming that the real contribution was showing that when factor markets anticipate value created by resources in product markets, that apparently advantaged positions in product markets would not generate superior performance for firms. Over the review process, this part of the paper became a single paragraph, and the paper spends most of the time on imperfections of strategic factor markets. Despite this, people still think the paper is only about perfect strategic factor markets and not about competitive imperfections in the SFM. The paper started out 45 pages long (in *Management Science*) and ended up about 25 – but it was a better paper. The first time I presented it, it was ripped to shreds at a UCLA colloquium. Of course, most papers back then were ripped to shreds at a UCLA colloquium. As I walked out of the colloquium, Kate Conner (who was a Ph.D. student) said 'that was a great seminar'. My reply was, 'It doesn't feel like a great seminar.'

According to research on Google Scholar, this article was 1 of the 50 most influential papers published in *Management Science* by 2004 and cited more than 4500 times. The second article, titled 'Firm resources and sustained competitive advantage', published in the *Journal of Management*, is cited by more than 30,000 scholars working across multiple fields in management such as strategy, international business, human resources and organizational behaviour, information systems, marketing, health care and sports (Barney and Arikan 2001). In this article, Barney develops a parsimonious framework for the RBV of the firm and expands upon the characteristics of resources that are likely to be sources of competitive advantage.

In addition to continuing his research programme in the RBV of the firm and consistent with his theoretical prowess in understanding 'uniqueness', Jay is also pursuing a research programme in understanding the nature of entrepreneurial process through discovery and creation. He also leads MBA students in study-abroad programmes to develop unique and localized solutions to the problems of poverty in Peru and Bolivia through social entrepreneurship. In sum, Barney's career has been a testament to his advice to young scholars: pursue your true passion and ask 'bold' research questions.

See Also

- ▶ Resource-Based View
- ▶ Strategic Factor Markets

References

Nelson, R.R., and S.G. Winter. 1982. *An evolutionary theory of economic change*. Cambridge, MA: Belknap Press of Harvard University Press.

Ouchi, W.G. 1980. Markets, bureaucracies, and clans. *Administrative Science Quarterly* 25: 129–141.

Williamson, O.E. 1975. *Markets and hierarchies: Analysis and antitrust implications*. New York: Free Press.

Selected Works

Barney, J.B. 1986. Strategic factor markets: Expectations, luck, and business strategy. *Management Science* 32: 1231–1241.

Barney, J.B. 1991. Firm resources and sustained competitive advantage. *Journal of Management* 17: 99–120.

Barney, J.B., and A. Arikan. 2001. The resource-based view: Origins and implications. In *The Blackwell handbook of strategic management*, ed. M.A. Hitt, R.E. Freeman, and J.S. Harrison. Malden: Blackwell.

Basic Research

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Abstract

Basic research can be defined as systematic inquiry that involves a quest for some fundamental scientific aspects of phenomena without any specific practical applications in mind. The pay-off of basic research is often uncertain and, once published, difficult to appropriate. Accordingly, the social returns to basic research exceed the private returns, rendering it a 'public good'. Basic research results in contributions to the world stock of scientific knowledge. It

ultimately supports long-term economic growth, increased productivity and subsequent practical applications on a global basis.

Definition Basic research is defined as systematic study directed towards fuller knowledge or understanding of the fundamental scientific aspects of phenomena and of observable facts without specific applications towards processes or products (NSF 2010).

The Definitions of Basic Research

Basic research is defined by the National Science Foundation (NSF 2010: 9) in the US as 'systematic study directed toward fuller knowledge or understanding of the fundamental aspects of phenomena and of observable facts without specific applications towards processes or products in mind'. Similarly, 'basic research is experimental or theoretical work undertaken primarily to acquire new knowledge of the underlying foundation of phenomena and observable facts, without any particular application or use in view' (OECD 1994: 13). Vannevar Bush likewise observed that 'Basic research is performed without thought of practical ends.' In *Science the Endless Frontier* (1945), Bush pointed out that it results in 'general knowledge and understanding of nature and its laws'.

Research can be regarded as basic, depending on the nature of its outcomes. For example, scientists often refer to research as basic if its focus is fundamental and the goal is to improve understanding and augment society's knowledge base – that is, if its results have a major impact upon a given field or they turn out to provide a fundamental discovery (Trajtenberg et al. 1992: 4). Basic research focuses on deepening the understanding of scientific laws rather than solving particular questions. It often offers solutions to old puzzles (e.g., Kuhn 1962; Rosenberg 1982). Thus, the research at the Bell Labs that led to the discovery of the transistor is an example of basic research, as are Watson and Crick's research which resulted in the discovery of DNA, the laws of thermodynamics and the mathematics of chaos (Nelson 1962; Trajtenberg et al. 1992). On the other hand, pursuit of the knowledge or understanding necessary to meet specific and recognized needs is considered to be applied research (NSF 2010).

Features of Basic Research

Researchers involved in basic research require more freedom than those involved in applied research. In applied work, researchers work on defined problems while those working on basic research are relieved of such restrictions and are constrained mainly by their own imagination and creative capability (NSF 1953).

A peculiar feature of basic research is that the pay-off is uncertain, serendipitous and distant, and thus it is difficult to identify in advance the commercial value or utility of the discoveries that result from basic research (Mowery and Rosenberg 1989). Basic research involves the investigation of observable facts without specific applications towards processes or products in mind. In the search for oil many a dry hole is drilled, but statistically the eventual output far outweighs the cost. So it is with basic research (NSF 1953: 39).

Another feature of basic research is that it produces knowledge that is virtually costless to reproduce and reuse and thus quickly moves into the public domain (Arrow 1962; Mowery and Rosenberg 1989). Thus, the outcome of a piece of basic research is freely available to all. The social returns to basic research far exceed the private returns and therefore the market fails to provide adequate incentives for the private sector to invest in basic research (Nelson 1959; Arrow 1962). For these reasons, economists justify public subsidies for basic research (Teece 2003). However, given that the benefits of basic research accrue to global society, payment for it ought to come, as a matter of economic policy, from all nations. However, no such mechanism currently exists to allow this in a comprehensive manner.

Basic research is conducted primarily in universities, government labs and not-for-profit organizations. Some amount of basic research is also conducted in large business enterprises; however, the amount is quite small because it is very difficult for the business enterprise to capture value from

basic research. As a result, basic research is almost always delivered free of charge into the public domain, whether it is privately or publicly funded.

The Role of Basic Research in Innovation and Society

In the 'linear model' of ▶ innovation, innovation begins with basic research, the results of which are fed into applied research and also development, which subsequently lead to production and market sales.

Many scholars have observed a more interactive relationship, wherein basic research may either precede or follow new technology development (e.g., Gibbons and Johnston 1974; Kline and Rosenberg 1986; von Hippel 1988; Teece 1989; Nelson 1990). Rosenberg (1990) similarly argues that basic research often grows out of applied research funded by large corporations and thus the two are interactive. Rosenberg (1990: 170) views investments in basic research as 'a ticket of admission to an information network'. Applied research such as development activities can also have an impact on basic research. The output of basic research is never a final product but, rather, is some form of new knowledge that may be used to play some further role in the development of new products (i.e., via applied research initiatives). Therefore pursuing simultaneous investment both in applied and basic research is desirable (e.g., Cockburn and Henderson 1998). In a similar vein, March (1991: 71) states that firms that invest in basic research to the exclusion of applied research 'suffer the costs of experimentation without gaining many of its benefits'.

Much effort has been made to identify a variety of paths by which basic research leads to productive advancement. However, basic research outputs are difficult to observe, given their nature. As noted, the benefits from basic research occur over the long term while a firm's investment in applied research is considered short term and results in the development of marketable products. These practical and conceptual problems make it difficult to measure the rate of return to basic research.

Despite the difficulty associated with measuring the returns to basic research, scholars have examined various types of contributions that basic research makes to society. The immediate increments to knowledge resulting from basic research itself can be of great economic significance (Rosenberg 1992: 381). Using historical analysis, Rosenberg (1992) argues that basic research contributes to economic performance by creating new scientific instrumentation and methodologies. Some proxy basic research as publicly funded R&D and find a positive contribution to economic growth (Bergman 1990). Basic research can lead to important product development and an increase in overall firm productivity (e.g., Mansfield 1980a; Griliches 1986). Mansfield (1980b) reports a positive relationship between basic research as a percentage of value added and the rate of growth of total factor productivity. Put differently, basic research is the 'seed corn' that enables and supports technological innovation, often at a much later date. That enablement is global in scope – that is, basic research anywhere benefits innovation everywhere. This is because the results are typically made public transmitted through the scientific literature. Accordingly, the ▶ appropriability of returns by the investor in basic research is very difficult, if not impossible.

Notwithstanding the important contribution of basic research to innovation and to global society, it is important to recognize that at the centre of the innovation process is design, not science. Research is often stimulated by the problems associated with trying to get the design right. Technology is not merely applied science. Any technological development draws on an array of science, not only that which is embedded in one or two recent findings. Moreover, important technological breakthroughs can often proceed even when the underlying science is not understood well (e.g., the IUD for birth control). Products can often be made to work without much knowledge of the underlying reasons. Airframe design in the aircraft industry, for instance, has a large empirical component. Certain airframe designs are known, from experimentation, to have certain performance features. However, the underlying scientific understanding of airframe design is

rudimentary. Accordingly, computer modelling and wind tunnel testing is still an essential part of the development process (Teece 1989: 35–6).

Basic research nonetheless provides the underpinnings for technological progress from which practical applications can be drawn. The output of basic research is a peculiar kind of good that may be used, not to produce a final good, but to play some further role in the invention of a new final good (Mowery and Rosenberg 1989: 10). In other words, basic research frequently provides the foundation for subsequent applied research, and applied research often influences the direction of basic research. David et al. (1992) document historical cases of specific technologies and publicly funded basic research programs to show how they lay the foundation for subsequent technological progress. As noted, basic research might be thought of as the 'seed corn' for much follow-on activity.

Another mechanism by which basic research benefits industry is through the production of skilled graduates. Pavitt (1991) shows that conducting basic research helps to develop skills that translate knowledge into practice, solve complex technological problems and participate effectively in networks and absorb and exploit the resulting knowledge and skills. Nelson (1987) highlights the importance of basic research as a source of the skills essential for young scientists to conduct more applied industrial activities within a firm. Trained graduates are thus a key benefit from publicly funded research (Gibbons and Johnston 1974).

See Also

- ▶ Appropriability
- ▶ Innovation
- ▶ Profiting from Innovation
- ▶ Research and Development (R&D) Organization
- ▶ Science and Innovation

References

Arrow, K. 1962. Economic welfare and the allocation of resources for invention. In *The rate and direction of inventive activity*. Princeton: Princeton University Press.

Bergman, E.M. 1990. The economic impact of industry-funded university R&D. *Research Policy* 19: 340–355.

Bush, V. 1945. *Science: The endless frontier. A report to the president*. Washington: US Government Printing Office. Available at http://www.nsf.gov/od/lpa/nsf50/vbush1945.htm

Cockburn, I., and R. Henderson. 1998. Absorptive capacity, coauthoring behavior, and the organization of research in drug discovery. *Journal of Industrial Economics* 46: 157–182.

David, P., D. Mowery, and W.E. Steinmueller. 1992. Analysing the economic payoffs from basic research. *Economics, Innovation and New Technology* 2: 73–90.

Gibbons, M., and R. Johnston. 1974. The roles of science in technological innovation. *Research Policy* 3: 220–242.

Griliches, Z. 1986. Productivity, R&D, and basic research at the firm level in the 1970s. *American Economic Review* 76: 141–154.

Kline, S.J., and N. Rosenberg. 1986. An overview of innovation. In *The positive sum strategy: Harnessing technology for economic growth*, ed. R. Landau and N. Rosenberg. Washington, DC: National Academy Press.

Kuhn, R. 1962. *The structure of scientific revolutions*. Chicago: University of Chicago Press.

Mansfield, E. 1980a. Comments on returns to research and development expenditures. In *New developments in productivity measurement*, NBER Studies in Income and Wealth, vol. 44, ed. J.W. Kendrick and B.N. Vaccara. New York: National Bureau of Economic Research.

Mansfield, E. 1980b. Basic research and productivity increase in manufacturing. *American Economic Review* 70: 863–873.

March, J.G. 1991. Exploration and exploitation in organizational learning. *Organization Science* 2: 71–87.

Mowery, D., and N. Rosenberg. 1989. *Technology and the pursuit of economic growth*. Cambridge: Cambridge University Press.

Nelson, R. 1959. The simple economics of basic scientific research. *Journal of Political Economy* 67: 297–306.

Nelson, R. 1962. The link between science and invention: The case of the transistor. In *The rate and direction of inventive activity*, ed. R. Nelson. Princeton: Princeton University Press.

Nelson, R. 1987. *Understanding technical change as an evolutionary process*. Amsterdam: North-Holland.

Nelson, R. 1990. Capitalism as an engine of progress. *Research Policy* 19: 193–214.

NSF (National Science Foundation). 1953. What is basic research? Available at http://www.nsf.gov/pubs/1953/annualreports/ar_1953_sec6.pdf. Accessed 17 Feb 2014.

NSF (National Science Foundation). 2010. Definitions: Research and development (R&D) definitions. In *Globalization of science and engineering research*, 9. Arlington: National Science Board Publication. Available at http://www.nsf.gov/statistics/nsb1003/pdf/nsb1003.pdf

OECD (Organisation for Economic Co-operation and Development). 1994. *The measurement of scientific and technological activities: Standard practice for surveys of research and experimental development*, Frascati Manual 1993. Paris: OECD.
Pavitt, K. 1991. What makes basic research economically useful? *Research Policy* 20: 109–119.
Rosenberg, N. 1982. *Inside the Black Box: Technology and economics*. Cambridge: Cambridge University Press.
Rosenberg, N. 1990. Why do firms do basic research (with their own money)? *Research Policy* 19: 165–174.
Rosenberg, N. 1992. Scientific instrumentation and university research. *Research Policy* 21: 381–390.
Teece, D.J. 1989. Inter-organizational requirements of the innovation process. *Managerial and Decision Economics* 10: 35–42.
Teece, D.J. 2003. Industrial research. In *Dictionary of American history*, 3rd ed, ed. S.I. Kutler. New York: Gale/Charles Scribner.
Trajtenberg, M., Henderson, R. and Jaffe, A. 1992. *Ivory tower versus corporate lab: An empirical study of basic research and appropriability*. National Bureau of Economic Research Working Paper, No. 4146 (August), Cambridge, MA.
Von Hippel, E. 1988. *The sources of innovation*. New York: Oxford University Press.

Behavioural Strategy

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Abstract

This entry discusses behavioural strategy that seeks to outline those approaches to organizational life that are defined in other than economic terms. It outlines the origins of the approach in the work of seminal figures such as Cyert and March (1963) and then goes on to discuss later contributions such as Levinthal (2011). It offers case studies in areas such as resource valuation through the use of statistical approaches and then provides a consideration of the application of the approach to the discussion of production chains.

Definition Behavioural strategy is a progress whereby it is acknowledged that the decision-making of an individual or an organization is arrived at not solely in economic terms but also by taking into account the complexity of the environment in which the actor finds itself.

In addition to behavioural areas such as behavioural finance, behavioural ▶ decision-making and so on, behavioural strategy has emerged as a new field of study. Powell et al. (2011) provide an excellent overview of this nascent area, and I will not repeat their arguments here. The origin of the term 'behavioural' in organizational theory and strategy can be traced to *A Behavioral Theory of the Firm*, a seminal work by Cyert and March (1963). It has been used to denote approaches to organizational life that are not based on a simple, economic account. However, Levinthal (2011) argues that such a distinction between behavioural and economic approaches is a false divide and that there only exist more or less preferred mechanisms (all imperfect) to guide choice and behaviour.

My approach is similar to that in Levinthal (2011). In a nutshell, I argue that strategy is necessarily behavioural due to the complexity we face as organizational and individual decision makers. I illustrate this point by exploring a key question in strategy: how resources are valued.

An Illustrative Problem: Resource Valuation

Developing superior insights into the value of resources is the only systematic way for firms to acquire resources capable of generating economic rent (Barney 1986; Peteraf 1993). Consider the Oakland Athletics, a Major League baseball team, during the period from 2003 to 2007. Working with the lowest payroll in all of baseball, the Oakland A's managed to win more regular season games than any other team. Its secret, as documented in the bestseller *MoneyBall* (Lewis 2003), seems to be the scientific ways which its general manager, Billy Beane, and the front office use to evaluate players. Instead of following conventional metrics such as batting averages, the team aims to scientifically measure a player's 'precise contribution to victory and defeat'

(p. 70) using newer statistics such as on-base percentage. The team's superior insight into the value of its players (i.e., resources) enables it to engage in arbitrage: buying players that have been undervalued and selling players that have been overvalued (p. 125).

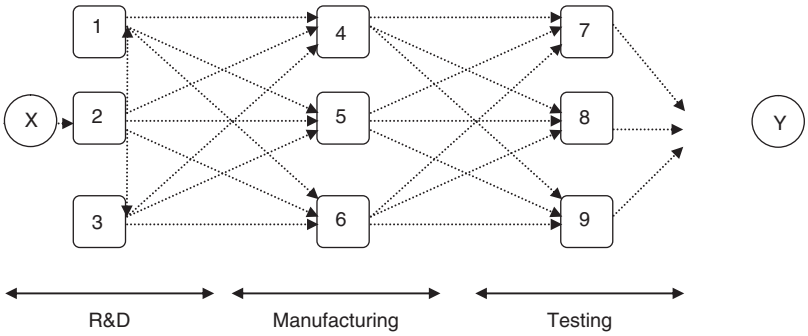
However, the same scientific approach that has been subsequently adopted in baseball has had limited success in other sports such as football and basketball (Isidore 2006). The crucial reason lies in the differential patterns of interdependence (Keidel 1984, 1987; Daft 1995; Berman et al. 2002). In baseball, every player acts independently, taking a turn at bat and playing his or her position. As Pete Rose reportedly once said, 'Baseball is a team game, but nine men who reach their individual goals make a nice team.' Thus, baseball is a game characterized by pooled independence (Keidel 1984, 1987). The key to the game is still the one-on-one match-up between pitchers and batters. As such, the determination of an individual player's contribution to the game depends roughly on his own statistics (e.g., on base percentage). In contrast, American football is best described as sequentially interdependent. For instance, the line first blocks the opponents, to enable the backs to run or pass. Plays are sequentially performed from first down to fourth down (Daft 1995). There is thus a significant degree of sequential interdependence among players. Furthermore, the outcome of every play depends on the interaction of 22 different players, making a single player's statistics, such as yards per carry, somewhat harder to value (Isidore 2006). In such settings, it is much harder to value individual players accurately according to their precise contribution to a team's victory or loss.

Thus, a fundamental challenge in valuation arises from the fact that resources are often characterized by a high degree of interdependence (Thompson 1967), in both sports and business. The very notion of strategic decisions in the strategy literature, in contrast to that of tactical decision-making, revolves around the fact that the former class of decisions entails longer-term consequences (Andrews 1971). Many strategic actions do not have any immediate or direct consequence, but instead set the stage for subsequent actions that bring the firms towards some actual payoff. For instance, after an R&D decision is made, payoffs are not known immediately since R&D is typically located far away from the market. A long sequence of value chain activities such as manufacturing, marketing and service has to unfold before the overall effect of R&D is felt. As such, it is difficult to take into account the full consequences of R&D strategies when assessing alternatives at any given point in time. Just as the outcome of a football game is determined largely by the interaction and coordination among players, resource valuation depends on the identification of the value of a *configuration* of resources.

Despite the importance of resource valuation, there have been few attempts to model the development of differential valuations and, in particular, the mechanisms by which firms create such heterogeneous expectations (Denrell et al. 2003; Peteraf and Barney 2003; Barney and Alvarez 2006).

A Canonical Problem

Consider a simple prototypical representation of a multi-stage production chain, as shown in Fig. 1. Suppose this firm specializes in the transformation of an input resource X into a final output Y. It transforms X into Y through a series of three production stages, namely R&D, manufacturing and testing, and each one of these stages is supervised by a department manager. At each stage, there are nine available production choices (represented by directed arrows) and three types of corresponding intermediate resources (represented by nodes). For instance, resource #1 can be transformed into resource #4, #5 and #6 respectively by the R&D department in three different production processes, which have different costs. Similarly, each one of the resources (nodes) in the manufacturing stage can be transformed into resources #7, #8 and #9, which can then be transformed in the testing stage into the final output Y. The challenge is to find out which configuration of resources yields the least total costs of production (or, equivalently, the most total payoffs).



Behavioural Strategy, Fig. 1 A canonical representation of resource valuation

Even in this simple example, it is not immediately obvious what value should be given to each of the resources. Clearly, the value of a resource depends on the levels of other resources that it might be transformed into downstream. For instance, the value of resource #3 depends on the value of downstream resources such as resources #4, #5, #6, #7, #8 and #9. Rational choice requires the computation of values of all resources that constitutes a particular resource combination or configuration.

At a more abstract level, this challenge is a variant of a more general problem known in artificial intelligence as the 'credit assignment problem' (Samuel 1959, 1967; Minsky 1961; Levinthal 2000; Denrell et al. 2004) – how should one assign the credit arising from the overall sequence of actions to each of the antecedent actions?

Several Solution Approaches

Direct Search

One straightforward solution approach is simply direct search – go through all possible configurations and choose the best one. In the example above, if N and M denote the number of stages and number of resources per stage respectively, the total number of possible resource configurations is M^N or 27 (i.e., 3^3). While this seems easy enough, direct search quickly loses its allure as M and N grow in magnitude. For instance, imagine a firm with 10 stages of production processes, each with 10 different resource positions at each stage, this generates a state space of 10^{10}, which is a billion configurations to search through. The example implies that it is close to impossible to compute all of the resource valuations by iterating over the entire state space as either M or N gets arbitrarily large.

Dynamic Programming

With M stages and N possible resource positions for each stage, we have $M \star N$ number of possible nodes. A system of equation with $M \star N$ number of unknowns can be set up, such that the solution to this system of equations is the true utility associated with each resource. With this formulation, solutions can be obtained explicitly by many standard methods such as dynamic programming. Solving directly is akin to an exhaustive search, looking ahead at all possibilities, computing their probabilities of occurrence and their desirabilities in terms of expected rewards. Yet this framework assumes that the task can be fully specified by a sequence of states and actions. In reality the specification of a full decision tree is almost impossible due to a lack of information. Furthermore, even if the resource valuation challenge can be reduced to a dynamic programming problem, the solution can still be hard to reach. As the number of stages grows, the number of nodes expands exponentially. A reasonable approximation cannot be computed by numerical methods, let alone analytical ones. Bellman refers to this limitation as the 'curse of dimensionality' (Bellman 1957).

A Behavioural Approach

If resource valuation does not proceed optimally, what constitutes a behavioural approach that combines elements of dynamic programming with

well-known human limitations and biases? Below I outline a minimal set of behavioural principles. First, a viable way to solve the sequentially dependent problem is learning, rather than derivation. Solution is learned incrementally, gradually and approximately, rather than computed. Second, a behavioural approach needs to assume limited foresight. While it makes sense to carry out backward induction, there now exists considerable evidence that individual decision makers are not capable of seeing far into the future. When anticipating future consequences of current actions, decision makers can only look one or two periods into the future and consider limited future outcomes (Simon 1955). As reviewed by Hutchinson and Meyer (1994), psychological experiments have demonstrated convincingly that people are not capable of looking ahead to all future periods and often do not fully utilize past information to inform future decisions. In an experimental study of three-stage bargaining, Camerer and Johnson (2004) find that only 15% of the subjects look two steps ahead while the vast majority look only one step ahead.

One possible behavioural model on resource valuation is based on a simple family of learning algorithms known as Q-learning (Watkins 1989; Kaelbling 1993; Sutton and Barto 1998; Denrell et al. 2004) and has been shown to describe human subject behaviour in lab-based experiments (Fang 2012).

Conclusion

The world we live in as strategists is complex. This sheer complexity implies that strategizing is necessarily behavioural in nature, as optimal solution approaches are often not feasible. In this piece, I have illustrated this argument by exploring a key question in strategy: how resources come to be valued.

See Also

- ▶ Cyert, Richard M. (1921–1998)
- ▶ Decision-Making
- ▶ Dynamic Capabilities
- ▶ March, James G. (Born 1928)
- ▶ Organization Theory

References

Andrews, K. 1971. *The concept of corporate strategy*. Homewood: Irwin.

Barney, J. 1986. Strategic factor markets: Expectations, luck and business strategy. *Management Science* 32: 1231–1241.

Barney, J., and S. Alvarez. 2006. Toward a creation theory of entrepreneurship opportunity formation. Working paper, Ohio State University.

Bellman, R. 1957. *Dynamic programming*. Princeton: Princeton University Press.

Berman, S., J. Down, and C. Hill. 2002. Tacit knowledge as a source of competitive advantage in the national basketball association. *Academy of Management Journal* 45: 13–31.

Camerer, C., and E. Johnson. 2004. Thinking about attention in games: Backward and forward induction. In *The psychology of economic decisions*, vol. 2, ed. I. Brocas and J. Carillo. Oxford: Oxford University Press.

Cyert, R., and J. March. 1963. *A behavioral theory of the firm*. Englewood Cliffs: Prentice Hall.

Daft, R.L. 1995. *Organization theory and design*, 5th ed. St Paul: West.

Denrell, J., C. Fang, and S. Winter. 2003. The economics of strategic opportunities. *Strategic Management Journal* 24: 977–990.

Denrell, J., C. Fang, and D. Levinthal. 2004. From T-mazes to labyrinths: Learning from model-based feedback. *Management Science* 50: 1366–1378.

Fang, C. 2012. Organizational learning as credit assignment: A model and two experiments. *Organizational Science* 23: 1717–1732.

Hutchinson, J.W., and R. Meyer. 1994. Dynamic decision making: Optimal policies and actual behavior in sequential choice problems. *Marketing Letters* 5: 369–382.

Isidore, C. 2006. Bringing moneyball to the NFL draft, CNNMoney.com, 28 April. Available at http://money.cnn.com/2006/04/28/commentary/column_sportsbiz/sportsbiz/

Kaelbling, L. 1993. *Learning in embedded systems*. Cambridge, MA: MIT Press.

Keidel, R. 1984. Baseball, football, and basketball: Models for business. *Organizational Dynamics* 12: 5–18.

Keidel, R. 1987. Team sports models as a generic organizational framework. *Human Relations* 40: 591–612.

Levinthal, D. 2000. Credit assignment and the theory of the firm. Working paper, Wharton School, University of Pennsylvania.

Levinthal, D. 2011. A behavioral approach to strategy: What's the alternative? *Strategic Management Journal* 32: 1517–1523.

Lewis, M. 2003. *Moneyball*. New York: W. W North & Company.
Minsky, M. 1961. Steps towards artificial intelligence. *Proceedings of the Institute of Radio Engineers* 49: 8–30.
Peteraf, M. 1993. The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal* 14: 179–191.
Peteraf, M., and J. Barney. 2003. Unraveling the resource-based tangle. *Managerial and Decision Economics* 24: 309–323.
Powell, T., D. Lovallo, and C. Fox. 2011. Behavioral strategy. *Strategic Management Journal* 32: 1369–1386.
Samuel, A. 1959. Some studies in machine learning using the game of checkers. *IBM Journal of Research and Development* 31: 211–229.
Samuel, A. 1967. Some studies in machine learning using the game of checkers II: Recent progress. *IBM Journal of Research and Development* 11: 601–617.
Simon, H. 1955. A behavioral model of rational choice. *Quarterly Journal of Economics* 69: 99–118.
Sutton, R., and A. Barto. 1998. *Reinforcement learning: An introduction*. Cambridge, MA: MIT Press.
Thompson, J. 1967. *Organizations in action: Social science bases of administrative theory.* Transaction Publishers.
Watkins, C. 1989. *Learning from delayed rewards*. Cambridge: King's College.

Bertrand Competition

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Definition When the outputs of the firms in an industry are perfect substitutes, the firms compete on price and have no capacity constraints, the resulting industrial organization is called Bertrand competition.

Bertrand competition is a (game) theoretical concept. Models of Bertrand competition generally assume that product characteristics are fixed (and typically are assumed to be the same for all sellers, so that goods from different suppliers are perfect substitutes), and that the dimension along which competition occurs is that the suppliers set the prices for the goods they sell (as contrasted with Cournot competition, in which the parties are assumed to compete by choosing the quantities they sell, and prices adjust to match quantity demanded with quantity supplied).

Models of price competition with differentiated products exist, but they are generally not described as being 'Bertrand competition'.

With Bertrand competition, suppliers are assumed to set prices, buyers elect to buy as much or as little as they want at those prices, and the assumption is that suppliers will supply enough to satisfy market demand; that is, the assumption is that firms do not have capacity constraints.

The solution concept typically used in models of Bertrand competition is the standard ▶ nash equilibrium concept from non-co-operative game theory, though refinements (such as subgame perfect Nash equilibria) are sometimes used.

In equilibrium with identical firms, the price is driven down to the common ▶ marginal cost of the firms. If one firm has a lower marginal cost than all of its rivals, in equilibrium price is driven down to the second-lowest marginal cost. The intuition is that (a) since all goods are assumed to be homogeneous perfect substitutes, customers buy from the firm with the lowest price, (b) any price strictly above the second-lowest marginal cost can and will be undercut by another firm – see Bertrand (1883) and Tirole (2000).

Some have criticized Bertrand competition models as leading to unrealistic results in situations where there are fixed costs F and constant per-unit marginal costs C, so that the total cost of producing X units is F + CX. In such a situation, if price is driven down to marginal cost the firms earn no margins on inframarginal units and thus cannot recoup any of their fixed costs. With an upward-sloping marginal cost curve, firms can earn margins on infra-marginal sales that can contribute to covering fixed costs.

As an example, Bertrand competition models have sometimes been proposed for licensing intellectual property, where the assumption is often made that the marginal cost of licensing is zero. In such models, the conclusion that price will be driven down to the marginal cost of licensing (zero) has been criticized as unrealistic, as such

an outcome would fail to compensate successful innovators for the costs and risks associated with R&D (including 'dry holes'). Firms anticipating that licensing competition will take the form of Bertrand competition would have little incentive to invest in R&D in the first place.

Hence, models of Bertrand competition, while popular in some scholarly circles, have not been widely applied in the field of strategic management. The marginal cost pricing that it predicts is not sustainable, and accordingly business models are selected by managers to avoid this trap – see Besanko et al. (2010).

See Also

- ▶ Cost
- ▶ Marginal Cost
- ▶ Nash Equilibrium

References

Bertrand, J. 1883. Théorie mathématique de la richesse sociale. *Journal des Savants*, 499–508.
Besanko, D., D. Dranove, M. Shanley, and S. Schaefer. 2010. *Economics of strategy*. New York: Wiley.
Tirole, J. 2000. *The theory of industrial organization*. Cambridge, MA: The MIT Press.

Bettis, Richard (Born 1947)

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Richard A. Bettis (Rich) was born in Portsmouth, Ohio, on 22 November 1947. His mother, Sarah L. Bettis, was a housewife and former bank cashier. His father, Charles F. Bettis, was a Second World War veteran who worked as a draftsman, earning what was described at the time as 'a good living'. Although Bettis senior was interested in anything scientific or mathematical, neither he nor his wife attended college, which was a source of regret for them both. The family lived initially in the maternal grandmother's home, and in 1951 Bettis' brother James was born. When his father died suddenly of a heart attack in 1960 his mother returned to work as a bank cashier. Bettis meanwhile attended public schools, where he received high grades and excelled in science and maths. He also loved playing baseball and basketball and was a member of the school tennis team. Following graduation from high school in 1965 he enrolled in Ohio State University engineering college, majoring in Engineering Physics, which allowed him to combine interests in physics, electrical engineering and mathematics. Before graduation in March 1970, he accepted an engineering job at General Motors, working in product development. Working for GM at this time was considered a prime career with a high salary and benefits guaranteed for life. However, Bettis found both GM and automotive engineering not well suited to him, and so he left to pursue an MBA at the University of Michigan.

He met his future wife, Deborah (Debbie) Warden, an occupational therapist, at the wedding of a friend in April 1972; they were married 2 years later, shortly before he started the MBA programme at Michigan. They are both evangelical Christians and lifelong members of the United Methodist Church. The MBA programme opened up a whole new world of academic and practical interests for Bettis. He graduated with distinction in 1976 and entered a Ph.D. programme in business policy after initially being admitted to a programme in statistics. He completed his Ph.D. in 1979. While working on his dissertation, C. K. Prahalad arrived at Michigan as an assistant professor. Bettis and Prahalad immediately struck up a friendship and productive research collaboration that eventually resulted in three papers published in the *Strategic Management Journal*. Their 1987 *SMJ* paper, 'The dominant logic: a new linkage between diversity and performance', won the first SMJ Best Paper Award in 1993.

In autumn 1978 Bettis started as an assistant professor at Tulane University in New Orleans, and moved the following year to the Edwin L. Cox School of Business at Southern Methodist University (SMU) in Dallas. While in Dallas two

children were born: Matthew (1981), currently a manager in Atlanta, and Kimberly (1985), currently a registered nurse in Nashville. He spent 13 years at SMU, where he received two MBA teaching awards and a research award. In 1992 he accepted a Chair at the Kenan-Flagler Business School of the University of North Carolina, where he remains today.

Bettis has a long history of editorial assignments and professional society service. He was an associate editor for *Management Science* (1987–1991), a consulting editor for the *Academy of Management Review* (1990–1993), and an associate editor for the *Strategic Management Journal* (1995–2006). In 2007 he was named one of three co-editors of the *Strategic Management Journal*. Bettis was also Chair Elect and the Chair of the Business Policy/Planning Division of the Academy of Management between 1986 and 1989. He served on the Board of Directors of the Academy of Management between 1989 and 1992. He is a Founding Member of the Strategic Management Society (SMS), where he served on the Board of Governors (1999–2008). He was Program Chair for the 2001 SMS International Meeting in San Francisco, President Elect (2002–2003) and President (2004–2006).

In addition to his many scholarly and professional contributions, one of his most important legacies is his work with and dedication to doctoral students, including those whose dissertations he chaired as well as the many other students he mentored over the years. Bettis has played a critical role in shaping the professional lives of countless scholars, many of whom are now tenured professors at top research schools in the USA and abroad.

His early core research interests focused on the relationship between ▶ diversification and performance, cognition and strategy, and risk/uncertainty. In recent years Bettis has added core interests in organizational learning and adaptation, measurement of firm performance and complex interdependency. His methodological approach is eclectic; he has published qualitative research, large sample statistical studies, simulations and conceptual papers.

See Also

- ▶ Business Strategy
- ▶ Diversification
- ▶ Dominant Logic
- ▶ Strategic Management Journal

Selected Works

Bettis, R.A. 1981. Performance differences in related and unrelated diversified firms. *Strategic Management Journal* 2: 379–393.

Bettis, R.A., and W.K. Hall. 1982. Diversification strategy, accounting determined risk, and accounting determined return. *Academy of Management Journal* 25:254–264.

Bettis, R.A., and M.A. Hitt. 1995. The new competitive landscape. *Strategic Management Journal* 16:7–19.

Bettis, R.A., and V. Mahajan. 1985. Risk/return performance of diversified firms. *Strategic Management Journal* 31:785–813.

Bettis, R.A., and C.K. Prahalad. 1986a. The dominant logic: A new linkage between diversity and performance. *Strategic Management Journal* 7:485–501.

Bettis, R.A., and C.K. Prahalad. 1986b. The dominant logic: Retrospective and extension. *Strategic Management Journal* 16:5–14.

Bilateral Monopoly

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Abstract

Bilateral monopolies present challenges to private and public managers. In a market characterized by bilateral monopoly, the monopolist has an incentive to curtail production to maximize profit while the monopsonist should use its market power to expand production and lower unit cost. The final price and quantity are determined through a negotiating process that may, in part, depend on the risk preference of the negotiator. Public policy may restrict the ability of a government to take advantage of its monopolist position. A government may, for reasons of political or public interest, subsidize the monopsonist to lower prices, increase

supply, or both. A government may also shift the risk of procurement from the monopsonist to the government, decreasing the ability of the government to negotiate on cost and schedule. Finally, laws, rules and regulations may explicitly prohibit the government from exercising monopolist power, even if such an exercise would be of benefit to the taxpayer.

Definition A bilateral monopoly exists when there is a single buyer and seller of a given product in a market. Bilateral monopolies present specific challenges to managers and policymakers alike, as the final price and quantity are determined through negotiation.

A bilateral monopoly exists when there is a single buyer (monopsonist) and seller (monopolist) of a given product in a market. For managers in the public sector, especially those in security establishments, markets characterized by bilateral monopoly dominate the procurement of large systems and projects. If the United States Department of Defence, for example, desires to procure a new main weapon system (aircraft, armoured vehicle, missile system) built in the United States, it will recognize that the number of potential suppliers has declined significantly over the last four decades (Hensel 2010). Once a decision is made as to which manufacturer will produce the weapon system, the market shifts from oligopolists interacting with a monopsonist to a monopolist interacting with a monopsonist. The monopolist has an incentive to curtail production to maximize profit while the monopsonist should (but often does not) use its market power to expand production and lower unit cost.

Monopolies and Monopsonies

A monopolist exists where there is one, and only one, seller of a good or service and significant barriers to entry prohibit potential competitors from entering the market. A monopolist thus has significant, but not unlimited, market power and faces a downward sloping demand curve. The downward sloping demand curve is important in that it implies the monopolist can set price *or* quantity but not both, that is, if the monopolist sets a market price, quantity is determined by the demand curve and vice versa. In the presence of monopoly power in the product market, the value of the marginal physical product of labour is always lower than the wage rate (Varian 1992).

A monopsonist exists where there is one, and only one, buyer of a good or service and significant barriers to entry prohibit other potential buyers from entering the market. The classic approach to monopsony involves a single buyer and multiple sellers. The monopsonist establishes a market price and the multiple, price-taking sellers select an output quantity at which price is equal to the marginal cost of production. As with a market with a single producer, the market with a single buyer is inefficient relative to the perfectly competitive market.

National governments, for example, are monopsonists for specific goods and services due to the legal constraints imposed by the government. While private militaries can (and do) exist, for example, governments often retain the sole right for the legitimate use of lethal force (Stafford 2000), although this line has become blurred since the 1980s. One could argue that the use of private military contractors has led to a more competitive labour market for those who provide military force (Leander 2005), as evidenced by the flight of higher quality personnel to private military contractors.

Bilateral Monopoly

Markets characterized by bilateral monopolies appear to be on the rise over the past four decades, especially when one considers the expanding role of the public sector in economic activity. Yet bilateral monopolies may occur in private markets also. A geographical location with a single maritime port and a single maritime transport company would be considered a market characterized by a bilateral monopoly. Economic theory originally classified the bilateral monopoly market price as 'indeterminate' since the final price resulted from a bargaining process (Pigou 1908; Bowley 1928; Pen 1952). The relative bargaining strength of the monopsonist and monopolist reduced this indeterminacy to a solution, or at least a solution with

bounds (Fellner 1947; Agapos and Dunlap 1970). One bound is set where the seller fixes his price, that is, when the monopsonist has no bargaining power. The lower bound is likewise set where the buyer fixes his price. As long as the price is within this contract zone, the market is characterized by bilateral monopoly (Fellner 1947; Pen 1952).

Economic theory suggests that markets characterized by bilateral monopolies consisting of two private firms are likely to be relatively inefficient compared with markets where there are either numerous buyers or sellers (Baker et al. 2008). With private information, markets with one or more sellers are relatively more efficient and have a relatively higher quantity of goods produced than markets characterized by one seller. Suppose, for example, that marginal cost is $1 and that the buyer's value is either $2 or $4 with equal likelihood. Competition between the sellers will likely yield a price below $2 and an efficient level of trade. On the other hand, if only one seller exists, the seller wishes to maximize profits by selling at $4. Half the time, the buyer's actual value will be $2 and no trade will occur, thus illustrating the inefficiency of a single supplier relative to multiple suppliers (Vickers 1996; Baker et al. 2008).

If, however, the purchaser of the goods and services is the government, the prevailing price is dependent upon the contractual mechanism. The government may desire to seek the lowest possible price but may face legal and regulatory impediments to doing so. Attempts, for example, to consolidate purchases into fewer contracts of larger size may have the unintended consequence of consolidation among suppliers, moving the market further away from a competitive equilibrium (Agapos 1971).

Strategic Management

From a strategic management perspective, bilateral monopolies offer significant challenges to policy-makers and managers alike. For policymakers, the desire to intervene into these markets to move them towards a competitive equilibrium may, in fact, have the unintended consequence of exacerbating the market power of the monopolist or monopsonist. For managers, these markets often lack clear signals as to price and quantity, and negotiation is relatively more important than in a competitive market.

With regard to economic policy, the relative bargaining power of the monopsonist can be altered by subtle changes in laws, regulations or procedures. Imposing a minimum domestic content requirement, for example, alters the resultant rent distribution even if the content requirement is set to the free trade input proportion (Beghin and Sumner 1992). The imposition of the requirement increases the relative bargaining power of the supplier of the content, skewing the resulting rents. In defence procurement, for example, the government may 'give away' bargaining power by transferring research and development risk from the supplier to the government. The government may also reduce its bargaining power by guaranteeing the monopsonist receives 'cost + profit'. As cost overruns plague major weapons systems, from the F-22 Raptor (an advanced single-seat air-superiority fighter aircraft) to new destroyers, one may be drawn to the conclusion that the government is to blame, in part, for the creation of contracting mechanisms that reward underperformance and cost overruns.

In the case of a market of an exhaustible resource, a bilateral monopoly may create greater uncertainty. The most important issue in these markets may be one of *commitment*, that is, the ability of strategic players to commit themselves to a course of action to favourably influence their rivals (Lewis et al. 1986). If we assume that a perfect substitute, for example, is available for the exhaustible resource, then a lack of commitment induces the monopolist to extract the resource more quickly, which creates an incentive for consumers to remain with the exhaustible resource. Why would the monopolist not commit? Commitment places the monopolist at a strategic disadvantage and lowers their profits over time. In essence, the monopolist has every incentive to maximize profit, even if it means exhausting the resource more quickly than would occur under market conditions.

Mergers may not produce the results that standard theory would predict. Mergers are often discussed in terms of reaping the benefits of economies of scale. The terms of the resulting

transactions, however, are determined through bargaining rather than by being determined by one of the parties. The incentives for mergers are sometimes significantly different than they would be if prices were not determined by bargaining (Horn and Wolinsky 1988). The implicit assumption that the merged firm would thus attempt to lower its per-unit costs may be incorrect if such an action resulted in lower profits over time.

Yet to think that bilateral monopolies are only characterized by interactions between two firms or a government and a firm would be incorrect. Bureaucracy is a classic issue in public choice and can be modelled as a bureau selling its services to government which, in turn, only buys services from the bureau (Niskanen 1996, 2007). If we assume that the bureaucrats attempt to maximize their budget, the level of output may be inefficient. Monitoring may thus be necessary to discern what are the true costs of the bureaucracy; and monitoring generates additional costs. This argument, however, may be sensitive to the assumption that the bureaucrats are a discriminating monopoly. If this assumption is relaxed, the bureaucrats' preferred level of output is equal to the sponsor's preferred level (Casas-Pardo and Puchades-Navarro 2001). In other words, policy, not bureaucratic attempts to maximize profits, determines the level of output.

From a management perspective, price and quantity are determined through a negotiating process. Managers can thus directly attempt to maximize profitability (for monopsonists) or minimize cost (for monopolists). The personal characteristics of the manager are an important (and oft ignored) input to the negotiating process. The archetype is a successful manager who is an extrovert, a risk-taker, and confident in his or her ability to maximize the payout from a negotiating process. The evidence, however, suggests the archetype is more myth than reality. Relatively risk-adverse managers appear to be more able to obtain a higher payoff than risk-taking counterparts (Harnett et al. 1973). Risk-adverse managers appear to pursue more a more demanding negotiating strategy with a significantly higher starting price than extroverted, risk-loving managers. Thus, while economic theory suggests that the relative power of a monopolist will determine the final market price and quantity, the human factor may result in a different outcome.

These elements combine to suggest that governments are ill-equipped to operate in markets characterized by bilateral monopoly, yet the government is often one side of these markets. The F-35 provides an excellent example of how the government, even though it is a monopolist, has been unable to employ its market power to rein in costs and underperformance. The per-unit acquisition price of the F-35 has increased by 75% since 2001 and shows no signs of abetting (GAO 2012). Yet the government has contracted to acquire hundreds of F-35 *before* testing is complete, thereby decreasing its relative bargaining power. In essence, the government apparently (and willingly) moved the price away from cost minimization to profit maximization. From a strategic perspective, this is sheer folly (and regrettably avoidable) given the looming reductions in discretionary expenditures in the United States.

See Also

- ▶ Acquisition Strategy
- ▶ Agency Problems
- ▶ Market Structure
- ▶ Principal Agent

References

Agapos, A.M. 1971. Competition in the defense industry: An economic paradox. *Journal of Economic Issues* 5: 41–55.

Agapos, A.M., and P.R. Dunlap. 1970. The theory of price determination in government–industry relationships. *Quarterly Journal of Economics* 84: 85–99.

Baker, J.B., J. Farrell, and C. Shapiro. 2008. Merger to monopoly to serve a single buyer: Comment. *Antitrust Law Journal* 75: 637–646.

Beghin, J.C., and D.A. Sumner. 1992. Domestic content requirements with bilateral monopoly. *Oxford Economic Papers (new series)* 44: 306–316.

Bowley, A.L. 1928. Bilateral monopoly. *Economic Journal* 38: 651–659.

Casas-Pardo, J., and M. Puchades-Navarro. 2001. A critical comment on Niskanen's model. *Public Choice* 107: 147–167.

Fellner, W. 1947. Prices and wages under bilateral monopoly. *Quarterly Journal of Economics* 61: 503–532.
GAO (Government Accountability Office). 2012. *Joint strike fighter: Restructuring added resources and reduced risk, but concurrency is still a major concern*, 20 March. Available at http://www.gao.gov/products/GAO-12-525T. Accessed 12 Jan 2013.
Harnett, D.L., L.L. Cummings, and W.C. Hamner. 1973. Personality, bargaining style and payoff in bilateral monopoly bargaining among European managers. *Sociometry* 36: 325–345.
Hensel, N. 2010. Can industry consolidation lead to greater efficiencies? Evidence from the U.S. defense industry. *Business Economics* 45: 187–203.
Horn, H., and A. Wolinsky. 1988. Bilateral monopolies and incentives for merger. *RAND Journal of Economics* 19: 408–419.
Leander, A. 2005. The market for force and public security: The destabilizing consequences of private military companies. *Journal of Peace Research* 42: 605–622.
Lewis, T., R. Lindsey, and R. Ware. 1986. Long-term bilateral monopoly: The case of an exhaustible resource. *RAND Journal of Economics* 17: 89–104.
Niskanen, W.A. 1996. *Bureaucracy and public economics*, 2nd ed. Northampton: Edward Elgar.
Niskanen, W.A. 2007. Bureaucracy and representative government. *American Political Science Review* 68: 1775–1777.
Pen, J. 1952. A general theory of bargaining. *American Economic Review* 42: 24–42.
Pigou, A.C. 1908. Equilibrium under bilateral monopoly. *Economic Journal* 18: 205–220.
Stafford, W.A. 2000. How to keep military personnel from going to jail for doing the right thing: jurisdiction, ROE & (and) the rules of deadly force. *Army Lawyer, Department of the Army Pamphlet* 27-50-336, 1–25.
Varian, H.R. 1992. *Microeconomic analysis*, 3rd ed. New York: W. W. Norton.
Vickers, J. 1996. Market power and inefficiency: A contracts perspective. *Oxford Review of Economic Policy* 12: 11–26.

Biological Analogies

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Abstract

Alfred Marshall believed that biology, not physics, should be the economist's Mecca, yet it is more likely to be that of the strategist. Economics aims to eliminate complexity from its subject matter, whereas biology, being more descriptive, aims to accommodate it. Partly, this is a question of each discipline's distance from its subject matter. Seen from afar, similarities between entities trump the differences. As one gets closer, however, the reverse obtains. Since the observations are likely to constitute the raw material for the exercise of strategic choice, the key question is whether those differences count. The lesson from biology is that they do.

Definition Analogies build on structural similarities that exist between a source domain and a target domain. What structural similarities, then, obtain between some of the core concepts in biology – for example, evolution, selection, fitness, adaptation, inheritance, competition, symbiosis, commensalism – and those in strategic management? Do these similarities, if established, suggest an overarching set of concepts that are common to both disciplines?

Although economics had traditionally tended to look to physics for its inspiration (Walras 1954; Mirowski 1989), biology, according to Alfred Marshall, was to be the Mecca for the discipline (Marshall 1920). To some extent, of course, this has happened, as the growing interest in evolutionary economics attests. The physics that inspired economists in the nineteenth century was mechanical and atomistic; it argued for the ontological primacy of autonomous entities and for methodological individualism in economics. Biology, by contrast, took the nature of the entities it studied as determined in large part by complex interactions – characterized by, for example, information flows and amplifying and dampening feedback – with other entities and with the physical environment. In such interactions, time has a direction and history matters. Some interactions will be collaborative – such as mating, rearing, commensalism, symbiosis and herding – and some will be competitive – rivalry for mates, for resources, for instance. As Marshall clearly understood, it would be no big challenge to map biological processes onto economic ones. Collaborative relations would give rise to firms, competitive ones to markets. The marketplace would become a 'jungle' populated with predators

and prey. The development of molecular biology in the 1950s broadened the scope for such metaphorical thinking, so that, for example, we now talk of the firm's DNA as shaping its capacity for action. For some time, then, biological concepts have been making inroads into economics and spawned subfields such as evolutionary economics, behavioural economics and, more recently, neuroeconomics. The mainstream, however, can hardly be said to be facing Mecca.

Given the impact of economic thinking on the field of strategy – some of which is clearly biological in flavour – could biology turn out to be the Mecca of strategic management instead? If so, what kind of biology? Under the influence of the economics of industrial organization, strategy in the 1960s and 1970s focused on the similarities between firms (e.g., strategic groups, industry) rather than on the differences. The Mason–Bain structure-conduct-performance paradigm, for example, limited the scope of strategic choice to one where a firm positions itself in an environment, picking for itself a niche that it can protect. Likewise, the population ecology perspective on strategy (Hannan and Freeman 1984) largely confined the scope for adaptation of the phenotype (the firm) to what its genotype – the imprinting it receives at birth, what Bartlett and Goshal (1989) label its administrative heritage – will allow. The result was a form of genetic determinism in which a firm's DNA fixed its destiny and strategic 'fit' meant adapting to the constraints imposed by an external environment. 'Lamarkian' adaptation at the level of the phenotype was not an option.

The strict version of population ecology, however, is at odds with the managerial choices implicit in the practices of strategic management (Child 1972), choices that also have their counterpart in the biological realm. As James Mark Baldwin had pointed out as far back as the 1890s, organisms shape the environment that subsequently selects them as much as they adapt to it (Baldwin 1896). This so-called 'Baldwin effect' foreshadowed the strategic concept of enactment (Weick 1977).

If, for reasons of computational tractability, the atomism of nineteenth century physics would push economists to reduce the firm to an autonomous dot on a production function, biology, being more descriptive, would invite organization theorists and strategists to accommodate more elaborate representations of their objects of study. Thus, whereas economics aims to eliminate complexity, biology aims to accommodate it. And, under conditions of complexity, the scope for far-from-equilibrium thinking, for emergent outcomes and, by implication, for strategic choice, increases. When small initiating events can have a significant impact – the so-called 'butterfly effect' – then differences between firms may begin to matter more than similarities. This has not escaped the notice of strategy scholars, who argue that firm effects trump industry effects (Henderson and Cockburn 1994).

Of course, the distance from which one's subject matter is viewed counts for something, and economists tend to stand further away from their subject matter than do strategists. From afar, the perception of similarities predominates; as one gets closer to one's subject matter, however, perception of differences takes over. Should these be treated as just so much noise? Much like particle physics, economics has tended to assume away the difference between atomized economic agents in order to study their aggregated behaviour at a high level of abstraction. This delivers representative firms, identical technologies and consumer tastes, and results in a collection of stylized facts offering useful, if limited, insights into economic behaviour. The field of strategic management, by contrast, where it focuses on the differences between agents, captures a less aggregated, more organized and hence more complex set of interactions between the agents. It is thus closer to biological thinking. From an evolutionary perspective, heterogeneity matters as a source of variety on which selection can act.

Early systems theory was strongly biological in flavour and had a big impact on our view of organization (Burns and Stalker 1961; Von Bertalanffy 1976). But, like economics, it was steeped in equilibrium thinking. The feedback loops that held a system together and ensured its closure were dampening rather than amplifying. The complex adaptive systems perspective (CAS) that emerged in the late 1970s and 1980s added far-from-equilibrium thinking to the mix. If equilibrium-seeking systems adapt to their

environment, far-from-equilibrium systems enact their environment as much as they adapt to it. The first takes the environment to be a determining constraint; the second takes it to be an opportunity for the emergence of novelty, the exercise of creativity and hence of strategic choice.

The very concept of the firm has roots in biological notions of intelligent agency (Beer 1981) and responsibility. The firm's early precursor, the medieval corporation, was treated very early on as an organism exhibiting a capacity for agency and endowed with a legal personality in its own right. Organisms are 'intentional systems', operating inside ecologies that they themselves have largely constituted. Are such organisms narrowly self-interested as required by the theory of the firm? It would certainly keep their interactions computationally tractable if they were, since under the rationality postulate their behaviour would now become similar and almost mechanically predictable. Evidence from the theories of both kin and group selection, however, suggests otherwise (MacArthur and Wilson 1967; Trivers 1971). Biological thinking, then, once more favours differences over similarities.

Evolutionary game theory, the study of agent behaviour under conditions of resource scarcity and rivalry, is another arena in which biology and strategy meet (Maynard-Smith 1970; Gintis 2000). In biology it gives rise to territorial behaviour, arms races, predator–prey models, niche selection, signalling, feigning, symbiosis, commensalism, flocking, swarm behaviour and herding behaviour, for example. The challenge confronting agents is to prevent competitors from gaining access to your resources by erecting barriers of one kind or another. In the field of strategy, the positioning view is similarly concerned with the erection of barriers to firm resources. The ▶ resource-based view (RBV), by contrast, identifies a class of resources which the very heterogeneity of firms renders inaccessible to outsiders. A firm's dynamic capabilities will then determine for how long they are likely to remain so (Teece 2007).

Marshall intended biology to be a source of metaphors for economics. According to Lackoff and Johnson (1980) the essence of metaphor is understanding one thing in terms of another. But in exploring the conceptual similarities between biology and strategic management, are we dealing with metaphors, analogies or homologies? In biology, analogies draw on the similarity of appearances between phenomena that have evolved in different ways. Homologies, by contrast, derive from common evolutionary origins (Thompson 2007).

There are good reasons for thinking that the conceptual relationship between biology and strategic management is homological and analogical. The fields share a set of overarching concepts common to living systems (Miller 1995) – to do with survival, competition, adaptation, ecology, for example – that first found their way into biology and then, later, into the social sciences. Biology, however, is a natural science whereas strategy is a social science. Some would like to keep it that way. Of course, just as one cannot reduce biology to physics, one cannot reduce strategy to biology. But since both biology and strategy study the behaviour of living systems (Miller 1995), each can draw inspiration and borrow from the other. Economics, by looking to physics, was effectively trying to take a short cut, bypassing the biological and social complexity of its subject matter. It paid the price in the coin of a loss of realism. It is to be hoped that strategic management can escape that fate.

See Also

▶ Organizational Ecology
▶ Resource-Based View

References

Baldwin, J.M. 1896. A new factor in evolution. *The American Naturalist* 30: 441–451.
Bartlett, C., and S. Goshal. 1989. *Managing across borders: The transnational solution*. Cambridge, MA: Harvard Business School Press.
Beer, S. 1981. *Brain of the firm*. Chichester: Wiley.
Burns, T., and G. Stalker. 1961. *The management of innovation*. London: Tavistock.
Child, J. 1972. Organizational structure, environment and performance: The role of strategic choice. *Sociology* 6: 1–22.

Gintis, H. 2000. *Game theory evolving: A problem-centered introduction to modeling strategic interaction*. Princeton: Princeton University Press.
Hannan, M., and J. Freeman. 1984. Structural inertia and organizational change. *American Sociological Review* 49: 149–164.
Henderson, R., and I. Cockburn. 1994. Measuring competence? Exploring firm effects in pharmaceutical research. *Strategic Management Journal* 15: 63–84.
Lackoff, G., and M. Johnson. 1980. *Metaphors we live by*. Chicago: University of Chicago Press.
MacArthur, R.H., and O.E. Wilson. 1967. *The theory of Island biogeography*. Princeton: Princeton University Press.
Marshall, A. 1920. *Principles of economics*. London: Macmillan.
Maynard-Smith, J. 1970. In *The structure of neo-Darwinism: Towards a theoretical biology*, vol. 2, ed. C.H. Waddington. Chicago: Aldire Publishing Co.
Miller, J. 1995. *Living systems*. Niwot: University Press of Colorado.
Mirowski, P. 1989. *More heat than light: Economics as social physics, physics as nature's economics*. Cambridge: Cambridge University Press.
Teece, D.J. 2007. Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal* 28: 1319–1350.
Thompson, E. 2007. *Mind in life: Biology, phenomenology and the sciences of mind*. Cambridge, MA: Belknap Press/Harvard University Press.
Trivers, R.L. 1971. The evolution of reciprocal altruism. *Quarterly Review of Biology* 46: 35–57.
Von Bertalanffy, L. 1976. *General system theory: Foundations, development, applications*. New York: George Braziller.
Walras, L. 1954. *Elements of pure economic: Or the theory of social wealth*. Homewood: Irwin.
Weick, K. 1977. Enactment processes in organizations. In *New directions in organization behavior*, ed. B. Shaw and G. Salancik. Chicago: St Clair Press.

Boundary Spanning

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Abstract

Boundary spanning is the process of search for knowledge beyond existing boundaries such as organizational, technological, temporal or geographic. This article summarizes the theories of search in strategy and the knowledge recombination processes. We explore the roots of the construct by connecting it to existing frameworks for exploration versus exploitation. We then discuss the empirical usage of boundary spanning in past research. We conclude with the model of four types of exploration based on boundary dichotomies from organizational and technological search.

Definition Boundary spanning is the act of searching for knowledge from outside the current domain. It is an empirical method of dichotomizing exploration versus exploitation to balance the costs and benefits of search, frequently along common dimensions such as organizational, technological or geographic.

Knowledge Recombination

Boundary spanning is a categorization of search behaviour underlying the innovation processes. The term 'boundary spanning' originates primarily from the research done on organizational learning and the knowledge-based view of the firm. As conceptualized by Schumpeter (1934), innovation is the result of new recombinations. Following this, innovations from R&D are a result of recombining prior innovations (Henderson and Clark 1990; Fleming 2001). The knowledge-based view of the firm combines these perspectives and proposes that all new knowledge creation is a recombinant process (Kogut and Zander 1992; Grant 1996). Since knowledge is nearly costless to transmit, firm boundaries are established to maintain appropriation rights over developed knowledge (Arrow 1962; Williamson 1975, 1991). Relaxing this assumption and documenting costs of technology transfer (Teece 1977), there are difficulties in transferring knowledge even within the firm, due to 'stickiness' of information (von Hippel 1994; Szulanski 1996). Firms therefore must determine processes for information transfer to facilitate the recombination processes.

R&D as knowledge recombination requires firms to access different *sources* of knowledge. A primary question examined in this context is what the search process for new knowledge

involves. Early use of the term 'boundary spanning' was applied to the role of an individual seeking knowledge from outside the firm. Tushman (1977) suggests that special boundary roles would be required to support the innovation process. Aldrich and Herker (1977) expand the theory, focusing on the skills of the individual and the process of creating boundary roles within the organization. Leifer and Delbecq (1978) offer the theoretical framework for the activities in negotiating the organizational and environmental interchange. Tushman and Scanlan (1981a, b) further clarify the role of the boundary spanner and demonstrate that successful individuals must be well connected both internally and externally as well as demonstrate the communication or professional skills required to transfer outside information back to the organization. Similarly, other methods of sourcing this external information have been tested: acquisitions (Makri et al. 2010), licences (Laursen et al. 2010), alliances (Mowery et al. 1996) and hiring key external individuals (Almeida and Kogut 1999; Rosenkopf and Almeida 2003).

Search Processes

The above research examines the concept of boundary spanning from an individual actor perspective. In contrast to boundary spanning, a parallel concept of local search emerged. Cyert and March (1963) and March and Simon (1958) present models of a problemistic search process that firms will employ until a satisficing condition to a problem encountered by an organization is met. The costs of coordinating and processing search information increase with distance. Recognizing such costs, firms will conclude the process once a satisfactory solution to the problem is identified. This behaviour results, predominantly, in 'local search' processes being exercised.

Building on the above work, Nelson and Winter (1982) suggest that organizational search routines are one of the main drivers for successful innovations and competitive advantage. R&D is path-dependent and a common assumption in the evolutionary theory is that organizations will use 'local search' processes that constrain future technologies. With the path-dependent nature, routines will focus on the current R&D activities and the search results in new products that are closely related to the current products and skills.

The above two strands of research helped to create the opposite concepts of 'local search' and 'boundary spanning'. March (1991) introduced the concept of 'exploitation' versus 'exploration' as different processes for organizational learning that helped to clarify the construct of boundary spanning. As defined by March (1991), exploration is the process involving search activities, variation, risk-taking, experimentation, discovery and innovation processes. Exploitation involves refinement of the current product and knowledge, choice, production, efficiency, selection mechanisms, implementation, execution. There is a trade-off between the search methods as the costs and benefits are different. Local search is more natural and supports exploitation of current knowledge within the firm. However, myopically focusing solely on knowledge within the firm (Levinthal and March 1993) could result in a competency trap whereby current skills are re-emphasized to the detriment of developing new, potentially useful ones (Levitt and March 1988) or capabilities that were once core competencies can become core rigidities (Leonard-Barton 1992), constraining new development. Returns from exploration are less certain, dispersed over longer periods and located further from organizational controls to process information. This distance increases result variability, and new product experimentation could result in both more breakthroughs and more failures (Fleming 2001). Additionally, a firm must have some experience related to the knowledge in order to understand and assimilate the new knowledge into its existing base (Cohen and Levinthal 1990). Using a simulation, March (1991) proposes that firms must balance the processes of exploration and exploitation to obtain the optimal outcomes.

Thus, boundary spanning is the act of searching for knowledge from outside the current domain. It is an empirical method of dichotomizing exploration versus exploitation to balance the

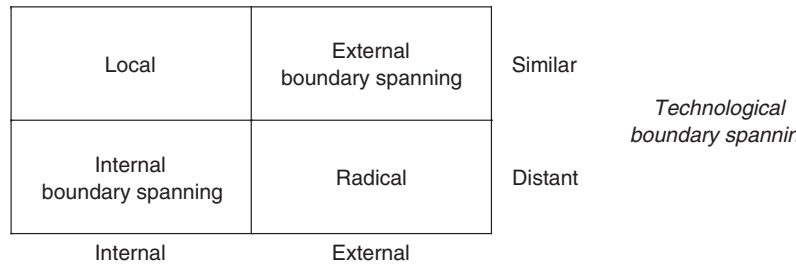
costs and benefits of search, frequently along common dimensions, such as organizational, technological and geographic.

Empirical Use of Boundary Spanning

Boundary spanning commonly refers to the empirical implementations of the *explore*/*exploit* framework. The original conceptualization was a continuum between exploration and exploitation (March 1991). Measures can still be operationalized as continuous. However, boundary spanning is particularly useful as a dichotomy between the exploitation of current internal knowledge versus the exploration for new external knowledge. This dichotomy is significant to researchers, as defined boundaries along different dimensions are useful and meaningful indictors of the effort required for finding and obtaining knowledge. In the spirit of local search processes, it is less costly both financially and cognitively to use knowledge closer to the firm. A number of dimensions for dichotomization have often been used to signify boundary-spanning efforts including: *organizational* (Henderson and Cockburn 1994; Rosenkopf and Nerkar 2001), *technological* (Ahuja and Lampert 2001; Nerkar and Roberts 2004) and *geographic* (Almeida and Kogut 1999; Phene et al. 2006; Tallman and Phene 2007). While organizational and technological are the most common dimensions tested for boundary spanning, this list is not exhaustive. Boundary spanning can be operationalized for any meaningful separation of the costs of exploratory or exploitative behaviour. For example, knowledge can be reconfigured from older versus recent knowledge, representing a *temporal* boundary (Katila 2002; Nerkar 2003). In multinational contexts, boundary spanning is tested within different units and subsidiaries in an MNE – a combination of internal *sub-organizational* separation and *geographic* separation (Miller et al. 2007; Phene and Almeida 2008).

Studying the development in the optical disc industry, Rosenkopf and Nerkar (2001) offer a useful framework and one of the first models to empirically test exploitation versus exploration. As well as dichotomizing the exploration and exploitation activity, the framework combines two of the boundary dimensions – *organizational* and *technological* – to refine the type of search process and to test the second-order competence of crossing multiple boundaries. In Fig. 1, the dimensions refer to the knowledge residing internally or externally with regard to the focal firm, as well as within or without the technology classification – measured as the relevant patent classifications for the focal technology. Four types of exploration behaviour are described through the search procedures employed to obtain new knowledge for the technology recombination.

If the required knowledge for new invention is internal to the firm and that knowledge is in a similar technology class to the new invention under development, the firm is measured as having exploited its current relevant knowledge, performing a *local search*. Knowledge within the firm but related to different technology topics is called *internal boundary spanning*. A firm must combine technologies from different domains in this case. This process is greater than simply exploiting the current technology through refinements. When a firm incorporates knowledge from the same technological domain but obtained from outside the organization, the firm has performed *external boundary spanning*. In this case, the firm



Boundary Spanning, Fig. 1 Types of exploration from boundary spanning (Source: Adapted from Rosenkopf and Nerkar (2001))

has the technological expertise to recognize and search for this knowledge but must expend effort obtaining it outside the organization. Both internal and external boundary spanning are part of the Henderson and Cockburn (1994) 'architectural competence' framework. Rosenkopf and Nerkar (2001) highlight that both are examples of boundary spanning and require special effort by the firm. However, the exact skills involved and outcomes obtained could be different according to the specific boundary spanned, and they are therefore maintained separately in their model. Finally, when both boundaries are spanned, the firm has performed a *radical* recombination by incorporating knowledge from a different technological domain and from an outside organization. The next section summarizes the effects of the four types of exploration.

Local Exploration

Both the *Behavioral Theory of the Firm* (Cyert and March 1963) and *Evolutionary Economics* (Nelson and Winter 1982) assumed local search processes would dominate innovation activities. Particularly due to path dependence and evolutionary selection mechanisms, they argued that future R&D activities would be closely linked to current activities. Utilizing this framework, Helfat (1994) tests the hypothesis within the petroleum industry to support the view that firms will significantly differ in their approach to R&D and that these differences will persist over time. Stuart and Podolny (1996) also demonstrate that semiconductor firms predominantly patent in technological areas similar to the domains in which the firms have previously patented. After the introduction of the magnetic resonance imaging (MRI), Martin and Mitchell (1998) show that new entrants introduce different types of MRIs but then start releasing subsequent products that are closely related to their current design. Each of these authors sought to illustrate the dominance of local search behaviour. Seeking to compare the results of search processes, Rosenkopf and Nerkar (2001) show that local knowledge generates lower impact than knowledge obtained through boundary spanning. Henderson and Cockburn (1994) also demonstrate, in the pharmaceutical industry, that the ability to access knowledge external to the firm or combine knowledge across different therapeutic classes is a necessary competence for the generation of new drugs. The advantage with dichotomization of the search process along particular boundaries enables researchers to examine higher-level search processes.

Internal Boundary Spanning

Experimenting with new technologies is a critical process for generating new innovations. Knowledge within the existing technological domain will have already been built on and recombined for its current technology. Exploration of new and emerging technologies increases the chances of creating breakthroughs (Ahuja and Lampert 2001), especially if the knowledge is contained within the organization (Rosenkopf and Nerkar 2001). Internal boundary spanning allows for the experimentation with technological recombination but ensures the organization has the skills in each of technology areas inside. This search process can be an example of economies of scope (Henderson and Cockburn 1996) and appropriability conditions, as the single firm is in control of all the competencies.

External Boundary Spanning

Along the other diagonal, exploration outside the organizational bounds but within the same technology domains is termed 'external boundary spanning'. The knowledge required for innovation is not housed within the focal firm. However, the exploratory search processes focus on knowledge that is closely related to the technological experiences already under study. This type of exploration benefits from the absorptive capacity of the firm (Cohen and Levinthal 1990) to facilitate translation and understanding for the present activity. Rosenkopf and Nerkar (2001) find significant evidence to show that exploration activities that do not span the organizational boundary have less impact on subsequent optical disc technology. Nerkar and Roberts (2004) also find that product-market performance is improved if the exploratory R&D processes were in similar domains to the current technology. Nagarajan and Mitchell

(1998) study medical lithotripters and demonstrate that technological change based on internal R&D result in incremental improvements but inter-organizational methods may be required for significantly changing the current technology.

Radical Exploration

The last type of exploration under Rosenkopf and Nerkar's (2001) framework is boundary spanning beyond both the organizational and technological boundaries. They call this 'radical' exploration. Nonaka and Takeuchi (1995) present the case of a Japanese firm sending a programmer to study the art of kneading bread to support the development of a new 'Home Bakery' product while Rosenkopf and Nerkar (2001) describe the use of inert gasses, an expertise external to the organization and technology class, to increase current storage limits for optical discs. They show that radical exploration can have the greatest impact on subsequent technologies. Ahuja and Lampert (2001) study the chemical industry and demonstrate that firms experimenting with 'emerging' and 'pioneering' technologies overcome competency traps, while the experimentation promotes breakthrough innovations.

Balancing Boundary Spanning

Integrating March's (1991) recommendation of balancing the search activities with the specific capabilities denoting boundary spanning, the skill to manage this mixture of exploration for radical technologies and exploitation for incremental technologies is termed ▶ organizational ambidexterity by Tushman and O'Reilly (1996). He and Wong (2004) demonstrate that the interaction between exploration and exploitation is positively related to sales growth for their sample of manufacturing firms. Phene et al. (2006) demonstrate the benefits and costs of balancing spanning activities. With patents in the US biotechnology industry, technologically proximate knowledge drawn from a cross-county setting is positively related to breakthrough innovations. Geographically close knowledge drawn from different technologies has a curvilinear effect where the recombination of knowledge is initially positively related to growth as the explored technology differs from its core expertise. This effect begins to fade as the technological distance expands. Finally, the combination of technological distance and geographic distance is not useful in generating breakthrough innovations in their setting. Katila and Ahuja (2002) separate search behaviour in the robotics industry as search depth and scope. Depth represents the frequency with which the firm reuses existing knowledge and scope is the degree of new knowledge used. They hypothesize curvilinear relationships for both search depth and scope. For search depth, they support the proposed relationship where success increases as the frequency of knowledge reuse increases but reaches a peak and starts decreasing again. In their context, they only find support for a linear relationship in search scope where the likelihood of success increases as firms search widely for new knowledge. They suggest that few firms in their sample have 'oversearched' on the scope dimension that could demonstrate a second-order effect.

Conclusions

Boundary spanning provides a deeper understanding of the exploration and exploitation framework. It is practically relevant because R&D managers can easily identify whether knowledge is outside of the current domain – be it organizational, technological or geographical. The research on boundary spanning demonstrates that breakthroughs are often generated from knowledge outside the organization and exploitation of current knowledge generates incremental innovation. Boundary spanning is the tool for exploration in order to access and obtain knowledge outside local processes. There are significant costs and benefits of exploration and exploitation for innovation activities and these differ according to the specific boundary being crossed. Boundary spanning continues to offer useful guidance and research paths as firms experiment with organizational structures to facilitate the transfer of knowledge across domains, subsidiaries, locations, partners and competitors to support the innovation process generating breakthrough technologies.

See Also

- ▶ Architectural Innovation
- ▶ Behavioural Strategy
- ▶ Knowledge Management Theories
- ▶ Organizational Ambidexterity

References

Ahuja, G., and C.M. Lampert. 2001. Entrepreneurship in the large corporation: A longitudinal study of how established firms create breakthrough inventions. *Strategic Management Journal* 22: 521–543.

Aldrich, H., and D. Herker. 1977. Boundary spanning roles and organization structure. *Academy of Management Review* 2: 217–230.

Almeida, P., and B. Kogut. 1999. Localization of knowledge and the mobility of engineers in regional networks. *Management Science* 45: 905–917.

Arrow, K. 1962. Economic welfare and allocation of resources for invention. In *The rate and direction of inventive activity: Economic and social factors*, ed. R. R. Nelson and S. Kuznets. Cambridge, MA: NBER; Princeton, NJ: Princeton University Press.

Cohen, W.M., and D.A. Levinthal. 1990. Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly* 35: 128–152.

Cyert, R.M., and J.G. March. 1963. *A behavioral theory of the firm*. Englewood: Prentice Hall.

Fleming, L. 2001. Recombinant uncertainty in technological search. *Management Science* 47: 117–132.

Grant, R.M. 1996. Toward a knowledge-based theory of the firm. *Strategic Management Journal* 17(Special issue: Knowledge and the firm): 109–122.

He, Z.-L., and P.-K. Wong. 2004. Exploration vs. exploitation: An empirical test of the ambidexterity hypothesis. *Organization Science* 15: 481–494.

Helfat, C.E. 1994. Evolutionary trajectories in petroleum firm R&D. *Management Science* 40: 1720–1747.

Henderson, R.M., and K.B. Clark. 1990. Architectural innovation: The reconfiguration of existing product technologies and the failure of established firms. *Administrative Science Quarterly* 35: 9–30.

Henderson, R.M., and I.M. Cockburn. 1994. Measuring competence? Exploring firm effects in pharmaceutical research. *Strategic Management Journal* 15(Supplement S2: Competitive organizational behavior): 63–84.

Henderson, R.M., and I.M. Cockburn. 1996. Scale, scope, and spillovers: The determinants of research productivity in drug discovery. *RAND Journal of Economics* 27: 32–59.

Katila, R. 2002. New product search over time: Past ideas in their prime? *Academy of Management Journal* 45: 995–1010.

Katila, R., and G. Ahuja. 2002. Something old, something new: A longitudinal study of search behavior and new product introduction. *Academy of Management Journal* 45: 1183–1194.

Kogut, B., and U. Zander. 1992. Knowledge of the firm, combinative capabilities, and the replication of technology. *Organization Science* 3: 383–397.

Laursen, K., M.I. Leone, and S. Torrisi. 2010. Technological exploration through licensing: New insights from the licensee's point of view. *Industrial and Corporate Change* 19: 871–897.

Leifer, R., and A. Delbecq. 1978. Organizational/environmental interchange: A model of boundary spanning activity. *Academy of Management Review* 3: 40–50.

Leonard-Barton, D. 1992. Core capabilities and core rigidities: A paradox in managing new product development. *Strategic Management Journal* 13(S1): 111–125.

Levinthal, D.A., and J.G. March. 1993. The myopia of learning. *Strategic Management Journal* 14(S2: Organizations, decision making and strategy): 95–112.

Levitt, B., and J.G. March. 1988. Organizational learning. *Annual Review of Sociology* 14: 319–340.

Makri, M., M.A. Hitt, and P.J. Lane. 2010. Complementary technologies, knowledge relatedness, and invention outcomes in high technology mergers and acquisitions. *Strategic Management Journal* 31: 602–628.

March, J.G. 1991. Exploration and exploitation in organizational learning. *Organization Science* 2(special issue): 71–87.

March, J.G., and H.A. Simon. 1958. *Organizations*. New York: Wiley-Blackwell.

Martin, X., and W. Mitchell. 1998. The influence of local search and performance heuristics on new design introduction in a new product market. *Research Policy* 26: 753–771.

Miller, D.J., M.J. Fern, and L.B. Cardinal. 2007. The use of knowledge for technological innovation within diversified firms. *Academy of Management Journal* 50: 307–326.

Mowery, D.C., J.E. Oxley, and B.S. Silverman. 1996. Strategic alliances and interfirm knowledge transfer. *Strategic Management Journal* 17(Special issue: Knowledge and the firm): 77–91.

Nagarajan, A., and W. Mitchell. 1998. Evolutionary diffusion: Internal and external methods used to acquire encompassing, complementary, and incremental technological changes in the lithotripsy industry. *Strategic Management Journal* 19: 1063–1077.

Nelson, R.R., and S.G. Winter. 1982. *An evolutionary theory of economic change*. New York: Belknap/Harvard Press.

Nerkar, A. 2003. Old is gold? The value of temporal exploration in the creation of new knowledge. *Management Science* 49: 211–229.

Nerkar, A., and P.W. Roberts. 2004. Technological and product-market experience and the success of new

product introductions in the pharmaceutical industry. *Strategic Management Journal* 25: 779–799.
Nonaka, I., and H. Takeuchi. 1995. *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.
Phene, A., and P. Almeida. 2008. Innovation in multinational subsidiaries: The role of knowledge assimilation and subsidiary capabilities. *Journal of International Business Studies* 39: 901–919.
Phene, A., K. Fladmoe-Lindquist, and L. Marsh. 2006. Breakthrough innovations in the U.S. biotechnology industry: The effects of technological space and geographic origin. *Strategic Management Journal* 27: 369–388.
Rosenkopf, L., and P. Almeida. 2003. Overcoming local search through alliances and mobility. *Management Science* 49: 751–766.
Rosenkopf, L., and A. Nerkar. 2001. Beyond local search: Boundary-spanning, exploration, and impact in the optical disk industry. *Strategic Management Journal* 22: 287–306.
Schumpeter, J.A. 1934. *The theory of economic development*. Cambridge, MA: Harvard University Press.
Stuart, T.E., and J.M. Podolny. 1996. Local search and the evolution of technological capabilities. *Strategic Management Journal* 17(S1): 21–38.
Szulanski, G. 1996. Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal* 17(Special issue: Knowledge and the firm): 27–43.
Tallman, S., and A. Phene. 2007. Leveraging knowledge across geographic boundaries. *Organization Science* 18: 252–260.
Teece, D.J. 1977. Technology transfer by multinational firms: The resource cost of transferring technological know-how. *The Economic Journal* 87: 242–261.
Tushman, M.L. 1977. Special boundary roles in the innovation process. *Administrative Science Quarterly* 22: 587–605.
Tushman, M.L., and C.A. O'Reilly III. 1996. Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review* 38: 8–30.
Tushman, M.L., and T.J. Scanlan. 1981a. Characteristics and external orientations of boundary spanning individuals. *Academy of Management Journal* 24: 83–98.
Tushman, M.L., and T.J. Scanlan. 1981b. Boundary spanning individuals: Their role in information transfer and their antecedents. *Academy of Management Journal* 24: 289–305.
Von Hippel, E. 1994. 'Sticky information' and the locus of problem solving: Implications for innovation. *Management Science* 40: 429–439.
Williamson, O.E. 1975. *Markets and hierarchies*. New York: Free Press.
Williamson, O.E. 1991. Comparative economic organization: The analysis of discrete structural alternatives. *Administrative Science Quarterly* 36: 269–296.

Bounded Rationality

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Abstract

Bounded rationality refers to the fact that decision makers are intentionally rational, but only in a limited sense. They are constrained in their rationality by a variety of environmental, organizational and cognitive aspects. Bounded rationality (also sometimes called limited rationality) has become a foundation stone for subsequent developments in strategic management and organization theory as well as certain developments in economics. As a result of bounded rationality, decision makers in organizations do not maximize expected utility. Instead, they often develop (and rely on) rules of thumb and other heuristics when making decisions.

Definition Bounded rationality (BR) is the idea that people and other choosing organisms have limited cognitive and computational abilities and therefore cannot make rational decisions in a maximizing sense.

Bounded rationality (BR) is the idea that people and other choosing organisms have limited cognitive and computational abilities and therefore cannot make rational decisions in a maximizing sense. The term was introduced by Herbert Simon and in his work is closely associated with the idea of ▶ satisficing: the idea that decision-makers interpret outcomes as either satisfactory or unsatisfactory, with an aspiration level constituting the boundary between the two. Bounded rationality is part of the research programme that emerged from the Carnegie School of behavioral economics (Simon, Cyert, March in particular). Whereas decision-makers in neoclassical rational choice theory would list all possible outcomes evaluated in terms of their expected utilities, and then choose the one that is rational and maximizes

utility, decision-makers in Simon's model face only two possible outcomes, and look for a satisfying solution, continuing to search only until they have found a solution which is good enough.

Conceptual Overview

Bounded rationality has been particularly important to the foundational works as well as later developments in strategy, economics and organization theory, and it is a crucial element to our understanding of decisions in organizations that often does not exist in neoclassical theory because of many unrealistic assumptions. There are other developments in economics, for example in game theory and macroeconomics that have developed the idea of bounded rationality in a more neoclassical direction that is less consistent with the dynamic focus of the field of strategic management.

Early Formulations

Although there were some early discussions of limitations to rationality, bounded rationality was introduced by Simon (1955) in his critique of the assumption in economics of perfect information and unlimited computational capability. Simon wanted to replace the assumption of global rationality with one that corresponded better with how humans (and other choosing organisms) made decisions, their computational limitations and how they accessed information in their current environments (1955, p. 99). In Simon's illustration of the problem, the influence of his early ideas outlined in *Administrative Behavior* is clear, echoing the view that decisions are reasoned and deliberately rational, yet limited (Simon 1947). To understand what is meant by rational behaviour, Simon first suggests a simple and very general model of behavioural choice that analyses choosing organisms (such as humans) in terms of basic properties. He introduces the simplifying assumptions (such as the choice alternatives, the payoff function, possible future states and the subset of choice alternatives, as well as the information about the probability that a particular outcome will lead to a particular choice) (Simon 1955, p. 102). But immediately afterwards he turns to the simplifications of this model, stressing that, upon careful examination, 'we see immediately what severe demands they make upon the choosing organism' (Simon 1955, p. 103). Whereas in models of rational choice, the organism must be able to 'attach definite payoffs (or at least a definite range of payoffs) to each possible outcome' (p. 103), Simon suggests that 'there is a complete lack of evidence that, in actual human choice situations of any complexity, these computations can be, or are in fact, performed' (p. 104). As a consequence of the lack of computational power, decision-makers have to simplify the structure of their decisions (and thus satisfice), one of the most important lessons of bounded rationality.

In addition to the core articles by Simon (1955, 1956), this idea later became important to the work on organizational behaviour and decision-making undertaken by Simon and March and their colleagues at Carnegie. In addition, the idea of satisficing has been used by researchers in evolutionary and adaptive economics (such as Richard Nelson and Sidney Winter).

Some Key Works of Bounded Rationality

Bounded rationality is an important foundation stone for the behavioural research of Simon, Cyert and March, which aimed at making understandable how individuals make decisions and behave in the real world, thereby providing the first real foundation for organization theory. In particular, they found that neoclassical economics gave too little attention to the *institutional and cognitive constraints* on economic and organizational behaviour and individual decisions, and too little room for human mistakes, foolishness, the complications of limited attention and other features of bounded rationality. As a result, they proposed to include the whole range of limitations on human knowledge and human computation that prevent organizations and individuals in the real world from behaving in ways that approximate to the predictions of neoclassical theory. For example, decision-makers are sometimes confronted by the need to optimize several, sometimes incommensurable, goals (Cyert and March

1992). Furthermore, instead of assuming a fixed set of alternatives among which a decision-maker chooses, the Carnegie School postulated a process for generating search and alternatives and analysing decision processes through the idea of aspiration levels (March and Simon 1958), a process that is regulated in part by variations in organizational slack (Cyert and March 1992). Finally, individuals and organizations often rely on routines or rules of thumb learned from experience or from others, rather than seek to calculate the consequences of alternatives.

Underlying these ideas is the emphasis on bounded rationality, introducing a more psychological and realistic assumption to the analysis. As Simon noted early on:

> [T]he first principle of bounded rationality is that the intended rationality of an actor requires him to construct a simplified model of the real situation in order to deal with it. He behaves rationally with respect to this model, and such behavior is not even approximately optimal with respect to the real world. To predict his behavior, we must understand the way in which this simplified model is constructed, and its construction will certainly be related to his psychological properties as a perceiving, thinking, and learning animal. (Simon 1957, p. 199)

One of the first major results of the Carnegie School's work was a propositional inventory of organization theory, involving Herbert Simon, James March and Harold Guetzkow, which led to the book *Organizations* (March and Simon 1958). This book illustrates the centrality of the concept of bounded rationality and was intended to provide the inventory of knowledge of the (then almost non-existing) field of organization theory, and also a more proactive role in defining the field. Results and insights from studies of organizations in political science, sociology, economics and social psychology were summarized and codified. The book expanded ideas about behavioural decision-making, search and aspiration levels, and elaborated on the significance of organizations as social institutions in society. March and Simon wrote:

> The basic features of organization structure and function derive from the characteristics of rational human choice. Because of the limits of human intellective capacities in comparison with the complexities of the problems that individuals and organizations face, rational behavior calls for simplified models that capture the main features of a problem without capturing all its complexities. (March and Simon 1958, p. 151)

March and Simon also wanted to unite empirical data-gathering research with rigorous theorizing in order to create a disciplined, empirically based theory that could organize and so give meaning to empirical facts with analytical concepts. Science, they believed, was the product of the organization of empirical facts into conceptual schemes, and the progress of science was based on the development of more sophisticated and elegant theoretical systems, but not necessarily the discovery of new facts.

From March and Simon to Cyert and March

Another major development around the behavioural idea of bounded rationality was initiated by Richard Cyert and James March (along with their students, including Julian Feldman, Edward Feigenbaum, William Starbuck and Oliver Williamson). This project originated in the works of Cyert and March to develop improved models of oligoplogy pricing by using organization theory. The research on the behavioural theory of the firm aimed at investigating how the characteristics of business firms as organizations affect important business decisions. Integrating theories of organizations with existing (mostly economic) theories of the firm, they developed an empirical theory rather than a normative one, and focused on classical problems in economics (such as pricing, resource allocation and capital investment) to deal with the processes for making decisions in organizations.

The behavioural theory if the firm is built around a political conception of organizational goals, a bounded rationality conception of expectations, an adaptive conception of rules and aspirations, and a set of ideas about how the interactions among these factors affect decisions in a firm (Cyert and March 1992). Whereas goals in neoclassical theory are pictured as given alternatives, each with a set of consequences attached, goals within behavioural theory are pictured as reflecting the demands of a political coalition,

changing as the composition of that coalition changes. According to Cyert and March:

> Since the existence of unresolved conflict is a conspicuous feature of organizations, it is exceedingly difficult to construct a useful positive theory of organizational decision-making if we insist on internal goal consistency. As a result, recent theories of organizational objectives describe goals as the result of a continuous bargaining-learning process. Such a process will not necessarily produce consistent goals. (Cyert and March 1992, p. 28)

Thus, the theory treats the demands of shareholders, managers, workers, customers, suppliers and creditors as components of the operational goals of a firm. In the behavioural view, agents have only limited rationality, meaning that behaviour in organizations is deliberately rational, neither emotive nor aimless (March and Simon 1958). Since firms are seen as heterogeneous, boundedly rational entities that have to search for relevant information, expectations in behavioural theory are portrayed as the result of making inferences from available information, involving both the process by which information is made available and the processes of drawing inferences. Since information is costly, it is generated by search activity. The intensity of search depends on the performance of the organization relative to aspirations and the amount of organizational slack (March and Simon 1958, pp. 47–52). The direction of search is affected by the location (in the organization) or search activity and the definition of the problem stimulating the activity. Thus, the search activity of the organization furthers both the generation of new alternative strategies and facilitates the anticipation of uncertain futures.

Decision-making under the conditions of bounded rationality is seen as taking place in response to a problem, through the use of standard operating procedures and other routines, and also through search for an alternative that is acceptable from the point of view of current aspiration levels for evoked goals. Choice is affected, therefore, by the definition of a problem, by existing rules (which reflect past learning by the organization), by the order in which alternatives are considered (which reflects the location of decision-making in the organization and past experience), and by anything else that affects aspirations and attention.

Examples of Subsequent Uses: Bounded Rationality in Transaction Cost Economics and Evolutionary Economics

Bounded rationality and the behavioural theory of the firm and organizations were important to modern developments such as evolutionary theory and ▶ transaction cost economics (Williamson 2002; Dosi 2004). For example, the idea of bounded rationality and conflict of interest are now standard in the transaction cost theory, especially as developed by Oliver Williamson (1985, 1996), and the view of the firm as a system of rules that adapts to its changing environment is important in the evolutionary theory put forward by Richard Nelson and Sidney Winter (1982). The transactions cost approach is widely accepted as a framework for understanding economic organization. This perspective sees markets and hierarchies as alternative mechanisms for organizing transactions. In order to economize on transaction costs, production is frequently required to be organized in firms. Transaction cost economics builds on the assumptions of bounded rationality and opportunism (Williamson 1975, 1985). In the evolutionary view, the firm is seen as a profit-seeking entity whose primary activities are to build (through organizational learning processes) and exploit valuable knowledge assets. Firms in this view also come with ‘routines’ or ‘competencies’, which are recurrent patterns of action that may change through search and learning. Routines will seldom be ‘optimal’ and will differ among agents, and behaviours cannot be deduced from simply observing the environmental signals (such as prices) that agents are exposed to. This variety drives the evolutionary process since firms articulate rent-seeking strategies on the basis of their routines and competencies, and competition in the product market constitutes an important part of the selection environment of confronting firms. Bounded rationality also underlies much work in organizational learning, cognition and theories of strategy, such as dynamic capabilities.

See Also

- ▶ Satisficing
- ▶ Transaction Cost Economics

References

Cyert, R., and J.G. March. [1963] 1992. *A behavioral theory of the firm*, 2nd ed. Oxford: Blackwell.

Dosi, G. 2004. A very reasonable objective still beyond our reach: Economics as an empirically disciplined social science. In *Models of a man: Essays in memory of Herbert A. Simon*, ed. M. Augier and J.G. March. Cambridge, MA: The MIT Press.

March, J.G., and H.A. Simon. 1958. *Organizations*. New York: Wiley.

Nelson, R., and S. Winter. 1982. *An evolutionary theory of economic change*. Cambridge, MA: Bellknap Press.

Simon, H.A. 1947. *Administrative behavior*. New York: Free Press.

Simon, H.A. 1955. A behavioral model of rational choice. *Quarterly Journal of Economics* 69: 99–118.

Simon, H.A. 1956. Rational choice and the structure of the environment. *Psychological Review* 63: 129–138.

Simon, H.A. 1957. *Models of man*. Cambridge, MA: The MIT Press.

Williamson, O.E. 1985. *The economic institutions of capitalism*. New York: Free Press.

Williamson, O.E. 1996. Transaction cost and the Carnegie connection. *Journal of Economic Behavior and Organization* 31: 149–155.

Williamson, O.E. 2002. Empirical microeconomics: Another perspective. In *The economics of choice, change and organization: Essays in honor of Richard M. Cyert*, ed. M. Augier and J.G. March. Cheltenham: Edward Elgar.

Bowman, Edward H. (1925–1998)

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Abstract

Edward Bowman was a pioneer in the field of strategic management research whose work examined managerial decision-making and its impact on corporate performance.

Edward H. (Ned) Bowman was born in Watertown, Massachusetts, in 1925. He earned a B.Sc. from the Sloan School at the Massachusetts Institute of Technology (MIT) in 1947, an MBA from the Wharton School of the University of Pennsylvania in 1949 and a Ph.D. from Ohio State University in 1954. He served as a professor of management at MIT and at Wharton, as comptroller and senior research associate in administrative science at Yale, and as Dean of the Ohio State University College of Administrative Science.

Bowman's early research developed mathematical models for operations research problems (e.g., Bowman 1956). Bowman created models that managers would find easier to implement than existing approaches. He then studied managerial decision-making in organizations, combining both the prescriptive and descriptive approaches. Bowman (1963) examined production decisions made by various manufacturing organizations, and compared their actual results (in terms of production costs) with the costs that would have resulted from the use of an optimized mathematical model. He found that experienced managers were capable of making good production decisions, and that if managers were more consistent in their decision-making they would have had better results than they actually had produced.

Bowman's subsequent research focused on managers, decision-making and strategy. He developed a conceptual framework for understanding the genesis and analysis of corporate strategy, which was, at that time, an emerging academic field (Bowman 1974). Bowman developed a structure for categorizing strategy research by its domain (practice, methodology or theory) and by its level of formality (more or less formal). Another approach for categorizing was based on the topic: goals, environment, company, strategy, implementation and control. Bowman listed examples of these different approaches and domains, and demonstrated how these multiple approaches could contribute to a better understanding of the field of strategic management.

▶ Corporate social responsibility was also an area that attracted Bowman's attention. With

Haire (1975), he examined the empirical relationship between corporate social responsibility and profitability. They found an inverted U-shaped relationship between the level of corporate social responsibility and return on equity (ROE), with companies in the middle range of social responsibility having the highest ROE. Bowman and Haire argued that this finding resulted from the management processes at corporations that determined the level of corporate social responsibility. Managers who were sensitive to a variety of facets in the external world, such as social responsibility, and who were responsive and flexible, were able to cope proactively with signals from the outside world. This responsiveness led to higher returns. Additionally, the finding that being average in corporate social responsibility is optimal suggested that aggregated managerial judgements produced better returns that individual decisions – a finding that echoes Bowman's earlier work (1963) on managerial decision-making.

Bowman (1976) continued to examine the role of managerial cognition and decision-making on corporate performance. He performed content analysis on corporate annual reports, and found that companies with better performance tended to have managers who were better at environmental coping and customer orientation, and less likely to attribute poor performance to external causes.

Bowman also studied managerial decision-making using ▶ real options analysis. In a theoretical contribution, Bowman and Hurry (1993) argued that managers who followed a real options approach to strategic investment would have better organizational performance. Under this approach, managers must recognize the existence of the real option, and interpret correctly signals as to the value of exercising the option. As real options are exercised, corporate strategy unfolds. In a case study, Bowman and Moskowitz (2001) examined the problems with valuing real options in a corporate setting.

See Also

- ▶ Business Policy and Strategy
- ▶ Cognition and Strategy
- ▶ Corporate Social Responsibility
- ▶ Heuristics and Biases and Strategic Decision-Making
- ▶ Real Options

Selected Works

Bowman, E.H. 1956. Productions scheduling by the transportation method of linear programming. *Operations Research* 4: 100–104.

Bowman, E.H. 1963. Consistency and optimality in managerial decision making. *Management Science* 9: 310–321.

Bowman, E.H. 1974. Epistemology, corporate strategy, and academe. *Sloan Management Review* 15: 35–50.

Bowman, E.H. 1976. Strategy and the weather. *Sloan Management Review* 17: 49–62.

Bowman, E.H., and M. Haire. 1975. A strategic posture toward corporate social responsibility. *California Management Review* 18, 49–58.

Bowman, E.H., and D. Hurry. 1993. Strategy through the option lens: An integrated view of resource investments and the incremental-choice process. *Academy of Management Review* 18, 760–782.

Bowman, E.H., and G.T. Moskowitz. 2001. Real options analysis and strategic decision making. *Organization Science* 12, 772–777.

Brand

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Abstract

With the realization that brands are one of the most valuable intangible assets that firms have, branding has emerged as a top management priority. Brands offer a number of benefits to both firms and consumers. Branding is all about creating differentiation in the minds of consumers and avoiding commoditization. A strong brand is a promise to consumers; marketing must be conducted with those positive expectations in mind. Brands must also be managed to remain strong over time. A good brand architecture strategy properly brands new products for optimal growth.

Definition According to the American Marketing Association, a brand is a 'name, term, sign, symbol, or design, or a combination of them intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competition'. By virtue of their ability to identify and differentiate, brands create value to consumers and organizations.

Branding has been in place for centuries as a means to distinguish the goods of one producer from those of another. In an increasingly complex world, individuals and businesses are faced with more and more choices, but seemingly have less and less time to make those choices. The ability of a strong brand to simplify consumer decision-making, reduce risk and set expectations is thus invaluable (Erdem 1998). An increasing number of firms and other organizations have therefore come to the realization that one of their most valuable assets is the brands associated with their products or services.

Creating strong brands that deliver on that promise and maintaining and enhancing the strength of those brands over time is thus a management imperative, but at the same time a major challenge (Keller 2002; Keller and Lehmann 2006; Loken et al. 2010). Accordingly, the purpose of this article is to review some branding fundamentals and key concepts to help provide a foundation to such efforts.

Brands

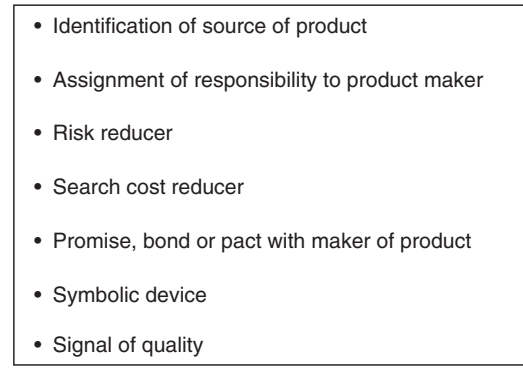
According to the American Marketing Association (AMA), a brand is a 'name, term, sign, symbol, or design, or a combination of them intended to identify the goods and services of one seller or group of sellers and to differentiate them from those of competition'. By virtue of their ability to identify and differentiate, brands create value to consumers and organizations.

Technically speaking, whenever marketers create a new name, logo or symbol for a new product, they have created a brand. It should be recognized that many practising managers, however, refer to a brand as more than that – defining a brand in terms of having actually created a certain amount of awareness, reputation, prominence and so forth in the marketplace. In some sense, a distinction can be made between the AMA definition of a 'small "b" brand' versus the occasional industry practice of a 'big "b" brand' – that is, a 'brand' versus a 'Brand'. It is important to recognize this distinction, as disagreements about branding principles or guidelines can often revolve around the definition of what is meant by a 'brand' as much as anything.

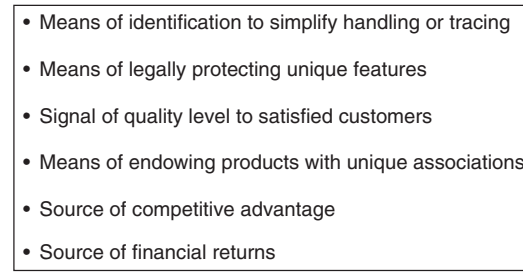
Why are brands important? What functions do they perform that make them so valuable to marketers? Figures 1 and 2 display some of the key roles that have been ascribed to brands from the perspective of the consumer and the firm, respectively (Hoeffler and Keller 2003).

Branding

Brands clearly provide important benefits to consumers – both individuals and firms. An obvious question then is, how are brands created?



Brand, Fig. 1 Roles of brands to consumers



Brand, Fig. 2 Roles of brands to firms

How do you 'brand' a product? Although firms provide the impetus to brand creation through their marketing programmes and other activities, *ultimately a brand is something that resides in the minds of consumers*. A brand is a perceptual entity that is rooted in reality but is more than that and reflects the perceptions and perhaps even the idiosyncrasies of consumers.

To brand a product, it is necessary to teach consumers 'who' the product is – by giving it a name and using other brand elements to help identify it – as well as 'what' the product does and 'why' consumers should care. Branding involves creating mental structures and helping consumers organize their knowledge about products and services in a way that clarifies their decision-making and, in the process, provide value to the firm.

For branding strategies to be successful and brand equity to be created, consumers must be convinced that there are meaningful differences among brands in the product or service category (Keller et al. 2002). The key to branding is that consumers must *not* think that all brands in the category are the same. Strong, favourable and unique brand associations are the foundation to positive brand equity.

Brand differences often are related to performance attributes or benefits of the product itself. For example, brands such as Gillette, Merck, Sony, 3M and others have been leaders in their product categories for decades due, in part, to continual innovation. Other brands create competitive advantages through non-product-related imagery. For example, Coca-Cola, Calvin Klein, Chanel No. 5, Marlboro and others have become leaders in their product categories by understanding consumer motivations and desires and creating relevant and appealing images surrounding their products.

The challenge for marketers in building a strong brand is ensuring that customers have the right type of experiences with products and services and their accompanying marketing programmes so that the desired thoughts, feelings, images, beliefs, perceptions, attitudes, behaviours and so on become linked to the brand. Consumer knowledge is what drives the differences that manifest themselves in terms of brand equity. This realization has important managerial implications. In an abstract sense, according to this view, brand equity provides marketers with a vital strategic 'bridge' from their past to their future, as follows.

Brands as a Reflection of the Past

In this light, the dollars spent each year on manufacturing and marketing products should be thought of less as 'expenses' than as 'investments' – investments in what consumers learned, felt and experienced. About the brand. If not properly designed and implemented, these expenditures may not be 'good' investments, in that the right knowledge structures may not have been created in consumers' minds, but they should be considered investments nonetheless. The *quality* of the investment in brand building is the most critical factor, not necessarily the *quantity* of investment, beyond some minimal threshold amount.

Brands as Direction for the Future

At the same time, the brand knowledge that has been created over time by these marketing investments dictates appropriate and inappropriate future directions for the brand. Consumers, be they individuals or organizations, will decide, based on their brand beliefs and attitudes where they think the brand should go and grant permission (or not) to any marketing action or programme.

At the end of the day, the true value and future prospects of a brand rests with consumers and their knowledge about the brand and their likely response to marketing activity as a result of this knowledge. Understanding consumer brand knowledge – all the different kinds of things that become linked to the brand in the minds of consumers – is thus of paramount importance as the underpinning and foundation of brand equity.

Building Strong Brands

Marketers build strong brands by creating the right brand knowledge structures with target

consumers (Keller 2001). As noted above, there are a whole host of beneficial associations that may become linked to the brand, such as thoughts, feelings, images, beliefs, perceptions, attitudes, behaviours.

In particular, building a strong brand requires creating a brand that consumers are sufficiently aware of and with which consumers have strong, favourable, and unique brand associations. This knowledge-building process depends on *all* brand-related contacts – whether marketer-initiated or not. From a marketing management perspective, however, there are three main sets of brand equity drivers:

1. *The initial choices for the brand elements or identities making up the brand* (e.g., *brand names*, *URL's*, *logos*, *symbols*, *characters*, *slogans*, *jingles*, *packages*, *and signage*). In establishing its brand elements, Red Bull chose a unique brand name and symbol, an unusually shaped can as packaging, and an evocative slogan 'Red Bull Gives You Wings'.
2. *The product and service and all accompanying marketing activities and programmes*. Starbucks' marketplace success has resulted from a series of well-designed and executed marketing activities and programmes that include a wide variety of high-quality coffee products and variations; controlled retail distribution; motivated and trained employees; the provision of a rich sensory retail experience; and positive word-of-mouth and publicity.
3. *Other associations indirectly transferred to the brand by linking it to some other entity* (e.g., *a person*, *place*, *or thing*). Subaru used the rugged Australian Outback and actor Paul Hogan of *Crocodile Dundee* movie fame in ads to help craft the brand image of their Subaru Outback line of cars and sports utility wagons.

Although the second factor is the central driver of equity, the first and third approaches are critical contributors since they typically represent potentially much less expensive options.

Managing Brands

Given the importance of brands as intangible assets for organizations, the ability to strategically manage those brands is critical (Aaker 1991, 1996; Aaker and Joachimsthaler 2000; Kapferer 2008; Keller 2008; Levy 1999). An effective branding strategy can provide a product roadmap to the future for a brand, clarifying where it can go and how it can get there. It is virtually impossible to manage and maximize the value and equity of a brand without a clear, compelling brand strategy, whether explicitly written down or not.

Long-Term Perspectives

Effective brand management requires taking a long-term view of marketing decisions – the ability to think at least 1–3 years down the line if not longer. Any action that a firm takes as part of its marketing programme has the potential to change consumer knowledge about the brand in terms of some aspect of brand awareness or brand image. These changes in consumer brand knowledge from current marketing activity also will have an indirect effect on the success of *future* marketing activities.

Brand equity must be actively managed over time by reinforcing the brand meaning and, if necessary, by making adjustments to the marketing programme to identify new sources of brand equity. Brand equity is reinforced by marketing actions that consistently convey the meaning of the brand to consumers in terms of: (1) what products the brand represents; what core benefits it supplies; and what consumer needs it satisfies; and (2) how the brand makes those products superior and which strong, favourable, and unique brand associations should exist in the minds of consumers.

In managing brand equity, it is important to recognize the trade-offs that exist between those marketing activities that fortify the brand and reinforce its meaning and those that attempt to leverage or borrow from its existing brand equity to reap some financial benefit. At some point, failure to fortify the brand will diminish brand awareness and weaken brand image. Without

these sources of brand equity, the brand itself may not continue to yield as valuable benefits.

Reinforcing brand equity thus requires consistency in the amount and nature of the supporting marketing programme for the brand. Although the specific tactics may change, the key sources of equity for the brand should be preserved and amplified where appropriate. Product innovation and relevance is paramount in maintaining continuity and expanding the meaning of the brand.

Brand Architecture

An important aspect of brand management is the branding strategies the firm adopts to launch new products and services. *Branding strategies* can be defined broadly in terms of how the products or services offered by a firm are branded both in terms of the brand elements (e.g. names, logos, symbols, packaging, signage) involved, as well as how those different products or services are given meaning in terms of how they are positioned (Aaker 2004).

Branding strategies are often described in terms of the concept of brand architecture. Formally, *brand architecture* refers to the number and nature of common or distinctive brand elements applied to the different products sold by the firm. Brand architecture involves defining both brand boundaries and brand relationships across products and services.

Specifically, three key dimensions of brand architecture are: (1) *brand assortment* in terms of brand portfolios and the number of distinctive brands a company sells; (2) *brand depth* in terms of line extensions associated with any one brand in a category that a company sells; and (3) *brand breadth* in terms of category extensions and the number of different categories associated with any one brand a company sells.

From a brand strategy standpoint, growth requires a well-thought-out and well-implemented brand architecture strategy that clarifies three key issues (Aaker 2004; Keller 2012): (1) the potential of a brand in terms of the breadth of its 'market footprint' (Keller and Lehmann 2009); (2) the types of product and service extensions that would allow a brand to achieve that potential (Keller and Aaker 1992; Völckner and Sattler 2006; Wernerfelt 1988); and (3) the brand elements and positioning that identify and are associated with the offerings of a brand as part of that extension strategy.

Conclusion

Brands are one of a firm's most valuable intangible assets. The power of a brand, however, resides in the minds of consumers. The value of a brand is ultimately derived in the marketplace from the words and actions of consumers. Consumers decide with their purchases, based on whatever factors they deem important, which brands are more valuable than others. Marketers, in turn, must build and manage their brands by creating the right brand knowledge structures.

See Also

- ▶ Business-to-Consumer (B2C) Marketing
- ▶ Competitive Strategy
- ▶ Corporate Strategy

References

Aaker, D.A. 1991. *Managing brand equity*. New York: Free Press.

Aaker, D.A. 1996. *Building strong brands*. New York: Free Press.

Aaker, D.A. 2004. *Brand portfolio strategy: Creating relevance, differentiation, energy, leverage, and clarity*. New York: Free Press.

Aaker, D.A., and E. Joachimsthaler. 2000. *Brand leadership*. New York: Free Press.

Erdem, T. 1998. Brand equity as a signaling phenomenon. *Journal of Consumer Psychology* 7: 131–157.

Hoeffler, S., and K.L. Keller. 2003. The marketing advantages of strong brands. *Journal of Brand Management* 10: 421–445.

Kapferer, J.-N. 2008. *The new strategic brand management*, 4th ed. London: Kogan-Page.

Keller, K.L. 2001. Building customer-based brand equity: A blueprint for creating strong brands. *Marketing Management*, 15–19.

Keller, K.L. 2002. Branding and brand equity. In *Handbook of marketing*, ed. B. Weitz and R. Wensley. London: Sage Publications.

Keller, K.L. 2008. *Strategic brand management: Building, measuring, and managing brand equity*, 3rd ed. Upper Saddle River: Prentice Hall.

Keller, K.L. 2012. Brand strategy. In *Marketing strategy handbook*, ed. V. Shankar and G. Carpenter. Edward Elgar, forthcoming.
Keller, K.L., and D.A. Aaker. 1992. The effects of sequential introduction of brand extensions. *Journal of Marketing Research* 29: 35–50.
Keller, K.L., and D. Lehmann. 2006. Brands and branding: Research findings and future priorities. *Marketing Science* 25: 740–759.
Keller, K.L., and D. Lehmann. 2009. Assessing brand potential. In *Brand value and valuation*, Special Issue, *Journal of Brand Management* 17, ed. R. Raggio and R.P. Leone, 6–7.
Keller, K.L., B. Sternthal, and A. Tybout. 2002. Three questions you need to ask about your brand. *Harvard Business Review* 80: 80–89.
Levy, S.J. 1999. *Brands, consumers, symbols, and research: Sydney J. Levy on marketing*. Thousand Oaks: Sage Publications.
Loken, B., R. Ahluwalia, and M.J. Houston. 2010. *Brands and brand management: Contemporary research perspectives*. London: Psychology Press.
Völckner, F., and H. Sattler. 2006. Drivers of brand extension success. *Journal of Marketing* 70: 1–17.
Wernerfelt, B. 1988. Umbrella branding as a signal of new product quality: An example of signalling by posting a bond. *RAND Journal of Economics* 19: 458–466.

Brand Equity

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Abstract

Brand equity can be defined in terms of marketing effects uniquely attributable to a brand. Positive brand equity occurs when different outcomes are observed in the marketing of a product or service because of its brand, compared with the results if that same product or service was not identified by that brand. Brand equity can be measured both indirectly, by capturing the customer mindset and associations to the brand, and directly, by estimating the differential outcomes in the marketing of the product or service. Brand valuation assesses all the long-term benefits provided by a brand to estimate its financial value and worth.

Definition Although various perspectives have been employed to study brand equity, customer-based approaches take the perspective of a consumer, be it an individual or an organization. *Customer-based brand equity* can be defined as the differential effect brand knowledge has on consumer response to the marketing of that brand. Brand knowledge is all the associations the brand has with consumers – such as thoughts, feelings, images, perceptions, beliefs, attitudes and experiences.

Brands represent highly valuable pieces of legal property, capable of influencing consumer behaviour, being bought and sold, and providing the security of sustained future revenues to their owner. The value directly or indirectly accrued by these various benefits is often called brand equity (Keller 1993, 2002).

Branding is all about creating differences. Most marketing observers also agree with the following basic principles of branding and brand equity (Kapferer 2008; Keller 2008): these differences in outcomes arise from the 'added value' endowed to a product as a result of past marketing activity for the brand; there are many different ways that this value can be created for a brand; brand equity provides a common denominator for interpreting marketing strategies and assessing the value of a brand; and there are many different ways as to how the value of a brand can be manifested or exploited to benefit the firm, that is, in terms of greater proceeds and/or lower costs (see Fig. 1).

Brand equity is thus reflected in the way consumers think, feel and act with respect to the brand, as well as in the prices, market share and profitability the brand commands (Aaker 1991; Aaker and Joachimsthaler 2000). Although various perspectives have been employed to study brand equity (Erdem 1998; Fournier 1998; Levy 1999; McCracken 2005; Thompson et al. 2006), customer-based approaches view brand equity from the perspective of the consumer as either an individual or an organization (Aaker 1996; Keller 2001).

The basic premise of customer-based brand equity models is that the power of a brand lies in

- Improved perceptions of product performance
- Greater loyalty
- Less vulnerability to competitive marketing actions
- Less vulnerability to marketing crises
- Larger margins
- More inelastic consumer response to price increases
- More elastic consumer response to price decreases
- Greater trade cooperation and support
- Increased marketing communication effectiveness
- Possible licensing opportunities
- Additional brand extension opportunities

Brand Equity, Fig. 1 Marketing advantages of strong brands

what customers have learned, felt, seen and heard about the brand as a result of their experiences over time. In other words, *the power of a brand lies in the minds of consumers or customers and what they have experienced and learned about the brand over time*.

Formally, *customer-based brand equity* can be defined as the differential effect brand knowledge has on consumer response to the marketing of that brand (Keller 2008). A brand has *positive* customer-based brand equity when consumers react more favourably to a product and the way it is marketed when the brand is *identified*, than when it is not identified. A brand has negative customer-based brand equity if consumers react less favourably to marketing activity for the brand under the same circumstances. There are three key components to this definition.

1. Brand equity arises from differences in consumer response. If no differences occur, the brand-name product is essentially a commodity and competition will probably be based on price (Levitt 1980; Keller et al. 2002).
2. Differences in response are a result of consumers' *brand knowledge*, all the thoughts, feelings, images, experiences and beliefs associated with the brand (Keller 2001). Brands must create strong, favourable and unique brand associations with customers, as have BMW (*performance*), Hallmark (*caring*) and Amazon (*convenience*).
3. Brand equity is reflected in perceptions, preferences and behaviour related to all aspects of the marketing of a brand (Hoeffler and Keller 2003).

Measuring Brand Equity

Given that customer-based brand equity defines brand equity in terms of the differences that arise in customers' response to marketing activity as a result of the knowledge that customers have about the brand, there are two basic approaches to measuring brand equity (Keller 2006). An *indirect approach* assesses potential sources of customer-based brand equity by identifying and tracking consumers' brand knowledge structures. A *direct approach*, on the other hand, measures customer-based brand equity more directly by assessing the actual impact of brand knowledge on consumer response to different elements of the marketing programme: for example, in terms of the marketing advantages listed in Fig. 1.

The two general approaches are complementary, and both can and should be employed by marketers. In other words, for brand equity to perform a useful strategic function and guide marketing decisions, marketers need to fully understand (1) the sources of brand equity and how they affect outcomes of interest, and (2) how these sources and outcomes change, if at all, over time.

Understanding the sources and outcomes of brand equity provides a common denominator for interpreting marketing strategies and assessing the value of a brand: the sources of brand equity help managers understand and focus on what drives their brand equity; the outcomes of brand equity help managers understand exactly how and where brands add value. Brand audits are important for the former; brand tracking for the latter, as follows.

- A *brand audit* is a consumer-focused series of procedures to assess the health of the brand, uncover its sources of brand equity and suggest

ways to improve and leverage its equity. Marketers should conduct a brand audit when setting up marketing plans and when considering shifts in strategic direction. Conducting brand audits on a regular basis, such as annually, allows marketers to keep their fingers on the pulse of their brands so they can manage them more proactively and responsively.

- *Brand tracking studies* collect quantitative data from consumers over time to provide consistent, baseline information about how brands and marketing programmes are performing. Tracking studies help us understand where, how much, and in what ways brand value is being created, to facilitate day-to-day decision-making.

Brand tracking studies – as well as brand audits – can provide a huge reservoir of information concerning how to best build and measure brand equity. Nevertheless, the potential value of these research efforts will not be realized unless proper internal structures and procedures are put into place within the organization to capitalize on the usefulness of the brand equity concept and the information that is collected with respect to it.

A *brand equity management system* is defined as a set of organizational processes designed to improve the understanding and use of the brand equity concept within a firm. Although there are many aspects to a brand equity management system, two useful tools that can be employed are highlighted here.

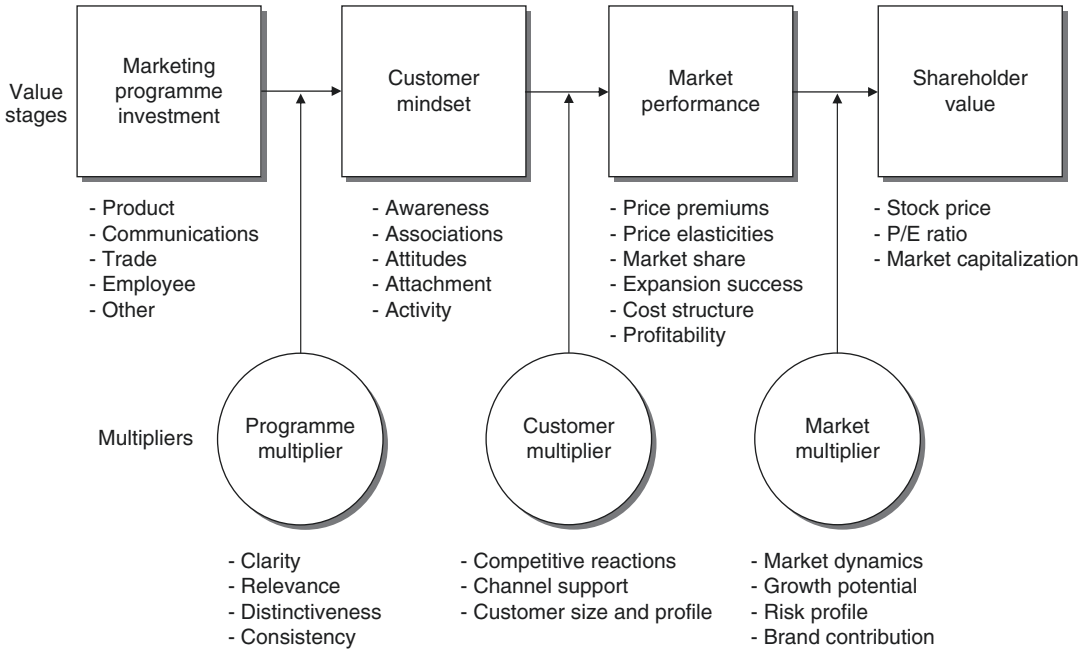
1. Brand equity charter. The insights gained from the brand audit and the company view of brand equity should be placed into a document, the brand equity charter, to provide relevant guidelines to marketing managers within the company as well as key marketing partners outside the company (e.g., ad agency personnel).
2. Brand equity report. The results of the tracking survey and other relevant performance measures for the brand should be assembled into a brand equity report to be distributed to management on a regular basis (monthly, quarterly or annually). The brand equity report should provide descriptive information as to *what* is happening with a brand as well as diagnostic information as to *why* it is happening.

The Brand Value Chain

One useful conceptual tool to pull together all these different aspects of brand equity is the brand value chain. The *brand value chain* is a structured approach to assessing the sources and outcomes of brand equity and the way marketing activities create brand value (see Fig. 2). It is based on several premises (Keller and Lehmann 2003; see also Ambler 2000; Epstein and Westbrook 2001; Srinivasan et al. 2010; Srivastava et al. 1998). First, brand value creation begins when the firm targets actual or potential customers by investing in marketing programmes and activities to develop the brand, including product research, development and design; marketing communications; trade or intermediary support; employee training; etc. Next, we assume customers' mindsets, buying behaviour and response to prices will change as a result of the marketing programme; the question is how. Finally, the investment community will consider market performance, replacement cost and purchase price in acquisitions (among other factors) to assess shareholder value in general and the value of a brand in particular.

The model also assumes that three multipliers moderate the transfer between the marketing programmes and activities and the subsequent three value stages.

- The *programme multiplier* determines the marketing programme's ability to affect the customer mindset and is a function of the quality of the programme investment as reflected by various criteria (e.g., the clarity, relevance, distinctiveness and consistency of the marketing programme).
- The *customer multiplier* determines the extent to which value created in the minds of customers affects market performance. This result depends on competitive superiority (how effective the quantity and quality of the



Brand Equity, Fig. 2 Brand value chain

marketing investment of other competing brands are), channel and other intermediary support (how much brand reinforcement and selling effort various marketing partners are putting forth) and customer size and profile (how many and what types of customers, profitable or not, are attracted to the brand).

- The *market multiplier* determines the extent to which the value shown by the market performance of a brand is manifested in shareholder value. It depends, in part, on the actions of financial analysts and investors.

Brand Valuation

Marketers should distinguish brand equity from *brand valuation*, which is the job of estimating the total financial value of the brand. In many well-known companies, brand value is typically over half the total company market capitalization. John Stuart, co-founder of Quaker Oats, famously said: 'If this business were split up, I would give you the land and bricks and mortar, and I would take the brands and trademarks, and I would fare better than you.'

For the purposes of determining the overall financial value of brands, the various consumer benefits emanating from the brand can be assessed and combined to provide an overall estimate of brand equity and value. One popular industry method by Interbrand concentrates in part on the intangible asset value afforded the brand and then considers a number of discount factors to determine the appropriate long-term brand value (Murphy 1989). US companies do not list brand equity on their balance sheets in part because of differences in opinion about what constitutes a good estimate. Companies do give it a value, however, in countries such as the United Kingdom, Hong Kong and Australia.

Conclusion

Regardless of the particular definition adopted, the value to marketers of brand equity as a concept ultimately depends on how they use it (Keller 2002; Keller and Lehmann 2006). Brand equity can offer focus and guidance, providing marketers with a means to interpret their past marketing

performance and design their future marketing programmes (Keller and Lehmann 2009). Everything the firm does can help to enhance or detract from brand equity. Those marketers who build strong brands have embraced the concept and use it to its fullest as a means of clarifying, communicating and implementing their marketing actions. Towards that goal, this entry advanced some concepts and principles with respect to customer-based brand equity, a set of approaches with much potential managerial insight.

See Also

- ▶ Market Research
- ▶ Return on Invested Capital (ROIC)
- ▶ Swot Analysis

References

Aaker, D.A. 1991. *Managing brand equity*. New York: Free Press.

Aaker, D.A. 1996. *Building strong brands*. New York: Free Press.

Aaker, D.A., and E. Joachimsthaler. 2000. *Brand leadership*. New York: Free Press.

Ambler, T. 2000. *Marketing and the bottom line*. London: Pearson Education.

Epstein MJ. and Westbrook RA. 2001. Linking actions to profits in strategic decision making. *MIT Sloan Management Review*, 39–49.

Erdem, T. 1998. Brand equity as a signaling phenomenon. *Journal of Consumer Psychology* 7: 131–157.

Fournier, S. 1998. Consumers and their brands: Developing relationship theory in consumer research. *Journal of Consumer Research* 24: 343–373.

Hoeffler, S., and K.L. Keller. 2003. The marketing advantages of strong brands. *Journal of Brand Management* 10: 421–445.

Kapferer, J.-N. 2008. *The new strategic brand management*, 4th ed. London: Kogan Page.

Keller, K.L. 1993. Conceptualizing, measuring, and managing customer-based brand equity. *Journal of Marketing* 57: 1–22.

Keller K. L. 2001. Building customer-based brand equity: A blueprint for creating strong brands. *Marketing Management*, 15–19.

Keller, K.L. 2002. Branding and brand equity. In *Handbook of marketing*, ed. B. Weitz and R. Wensley. London: Sage.

Keller, K.L. 2006. Measuring brand equity. In *Handbook of marketing research – Do's and don'ts*, ed. R. Grover and M. Vriens. London: Sage.

Keller, K.L. 2008. *Strategic brand management: Building, measuring, and managing brand equity*, 3rd ed. Upper Saddle River: Prentice Hall.

Keller K.L. and Lehmann D. 2003. How do brands create value? *Marketing Management* (May–June), 27–31.

Keller, K.L., and D. Lehmann. 2006. Brands and branding: Research findings and future priorities. *Marketing Science* 25: 740–759.

Keller K.L. and Lehmann D. 2009. Assessing brand potential. In *Brand value and valuation*, Special Issue, *Journal of Brand Management* 17, ed. R. Raggio and R. P. Leone, 6–7.

Keller, K.L., B. Sternthal, and A. Tybout. 2002. Three questions you need to ask about your brand. *Harvard Business Review* 80: 80–89.

Levitt, T. 1980. Marketing success through differentiation—of anything. *Harvard Business Review*, 83–91.

Levy, S.J. 1999. *Brands, consumers, symbols, and research: Sydney J. Levy on marketing*. Thousand Oaks: Sage Publications.

McCracken, G. 2005. *Culture and consumption II: Markets, meaning, and brand management*. Bloomington: Indiana University Press.

Murphy, J. 1989. *Brand valuation*. London: Hutchinson Business Books.

Srinivasan, S., M. Vanhuele, and K. Pauwels. 2010. Do customer mind-set metrics explain brand performance? *Journal of Marketing Research* 47: 672–684.

Srivastava, R.K., T.A. Shervani, and L. Fahey. 1998. Market-based assets and shareholder value. *Journal of Marketing* 62: 2–18.

Thompson, C.J., A. Rindfleisch, and Z. Arsel. 2006. Emotional branding and the strategic value of the Doppelganger brand image. *Journal of Marketing* 70: 50–64.

Breakeven Analysis

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Abstract

A fundamental concept behind strategy is one of resource allocation and the trade-offs involved. Resources are time, money, space, human capital and so on. In making such trade-offs it is important to evaluate the viability or feasibility of any strategy or action by quantifying the benefits or revenue stream of an action and comparing that to the cost of executing that strategy. Breakeven analysis refers to this exercise, which firms do to decide

whether one should undertake a strategy. In this entry, we discuss the underlying logic and principle behind such an analysis, and illustrate its use with a simple example of evaluating a new project.

Definition A breakeven point is a numerical number above which the benefit of doing something exceeds the cost of doing it.

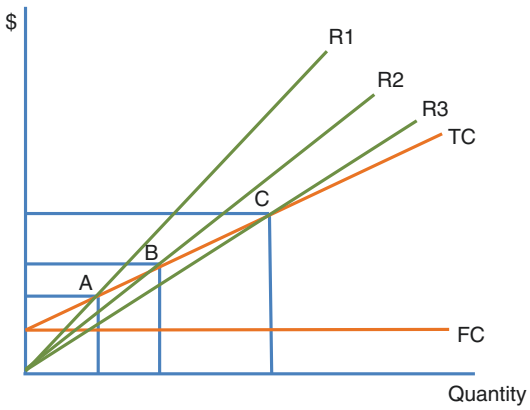
A breakeven analysis is the sum of the steps one goes through to arrive at this number to evaluate the economic feasibility of taking an action.

Breakeven analysis is a fundamental concept in many business activities, used to evaluate the economics of an investment. Consider the following example. Suppose a firm is considering an investment in a new product. Let's assume that the total initial investment in design, plant and equipment, marketing research, investment with trading partners such as distributors, dealers and retailers, marketing expenses such as advertising, promotions, branding and so on is $100 million. This is not an unreasonable amount considering that many packaged goods and pharmaceutical companies spend this much on advertising alone in the first year of a new product introduction. Of this amount let us suppose that $50 million is salvageable, that is, it can be used in some other economic and revenue-yielding activities should the new product fail. This means that $50 million becomes sunk once the investment is made. This is the 'fixed cost' or investment that does not vary with the number of units produced or sold. In return, the firm hopes to sell its product to millions of customers selling millions of units. Suppose the firm can price each unit of the product at $10 and that for *every* additional unit there is a $5 cost in production and marketing: how many units should the firm sell to *breakeven*? That is, how many units must the firm sell for the profit generated from selling the new product to pay off or equal the sunken initial investment? This is the question behind the concept of breakeven analyses. Note that I am silent on whether all the units are sold on the day the product is introduced or whether this is spread over weeks, months or years. We will return to the time dimension later. Similarly, I will ignore any inventory cost or uncertainty in the system; that is, we assume that as soon as the firm produces it sells all the units. Using the numbers from the above example, I develop the following notations:

FC = fixed cost = $50 MM
V = variable cost = $5
P = price = $10
Q = quantity sold at the price P
R = total revenue = Q*P = 10*Q
TVC = total variable cost of all units sold = Q*V = 5*Q
TC = total cost = FC + TVC = 50 MM + 5*Q
GP = gross profit = TR − TVC = 10*Q − 5*Q = 5*Q

And therefore the breakeven point Q** is given by the Q**, which solves GP = FC or equivalently TC = R, which implies Q** = 10 million units.

What this means is that if the firm were to sell any $Q < Q^{**}$, it would earn negative profits from this new product investment, whereas for any $Q > Q^{**}$, the firm would make strictly positive profits and therefore, from an economic point of view, this would be labelled a successful venture. Graphically, this is illustrated below. In Fig. 1 R1, R2 and R3 each represent the total revenue as a function of the number of units sold under three different prices. Note that R1 is steeper than R2, which is steeper than R3. This means that at any given Q, R1 generates more revenue than R2,



Breakeven Analysis, Fig. 1 Breakeven analysis

which in turn generates more than R3, and the breakeven points, correspondingly, are ordered in that A < B < C.

In Fig. 1 the revenue curves are drawn as straight lines but, in general, this need not be or won't be the case. In general, sales or demand Q is a function of price and total revenue can be written as R = P*Q(P). Since sales or Q would be a decreasing function of price the total revenue would first increase with quantity as price is lowered and would eventually start decreasing beyond some Q as further price reduction leads to smaller increases in Q. If Q is linear in P, the revenue curves would look like inverted 'U's or parabolas starting from the origin. Given this, we can interpret R1, R2 and R3 as reflecting a manager's belief about the demand functions. If demand is only a function of price, then these curves would represent a manager's beliefs, based on market research and intelligence, for example, about how demand responds to price changes. From a manager's point of view it is better to be on the revenue curve R1 than R2 than R3, since the business becomes viable at a lower scale of operation and anything above that represents pure profit. It is fairly easy to develop a spreadsheet 'calculator' to do the breakeven analysis and do sensitivity analysis to examine how the breakeven point varies as assumptions about costs and volume change. There are simple calculators using Java applets online. For an example see http://www.dinkytown.net/java/Break-even.html.

The concept of breaking even is more widely applicable than the new product investment example above. To generalize this, consider a decision maker who needs to invest F to generate a benefit y that is a function of x. We will assume that $y'(x) > 0$ over some reasonable range of x, meaning that more x leads to more y. The decision maker can pick values of x by incurring a cost c for every unit of x. The decision maker's problem is: what is the minimum level of x that would lead to recuperating the initial investment F? So, the *breakeven* analysis is on the x^* that needs to be achieved to make this investment or project worthwhile. Mathematically, x^* solves $F - y(x) - c^*x = 0$. Table 1 describes some common decision situations that consumers and managers face.

Extensions

How can we compute a breakeven analysis if the revenue streams or benefits are spread over time? Let us use the subscript t to denote the value of the relevant variables at time t. Then, we can either think of a breakeven 'time period' or breakeven x by solving the following equation for t:

$$F = \sum_{1}^{\infty} [y(x_t) - c_t * x_t] \beta^t$$

where β is a one-period discount factor. Firms often develop pro forma income statements for new projects to see 'how long' it will take in months or years before the investment pays off or breaks even. For an example see Kotler and Keller (2006).

Breakeven Analysis, Table 1 Sample of investment situations

Situation	F	Y	X	C
Investing in new products	Plant and equipment, R&D etc.	Revenue stream	Sales/market share	Variable cost/unit
Investing in education	Tuition, opportunity cost	Income stream	Number of working years	Incremental cost for generating the income stream
Buying Sunday paper for coupons	Cost of Sunday paper	Savings from coupons	Number of acceptable coupons	Hassle cost, time cost
Recruiting visit to college	Flight, hotel, opportunity cost	Potential benefit of finding a good hire	Number of attractive students	Time cost

Suppose the decision maker does not know for certain $y(x_t)$ but has a prior distribution on the realizations of the 'y's. If we assume the decision maker is risk neutral, then we can use expected values of 'y's in the above equation. If the decision maker is not risk neutral then we will have to consider his utility function or preferences over the realizations of y in computing the breakeven period.

Summary

Breakeven analysis is a simple yet an important tool to enable decision makers to evaluate the consequences of an upfront effort, whether in time, money or some other resource. It leads to the development of 'targets' and an evaluation of performance to decide whether to abandon a project or invest further and/or change course.

See Also

- ▶ Business Development
- ▶ Business Strategy
- ▶ Decision-Making
- ▶ Profiting from Innovation

Reference

Kotler, P., and K. Keller. 2006. *Marketing management*, 12th ed. Upper Saddle River: Prentice Hall.

Buckley and Casson

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Abstract

P. J. Buckley and M. C. Casson (Buckley, P.J. and Casson, M.C. *The future of the multinational enterprise*. London: Macmillan, 1976) analysed the multinational enterprise (MNE) within a broad-based intellectual framework based on the pioneering work of Ronald Coase (Coase RH, Economica 4:386–405, 1937). Their book *Future of the Multinational Enterprise* demonstrated how seemingly unrelated aspects of multinational operations, such as technology transfer and international trade in semi-processed products, could be understood using a single concept – the internalization of imperfect markets.

P. J. Buckley and M. C. Casson (1976) analysed the multinational enterprise (MNE) within a broad-based intellectual framework based on the pioneering work of Ronald Coase (1937). Their book *Future of the Multinational Enterprise* demonstrated how seemingly unrelated aspects of multinational operations, such as technology transfer and international trade in semi-processed products, could be understood using a single concept – the internalization of imperfect markets.

The book explained why multinational enterprise (MNE) activity was concentrated mainly in knowledge-intensive industries characterized by high levels of R&D expenditure and advertising expenditure, and by the employment of skilled labour. It also explained why residual MNE activity was mainly concentrated in mining and tropical agriculture.

An MNE was defined as a firm that owns and controls activities in two or more different countries. The analysis was based on the principle that the boundaries of a firm are set at the margin where the benefits of further internalization of markets are just offset by the costs. Another principle was that firms sought out the least-cost location for each activity, taking its linkages with other activities into account. A third principle was that the firm's profitability, and the dynamics of its growth, were based upon a continuous process of ▶ innovation stemming from R&D. In this context, innovation was construed broadly, to encompass not only technology but new products, new business methods, and other commercial applications of new knowledge. The interaction of these three principles was illustrated using

a parsimonious mathematical model that was appended to Chap. 2 of the 1976 book.

The book provided a simple but radical analysis of the MNE by examining both location and internalization strategies. Production in a multi-stage process can be characterized as a sequence of distinct activities linked by the transport of semi-processed materials. The orthodox theory of location assumed constant returns to scale, freely available and therefore standardized technology and that firms are price takers in all factor markets. Given such assumptions, a firm chooses its optimal location for each stage of production by evaluating regional production costs and choosing the set of locations for which the overall average cost of production is minimized. Regional production costs vary according to regional price differentials in non-tradable goods (the price of tradables is standardized by trade), the relative prices of tradables and non-tradables and elasticities of substitution between pairs of non-tradables and between tradables and non-tradables. Overall, average production costs are minimized by the correct choice of the least-cost 'route' from the location of raw materials through to the final destination.

This location strategy is complicated in practice by a number of factors. Firstly, there are increasing returns to scale in many activities. The second major factor is that modern businesses perform many activities other than routine production. Two important non-production activities are marketing and research and development (R&D). The location strategy of a firm which integrates production, marketing and R&D is highly complex. The activities are normally inter-dependent and information flows as well as transport costs must be considered. Information costs that increase with distance encourage the centralization of activities where exchanges of knowledge through teamwork are of the essence. Such activities are the 'high-level' ones of basic research, innovative production and the development marketing strategy; they require large inputs of skilled labour, and the availability of skilled labour will therefore exert a significant influence on the location strategy of such firms. The third factor which complicates the location strategies of firms is that in practice they operate largely in imperfectly competitive markets. This means that, in many cases, MNEs cannot be considered as price takers in intermediate and factor markets. Consequently, a firm that can force down input or factor prices in a particular region will tend to concentrate the production processes which are intensive in these inputs in that region. The fourth factor is government intervention. Finally, location decisions will be influenced by the extent to which the internalization of markets in the firm modify the above considerations.

In a situation where firms are attempting to maximize profits in a world of imperfect markets, there will often exist an incentive to bypass imperfect markets in intermediate products. The activities that were previously linked by the market mechanism are brought under common ownership and control in a 'market' internal to the firm. Where markets are internalized across national boundaries, MNEs are created. Benefits of internalization arise from the avoidance of imperfections in the external market, but there are also costs. The optimum size of firm is set where the costs and benefits of further internalization are equalized at the margin.

Combining both internalization and location effects explained the division of particular markets between domestic producers, local subsidiaries of MNEs, exports from foreign-owned plants and exports from MNEs. The division between exports and local servicing is largely the result of the economics of location. Least-cost location, influenced by regional price differentials and by barriers to trade largely governs the proportion of a market serviced by exports. This, however, is modified by the economics of internalizing a market, for not only can this affect the least-cost location of any stage of protection but the strategy of a MNE after having internalized a market may differ from that which external market forces would dictate. Consequently, the question of servicing a final market is inextricably bound up with the nature and ownership of internal markets – which will be dictated by the costs and benefits of internalization.

The result was a view of the firm as a complex of interdependent activities, linked by flows of

knowledge and intermediate products. These internal flows were coordinated by information flows through the 'internal markets' of the firm. This was a radical departure from the neoclassical economic view of the firm as a unitary 'black box' devoted entirely to production, whose inputs and outputs were related by a simple production function. The new vision of the firm emphasized the internal division of labour, involving specialized functions comprising not only production but also marketing and R&D.

According to this new vision, the firm could operate multiple plants, with some plants specializing in one type of activity and other plants in another. Different plants could be located in different countries – when different countries were involved, a multi-plant enterprise became an MNE. It was the economics of coordinating this internal division of labour, and not technology, that set the limits to the boundaries of the firm. Whilst technology might set a limit on the size of any one plant, it was diminishing returns to managerial coordination that set the limit to the size of the firm. These limits were reflected not only in the aggregate quantity of output produced by the firm, but the range of locations in which this output was produced and sold.

This view had an immediate impact. Previously the market entry decision had been analysed as a simple choice between exporting and foreign investment, while afterwards it was analysed as a three-way decision between exporting, foreign investment and licensing. The speed of this transition can by appreciated by comparing a state-of-the art review of the theory produced just 2 years earlier (Dunning 1974), which makes only passing reference to licensing, with a synthesis of the theory published only 3 years later, in which licensing plays a crucial role (Dunning 1977). This analysis was subsequently extended to cover other entry options such as franchizing and subcontracting.

The authors later stressed that MNEs should be viewed as part of a global system in which they both cooperated and competed with each other. This global system would comprise interdependent specialized facilities created through an international division of labour. The account of the international division of labour drew upon the classical analysis of the subject developed by Adam Smith (1995), chiefly in the context of the national economy. This encapsulated some of Smith's key insights into a schematic 'global systems view' of international business.

Given a global configuration of production plants, R&D laboratories and distribution centres, internalization theory should be able to explain how the ownership of the system would be parcelled out between different firms It would identify the external markets through which the boundaries of the firm were drawn, and also the internal markets that lay within the boundaries of particular firms. It would also predict the characteristics of the firms that internalized particular markets – in particular their size and nationality. Finally, it would identify the long-term factors – such as entrepreneurship and technological opportunity – that explain why certain types of activity are best carried out at certain types of location under the control of certain types of firm.

The power of the internalization concept was such that, using such a global system view it is possible to analyse a very wide range of practical issues in international business. When applied using a global systems view, internalization theory illustrates how the activities of different MNEs interact with each other. As a result, an MNE's decisions on how to enter a particular national market are embedded within its wider global business strategy.

Rational action modelling can be applied to a wide range of international business issues, including dynamic market entry (Buckley and Casson 1981, 1998a, b), international joint ventures (Buckley and Casson 1988), international entrepreneurship (Casson 2000), business culture (Buckley and Casson 1991a; Casson 1991b) and strategic complexity in international business (Buckley and Casson 2001b).

When internalization theory is combined with other theories, it is necessary to ensure that these other theories are consistent with internalization theory in their methodological approaches. If they are not consistent, the resulting synthesis will become a confusing concoction of incompatible

ideas. In particular, complementary theories must be consistent with rational action principles. Trade theory satisfies this condition, since its economics pedigree means that it has followed rational action principles from the outset. Neoclassical economic theories of innovation also satisfy this condition. In certain areas, such as strategic management, it is sometimes unclear whether rationality is postulated or not, and even where it is postulated, it is not always clear that the postulates are consistently applied. For these reasons internalization theorists have been circumspect in combining the internalization principle with other bodies of theory. Rather then seeking to explain every conceivable phenomenon in international business through liaisons with other branches of theory, they have focused on explaining those phenomena that internalization theory and other rational action theories explain best.

The Progress of the Research Agenda

Progress of this research agenda has covered at least five key areas. These are:

1. Formalizing, extending and testing the theory,
2. (The extension of the internalization approach to) foreign market entry and development strategies,
3. International joint ventures,
4. Dynamics; innovation and real options,
5. The role of culture in international business.

Table 1 examines subsequent publications and classifies their contribution according to the scheme above. Table 2 classifies papers by contribution.

Conclusion

The 1976 book (Buckley and Casson) began with a problem – how to explain the existence of the MNE and the way that it behaves. The authors found an answer, in conjunction with other scholars. But the answer to that question raised new questions. This was progress of sorts, because the questions that are being asked – 30 years on – are much smarter than the first ones. They are certainly more tightly focused. Instead of a single general and rather ill-defined question, we now have a set of specific well-defined problems. The big problem has been broken down into little problems that are easier to solve. In pursuing this research agenda, Buckley and Casson have engaged with several distinct but related problems. Each problem has been analysed as a subset of a wider problem. This produced an answer – but an answer of a very general nature. Having solved the problem in general terms, they then resolved the problem into a set of specific sub-problems that addressed particular issues arising at the empirical level. Using the solution to the general problem, these specific problems were then addressed in turn.

In some respects, the theory of internalization is quite unusual as a social science theory in the sense that it really works. There is no need to disguise weaknesses, or obfuscate difficulties; weaknesses can be acknowledged because they can be remedied, and difficulties can be recognized because they can be overcome. Failing systems of thought often degenerate through steady attrition; qualifications and complexities are added to salvage the system until it becomes more complicated than the phenomena it claims to describe, and it no longer has any heuristic value. Internalization theory, by contrast, has retained its vitality. It is as incisive today as it was when first put forward by Ronald Coase.

Area of Contribution: Key

1. Formalizing and testing the theory.
2. Foreign market entry and development.
3. International joint ventures.
4. Innovation and dynamics.
5. The role of culture in international business.

See Also

▶ Emerging-Market Multinationals
▶ Innovation
▶ Multinational Corporations

Buckley and Casson, Table 1 Buckley and Casson contributions chronologically

Date and area of contribution	Contribution
1981 2	A rigorous analysis of foreign market entry strategy under determinate conditions of market growth based on fixed set up and variable operational costs predicting the timing of shifts in foreign market servicing strategy (e.g., export to licensing to foreign direct investment). The missing 'short-run decision-making' chapter of *The Future of the Multinational Enterprise*
1985 1	Development of theory and testing – compared and contrasted internalization with alternative approaches to the MNE, developed comparative institutional analysis versus cartels and integrated intermediate product trade and entrepreneurship into the theory. Reviewed the evidence on theoretical frameworks of the MNE
1988 3	The internalization theory of international joint ventures. IJVs are determined by three key factors: internalization of key markets, indivisibilities and barriers to merger. Described joint ventures as 'first and foremost, a device for mitigating the worst consequences of mistrust'. In the language of internalization theory, IJVs represent a compromise contractual arrangement that minimizes transaction costs under given environmental constraints. JVs provide a context in which the parties to the JV can demonstrate *mutual forbearance* and build up trust. Going on from this to provide a *commitment* to cooperation strengthens the JV. These novel concepts were introduced and amplified in the paper
1991 5	Multinational enterprises in less developed countries examined the cultural and economic interaction between the MNE and the local economy. The performance of a given MNE in a given LDC is governed by the degree of entrepreneurship in the culture of the firm, the degree of entrepreneurship in the culture of the host country and an interaction term. Some simple predictions about comparative economic development were derived
1992 4	Organizing for innovation was argued to be the key factor governing the long run success of MNEs. The paper examined the pressures on managers in MNEs to innovate and the process of innovation (from a knowledge management perspective). This was related to internalization and to the internal organization of skilled workers in the MNE. Source country institutions were argued to be influential in this process
1996 3	Provide a rigorous economic model of intentional joint ventures, using key factors suggested by internalization theory in the strategic choice between joint ventures, licensing agreements and merges. This paper explains the increasing use of IJVs in terms of the accelerating pace of technological innovation and globalization of markets. If offered a range of predictions on the formation of JVs within and across industries, across locations and over time
1998a 1,4	Identified flexibility as the hallmark of modelling the MNE as a response to the rationalization and restructuring of the global economy. Flexible firms are attracted to locations with flexible host governments. Introduced the notion of 'real options' into internalization theory as a dynamic modelling technique
1998b 2	A rigorous extension of the internalization approach to foreign market entry strategy providing a testable model of entry strategy and identifying key parameters that determine the choice of modes of entry
2001a 5	Examines the long run development of the capitalist system and pays particular attention to its moral basis and the problems arising from a culture of 'excessive individualism' and its social costs
2001b 1,2,3,4	Shows that the rational action approach can be widely applied to produce simple analytical solutions to problems alleged to be excessively complex. 'Economy of coordination calls for a division of labour in information processing and this in turn calls for cooperative behaviour of a social nature.' This echoes a quote from *The Future of the Multinational Enterprise* that 'social interactions will follow different rules in different places'
2002 with Gulamhussen 3,4	This paper uses the real options approach to rationalize many practical aspects of decision making in multinationals including information-gathering, procrastination and commitment. It encompasses incremental entry (as in the Uppsala approach) as a legitimate strategic variant in internationalization processes
2007 1,4	Provides a formal model of Edith Penrose's *Theory of the Growth of the Firm* and derives an analysis of the trade-off between product diversification and foreign market penetration that also makes a contribution to the understanding of speed of entry into foreign markets. The elaboration of Penrose's model advances knowledge of the internationalization of the firm by incorporating geographical expansion patterns, sequential decision-making and learning into the theory

Buckley and Casson, Table 2 Buckley and Casson contributions by area

1. Formalizing, extending and testing the theory	1985, 1998a, 2001b, 2007
2. Foreign market entry and development strategies	1981, 1998b, 2001b
3. International joint ventures	1988, 1996, 2001b, 2002 (with Gulamhussen)
4. Innovation and dynamics	1985, 1992, 1998a, 2001b, 2002 (with Gulamhussen), 2007
5. The role of culture in international business	1991, 2001a

References

Coase, R.H. 1937. The nature of the firm. *Economica* 4: 386–405.

Dunning, J.H. (ed.). 1974. *Economic analysis and the multinational enterprise*. London: George Allen & Unwin.

Dunning, J.H. 1977. Trade, location of economic activity and the MNEs. In *The international allocation of economic activity*, ed. B. Ohlin, P. Hesselborn, and P. Wijkman. London: Macmillan.

Smith, A. [1776] 1995. *An inquiry into the nature and causes of the wealth of nations*. Oxford: Clarendon Press.

Selected works

1976. *The future of the multinational enterprise*. London: Macmillan.

1981. The optimal timing of a foreign direct investment. *The Economic Journal* 91, 75–87.

1985. *The economic theory of the multinational enterprise*. London: Macmillan; New York: St Martin's Press.

1988. A theory of cooperation in international business. In *Cooperative strategies in international business*, ed. F.J. Contractor and P. Lorange. Lexington, MA: Lexington Books, D. C. Heath & Co.

1991a. Multinational enterprises in less developed countries: Cultural and economic interactions. In *Multinational enterprises in less developed countries*, ed. P. J. Buckley and J. Clegg. London: Macmillan.

1991b. The economics of business culture. Oxford: Oxford University Press.

1992. Organising for innovation: The multinational enterprise in the twenty-first century. In *Multinational enterprises in the world economy: Essays in honour of John Dunning*, ed. P. J. Buckley and M. Casson. Aldershot: Edward Elgar.

1996. An economic model of international joint ventures. *Journal of International Business Studies* 27, 849–876.

1998a. Models of the multinational enterprise. *Journal of International Business Studies* 29, 21–44.

1998b. Analysing foreign market entry strategies: Extending the internalisation approach. *Journal of International Business Studies* 29, 539–561.

2000. *Enterprise and leadership: Studies on firms, networks and institutions*. Cheltenham: Edward Elgar.

2001a. The moral basis of global capitalism: Beyond the eclectic theory. *International Journal of the Economics of Business* 8, 303–327.

2001b. Strategic complexity in international business. In *The Oxford handbook of international business*, ed. A. M. Rugman and T. L. Brewer. Oxford: Oxford Press.

2002 (with M. A. Gulamhussen). Internationalisation – real options, knowledge management and the Uppsala approach. In *Critical Perspectives on Internationalisation*, ed. V. Havila, M. Forsgen and H. Hakansson. Oxford: Elsevier Science.

2007. Edith Penrose's *Theory of the Growth of the Firm* and the strategic management of multinational enterprises. *Management International Review* 47, 151–173.

Bundling and Tying

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Abstract

We discuss strategic ways in which sellers can use tying and bundling with requirement conditions to extract consumer surplus. We analyse different types of tying and bundling creating (1) intra-product price discrimination; (2) intra-consumer price discrimination; and (3) inter-product price discrimination, and assess the antitrust liability that these practices may entail. We also discuss the impact on consumers and competition, as well as potential antitrust liability of bundling "incontestable" and "contestable" demand for the same good.

Definition *Tying* of two products (or services) occurs when a seller sells one good (tying good) on the condition that the buyer buys the other good (tied good) from that seller or imposes on the buyer the requirement that s/he will not purchase the other good from another seller. *Bundling* is a general term describing selling collections of

goods as a package. In *pure bundling*, the individual goods are not sold separately but only in combination, so it is essentially equivalent to tying. In *mixed bundling*, the individual goods, as well as the package, are available.

Tying of two products (or services) occurs when a seller sells one good (tying good) on the condition that the buyer buys the other good (tied good) from that seller or imposes on the buyer the requirement that he will not purchase the other good from another seller (see *Kodak*, 504 U. S. at 461 (*quoting Northern Pacific R. R. Co. v. United States*, 356 U. S. 1, 5–6 (1958))). A tying condition may involve a simple 1:1 combination of goods or may require a certain number of units of the tied good to be bought from the same seller. An even more restrictive condition resulting in a "requirements tie" is a requirement to sell the tying product only if the buyer buys all or most of its requirements of the tied product from that seller. The "requirements tie" conditions pricing on the number of units or the percentage of his "needs" that a buyer buys from a rival.

Bundling is a general term describing selling collections of goods (A, B, C, . . .) as a package. Such collections may vary in their composition and in the conditions that apply to the availability of special pricing for the collections. In *pure bundling*, the individual goods are not sold separately but only in combination, so it is essentially equivalent to tying, with the caveat that in tying one of the two goods may be available on its own, which is not possible in pure bundling. In *mixed bundling*, the individual goods, as well as the package, are available. For mixed bundling under a requirement condition, a dominant firm in market *A* also sells in market *B* à la carte. Based on a requirement that a particular buyer buys a large percentage or 100% of his/her needs in both products from the dominant firm, the dominant firm also offers discounts on all units of either *A*, *B* or both, or provides a lump sum discount. The need for monitoring with a requirements bundle implies that such lump sum discounts are typically not offered to final consumers but to companies. The difference between the price under the bundling condition and the à la carte price can be thought of as a penalty for not accepting the bundle, it is implicitly a "disloyalty penalty" (Rubinfeld 2005; Elhauge 2008: 406, 408; Economides 2009: 260; Economides and Lianos 2009: 513; Elhauge 2009b: 402–403, 450), since, when bundled pricing is introduced, a dominant firm can simultaneously increase the à la carte prices above the but-for levels.

Bundling and tying may be based on synergies to the seller in the joint sale of the products as a bundle in packaging, marketing, or alleviation of information and search costs through the sale of "matching" components in a bundle. Tying and bundling can also be motivated by strategic reasons and can be used as instruments for price discrimination or to impair rival competitiveness (see Adams and Yellen 1976; Schmalensee 1984; McAfee et al. 1989; Elhauge 2009b).

When tying and bundling are motivated by strategic reasons, they typically make sellers better off and consumers worse off, but there are exceptions. There has been considerable debate on whether buyers are worse off after tying. In a series of early decisions, the Supreme Court ruled that tying was quasi per se illegal, and is really a form of rule of reason review, where economic harm is inferred when tying market power exists and the tie restrains a substantial dollar amount of tied sales, despite the absence of a substantial ▶ foreclosure share in the tied market. (See *Jefferson Parish Hospital District No. 2 v. Edwin G. Hyde*, 466 U. S. 2, 12 and fn. 12–14 (1984). See also *Motion Picture Patents Co. v. Universal Film Co.*, 243 U. S. 502 (1917); *United States Steel Corp. v. Fortner Enterprises*, 429 U. S. 610, 429 U. S. 619–621 (1977); *Fortner Enterprises v. United States Steel Corp.*, 394 U. S. 495, 394 U. S. 498–499 (1969); *White Motor Co. v. United States*, 372 U. S. 253, 372 U. S. 262 (1963); *Brown Shoe Co. v. United States*, 370 U. S. 294, 370 U. S. 330 (1962); *United States v. Loew's Inc.*, 371 U. S. 38 (1962); *Northern Pacific R. Co. v. United States*, 356 U. S. 1, 356 U. S. 5 (1958); *Black v. Magnolia Liquor Co.*, 355 U. S. 24, 355 U. S. 25 (1957); *Times-Picayune Publishing Co. v. United States*, 345 U. S. 594, 345 U. S. 608–609 (1953); *Standard Oil Co. of California v. United States*,

337 U. S. 293, 337 U. S. 305–306 (1949); *International Salt Co. v. United States*, 332 U. S. 392, 332 U. S. 396 (1947). For an historical perspective on this case law, see Kramer (1985). For an explanation of why this amounts to a specific form of rule of reason review, see Elhauge (2009b).)

In the late 1970s, prominent Chicago School antitrust scholars (Posner, Easterbrook, Bork) proposed instead that tying should be presumptively per se legal, allowing antitrust liability only in exceptional circumstances (see Posner 1976; Bork 1978: 375; Posner and Easterbrook 1981: 802–810). They argued that a monopolist in good *A* has no reason to tie product *B* except when there are cost savings or other efficiencies in the joint production or distribution of *A* and *B*, because a monopolist in *A* had already appropriated all consumer surplus. However, their conclusion is incorrect when, without tying, the monopolist cannot extract *all* consumer surplus from *each* consumer through perfect price discrimination, which is almost always the case (Economides 2012). It is also incorrect when the tie forecloses a substantial share of the tied market in a way that increases the degree of market power in the tying market or gives the tying firm market power in the tied market that it can exploit against other buyers (Elhauge 2009b).

We examine five set-ups of strategic tying and bundling use.

Tying and Bundling to Extract Consumer's Surplus Through Intra-product Price Discrimination

When a monopolist in good *A* is unable to implement perfect price discrimination among buyers, and buyers differ in willingness to pay for *A*, the seller can use tying of *A* with a good *B*, the use of which is closely correlated with the value of *A*, to extract more or all the surplus of *A* (see, for example, *International Business Machines Corp. v. United States*, Supreme Court of the United States, 1936. 298 U. S. 131, 56 S. Ct. 701, 80 - L. Ed. 1085, where IBM imposed the requirement to leasees of its tabulating machines to buy its cards, reasoning that card use is closely correlated with value of machine to customer). Thus, good B is used both as a metering device of the value of product A as well as a device for consumer surplus extraction by being priced significantly above cost.

Tying and Bundling to Extract Consumer's Surplus Through Intra-consumer Price Discrimination

When a buyer buys more than one unit of a good *A* and is left with a positive consumer surplus absent tying (for example, if the monopolist charges a single (monopoly) price to a seller and the seller buys multiple units), tying can be used to transfer the remaining consumer surplus to the seller. Suppose that, originally, product B was offered at a competitive price. Tying is implemented as follows: the monopolist seller in *A* refuses to offer *A* by itself but offers it only with product *B* which he now sells at an inflated price. The buyer will accept if the consumer surplus from being able to continue buying *A* at the monopoly price exceeds the harm from having to buy *B* at an inflated price, but the buyer is worse off under tying compared to the but-for world, and the seller extracts additional surplus (and has higher profits) by tying (see Mathewson and Winter 1997; Nalebuff 2004, 2009; Grzeenlee et al. 2008; Elhauge 2009b: 407–413; Economides 2012). Since the price discrimination implemented through tying is among the units bought by the same consumer and is done separately for each consumer, it does not depend on differences across consumers. The tying scheme can be applied even if all buyers are identical in their valuations of the two products. Additionally, there is no requirement that market power and market share in the tied market *B* are significant before tying starts. However, once the tying scheme is in effect, the acceptance by many buyers to buy the tied products *A* and *B* (rather forego *A* altogether) increases the seller's market power in the tying market. In a bundling set-up, the monopolist seller sets a prohibitively high price for *A* if sold alone and gives a discount on

A if the buyer buys a sufficiently high share of his requirements of *B* from this seller. The effect of the bundling requirement contract is very similar to the one of tying.

Tying and Bundling Can Implement Inter-product Price Discrimination to the Detriment of Consumers

In the two cases above, monopolization of the second market though tying and bundling is typically not the monopolist's main goal. However, there are settings where the objective of tying and bundling is the extraction of surplus in the second (tied good) market.

In the presence of substantial market power in the tying and tied markets (see Schmalensee 1982: 67–69; Elhauge 2009b: 406), when consumers buy two goods and their demands do not have very strong positive correlation, introduction of tying or bundled pricing can increase profits and reduce consumer surplus (see also Adams and Yellen 1976; Schmalensee 1982, 1984; McAfee et al. 1989; Economides and Hebert 2008: 465; Elhauge 2009b: 405–407, 415).

For illustration, suppose that consumers are distributed uniformly according to type x in [0, 100] so that consumer x has willingness to pay p (x) for good *A* and willingness to pay \$100 − p (x) for good *B*. Additionally, let the willingness to pay for consumer of type x be inversely related to his type, p(x) = 100 − x. Then, if the goods are sold separately, a single-price monopolist will charge \$50 for each of goods *A* and *B*, and, in each of these markets, consumer surplus will be \$1250. However, if *A* and *B* are tied in a 1:1 ratio, the willingness to pay for *AB* is \$100 for every consumer. The monopolist charges \$100 for the bundle, all consumers buy the good, and consumers are left with zero consumer surplus.

Tying and Bundling Can Impair Rival Competitiveness

Tying and bundling, including under a loyalty/requirement programme can be used by a monopolist in *A* to foreclose rivals, reduce their scale of operations, and thereby increase their unit costs and reduce their competitiveness (see Whinston 1990; Economides 2009: 268; Economides and Lianos 2009: 511–516; Elhauge 2009b: 413–419). This can be profitable even when products A and B are tied in fixed proportions or the tied product has no other use (see Nalebuff 2004; Economides and Hebert 2008: 466. Also see Aghion and Bolton 1987, showing that a monopolist can extract a new entrant's technology advantage using contracts which require 100% of a customer's total purchases). This requires that a substantial share of the tied market be foreclosed (see Elhauge 2009b: 413–419). Creating tied market power with ties cannot be profitable if the tie or bundle is in fixed proportions and the tied product has no use other than with the tying product (see Elhauge 2009b: 416). Facing a smaller market, rivals with entry costs may not enter the tied market, resulting in less competition and lower consumer surplus. Based on the same argument, a company that only produces one of the tied products may exit the market as a result of tying.

Bundling "Incontestable" and "Contestable" Units of a Single Good

Suppose that a dominant firm in a market sells at a constant per unit price. Provided the particular buyer commits to buying a large percentage or all of his "needs" from the dominant firm, the seller also offers a "retroactive" "discount" on all units or a subset of units below a certain threshold, such as 90% of the buyer's purchases in market *A* during a defined time period. The term "retroactive" is used because the "discount" (or difference between prices adhering to and not adhering to the requirement) applies to all units sold in a time period once the threshold is met, even to purchases made before the threshold was met. This is distinguished from an "incremental" discount which is applied only to units sold after the threshold is met (for similar definitions, see Commission of the European Communities,

EU Guidance, ¶ 42). The retroactive discount can be a lower price on all units below the threshold or a subset of these, or it can be a lump sum discount. The requirement may be "sole-sourcing", that is, a requirement that a particular buyer buys 100% of his purchases from the dominant firm, or the discount may be available only if a large percentage of the buyer's purchases in market *A*, say 90%, are from the dominant firm. The requirement, the base prices, the extent of the discounts, and even the time period on which it applies can vary across buyers.

Bundling incontestable and contestable demand is very similar to multiproduct bundling and should be analysed very similarly (see Economides 2012). In both the multi- and single-product cases, the dominant firm leverages its monopoly or dominant position to obtain higher sales in the remaining market. (This conforms with the definitions used by the European Commission. See EU Article 82 Guidance 2008.) The only difference is that, in the multiproduct case, sales in market *A* are leveraged to obtain higher sales in market *B*, while, in the single-product case, the uncontested sales in market *A* are leveraged to obtain the contested sales also in market *A*. Some prominent single-product loyalty discounts cases are the ones involving Intel. In the US: *Advanced Micro Devices, Inc. v. Intel Corp.*, No. 05–441 (D. Del. filed 27 June 2005, settled 12 November 2009); *New York v. Intel Corp.*, 1:2009cv00827 (D. Del. filed 4 November 2009) available at http://www.oag.state.ny.us/media_center/2009/nov/NYAG_v_Intel_COMPLAINT_FINAL.pdf; *Complaint, Intel Corp.*, FTC Docket No. 9341 (16 December 2009), available at http://www.ftc.gov/os/adjpro/d9341/091216intelcmpt.pdf. In the European Union, see Commission Decision, COMP/C-3/37.900 – Intel Corp., 13 May 2009, available at http://ec.europa.eu/competition/sectors/ICT/intel.html. *Intel* involved both a single-product loyalty requirement programme as well as a loyalty requirement programme on bundles involving chip sets. The FTC case was settled with Intel on 29 October 2010 (see the proposed "Decision and Order" at http://www.ftc.gov/os/adjpro/d9341/101102inteldo.pdf and the "Analysis of Proposed Consent Order" at http://www.ftc.gov/os/adjpro/d9341/100804intelanal.pdf. See Economides 2012).

Table 1, adapted from Economides (2012) summarizes the effects of tying in implementing different types of price discrimination.

Given the antitrust liability arising from tying as well as bundling with requirement conditions, businesses should, in general, avoid offers that contain restrictions of these types. In contrast, firms may offer quantity discounts when they can be reasonably based on decreasing unit costs with scale.

Bundling and Tying, Table 1 Summary of requirements and effects of tying in implementing different types of price discrimination

Type of price discrimination that tying implements	Significant market power in the tying market	Market power in the tied market and foreclosure in the tied market	Tying gives additional profits to monopolist even when A and B are demanded in fixed proportion	Consumer surplus (CS) can decrease because of tying
Inter-product price discrimination	Necessary for tying resulting in CS reduction	Necessary for tying resulting in CS reduction	Yes	Yes
Intra-product price discrimination	Necessary for tying resulting in CS reduction	Unnecessary for tying resulting in CS reduction	No	Yes
Intra-consumer price discrimination	Necessary for tying resulting in CS reduction	Unnecessary for tying resulting in CS reduction	No	Yes

See Also

► Foreclosure

References

Adams, W.J., and J.L. Yellen. 1976. Commodity bundling and the burden of monopoly. *Quarterly Journal of Economics* 90: 475.
Aghion, P., and P. Bolton. 1987. Contracts as a barrier to entry. *American Economic Review* 77: 388.
Bork, R. 1978. *The antitrust paradox*. New York: Free Press.
Economides, N. 2009. Loyalty/requirement rebates and the antitrust modernization commission: What is the appropriate liability standard? *Antitrust Bulletin* 54: 259.
Economides, N. 2012. Tying, bundling, and loyalty/requirement rebates. In *Research handbook on the economics of antitrust law*, ed. E. Elhauge. London: Edward Elgar.
Economides, N., and W. Hebert. 2008. Patents and antitrust: Application to adjacent markets. *Journal on Telecommunications & High Technology Law* 6: 455.
Economides, N., and I. Lianos. 2009. The elusive antitrust standard on bundling in Europe and in the United States at the aftermath of the Microsoft cases. *Antitrust Law Journal* 76: 483.
Elhauge, E. 2008. *United States antitrust law and economics*. Cambridge, MA: Harvard University Press.
Elhauge, E. 2009a. The failed resurrection of the single monopoly profit theory. *Competition Policy International* 6: 155.
Elhauge, E. 2009b. Tying, bundled discounts, and the death of the single monopoly profit theory. *Harvard Law Review* 123: 397.
EU Article 82 Guidance (2008).
Grzeenlee, P., D.S. Reitman, and D.S. Sibley. 2008. An antitrust analysis of bundled loyalty discounts. *International Journal of Industrial Organization* 26: 1132.
Kramer, V.H. 1985. The Supreme Court and tying arrangements: Antitrust as history. *Minnesota Law Review* 69: 1013.
Mathewson, F., and R. Winter. 1997. Tying as a response to demand uncertainty. *RAND Journal of Economics* 28: 566.
McAfee, R.P., J. McMillan, and M.D. Whinston. 1989. Multiproduct monopoly, commodity bundling, and correlation of values. *Quarterly Journal of Economics* 104: 371.
Nalebuff, B. 2004. Bundling as an entry barrier. *Quarterly Journal of Economics* 119: 159.
Nalebuff, B. 2009. Price discrimination and welfare. *Competition Policy International* 5: 221.
Posner, R.A. 1976. *Antitrust law: An economic perspective*. Chicago: Chicago University Press.
Posner, R., and F. Easterbrook. 1981. *Antitrust cases, economic notes, and other materials*, 2nd ed. St Paul: West.
Rubinfeld, D.L. 2005. 3 M's bundled rebates: An economic perspective. *University of Chicago Law Review* 72: 243.
Schmalensee, R. 1982. Commodity bundling by single-product monopolies. *Journal of Law & Economics* 25: 67.
Schmalensee, R. 1984. Gaussian demand and commodity bundling. *Journal of Business* 57: 211.
Whinston, M.D. 1990. Tying, foreclosure, and exclusion. *American Economic Review* 80: 838.

Bureaucracy

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Abstract

This entry begins by describing the classical definition of bureaucracy developed by Max Weber, which is an organization where tasks are divided among technical specialists who devote their full working capacity to the organization and whose activities are coordinated by rational rules, hierarchy and written documents. It then discusses the causes and consequences of bureaucracy, with an emphasis on organizational performance, thus extending Weber's definition to encompass two important but unanticipated consequences of bureaucracy: inertia and goal displacement.

Definition Bureaucracy denotes a particular type of organization, one where tasks are divided among technical specialists who devote their full working capacity to the organization and whose activities are coordinated by rational rules, hierarchy and written documents.

Bureaucracies are organizations in which tasks are divided among technical specialists who devote their full working capacity to the organization and whose activities are coordinated by rational rules, hierarchy and written documents. Bureaucracies

have benefits; specifically, they are rational and technically efficient. But bureaucracies also have problems; most notably, they can be difficult to change and bureaucrats can substitute means for ends.

The German sociologist and political economist Max Weber was the first to formalize the concept of bureaucracy (Weber 1978: 956–1005). This entry describes and extends his definition of bureaucracy, which emphasizes six interrelated features of organizations:

1. The planned division of labour among bureaucrats into *official jurisdictional areas* whose regular activities, patterns of formal authority and employment are ordered by rules – that is, by laws or administrative regulations. To effect the division of labour, regular tasks are assigned as official duties, the authority to command others is distributed in a stable way and is strictly determined by rules about coercion, and provision is made for the regular and continuous fulfilment of tasks.
2. *A hierarchy of offices* in which authority flows from top to bottom and information flows from bottom to top. This requires a clearly established system of superordination and subordination in which those with more jurisdiction are ranked above those with less, and higher ranks supervise lower ranks. The hierarchy culminates with a single bureaucrat at the top; it is thus a 'monocratical' structure.
3. *Formal*, *written documents or files* that constitute the organization's memory and facilitate continuity of action and accountability for past action. Files are preserved in bureaus that are separated from bureaucrats' private personal lives, making them *impersonal*. Office-holders do not own their positions, so they cannot extract rents or emoluments; instead, they are paid salaries. But office-holders do not merely exchange their services for income, as in a labour contract; instead, they accept specific duties of fealty to the goals of the office. Bureaucrats are therefore required to be functionally, rather than personally, involved in their positions.
4. *Specialization in training*. Performing their jobs competently requires bureaucrats to possess specialized knowledge and skills, which in turn requires specialized training or education, certified by passing special exams. Office-holders do not purchase their offices; they are selected by higher-level bureaucrats because of their training.
5. *Full working capacity*. While they are at work, bureaucrats are expected to devote all their time and energy to work and to put their personal life aside.
6. *General*, *written rules* that all bureaucrats follow. These are more or less stable, more or less exhaustive, and they can be learned – they constitute explicit, rather than tacit, knowledge. Management decisions are based on these rules, rather than on personal bias.

Weber conceived of bureaucracy as an ideal type, meaning an abstract, hypothetical construct that is formed by analysing the characteristics and behaviour of a given phenomenon. Ideal types emphasize elements that are common across many instances of the phenomenon. It is important to note that no empirical case will correspond perfectly to an ideal type. Thus, no real state bureau or private enterprise will look exactly like Weber's ideal-typical bureaucracy. But all state bureaus and private enterprises will have some features in common with this ideal type.

Following Weber, many scholars (e.g., Boulding 1953; Jacoby 1973) have argued that bureaucracies are both caused by modernization and constitutive of modernity. Specifically, the development of bureaucracies requires a money economy (to pay bureaucrats' salaries), a centralized state (which requires coordinated action to accomplish large, complex goals), and an increase in the number, scale and variety of administrative tasks. All these features of society became prevalent as societies modernized – that is, became more complex and interdependent. Moreover, the existence of bureaucracies themselves facilitates the evolution of increasingly complex and interdependent social systems.

Weber saw bureaucracy as a major component of the process of rationalization in modern society. Rationalization, according to Weber, was apparent at three levels of analysis: individuals make decisions by calculating costs and benefits (rather than through custom), organizations become bureaucracies based on rules (rather than traditional authority or personal charisma), and entire societies venerate efficiency and accountability (rather than mystery and magic). The political outcome of rationalization was the emergence of the nation-state, while the economic outcome was the emergence of capitalism.

Consequences of Bureaucracy

The most important consequence of bureaucracy is its *technical efficiency*. In Weber's own words:

> The decisive reason for the advancement of bureaucratic organization has always been its purely *technical* superiority over any other form of organization. The fully developed bureaucratic apparatus compares with other organizations exactly as does the machine with the non-mechanical modes of production. Precision, speed, unambiguity, knowledge of the files, continuity, discretion, unity, strict subordination, reduction of friction and of material and personal costs – these are raised to the optimum point in the strictly bureaucratic administration … (Weber 1978: 973)

Bureaucracies are efficient because the division of labour requires workers to specialize in particular tasks. Over time, specializing makes workers learn how to perform their assigned tasks at a very high level of competence, which results in high productivity. For example, Adam Smith ([1776] 1982: 109–110) famously observed that pin-making factories, by dividing the labour of pin-making into 18 specialized operations performed by different workers, could produce pins at a rate 240 times higher than if the task were carried out in a single operation by a single worker.

Other consequences of bureaucracy are not as purely positive. The predictability of their actions makes bureaucracies unwieldy, even stultifying, in dealing with idiosyncratic cases. Because they are hierarchical, bureaucracies concentrate power in the hands of top-ranking bureaucrats. Bureaucracies are also persistent: once established, they are difficult to destroy. Because bureaucracies promote the formalization and rationalization of society, they are 'iron cages' within which modern actors have to live:

> Rational calculation … reduces every worker to a cog in this [bureaucratic] machine and, seeing himself in this light, he will merely ask how to transform himself into a somewhat bigger cog … The passion for bureaucratization … drives us to despair. (Weber 1978: lix)

In the extreme, bureaucracies can become 'greedy institutions' that take over all aspects of bureaucrats' lives (Coser 1974) and compel overwork (Schor 1991). Moreover, bureaucracies' impersonal nature alienates bureaucrats from their assigned tasks so they view themselves as components of an impersonal, mechanized system, and they follow orders without reflection.

Two interrelated consequences of bureaucracy – inertia and goal displacement – are especially relevant to scholars of strategic management, so we discuss them in detail.

Inertia

Formalized, rule-based organizational structures that resist change lead bureaucracies to develop structural inertia: they do not change rapidly enough to keep up with changes in their environments (Hannan and Freeman 1989). Why? Because selection pressures favour organizations that offer reliable performance and that can account rationally for their actions, which in turn require that organizational structures be highly reproducible – that is, unchanging. If selection pressures favour inert organizations over changeable ones, then inert organizations will be less likely to fail. Several selection pressures generate inertia: investments in plant, equipment and specialized personnel; limits on internal and external information received by decision-makers; vested interests; organizational

history, which justifies past action and prevents consideration of alternatives; legal and economic barriers to entry and exit; and legitimacy considerations.

Structural inertia involves an essential paradox: the better an organization gets at doing one thing (which is essential for its continued existence), the less likely it is to become good at doing something else – or even realizing that it needs to become proficient at something else (Hannan and Freeman 1989). Thus, inertia is an outcome of organizational learning (Levitt and March 1988). Over time, organizations polish their routines and so develop competencies that yield superior performance. But if conditions change, these competencies can become traps, since these routines become institutionalized and therefore fixed. The upshot is that organizations persist in doing what they have done well in the past, even if those things are not valuable in the present. Thus, inertia is deleterious to performance when conditions change.

Goal Displacement

Bureaucracies often do some things badly for precisely the same reasons that make them so good at other things: they come to value rules, and the behaviour required by those rules, over the objectives the rules were intended to achieve. Thus, rules displace performance goals (Merton 1940). 'Formalism, even ritualism, ensues with an unchallenged insistence upon punctilious adherence to formalized procedures' (Merton 1940: 563). Because bureaucrats come to value means over ends and rules over performance, they often fail to achieve their performance goals. Thus, the very thing that makes bureaucracies perform well – devotion to rules – makes them perform poorly if circumstances change. Goal displacement is a critical unanticipated consequence (Merton 1936) of the everyday functioning of bureaucracies. As strategic tools, bureaucracies are highly recalcitrant: they take on lives of their own and so behave in ways that often surprise, even confound, their managers (Selznick 1949: 10).

Bureaucracies are prone to goal displacement because they have to be reliable to be effective. Reliability, in turn, requires strict devotion to rules. Over time, devotion to rules leads bureaucrats to value rules for their own sake rather than for their ability to achieve organizational objectives. Designers of bureaucracies cannot conceive of all possible circumstances that bureaucrats might face, so they cannot draw up rules that will always yield superior performance. When circumstances change, bureaucrats who value rules for their own sake may not recognize change because they are narrowly focused on rules instead of the environment or their organization's performance in that environment, or because they conceive of rules as more important than performance. Alternatively, bureaucrats may recognize the fact of change but be unwilling to adjust valued rules to fit the new environment.

See Also

- ▶ Governance
- ▶ Industrial Organization
- ▶ Sociology and Strategy
- ▶ Theory of the Firm

References

Boulding, K.E. 1953. *The organizational revolution*. New York: Harper Brothers.

Coser, L.A. 1974. *Greedy institutions*. New York: Free Press.

Hannan, M.T., and J. Freeman. 1989. *Organizational ecology*. Cambridge, MA: Harvard University Press.

Jacoby, H. 1973. *The bureaucratization of the world*. Berkeley: University of California Press.

Levitt, B., and J.G. March. 1988. Organizational learning. *Annual Review of Sociology* 14: 319–340.

Merton, R.K. 1936. The unanticipated consequences of purposive social action. *American Sociological Review* 1: 894–904.

Merton, R.K. 1940. Bureaucratic structure and personality. *Social Forces* 18: 560–568.

Schor, J.B. 1991. *The overworked American: The unexpected decline of leisure*. New York: Basic Books.

Selznick, P. 1949. *TVA and the grassroots*. Berkeley: University of California Press.

Smith, A. [1776] 1982. *The wealth of nations: Books I–III*. Harmondsworth: Penguin.
Weber, M. 1978. Bureaucracy. In *Economy and society: An outline of interpretive sociology*. Trans. and ed. G. Roth and C. Wittich. Berkeley: University of California Press.

Business Development

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Abstract

Business development and its acting agent, the business developer, are concerned with tasks and processes aiming at preparing and supporting the implementation of growth opportunities within the constraints of a firm's strategic momentum (Admin Sci Q 28:223–244, 1983; Sørensen, H.E. *Business development: A market-oriented perspective*. New York: Wiley, 2012). Business development aims thus at mitigating risk by reducing two recurring managerial challenges that hamper firm growth: the senior decision makers' lack of resources to take informed decisions on potential growth opportunities, and disconnect between the preparation of growth opportunities and their actual implementation (Penrose, E.T. *The theory of the growth of the firm*. New York: Wiley, 1959).

Definition Business development is defined as the tasks and processes concerning analytical preparation of potential growth opportunities, and the support and monitoring of the implementation of growth opportunities, but does not include decisions on strategy and implementation of growth opportunities.

Business development and its acting agent, the business developer, are generally concerned with a number of tasks and processes aiming at preparing and supporting the implementation of growth opportunities within the constraints of a firm's strategic momentum (Burgelman 1983; Sørensen 2012). Business development thus aims at mitigating risk by reducing two recurring managerial challenges that hamper firm growth: the senior decision makers' lack of resources to take informed decisions on potential growth opportunities, and disconnect between the preparation of growth opportunities and their actual implementation (Penrose 1959).

Despite the frequent usage of the labels 'business development' and 'business developer', the meaning and content of the notion of the subject are today characterized by much confusion in business practice and academia. However, the actual tasks and practices of business development – independent of their label – have been embedded in firms for decades, but it is only recently that a growing body of strategy scholars has begun developing systematic theoretical and empirical approaches to the subject.

Business development is nested within ▶ corporate venturing processes (Burgelman 1983; Narayanan et al. 2009) that, in turn, is nested within the literature of corporate entrepreneurship (Zahra 1991; Barringer and Bluedorn 1999). More precisely, business development is best described as the impetus stage – from an opportunity, for example a prototype, receives clearance for further development to its possible integration to daily operations – of corporate venturing processes (Burgelman 1983) and as a designated organizational unit with distinct tasks and processes (Noda and Bower 1996; Kind and Knyphausen-Aufseß 2007; Sørensen 2012; Bussgang et al. 2013).

In the currently available scholarly papers related to the subject, business development has been related to either the outcome of (internal and external) corporate venturing (Burgelman 2002; Covin and Miles 2007), discrete projects (McGrath 2001; Burgers et al. 2008), the organization of radical ▶ innovation (O'Connor and DeMartino 2006).

Moreover, the notion of (external/new) business development has been used interchangeably with external corporate venturing (Kanter 1986: 58; Keil et al. 2008: 896) and with new venture development to denote difference to existing businesses. For further clarification, business

development is not existing phenomena, such as product development, technological development, market development, project development, project management, strategy development or, for example, advertising or promotions expenses as mentioned by Chesbrough (2002).

Sørensen (2012) synthesizes these existing perspectives on business development and integrates them into one refined, general construct supported with insights from senior business developers and strategists from successful firms from Europe, the US and India as well as international venture capitalists. In this perspective business development refers to 'the tasks and processes concerning analytical preparation of potential growth opportunities, the support and monitoring of the implementation of growth opportunities, but does not include decisions on strategy and implementation of growth opportunities' (2012: 26).

In this definition, three general aspects must be observed. First, that business development is a means for horizontal and vertical coordination and integration of tasks and processes across specialist functions and external partners. Secondly, that business development works within the constraints of firms' strategic momentum. Strategy refers here to choices that are commitment intensive and thus cause a heightened predictability of action (Ghemawat 1991). As such, business development is focused on preparing and evaluating a continuous stream of potential innovations that – in operational terms – have strategic fit, but are not on the current strategic budget.

Thirdly, there is a sharp distinction between the business development activities in the planning phase of a growth opportunity and in their implementation phase. This latter distinction is due to two recurrent managerial challenges, which are too little time and resources to take informed decisions as well as the disconnection between the preparation of growth opportunities and their actual implementation (Penrose 1959; Hrebiniak 2005).

The nature of business development tasks and processes are largely independent of firm and industry type. Levels of analysis range from the skill of an entrepreneur or CEO of a small firm to a distinct business development staff function in the mature organization. Business development tasks and processes are performed by *business developers*. Coordinating and integrating knowledge and activities across specialist functions and external partners require special skills that typically go beyond those of functional specialists. Such business development skills are captioned by the notion 'integrating generalist' (Sørensen 2012). Integrating generalists are characterized by being experienced working with both senior management and in multiple line-functions, having practical knowledge about the firm's technology, products, customer types and industry dynamics, and being capable of thinking conceptually and in abstract fashion rather than merely 'closing deals'.

The business developers' main tools are the ▶ business model, the, essentially answering 'how do we make money', and its analytical backup and road map for implementation, the ▶ business plan and due diligence.

See Also

- ▶ Business Model, The
- ▶ Business Plan
- ▶ Corporate Venturing
- ▶ Innovation
- ▶ Strategic Organization Design
- ▶ Strategic Planning
- ▶ Strategies for Firm Growth

References

Barringer, B.R., and A.C. Bluedorn. 1999. The relationship between corporate entrepreneurship and strategic management. *Strategic Management Journal* 20: 421–444.

Burgelman, R.A. 1983. A process model of internal corporate venturing in the diversified major firm. *Administrative Science Quarterly* 28: 223–244.

Burgelman, R.A. 2002. Strategy as vector and the inertia of coevolutionary lock-in. *Administrative Science Quarterly* 47: 325–357.

Burgers, J.H., F.A.J. Van Den Bosch, and H.W. Volberda. 2008. Why new business development projects fail: Coping with the differences of technological versus market knowledge. *Long Range Planning* 41: 55–73.

Bussgang, J.J., T.R. Eisenmann, S. Dillard, K. Nevins, and P. Ramani. 2013. The business development manager. *Harvard Business School* Background Note 812–107, March. (Revised from original December 2011 version.).

Chesbrough, H.W. 2002. Making sense of corporate venture capital. *Harvard Business Review* 80: 90–99.
Covin, J.G., and M.P. Miles. 2007. Strategic use of corporate venturing. *Entrepreneurship: Theory and Practice* 31: 183–207.
Ghemawat, P. 1991. *Commitment: The dynamic of strategy*. New York: Free Press.
Hrebiniak, L.G. 2005. *Making strategy work*. Philadelphia: Wharton School Publishing.
Kanter, R. 1986. Supporting innovation and venture development in established companies. *Journal of Business Venturing* 1: 47–60.
Keil, T., M. Maula, H. Schildt, and S.A. Zahra. 2008. The effect of governance modes and relatedness of external business development activities on innovative performance. *Strategic Management Journal* 29: 895–907.
Kind, S., and D. zu. Knyphausen-Aufseß. 2007. What is 'business development'? The case of biotechnology. *Schmalenbach Business Review* 59: 176–199.
McGrath, R.G. 2001. Exploratory learning, innovative capacity and managerial oversight. *Academy of Management Journal* 44: 118–131.
Narayanan, V.K., Y. Yang, and S.A. Zahra. 2009. Corporate venturing and value creation: A review and proposed framework. *Research Policy* 38: 58–76.
Noda, T., and J.L. Bower. 1996. Strategy making as iterated processes of resource allocation. *Strategic Management Journal* 17: 159–192.
O'Connor, G.C., and R. DeMartino. 2006. Organizing for radical innovation: An exploratory study of the structural aspects of RI management systems in large established firms. *Journal of Product Innovation Management* 23: 475–497.
Penrose, E.T. 1959. *The theory of the growth of the firm*. New York: Wiley.
Sørensen, H.E. 2012. *Business development: A market-oriented perspective*. New York: Wiley.
Zahra, S.A. 1991. Predictors and financial outcomes of corporate entrepreneurship: An exploratory study. *Journal of Business Venturing* 6: 259–285.

Business Ecosystem

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Abstract

A business ecosystem is made up of interdependent firms using common standards and collectively providing goods and services to their customers. The effective engagement of ecosystem participants requires some level of ecosystem management, including rules for participation by other firms. The supporting institutions and enterprises that provide the foundations for ecosystems are usually harnessed by a lead innovator who provides vision, financial resources, technological assets and coordinating mechanisms, including common standards. The health of each firm in the ecosystem depends on the vitality of all firms that share the system. To thrive over time, the system must adapt to changes in the business environment through the intentional acts and coordination efforts of managers and entrepreneurs.

Definition A business ecosystem is a group of interdependent organizations collectively providing goods and services to their customers. Shared standards and interfaces are inherent features of platform-based ecosystems. They permit the members of the ecosystem to innovate independently while competing collectively against other firms and/or ecosystems in the relevant market.

A business ecosystem is a group of interdependent organizations collectively providing valuable goods and services to their customers. The collective evolution of the system is typically reliant on the technological and business leadership of one or two firms that provide common standards and hence a platform around which other system members align their investments and strategies to provide inputs and complementary products. A 'platform' can be said to exist when there are common standards and interfaces that permit the elements of the ecosystem to innovate independently while advancing collectively (Robertson and Ulrich 1998).

Specialization by ecosystem members can result in shorter development times for new-generation components, products and services within the existing platform. Specialization and the concomitant dispersion of innovation tasks can, however, be a source of weakness if a superior set of products and services is offered by a different platform because of the coordination problems that arise when a platform changes in a

way that affects all the complementary goods and services.

Business ecosystems represent a substitute in today's economy for the large vertically integrated firms of previous decades. They yield benefits of integration without requiring common ownership of the system.

The world of mass production described by Alfred Chandler (1977) exhibited deep vertical integration in which most aspects of the value chain were under the control of a single enterprise; in effect, the most relevant elements of the business ecosystem were internal to large, vertically integrated enterprises. As competition has become more rapid and more global, and as many industry boundaries have blurred, vertical structures have become too clumsy to produce competitive product families that draw on multiple areas of expertise (e.g., computing and communications).

Cooperation and Co-evolution

Ecosystems, when directed, seem to offer an advantageous balance between the competing needs for control, independence, agility and scope. It is well recognized that firms today often operate not in isolation but as part of a web of strategic alliances, joint ventures, licensing agreements and industry associations (Richardson 1972). Early constructs that attempted to bring this collective action perspective to strategic management include the strategic network (Jarillo 1988) and the virtual corporation (Davidow and Malone 1992). The innovation literature also used related concepts such as those of complementarity (Rosenberg 1979; Teece 1986) and ▶ systemic innovation (Teece 1984). It is suggested here that the concept of ecosystem might now substitute for the industry as a useful domain for performing economic analysis.

Within an ecosystem, delivering a complete customer solution involves the cooperation of multiple firms; in some instances this requires joint entrepreneurial acts of standard setting and market co-creation (Pitelis and Teece 2010). Apple's iPod success was built not only on the hardware itself but by the later additions of a Windows-compatible software interface (drawing PC users into the ecosystem) and then the launch of the iTunes Music Store, in which the (proprietary) digital rights management system gave major music publishers the confidence to allow users to legally download music by a wide range of major artists (Dedrick et al. 2010).

For a business ecosystem to perform well over time, it must (co-)evolve. Moore (1993) described ecosystems as passing through a cycle with four phases: (1) Birth, in which a core innovation provides the basis for a business model; (2) Expansion, involving competition for dominance against competing ecosystems; (3) Leadership, when one or two firms guide the ecosystem's continued evolution; and (4) Renewal or death, when external changes force the ecosystem to respond quickly or be replaced.

Business Versus Biological Ecosystems

The biological metaphors that have proved very useful for conceptualizing business ecosystems were introduced by James Moore (1993). A key idea discussed by Moore and others is co-evolution, a process by which entities (species or organizations) become enmeshed in an ongoing cycle of interdependent change.

Whereas biological ecosystems are self-organizing, business ecosystems need not be. They frequently benefit from an ecosystem manager, or 'captain'. The ecosystem initiator/manager is typically an innovator developing and/or establishing standards and choosing which elements of the value chain must be internalized, and what needs to be supported externally, in order to provide it with the best opportunity for capturing value (Teece 1986). To attract firms into the ecosystem, the manager provides coordinating mechanisms, standards, rules, key products, intellectual property and financial capital, creating structure and momentum for the market it seeks to create. When the ecosystem manager is also a 'platform leader', the manager takes responsibility for guiding the technological evolution of the system to maintain

competitiveness against rival ecosystems (Gawer and Cusumano 2002).

The role and identity of the manager within an ecosystem is not necessarily identifiable deterministically. In Japan's mobile telephony market, service operators such as KDDI and NTT's DoCoMo are the ecosystem/platform 'managers' who drive the ecosystem forward by deciding strategic issues and making design choices such as which handset makers to work with. In the United States, handset manufacturers (e.g., Apple) and content providers (e.g., Google) have recently emerged as ecosystem/platform captains who are able to affect the fortunes of US network service operators by their decisions of which ones they will work with.

Multiple ecosystems can exist and compete within a given product market. Personal computers using the Windows and Macintosh operating systems form the bases of two competing ecosystems. Customers are part of the ecosystem, especially if the system exhibits network effects or involves some kind of lock-in, such as switching costs.

Ecosystems need not be exclusive. In the case of the PC, Hewlett-Packard makes printers for both Windows and Macintosh users.

Rules for Ecosystem Participation

An ecosystem requires rules for participation. In the absence of such rules, delicate ▶ complementarities can be disturbed and opportunities forsaken. Because of the interdependence of organizational roles, there are simply too many potential conflicts to allow a completely self-organizing approach. In economic terms, ecosystems are rife with externalities.

A rule-based business ecosystem may be closed, open or somewhere in between. Apple's iPhone is an example of a semi-closed ecosystem. Participation in the iPhone ecosystem requires recognizing Apple's intellectual property and abiding by Apple's rules. The Apple App Store, for example, requires application developers to grant Apple some editorial control, including the right to disapprove of content. The rules are designed both to secure a superior customer experience and to protect Apple's business model.

Although the health and vitality of each firm is dependent on the health and vitality of all firms that operate within the ecosystem, some firms matter more than others. The shopping mall is a classic example where this condition applies, with the identity of the anchor tenants of paramount concern to all tenants. But with power comes responsibility; an ecosystem is more likely to thrive when the ecosystem manager permits its partners an opportunity for a reasonable share of profits rather than siphoning them away at every opportunity (Iansiti and Levien 2004: 61).

There are numerous ways in which a business ecosystem can be poorly managed. Over time, Microsoft began to view some complementors as competitors and either acquired them or else undermined them by integrating their product features into its Windows operating system. This discouraged developers and may have inadvertently slowed evolution and innovation in the Windows ecosystem.

Relationship to Organizational Ecology

The business ecosystem concept has gone beyond concepts embedded in the '▶ organizational ecology' literature. Organizational ecology, which has its roots in the work of Hannan and Freeman (1977) posits that the organizational forms existing at a point in time have been determined by a process of selection in which competition weeds out those that do not fit the environment. Most of the work in this vein considers firms as independent units without allowing for interdependence within or across industries.

Whereas organizational ecologists were largely content to demonstrate that most firms fail to adapt to changes in the business environment, business ecosystem protagonists note that individual managers and entrepreneurs, unlike plants and animals, can potentially understand the functioning of the whole of which they are a part. As a result they can make conscious decisions in response to external threats and opportunities. So while there is some path dependence,

business ecosystems will reflect 'evolution with design' (Augier and Teece 2008). In other words, business and corporate 'strategy processes are evolutionary by nature, and often involve significant elements of intentional design and orchestration of assets by managers' (Augier and Teece 2008: 1201).

See Also

- ▶ Complementarities
- ▶ Organizational Ecology
- ▶ Path Dependence in Technologies and Organizations
- ▶ Platform Innovation
- ▶ Profiting from Innovation
- ▶ Systemic Innovation

References

Augier, M., and D.J. Teece. 2008. Strategy as evolution with design: The foundations of dynamic capabilities and the role of managers in the economic system. *Organization Studies* 29: 1187–1208.

Chandler Jr., A.D. 1977. *The visible hand*. Cambridge, MA: Harvard University Press.

Davidow, W.H., and M.S. Malone. 1992. *The virtual corporation: Structuring and revitalizing the corporation for the 21st century*. New York: Edward Burlingame Books/ Harper Business.

Dedrick, J., K.L. Kraemer, and G. Linden. 2010. Who profits from innovation in global value chains? A study of the iPod and notebook PCs. *Industrial and Corporate Change* 19: 81–116.

Gawer, A., and M.A. Cusumano. 2002. *Platform leadership: How Intel, Microsoft, and Cisco drive industry innovation*. Boston: Harvard Business School Press.

Hannan, M.T., and J. Freeman. 1977. The population ecology of organizations. *American Journal of Sociology* 82: 929–964.

Iansiti, M., and R. Levien. 2004. *The keystone advantage: What the new dynamics of business ecosystems mean for strategy, innovation, and sustainability*. Boston: Harvard Business School Press.

Jarillo, J.C. 1988. On strategic networks. *Strategic Management Journal* 9: 31–41.

Moore, J.F. 1993. Predators and prey: A new ecology of competition. *Harvard Business Review* 71: 75–85.

Pitelis, C.N., and D.J. Teece. 2010. Cross-border market co-creation, dynamic capabilities and the entrepreneurial theory of the multinational enterprise. *Industrial and Corporate Change* 19: 1247–1270.

Richardson, G.B.H. 1972. The organisation of industry. *Economic Journal* 82: 883–896.

Robertson, D., and K. Ulrich. 1998. Planning for product platforms. *Sloan Management Review* 39: 19–31.

Rosenberg, N. 1979. Technological interdependence in the American economy. *Technology and Culture* 20: 25–50.

Teece, D.J. 1984. Economic analysis and strategic management. *California Management Review* 26: 87–110.

Teece, D.J. 1986. Profiting from innovation. *Research Policy* 15: 285–305.

Teece, D.J. Forthcoming. Next-generation competition: New concepts for understanding how innovation shapes competition and policy in the digital economy. *Journal of Law, Economics & Policy*.

Business Ethics

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Abstract

Questions of right and wrong, and of good and evil, exist alongside ones of strategy, corporate governance, and economic theory. Ethical questions occur in each of the major contexts of business activity: individuals, business organizations, and business environments. The modern study of business ethics is divided into attempts to specify what is ethical on the one hand (normative enquiry), and attempts to understand how people and firms actually behave in relation to ethical standards on the other (empirical enquiry). Various models have been offered for understanding the psychology of business decision-making, the ethical purpose of the firm, and the ethical obligations of firms in specific contexts such as global business.

Definition Business ethics encompasses the moral principles that govern business activity and the ends and policies that businesses should pursue.

How investors, managers, customers, and firms should behave is the central question of business ethics. How they *think* they should behave, and

how they, in fact, *do* behave, constitute two important, related issues.

People have argued about business ethics since the beginning of business. The Roman statesman Cicero asked whether a merchant carrying grain to a town stricken by famine had a moral obligation to disclose that other merchants behind him would shortly arrive with more grain, even though doing so would lower the price the merchant could command for his own grain. In Confucian teachings, the notion of 'Li', meaning propriety, had a formative impact on shaping business activities. The Greek philosophers Plato and Aristotle discussed the rights and responsibilities of business people, and the status that society should accord them. In medieval times, Judaism, Christianity and Islam all articulated doctrines around the ethics of lending money at interest and the issue of 'usury'.

Today's discussions of business ethics focus on modern problems such as the purpose of the forprofit corporation; the ethical foundations of the market; fairness in advertising; bribery; corporate governance; responsibilities for observing human rights in foreign countries; and business obligations to the environment. 'Business ethics' as a specialized area of enquiry emerged in the 1970s and has grown rapidly ever since. Philosophers, political scientists, business academics and social psychologists have all written about business ethics. Rival theories for interpreting business ethics are actively debated.

Business ethics has three distinct foci: the individual, the business organization, and the business environment. It is concerned with business *individuals* such as employees, entrepreneurs, investors, traders, and consumers; business *organizations* such as corporations, partnerships, trade associations, international banks; and business *environments*, such as regulatory entities, judicial systems, economic systems, cultural norms, and host-country practices.

Each of these foci brings up questions of right and wrong (normative issues), as well as questions of fact (empirical issues). Attempts to answer these two kinds of questions are based on two methodologies: the empirical and the normative. Academics of the former school come from social sciences such as sociology, psychology, and economics, and from their offshoots in modern business schools such as finance, marketing, organizational theory, and management. Academics of the normative school come from philosophy, law, and religion. The scholarly literature is fairly evenly divided between empirical and normative approaches.

Individuals

In ancient thought, business activity was regarded as essential but not always noble. It took the eighteenth-century moral philosopher Adam Smith, in the *Wealth of Nations*, to make the pursuit of profit respectable. 'It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard of their own interest,' wrote Smith. 'We address ourselves not to their humanity, but to their self-love and never talk to them of our own necessities, but of their advantage' (Smith 1976: vol. 1, p. 13).

Smith highlights the fact that efficient economic transactions often rely on self-interested or profit-oriented motives rather than more noble motives such as benevolence. In his view, efficient economic activity requires reliable motives, and self-interest is the most reliable motive in the marketplace. His famous 'invisible hand' provides a metaphor for explaining how free markets, even in the context of predominantly selfish motives, can direct the inevitable, if regrettable, self-interest of business towards the common good.

Ethical theory impacts one's interpretation of the role of self-interest. Consider, for example, the distinction in ethical theory between reasons that rely on consequences and ones that rely on principles. Smith's invisible hand relies heavily on *consequential* considerations, that is to say, individual acts and motives are judged ethically through their consequences. For Smith, then, we should sometimes tolerate darker, self-interested motives in business so long as the consequences are good for society. A non-consequential approach to ethics, that is, placing more emphasis

on the motive or the *principle* of the individual's action, however, cannot appeal directly to consequences. A non-consequential approach must justify profit-seeking, if at all, by subsuming the profit motive under other, less selfish, motives, such as honouring one's obligation to society or one's family, *by way of* pursuing profit.

Critics have objected to a broad, self-interested view of business since it appears to presume selfishness or, at the very least, psychological egoism (the moral view that one's actions are inevitably rooted entirely in motives of self-interest). It is true that much of modern economics focuses on developing increasingly sophisticated conceptual mechanisms to maximize the achievement of economic goods such as market share or profits, all of which seem to exclude the pursuit of 'higher' interests such as benevolence, social welfare, and environmental integrity. Economists who criticize such an approach, such as Amartya Sen, have asserted that the rational economic man, *homo economicus*, is dangerously close to being a 'rational fool'. Other economists respond, however, that the maximization of individual preferences can easily include the satisfaction of other preferences such as helping the poor or protecting the environment. A businessperson may simply prefer saving the environment to maximizing his income. However, it is an ongoing debate whether such other preferences can be subsumed comfortably within the mathematically inclined methods that dominate modern-day economics.

Empirical researchers have shown how individuals often do not behave rationally even in terms of their own moral beliefs. Some studies, for example, have shown how we sometimes tend to enhance the quality of our own behaviour, exaggerating our virtues and minimizing those of others. We tend to rank our *own* business organizations, and *our* own actions, higher on average than others. Other studies have shown that most of us are willing, in practice, to tolerate flexibility even in the most precise of moral norms. Fudging slightly on business tax laws, just as driving at 55 mph in a 50 mph zone, is remarkably common behaviour, despite broad avoidance by people of more extreme law-breaking.

Organizations

Some ethical theorists argue that a corporation can never be a moral actor. They note that corporations have exceedingly narrow personalities and are chartered for the purpose of making money for their investors. In turn, only individuals in business, not corporations, can be true objects of 'ethical responsibility'. By contrast, theorists who see the corporation as either a large, abstract 'person' (the corporation in most legal systems is regarded as a *persona ficta*) or at least as an organization that possesses a decision-making structure capable of rational deliberation, ascribe 'moral agency' to the corporation and are called 'moral agency' theorists.

Nowadays, the most popular theories of corporate governance avoid assigning robust moral responsibilities to for-profit firms. These theories have their genesis in 'organizational economics', and include transaction cost economics (TCE) and agency theory. They refer to moral success and moral failure, but limit their reference to failures by participants to honor commitments that enhance economic efficiency, where 'efficiency' is tightly linked to economic ends, for example, microeconomic notions of 'optimality' and the satisfaction of investor interests.

What, then, does 'being responsible' mean when applied to a corporation? Three answers to this question have been offered that may be labelled: the classical framework, the ▶ stakeholder framework; and the social contract framework.

The Classical or Shareholder Primacy Framework

The 'classical' framework asserts that the moral responsibility of the corporation is nothing other than the maximizing of shareholder interests. It is associated with modern economic theory and theorists such as the Austrian economist Frederich Hayek and the American economist Milton Friedman. The sole moral responsibility of the corporation, and in turn of the managers who serve as agents for the shareholders, is seen to be the maximal satisfaction of the interests *only* of the owners of the corporation, that is, shareholders. This view is also sometimes called the 'shareholder primacy' view.

Defenders of shareholder primacy are quick to point out that corporate executives are not democratically elected officials and cannot be expected to serve well the dual aims of profit maximization and social welfare maximization. In the past, some corporate executives have made notoriously bad choices when intervening in social and political activity, as when large US companies in Chile helped unseat the country's democratically elected president. Classical theorists ask, are corporate executives the appropriate people in whom to entrust the common good? Is that not the role of government?

The Stakeholder Framework

Stakeholder theorists usually agree with classical theorists that the main aim of the for-profit corporation is the satisfaction of shareholder interests, but disagree that it is the corporation's sole aim. Managers' main obligations are to shareowners, but they also have certain ethical obligations to other groups called 'stakeholders'. Stakeholders, or those with a 'stake' in the corporation's activity, include customers, stockholders, employees, and others directly affected by the corporation's activities. There are disagreements about precisely who qualifies as 'stakeholders', but most theorists agree that three key groups of stakeholders are customers, employees, and stockholders. If the stakeholder view is correct, managers must consider how to make trade-offs among the interests of the corporation's different stakeholders. Even if shareholders are to be assigned a higher weight than customers or employees, exactly *how much* higher a weight? And what is the calculus for making such trade-offs? These questions have dogged stakeholder theory from the beginning, and disagreements exist about whether they can be successfully resolved.

Some stakeholder theorists argue that by working to enhance the interests of all stakeholders, the company will automatically maximize the long-run interests of the stockholders. This view is called 'instrumental stakeholder theory'. However, other theorists disagree, arguing that some stakeholders must inevitably receive less in order for the stockholder to achieve a maximum return on his investment. This particular issue, an empirical rather than a normative one, remains unresolved.

The Social Contract/Social Contracts Framework

The social contract/social contracts framework views corporate obligations through various sets of implicit 'contracts' in and among companies, industries, political units, and other economic communities. Some contract theorists have argued that an implicit 'social contract' exists between corporations and society, a contract that binds corporations to observing some minimal standards of moral behaviour, such as not exploiting workers, not destroying the environment, or not rewarding merely on the basis of gender or race. Thus, the social contract between a corporation and society demands certain moral behaviour in return for the special favors it receives from society, such as unlimited longevity and limited liability. In most legal systems the for-profit corporation is a *persona ficta* with no natural life span and with investors only financially liable to the extent of their invested money. From the 1990s, the idea of a social contract was extended to include the possibility of a multiple 'social contracts', understood as the sum of implicit agreements existing within and among economic communities such as corporations, trade associations, unions, industries, and professional associations.

Whichever of these views of corporate responsibility one chooses, another key question remains: are responsible corporations more profitable? In other words, does being ethical make a company more money in the long run? This factual or empirical question has been the subject of hundreds of empirical studies. Unfortunately, the answer remains elusive. Partly, the problem is that it is difficult to make accurate assessments of the quality of 'ethics' in a given corporation.

Business Environment

The surrounding culture is the most obvious part of the business environment that affects ethics. Cultural values can affect business, especially when the values of a company's home country are in opposition with those of a host country. For example, in countries where corruption is

common, should companies pay bribes to government officials? And what does one do about human rights issues? And in countries with poor educational opportunities, is it acceptable to hire a 14-year-old as a full-time employee? Does it make a difference, as sometimes happens, that a majority of adults in a host country regards child labour as ethically acceptable? Business ethicists have proposed a variety of theories to help solve such dilemmas. Most ethicists deny that all employment conditions between the home and host countries of the corporation must be comparable, since if that were true, employees would receive exactly the same pay (or at least the same pay adjusted for cost of living differences) for the same work. But this would produce the highly undesirable effect of freezing out developed country multinationals from foreign investments. Instead, the dominant approach has been to specify a floor of 'rights' or other minimal moral conditions that all corporations must respect. Nonetheless, even if minimum ethical behaviour can be specified successfully, what happens above that minimum remains open to debate.

See Also

- ▶ Corporate Social Responsibility
- ▶ International Business
- ▶ Moral Hazard
- ▶ Organization Theory
- ▶ Principal Agent
- ▶ Stakeholder
- ▶ Theory of the Firm
- ▶ Williamson, Oliver E. (Born 1932)

References

Arrow, K.J. 1973. Social responsibility and economic efficiency. *Public Policy* 21: 303–318.

Coase, R.H. 1937. The nature of the firm. *Economica* 4: 386–405.

Donaldson, T. 1989. *The ethics of international business*. New York: Oxford University Press.

Donaldson, T., and T. Dunfee. 1999. *Ties that bind: A social contracts approach to business ethics*. Boston: Harvard Business School Press.

Frank, R.H. 1996. Can socially responsible firms survive in a competitive environment? In *Codes of conduct: Behavioral research into business ethics*, ed. D. M. Messick and A.E. Tenbrunsel. New York: Russell Sage.

Freeman, R.E. 1997. Stakeholder theory. In *The Blackwell encyclopedic dictionary of business ethics*, ed. P.H. Werhane and R.E. Freeman. Oxford: Blackwell Business.

Gibbons, R. 2005. Four formal(izable) theories of the firm? *Journal of Economic Behavior & Organization* 58: 200–245.

Kim, J., and J.T. Mahoney. 2005. Property rights theory, transaction costs theory, and agency theory: An organizational economics approach to strategic management. *Managerial and Decision Economics* 26: 223–242.

Margolis, J.D., and J.P. Walsh. 2001. *People and profits? The search for a link between a company's social and financial performance*. Mahwah: Lawrence Erlbaum Associates.

Mazar, N., O. Amir, and D. Ariely. 2008. The dishonesty of honest people: A theory of self-concept maintenance. *Journal of Marketing Research* 45: 633–644.

Messick, D. 2009. What can psychology tell us about business ethics? *Journal of Business Ethics* 89: 73–80.

Sen, A. 1993. Does business ethics make economic sense. *Business Ethics Quarterly* 3: 45–54.

Smith A. [1776] 1976. *The glasgow edition of the works and correspondence of Adam Smith*. Oxford: Oxford University Press.

Tenbrunsel, A.E., K.A. Wade-Benzoni, D.M. Messick, and M.H. Bazerman. 2000. Understanding the influence of environmental standards on judgments and choices. *Academy of Management Journal* 43: 854–867.

Trevino, L.K., and G.R. Weaver. 2003. *Managing ethics in business organizations*. Palo Alto: Stanford University Press.

Business History

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Abstract

For academics and practitioners of strategic management, the study of 'business history' is not simply a matter of gaining an understanding of what happened in the past. Rather, in making strategic allocation decisions in the

face of uncertainty, knowledge of business history is essential for developing a perspective on the path to innovative success in the *future*. Strategy is about change, and the objective of ▶ business strategy is to influence the process of change so that the business enterprise can generate higher quality, lower cost products than were previously available.

Definition Business history is the real-world experience of business enterprise in the operation and performance of the economy, which, in a world of innovation and competition, is constantly undergoing change.

For academics and practitioners of strategic management, the study of 'business history' is not simply a matter of gaining an understanding of what happened in the past. Rather, in making strategic allocation decisions in the face of uncertainty, knowledge of business history is essential for developing a perspective on the path to innovative success in the *future*. Strategy is about change, and the objective of ▶ business strategy is to influence the process of change so that the business enterprise can generate higher quality, lower cost products than were previously available.

From this perspective on strategic management, relevant 'business history', brought up to the present, provides decision-makers with the context in which ▶ innovation occurs. A deep understanding of business history enables the strategic decision-maker to influence the path of change as the present evolves into the future. This intellectual process of learning from business history is akin to what ▶ Schumpeter, Joseph (1883–1950) (1883–1959) (1954: 12–13; original emphasis), writing at the end of his long and illustrious career, meant when he advised: 'Nobody can hope to understand the economic phenomena of any, including the present, epoch who has not an adequate command of the historical *facts* and an adequate amount of historical *sense* or of what may be described as *historical experience*.'

By 'historical experience' Schumpeter meant the ability to integrate theory and history. For theory to be relevant to real-world phenomena, it must be derived from the rigorous study of historical reality. To develop relevant theory requires an iterative methodology; one derives theoretical postulates from the study of the historical record, and uses the resultant theory to analyse history as an ongoing – and, viewing the present as history – unfolding process. Theory, therefore, serves as an abstract explanation of what we already know, and as an analytical framework for identifying and researching what we need to know. Business academics in strategic management who seek to understand innovative enterprise engage in this iterative process intellectually. Business executives who seek to set in motion and manage the innovative enterprise engage in this iterative process intuitively.

Schumpeter himself did not probe deeply enough into the 'black box' of the business enterprise to yield a useful framework for analysing the role of strategic management in an ongoing process of historical change. That task was begun in the 1950s (in the decade after Schumpeter died) by two American scholars, working entirely independently of one another, on the evolution of the modern industrial enterprise. One was the historian Alfred D. Chandler, Jr. (1918–2007), whose work has made business history relevant to social scientists, business academics and corporate executives (see Lazonick and Teece 2012). The other was the economist ▶ Penrose, Edith T. (1914–1996) (1914–1996), who in 1959 wrote the seminal work on the theory of the growth of the firm, a classic study that has exerted an intellectual influence on resource-based and ▶ dynamic capabilities theories of the firm (see e.g., Foss 1997, 1999; Pitelis 2002; Teece 2009). As an economist, my own efforts to integrate business history into a theory of innovative enterprise have been profoundly influenced by the work of both Chandler and Penrose, as well as by the methodological approach of Schumpeter (see Lazonick 1994, 2002a, b, 2005, 2010, 2012).

It should be noted, however, that this entry reflects my own perspective on the intellectual importance of business history to strategic management, and should by no means be taken as

representative of the views of academics who call themselves business historians. For the diversity of perspectives on the meaning, substance and significance of 'business history', see the edited volumes by Amatori and Jones (2003) and Jones and Zeitlin (2008). In the United States, the leading business history journals are *Business History Review* and *Enterprise & Society*, and the main academic association is the Business History Conference (http://www.thebhc.org/).

Nevertheless, virtually all business historians recognize the central impact that the work of Chandler has had on the field. For me, Chandler's work is important not because it is Schumpeterian (although Chandler did his early work in the 1950s at the Schumpeter-inspired Harvard Research Center in Entrepreneurial History) but because it focuses on the role of the firm in the allocation of resources in the economy and on the relationship between strategy and structure in the growth of the firm. Sociological in its orientation (having been influenced by the structural–functionalist approach of Talcott Parsons), Chandler's work has produced powerful generalizations and hypotheses about the dynamics of industrial enterprise derived from a combination of primary research and historical synthesis.

In *The Visible Hand*: *The Managerial Revolution in American Business* (1977), Chandler showed how, by building cohesive and coherent management structures, US business enterprises that took the lead in making integrated investments in production and distribution in industries characterized by technological change and market expansion were able to generate *economies of scale* that gave them dominant market shares. By about 1920, in Chandler's view, the managerial revolution in the United States was complete. The stage was then set for the corporate enterprise to expand into new lines of business and new markets to achieve *economies of scope*. As Chandler had documented in an earlier book, *Strategy and Structure*: *Chapters in the History of the American Industrial Enterprise* (1962), from the 1920s leading companies such as Du Pont, General Motors, Standard Oil of New Jersey and Sears, Roebuck implemented the multidivisional organizational structure to manage these growth strategies, and by the 1950s the multidivisional structure was widespread among major US industrial corporations. In the 1980s, after the publication of *The Visible Hand*, Chandler placed his analysis of the growth of the US industrial corporation in comparative perspective, focusing on Britain and Germany up to the Second World War, culminating in the publication of *Scale and Scope*: *The Dynamics of Industrial Capitalism* (1990).

As I have shown (Lazonick 2012), in these three books Chandler focused on the way in which corporate management ensured a high rate of *utilization* of productive resources to the neglect of how corporate management implemented strategies for the *development* of productive resources. After the publication of *Scale and Scope*, however, Chandler undertook what he called his 'paths of learning' project that shifted his attention from the utilization to the development of the corporation's productive resources. The results were *Inventing the Electronic Century*: *The Epic Story of the Consumer Electronic and Computer Industries* (2001) and *Shaping the Industrial Century*: *The Remarkable Story of the Evolution of the Modern Chemical and Pharmaceutical Industries* (2005). These two books (published when Chandler was in his 80s) brought the Chandlerian historical analysis as close to the present as possible, demonstrating once again the potential for business history to inform strategic management.

Even before Chandler published *Strategy and Structure* in 1962, a theory of the role of managerial organization in the innovation process was available in Penrose's (1959) book *The Theory of the Growth of the Firm*. Indeed, Penrose rooted her work in the same empirical reality of the US industrial corporation as did Chandler. As outlined elsewhere (Lazonick 2002a, b), Penrose elaborated a cogent and coherent theory of innovative enterprise, based on the dual role of management in developing and utilizing productive resources. While *The Theory of the Growth of the Firm* is written in an abstract manner, Penrose had no use for 'pure' theory (Penrose 1989). She went on in the 1960s and 1970s to become a

leading expert on the role of multinational corporations in the global oil industry, spending a considerable amount of time in Iraq, and capped her professorial career at the European Institute of Business Administration (INSEAD) from 1978 to 1984 (Best and Garnsey 1999).

Like Chandler, Penrose was not greatly influenced by the work of Schumpeter. But more than any other economist in the post-Schumpeter generation, Penrose engaged in the integration of economic theory and business history. In *The Theory of the Growth of the Firm*, Penrose conceptualized the modern corporate enterprise as an organization that administers a collection of human and physical resources (Penrose 1959). People contribute labour services to the firm, not merely as individuals, but as members of teams who engage in learning about how to make best use of the firm's productive resources – including their own. This learning is organizational; it cannot be done alone, and hence is collective, and it cannot be done at once, and hence is cumulative (see Best 1990: 125). At any point in time, this organizational learning endows the firm with experience that gives it productive opportunities unavailable to other firms, even in the same industry, that have not accumulated the same experience. The accumulation of innovative experience enables the firm to overcome the 'managerial limit' that in the neoclassical theory of the optimizing firm causes the onset of increasing costs and constrains the growth of the firm. The innovating firm can transfer and reshape its existing productive resources to take advantage of new market opportunities. Each move into a new product market enables the firm to utilize unused productive services accumulated through the process of organizational learning. These unused productive services can provide a foundation for the growth of the firm, through both in-house complementary investments in new product development and the acquisition of other firms that have already developed complementary productive resources.

In 1960, Penrose's article 'The growth of the firm: a case study of Hercules Powder Company' won the Newcomen Prize as best article published in *Business History Review* (Penrose 1960).

An editor's note on Penrose's *Business History Review* article states that it was supposed to have been a chapter in *The Theory of the Growth of the Firm*, but was omitted to reduce the length of the book. I suspect, however, that Penrose knew that if she had included this case study in the book, reviewers in the economics profession would have dismissed her theory by pointing out that it was based on just one case study (which in fact it was not). Better, then, to omit the case study. In the event, the economics profession largely ignored her book. Indeed, Fritz Machlup, her mentor at Johns Hopkins University who had sponsored her research into the growth of the firm, refused to acknowledge Penrose's work. See, for example, the absence of any reference to her work in Machlup's presidential address to the American Economic Association on 'theories of the firm' (Machlup 1967). By contrast, for an early recognition of the importance of Penrose to business history, see Galambos (1966).

As for Penrose's case study, Hercules Powder was a 1912 spin-off from Du Pont, one of the four companies on which Chandler focused in *Strategy and Structure*. In *Shaping the Industrial Century*, Chandler (2005: 86–92) treated the case of Hercules Powder in some detail, and stated in a footnote: 'It was on Hercules's experience that Edith Penrose based much of her seminal study *The Theory of the Growth of the Firm*' (Chandler 2005: 321).

Like Chandler's work, therefore, Penrose's book reflected a combination of primary research and the synthesis of the work of others, including a body of research in business history. Her understanding of the need to integrate theory and history is evident in an essay, published in the late 1980s, entitled, 'History, the social sciences and economic "theory", with special reference to multinational enterprise' (Penrose 1989). As she observed:

> 'Theory' is, by definition, a simplification of 'reality' but simplification is necessary in order to comprehend it at all, to make sense of 'history'. If each event, each institution, each fact, were really unique in all aspects, how could we understand, or claim to understand, anything at all about the past, or indeed

> the present for that matter? If, on the other hand, there are common characteristics, and if such characteristics are significant in the determination of the course of events, then it is necessary to analyse both the characteristics and their significance and 'theoretically' to isolate them for that purpose. (Penrose 1989: 11)

Quoting from Schumpeter's statement on the paramount importance of 'historical experience' for economic analysis, Penrose (1989: 11) argued that 'universal truths without reference to time and space are unlikely to characterise economic affairs'. Strategic management can use business history to construct a theory of innovative enterprise, which in turn, when applied in particular contexts, can guide the formulation and implementation of innovative investment strategies.

See Also

- ▶ Business Strategy
- ▶ Dynamic Capabilities
- ▶ Economies of Scale
- ▶ Innovation
- ▶ Penrose, Edith T. (1914–1996)
- ▶ Schumpeter, Joseph (1883–1950)

References

Amatori, F., and G. Jones (eds.). 2003. *Business history around the world at the end of the twentieth century*. Cambridge: Cambridge University Press.

Best, M.H. 1990. *The new competition: Institutions of industrial restructuring*. Cambridge, MA: Harvard University Press.

Best, M.H., and E. Garnsey. 1999. Edith Penrose, 1914–1996. *Economic Journal* 109: 187–202.

Chandler Jr., A.D. 1962. *Strategy and structure: Chapters in the history of the American industrial enterprise*. Cambridge, MA: The MIT Press.

Chandler Jr., A.D. 1977. *The visible hand: The managerial revolution in American Business*. Cambridge, MA: Harvard University Press.

Chandler Jr., A.D. 1990. *Scale and scope: The dynamics of industrial capitalism*. Cambridge, MA: Belknap Press.

Chandler Jr., A.D. 2001. *Inventing the electronic century: The epic story of the consumer electronic and computer industries*. New York: Free Press.

Chandler Jr., A.D. 2005. *Shaping the industrial century: The remarkable story of the revolution of the modern chemical and pharmaceutical industries*. Cambridge, MA: Harvard University Press.

Foss, N.J. 1997. *Resources, firms, and strategies: A reader in the resource-based perspective*. Oxford: Oxford University Press.

Foss, N.J. 1999. Edith Penrose, economics, and strategic management. *Contributions to Political Economy* 18: 87–104.

Galambos, L. 1966. Business history and the theory of the growth of the firm. *Explorations in Entrepreneurial History* 4: 3–16.

Jones, G., and J. Zeitlin (eds.). 2008. *The Oxford handbook of business history*. New York: Oxford University Press.

Lazonick, W. 1994. The integration of theory and history: Methodology and ideology in Schumpeter's economics. In *Evolutionary and neo-schumpeterian approaches to economics*, ed. L. Magnusson. Norwell: Kluwer Academic.

Lazonick, W. 2002a. Innovative enterprise and historical transformation. *Enterprise & Society* 3: 35–54.

Lazonick, W. 2002b. The US industrial corporation and the theory of the growth of the firm. In *The growth of the firm: The legacy of Edith Penrose*, ed. C. Pitelis. Oxford: Oxford University Press.

Lazonick, W. 2005. The innovative firm. In *The Oxford handbook of innovation*, ed. J. Fagerberg, D. Mowery, and R. Nelson. Oxford: Oxford University Press.

Lazonick, W. 2010. The Chandlerian corporation and the theory of innovative enterprise. *Industrial and Corporate Change* 19: 317–349.

Lazonick, W. 2012. Alfred Chandler's managerial revolution: Developing and utilizing productive resources. In *Management innovation: Essays in the spirit of Alfred D. Chandler, Jr*, ed. W. Lazonick and D.J. Teece. Oxford: Oxford University Press.

Lazonick, W., and D.J. Teece (eds.). 2012. *Management innovation: Essays in the spirit of Alfred D. Chandler, Jr*. Oxford: Oxford University Press.

Machlup, F. 1967. Theories of the firm: Marginalist, behavioral, managerial. *American Economic Review* 57: 1–33.

Penrose, E.T. 1959. *The theory of the growth of the firm*. Oxford: Blackwell.

Penrose, E.T. 1960. The growth of the firm: A case study of Hercules Powder Company. *Business History Review* 34: 1–23.

Penrose, E. T. 1989. History, the social sciences, and economic 'theory', with special reference to multinational enterprise. In *Historical studies in international corporate business*. Cambridge: Cambridge University Press.

Pitelis, C. (ed.). 2002. *The growth of the firm: The legacy of Edith Penrose*. Oxford: Oxford University Press.

Schumpeter, J.A. 1954. *History of economic analysis*. New York: Oxford University Press.

Teece, D.J. 2009. *Dynamic capabilities and strategic management*. New York: Oxford University Press.

Business Model, the

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Abstract

This entry provides an introduction to research on business models. The emerging literature highlights the business model as a new unit and level of analysis for scholars of strategic management. It emphasizes a system-level, holistic approach to explaining how firms 'do business', and how value is created, not just how it is captured. Researchers have shown that a firm's business model represents a potential source of ▶ competitive advantage, and complements firm product market strategy. It is thus an important concept that offers opportunities for further theoretical, empirical and field research.

Definition A firm's business model refers to the system of interdependent activities that are performed by the firm and by its partners, suppliers and customers to fulfil a customer need.

A firm's business model is the structural template of the way the firm conducts its business. It describes the system of activities that are performed by the firm and by its partners and the ways that these activities are linked to each other through transactions in factor and product markets. The overall objective of a focal firm's business model is to exploit its business opportunities by creating value for all the parties involved; that is, to fulfil customers' needs and create customer surplus while generating a profit for the focal firm and its partners (Amit and Zott 2001). An *activity* in a focal firm's business model can be viewed as the engagement of human, physical and/or capital resources of any part to the business model (the focal firm, end customers, vendors etc.) to serve a specific purpose toward the fulfilment of the overall objective. An *activity system* is a set of interdependent organizational activities centred on a focal firm, and encompasses activities that are conducted either by the focal firm or by partners, customers or vendors. To fully address the market opportunity, the firm's activity system may transcend the focal firm and span across the firm and its industry boundaries but remain firm-centric to enable the focal firm not only to create value with its partners, but to appropriate a share of the value created for it.

Interdependency among the business model activities is central to the view of the business model as an activity system. Interdependencies provide insights into the processes that enable the evolution of a focal firm's activity system over time, as its competitive environment changes (Siggelkow 2001, 2002). Business models are created by entrepreneurs or managers who shape and design organizational activities as well as the links (transactions) that weave activities together into a system. Such purposeful design – within and across firm boundaries – is the essence of the business model (Zott and Amit 2009). Some activities relevant to the focal firm's business model will be performed by the firm itself, others by suppliers, partners and/or customers. The architecture of the firm's activity system – shaped by the choice of activities, how they are linked and who performs them – captures how the focal firm is embedded in its ecosystem, that is, in its multiple networks of suppliers, partners and customers.

The firm's *revenue model* also plays an important role in value appropriation. The revenue model, akin to a pricing strategy for specific products or services, refers to the specific modes in which a business model enables revenue generation (Amit and Zott 2001). In that sense, a revenue model complements a business model design, just as a pricing strategy complements a product design. Although the concepts may be quite closely related and sometimes even intertwined – for example, in the product world, Gillette uses its pricing strategy of selling cheap razors to make customers buy its rather expensive blades – business models and revenue models are conceptually distinct.

A business model is geared towards total *value creation* for all parties involved. It lays the foundations for the focal firm's value capture by co-defining (along with the firm's products and services) the overall 'size of the value pie', or the total value created in transactions, which can be considered an upper limit to the firm's value capture. The business model also co-determines the focal firm's bargaining power. The greater the total value created and the greater the focal firm's bargaining power, the greater the amount of value that the focal firm can appropriate (Zott and Amit 2007).

Business Models and Strategy: A Review of the Literature

A recent review of the business model literature by Zott et al. (2011) found that the business model is often studied without explicitly defining the concept. Moreover, existing definitions sometimes only partially overlap. The selected business model definitions table summarizes some of the most prevalent definitions (Table 1).

Why has scholarly interest in business models surged? The increasing importance of digital technologies is part of the answer. They have provided firms with the ability to experiment with novel forms of value creation mechanisms, which are networked in the sense that value can be created in concert by a firm and a plethora of partners, for multiple users. According to Hamel (2000), companies must develop new business models, in which both value creation and value capture occur in a value network, which can include suppliers, partners, distribution channels and coalitions that extend the company's resources. This has attracted the attention of management scholars, who have developed the concept of the business model in their attempt to explain value creation in networked markets (e.g., Zott and Amit 2009). Value creation mechanisms thus often go beyond the value that can be created through Schumpeterian ▶ innovation, the (re-) configuration of the value chain (Porter 1985), the formation of strategic networks among firms or the exploitation of firms' specific core competencies. As Amit and Zott (2001) observe, prior frameworks used in isolation cannot sufficiently address questions about total value creation. Based on a sample of 150 firms, they propose four potential sources of value creation through business models: (1) novelty, (2) lock-in, (3) complementarities, and (4) efficiency. These value drivers can be mutually reinforcing; that is, the

Business Model, the, Table 1 Selected business model definitions

Author(s) year	Definition
Amit and Zott 2001; Zott and Amit 2010	The business model depicts 'the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities' (2001: 511). Based on the fact that transactions connect activities, the authors further evolved this definition to conceptualize a firm's business model as 'a system of interdependent activities that transcends the focal firm and spans its boundaries' (2010: 216)
Chesbrough and Rosenbloom 2002	The business model is 'the heuristic logic that connects technical potential with the realization of economic value' (2002: 529)
Magretta 2002	Business models are 'stories that explain how enterprises work. A good business model answers Peter Drucker's age-old questions: Who is the customer? And what does the customer value? It also answers the fundamental questions every manager must ask: how do we make money in this business? What is the underlying economic logic that explains how we can deliver value to customers at an appropriate cost?' (2002: 4)
Casadesus-Masanell and Ricart 2010	'A business model is [. . .] a *reflection* of the firm's *realized* strategy' (p. 195)
Teece 2010	'A business model articulates the logic, the data and other evidence that support a value proposition for the customer, and a viable structure of revenues and costs for the enterprise delivering that value' (2010: 179)

presence of each value driver can enhance the effectiveness of any other value driver.

While some of the literature on the business model tends to concentrate on value creation through the firm's activities with its network of partners, increasingly, scholars are acknowledging that firms do not execute their business models in a competitive vacuum, and that firms can indeed compete through their business models (Casadesus-Masanell and Ricart 2010). The business model, then, represents a potential source of ▶ competitive advantage (Markides and Charitou 2004), one that is distinct from the firm's product market position (Christensen 2001; Zott and Amit 2008). The novelty presented by new effective models can result in superior value creation, and replace the old way of doing things to become the standard for the next generation of entrepreneurs to beat (Magretta 2002).

Business models can thus play a central role in explaining firm performance. Afuah and Tucci propose the business model as a unifying construct for explaining competitive advantage and firm performance and define it as 'the method by which a firm builds and uses its resources to offer its customer better value and to make money in doing so' (Afuah and Tucci 2001: 3). Afuah (2004) focuses on firms' profitability and introduces a strategic framework in which the business model is conceptualized by means of a set of components that corresponds to the determinants of firm profitability.

While the work of Afuah (2004) and Afuah and Tucci (2001) is conceptual, some authors have conducted empirical analyses. Zott and Amit (2007) have analysed the performance implications of business model designs by looking at two distinct effects: the total value creation potential of the business model design and the focal firm's ability to appropriate that value. Zott and Amit (2008) examine the possible contingent effect of business model design in mediating between product market strategy and firm performance. They ask how the firm's business model and product market strategy interact to impact the firm performance. They find that: (1) business model designs that emphasize novelty and that are coupled with either differentiation or cost leadership strategies can have a positive impact on the firm's performance, and (2) novelty-centred business models together with early entry into a market have a positive effect on performance. Thus, business model design and product market strategy are complements, not substitutes (Zott and Amit 2008).

Other studies on the performance implications of business model design come from business practitioners and consultants (e.g., Linder and Cantrell 2001). Consultants at IBM (2006), interviewing 765 corporate and public sector leaders worldwide, for example, found that firms that were financial out-performers put twice as much emphasis on business model innovation as underperformers.

So how does the business model relate to strategy? In our view, the business model extends central ideas in ▶ business strategy and its associated theoretical traditions. Two main differentiating factors seem to have captured the attention of scholars. The first is the traditional emphasis of strategy on competition, value capture and competitive advantage, whereas the business model concept seems to focus more on cooperation, partnerships and joint value creation (Magretta 2002). The second factor of interest to strategy scholars is the focus of the business model concept on the value proposition and a generalized emphasis on the role of the customer, which appears to be less pronounced elsewhere in the strategy literature. A consensus seems to have emerged that the business model revolves around customer-focused value creation (Chesbrough and Rosenbloom 2002; Teece 2007, 2010; Zott et al. 2011). Viewed from this perspective, the business model outlines the essential details of a firm's value proposition for its various stakeholders as well as the activity system the firm uses to create and deliver value to its customers (Seddon et al. 2004; Zott and Amit 2010).

Despite the highlighted conceptual differences between business models and certain aspects of firm strategy, scholars have also emphasized that the business model can play an important role for a firm's strategy. According to Richardson (2008), the business model explains how the activities of

the firm work together to execute its strategy, thus bridging strategy formulation and implementation. In a similar vein, Shafer et al. (2005) and Casadesus-Masanell and Ricart (2010) view the business model as a reflection of a firm's realized strategy. According to Teece, the business model reflects a 'hypothesis about what customers want, and how an enterprise can best meet those needs, and get paid for doing so' (Teece 2007: 1329); it 'embodies nothing less than the organizational and financial 'architecture' of the business' (Teece 2010: 173).

Opportunities for Future Research

Research on business models needs to be advanced through both theory development and empirical analysis. Increasing consensus on the theoretical foundations, the definition and the fundamental properties of business models could lead to the emergence of broadly accepted typologies, which are currently lacking. Further research on the relationship between the activity systems and revenue models of firms is needed to extend both theory and practice. Such research will help deepen our understanding of the linkages between value creation and value appropriation. Empirical research on the measurement of business model design, structured to capture all lines of a firm's business that have revenue potential, holds great promise to enhance our understanding of business models. Examining the dynamics of business model evolution, how they emerge, and how they are shaped and adapted over time, as well as how business models co-evolve with strategy and organization design reflects an important research programme that will substantially solidify the business model as a pivotal concept in our understanding of value creation and capture.

In summary, we are still in the early stages of identifying and evaluating the business model as a new unit and level of analysis for strategy research. Theoretical, empirical and field research on the foundations and evolutions of business models promises to broaden our understanding of this important concept.

See Also

- ▶ Architectural Innovation
- ▶ Business Ecosystem
- ▶ Business Policy and Strategy
- ▶ Business Strategy
- ▶ Competitive Advantage
- ▶ Firm Resources
- ▶ Innovation
- ▶ Innovation Strategies
- ▶ Open Innovation

References

Afuah, A. 2004. *Business models: A strategic management approach*. New York: Irwin and McGraw-Hill.

Afuah, A., and C.L. Tucci. 2001. *Internet business models and strategies: Text and cases*. New York: McGraw-Hill.

Amit, R., and C. Zott. 2001. Value creation in e-business. *Strategic Management Journal* 22: 493–520.

Casadesus-Masanell, R., and J.E. Ricart. 2010. From strategy to business models and to tactics. *Long Range Planning* 43: 195–215.

Chesbrough, H.W., and R.S. Rosenbloom. 2002. The role of the business model in capturing value from innovation: Evidence from Xerox Corporation's technology spinoff companies. *Industrial and Corporate Change* 11: 529–555.

Christensen, C.M. 2001. The past and future of competitive advantage. *MIT Sloan Management Review* 42: 105–109.

Hamel, G. 2000. *Leading the revolution*. Cambridge, MA: Harvard Business School Press.

IBM (International Business Machines). 2006. *Expanding the innovation horizon: The global CEO study 2006*. IBM Global Business Services. http://www-07.ibm.com/sg/pdf/global_ceo_study.pdf. Accessed Jan 2010.

Linder, J., and S. Cantrell. 2001. *Changing business models: Surveying the landscape*. Chicago: Institute for Strategic Change, Accenture.

Magretta, J. 2002. Why business models matter. *Harvard Business Review* 80: 3–8.

Markides, C., and C.D. Charitou. 2004. Competing with dual business models: A contingency approach. *Academy of Management Executive* 18: 22–36.

Porter, M.E. 1985. *Competitive advantage: Creating and sustaining superior performance*. New York: Free Press.

Richardson, J. 2008. The business model: An integrative framework for strategy execution. *Strategic Change* 17: 133–144.

Seddon, P.B., G.P. Lewis, P. Freeman, and G. Shanks. 2004. The case for viewing business models as abstractions of strategy. *Communication of the Association for Information Systems* 13: 427–442.

Shafer, S.M., H.J. Smith, and J. Linder. 2005. The power of business models. *Business Horizons* 48: 199–207.
Siggelkow, N. 2001. Change in the presence of fit: The rise, fall, and the renaissance of Liz Clairborne. *Academy of Management Journal* 44: 838–857.
Siggelkow, N. 2002. Evolution toward fit. *Administration Science Quarterly* 47: 125–159.
Teece, D.J. 2007. Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal* 28: 1319–1350.
Teece, D.J. 2010. Business models, business strategy and innovation. *Long Range Planning* 43: 172–194.
Zott, C., and R. Amit. 2007. Business model design and the performance of entrepreneurial firms. *Organization Science* 18: 181–199.
Zott, C., and R. Amit. 2008. The fit between product market strategy and business model: Implications for firm performance. *Strategic Management Journal* 29: 1–26.
Zott, C., and R. Amit. 2009. The business model as the engine of network-based strategies. In *The network challenge*, ed. P.R. Kleindorfer and Y.J. Wind. Upper Saddle River: Wharton School Publishing.
Zott, C., and R. Amit. 2010. Designing your future business model: An activity system perspective. *Long Range Planning* 43: 216–226.
Zott, C., R. Amit, and L. Massa. 2011. The business model: Recent developments and future research. *Journal of Management* 37: 1019–1042.

Business Plan

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Definition A business plan is a written document whose purpose is to describe the nature of a business: its market and business environment, strategy, operations marketing and sales, investment priorities and expected future financial results.

A business plan is a written document whose purpose is to describe the nature of a business: its market and business environment, strategy, operations marketing and sales, investment priorities and expected future financial results. It should also define the ▶ business model and basis for competitive advantage, and operational and financial objectives. It sets goals, explains why those goals are attainable, and articulates a plan for reaching them. It contains financial projections and explains the means by which objectives will be realized. These projections include statements of projected income, cash flow and financial position (balance sheets).

A business plan can be produced for an internal or external audience and can vary in complexity and scope according to the needs of the organization. The plan may be general or specific. The plan is designed to help a company raise money, unify purpose, allocate resources, handle complications, and make decisions. Businesses often create or amend business plans as they evolve and grow. Such periodic revision is a sign of a healthy ongoing planning process.

Business plans are generally used in three scenarios: (1) existing mature enterprises doing ▶ strategic planning for the overall enterprise, (2) existing enterprises planning a new product or service offering, and (3) new ventures. This last scenario may also include a joint venture between two existing enterprises.

Under each scenario, the focus and priorities are quite different and result in highly different documents. The business plan for an existing mature enterprise differs from the operational plan, which typically has a 1- to 3-year time horizon, by extending the time horizon to 5–7 years and considering various major strategic alternatives, such as entering new or exiting existing markets. Its critical measures may be revenue expansion while maintaining the ability to achieve or exceed internal financial return 'hurdle rates'. The business plan for a new venture is often prepared in order to help capital procurement and employees (present and future) understand the priorities and purpose of the new venture. In such circumstances, the typical important financial measures are market potential, projected revenue and – most critically – capital (cash) required (and when).

Henry Mintzberg (1987) wrote of five Ps for defining strategy: as plan, intended pattern, emergent/ unintended pattern, position and perspective. For strategic planning, a strategy must be

developed in advance of actions, and with a conscious purpose. Mintzberg describes plans across genres including the military, game theory and management, as well as the dictionary definition. Mintzberg indicated that while 'some consider perspective to *be* a plan . . . others describe it as *giving rise* to plans' (Mintzberg 1987: 17).

A business plan is often required when seeking a business loan or investment capital. William Sahlman (1997) suggested a framework of four factors critical to business plans: the people running the venture and providing key services or resources; the opportunity of the business model; the context and environment; and an assessment of all risks and rewards. Sahlman stated, 'The assumption behind the framework is that great businesses have attributes that are easy to identify but hard to assemble' (Sahlman 1997: 100).

Not all constituents find such plans helpful. The reason is that plans may change so rapidly (especially in a startup context) that the plan is rapidly outdated. Historically, the business plan was how entrepreneurs approached venture capital; today, it is often a verbal pitch buttressed by a supporting slide presentation and supplemental analysis. The framework of analysis in such presentations is often the business model, presented on the business model canvas (Osterwalder and Pigneur 2010) and customer discovery process (Blank and Dorf 2012).

See Also

- ▶ Business Model, the
- ▶ Strategic Planning

References

Blank, S., and B. Dorf. 2012. *The startup owner's manual: The step-by-step guide for building a great company.* Pescadero: K&S Ranch Publishers.

Mintzberg H. 1987. The strategy concept I: Five ps for strategy. *California Management Review* (Fall), 11–24.

Osterwalder, A., and Y. Pigneur. 2010. *Business model generation: A handbook for visionaries, game changers, and challengers*. New York: Wiley.

Sahlman, W.A. 1997. How to write a great business plan. *Harvard Business Review* 75: 98–108.

Business Policy and Strategy

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Abstract

▶ Business policy and strategy (BPS) is a distinct field of scholarship focused primarily on explaining heterogeneity in the behaviour and performance of organizations, in particular business firms. As a step in building legitimacy for the growing field, the BPS Division of the Academy of Management was formed in 1971. The BPS Division is a professional community of scholars dedicated to advancing the field by creating and disseminating knowledge about business policy and strategy. This entry provides a brief history of the field from a research perspective.

Definition Business policy and strategy (BPS) is a distinct field of scholarship focused primarily on explaining heterogeneity in the behaviour and performance of organizations, in particular business firms. Using an interdisciplinary approach, research in the field is informed by the integration of multiple theoretical perspectives and research methods.

▶ Business policy and strategy (BPS) is a field of scholarship focused primarily on explaining heterogeneity in the behaviour and performance of organizations, in particular business firms. Business policy is viewed as an antecedent to the field of strategy or strategic management.

Overview

BPS is a relatively young field informed by multiple disciplines – microeconomics, sociology, psychology and political science. As a consequence, explanations of the drivers of differences in performance among firms benefit from the integration of multiple theoretical lenses, research

methods and techniques. This diversity informs a wide array of research topic areas (e.g., alliances and networks, ▶ competitive heterogeneity, corporate strategy and governance, industry dynamics, innovation and strategic renewal, and strategy process and change) and work that spans multiple levels of analysis – ecosystem, industry, inter-firm, firm and intra-firm. While this intellectual diversity has enriched the field's progress, it has also led to a questioning of the field's legitimacy, often within institutions (Mahoney and McGahan 2007). Despite these challenges, and assertions that the field is fragmented, consensus remains that the field's overarching focus is explaining differences in performance among firms. This article discusses the evolution of research in the field; for brevity, I direct attention to select events and contributions that defined and shaped the field's development. Interestingly, from the 1970s onwards, each wave of development included significant scholarly efforts to assess the field and define actions for its advancement.

A Brief History: Late 1950s to 2011

Prior to the 1960s, the field was more applied, focusing on the role of the general manager and the firm as a whole, including its performance. Specifically, the core of the field, then referred to as business policy, directed attention to the functional integration and coordination of specialized knowledge within the context of a firm. This was also the core emphasis in courses on business policy (taught as early as 1912 at Harvard). During the 1950s and early 1960s, interest shifted beyond general management principles to issues of where and how firms compete and, in turn, the alignment of a firm's strategy with its competitive environment (Ghemawat 2002). As a result, the concept of firm strategy began to take a more prominent role in the field's development. This was informed, in part, by recognition of the complexities of strategy formulation and implementation in the context of competition and change. Influential works emerged during this period, such as Chandler's (1962) *Strategy and Structure*, Ansoff's (1965) *Corporate Strategy* and, subsequently, ▶ Kenneth Andrews's (1971) *The Concept of Corporate Strategy*. Andrews' framework linked a firm's capabilities to its competitive environment in support of a firm's long-run, versus short-run, development. The latter underscored managerial challenges in distinguishing aspects of a firm that were more adaptive to environmental pressures from those that were more enduring or stable. These classics also benefited from research in economics and management that focused on opening the 'black box' of organizations. For example, prior work established links between a firm's development and its internal resources (Barnard 1938; Penrose 1959) or distinctive competences (Selznick 1957). Work on the behavioural theory of the firm (Cyert and March 1963), administrative science (Simon 1947) and organization theory (Thompson 1967) also played a vital role in shaping the field's understanding of the process side of strategy.

The concepts of strategy that began to take shape during the 1960s served as a platform for the field's development in the 1970s. Multiple activities accelerated the field's growth during this period: the exploration of different research approaches, topic domains and methods; the emergence of journals for strategy work; and the advancement of professional associations and consulting firms focused on strategy. For example, the BPS Division of the Academy of Management (AOM) was founded 1971, signalling the professionalism of the field (scholars identify the division's original name as Business Policy and Planning). To date, the BPS Division is the second largest division of the AOM. Research began to shift from primarily case-based, normative methods to studies leveraging large data sets, deductive methods, multivariate statistics and the logic of falsification. These differences also mapped to a dichotomy in research streams in the field – work on strategy formulation and implementation (process) and work on the relationships between strategic choice and performance (content). The shift in research approaches (normative to positive) was also influenced by the adoption of an industrial organization (IO) economics lens (rooted in the Mason/Bain tradition) by various groups of

scholars. These conditions also drove a shift in research focus – from internal aspects of a firm to differences in competitive positioning and, in turn, structural heterogeneity within industries (see Rumelt et al. 1991; Ghemawat 2002). It is not surprising that these changes brought a new level of rigour to strategy research. In so doing, they yielded a range of questions that could not be readily addressed with traditional case-based studies and a motivation to develop robust theory that could be vetted empirically. The result was a call for a paradigmatic approach to the field, relabelled as strategy or strategic management (Schendel and Hofer 1979). As background, a conference held in Pittsburgh in May 1977, 'Business Policy and Planning Research: The State of the Art', organized by ▶ Dan Schendel and Charles Hofer, is widely recognized as catalyst for defining the field and its future directions. The 1979 volume that emerged from the conference outlined a research agenda for the field spanning 18 lines of enquiry and clarified their importance in shaping the field's development. Two additional initiatives amplified this effort, the launch of the *Strategic Management Journal* (*SMJ* 1980) and the formation of the Strategic Management Society (SMS) in 1981; Dan Schendel, U. Purdue and Mary Lou Schendel played an instrumental role in the formation and management of *SMJ* and SMS (http://strategicmanagement.net/). Taken together, these developments also set the stage for fundamental changes in research, doctoral training and pedagogy.

The paradigm development was in full swing throughout the 1980s. Several prominent research streams emerged, spurring growth in doctoral programmes and in research diversity. One of the most influential contributions from this decade was ▶ Michael Porter's work *Competitive Strategy* (Porter 1980). Another line of work, initiated by ▶ Richard Rumelt and Richard Schmalensee, unbundled performance into classifications of effects – industry versus firm, to understand what explained more of the variance in performance among firms. A third stream, the ▶ resource-based view (RBV), also sharply impacted the field. The latter was largely influenced by two streams of research. First, work by scholars at the University of Chicago who emphasized that industry structure reflects efficiency outcomes and that performance differences among firms signal differences in the firms' resource endowments. Second, work examining the properties of resources that make them difficult to imitate and how these properties might contribute to sustained advantages (Wernerfelt 1984; Barney 1986). The view of a firm as a bundle of resources and capabilities revived the role of the internal aspects of a firm in shaping its strategic position and performance (e.g., Andrews 1971), and further spawned debates and theory regarding the conditions under which firm effects or industry effects would play a more important role in explanations of performance heterogeneity.

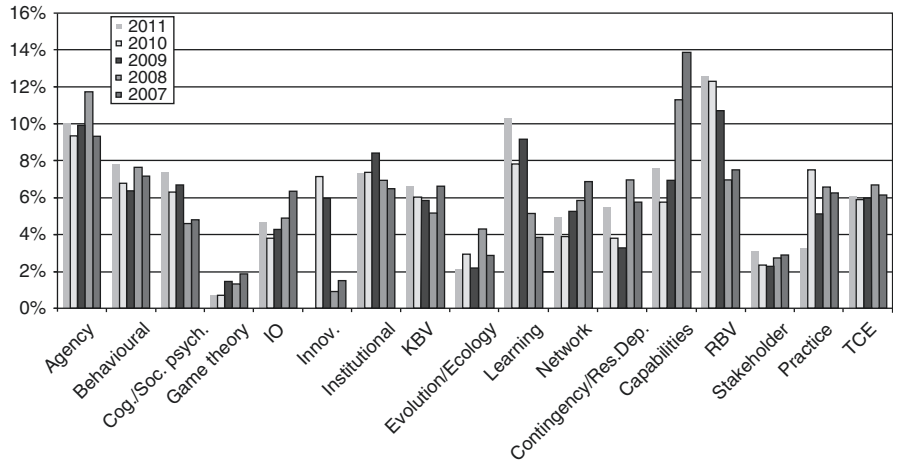
While economic thinking remained prominent, scholars also gravitated towards traditional disciplines that had influenced management thought, such as sociology, social psychology and cognitive psychology, for explanations of strategic phenomena. At the same time, complementary work emerging in organization theory, game theory, evolutionary economics, institutional theory and innovation also influenced strategy research. For instance, work on innovation drew attention to the notion of rents and appropriability whereas game theory was applied to understand strategic positioning and competitive dynamics. Nelson and Winter's classic work contributed to our understanding of organizational routines and capabilities in the context of Schumpeterian competition. Transaction cost economics and agency theory fostered thinking about markets vs hierarchies; this attention to the boundaries or scope of the firm influenced work on corporate strategy, governance forms and cooperative strategy. At the same time, scholars adopted more complex econometric methods, such as time series and event study methods, to explore firm performance and survival *over time* as well as more systematic approaches for conducting robust qualitative work.

The field's development in the 1970s and 1980s contributed to significant diversity in strategy research. As a result, a variety of initiatives

were taken in the 1990s and 2000s to assess the field and shape an agenda (see Rumelt et al. 1991; Hoskisson et al. 1999; Gavetti and Levinthal 2004; Mahoney and McGahan 2007). Common among these writings is an effort to frame the field's scope by identifying the fundamental questions or issues that underlie the field, recognizing new areas of inquiry that may require changing core assumptions in strategy models and/or emphasizing areas of inquiry that might play a more prominent role in the field's future. Work continued to refine thinking in core topic domains while new areas of inquiry gained traction (this volume also reiterates the diversity in research domains). Advances in tools and techniques also proliferated, facilitating theoretical progress. For example, more sophisticated econometric and qualitative methods enabled the exploration of research questions from different angles – unbundling important sources of heterogeneity. Finally, new strategy-oriented research journals emerged, further legitimating the field (e.g., *Industrial and Corporate Change*, *Strategic Organization*, *Strategic Entrepreneurship Journal*, *Global Strategy Journal*). Despite this progress, the quality of research varied, raising concerns about the field's development. In response, a small group of research-focused strategy faculty created the Strategic Research Initiative (SRI) in 2007 to advance the field by developing and disseminating resources to enhance the quality of strategy research. SMS also launched the Strategic Research Foundation (SRF) in 2011, to support novel strategy research that might not otherwise be pursued.

Conclusion

In the past 60 years, strategic management has emerged as a distinct field of study and it is now widely recognized as being integral to business. As progress occurs in scientific inquiry, a field's boundaries ebb and flow. These growing pains come with benefits and challenges. The field's interdisciplinary approach to research and its intellectual diversity has enriched its progress (see Fig. 1 for trends in theoretical areas used in paper submissions to BPS Division, AOM, 2007–2011). Nonetheless, with this rich diversity and growth comes a need to revisit norms for research quality (in journals and doctoral training) and, in turn, a call for encouraging robust interdisciplinary work that explores challenging (vs incremental) questions and examines novel, non-traditional territory. There also needs to be widespread recognition that strategy courses require faculty trained in strategy. In sum, building on Mahoney and McGahan (2007), advancing the field requires raising our aspirations.



Business Policy and Strategy, Fig. 1 % Submissions/total submissions by theoretical area (Source: Business Policy & Strategy Division, AOM, 2007–2011)

See Also

- Andrews, Kenneth (1916–2005)
- Business Policy and Strategy
- Competitive Heterogeneity
- Porter, Michael E. (Born 1947)
- Resource-Based View
- Rumelt, Richard (Born 1942)
- Schendel, Dan (Born 1934)

References

Andrews, K. 1971. *The concept of corporate strategy*. Homewood: Dow Jones-Irwin.

Ansoff, H.I. 1965. *Corporate strategy*. New York: McGraw-Hill.

Barnard, C.I. 1938. *The functions of the executive*. Cambridge, MA: Harvard University Press.

Barney, J.B. 1986. Strategic factor markets: Expectations, luck, and business strategy. *Management Science* 32: 1231–1241.

Chandler, A.D. 1962. *Strategy and structure*. Cambridge, MA: MIT Press.

Cyert, R.M., and J.G. March. 1963. *A behavioral theory of the firm*. Englewood Cliffs: Prentice Hall.

Gavetti, G., and D.A. Levinthal. 2004. The strategy field from the perspective of management science: Divergent strands and possible integration. *Management Science* 50: 1309–1318.

Ghemawat, P. 2002. Competition and business strategy in historical perspective. *The Business History Review* 76: 37–74.

Hoskisson, R.E., M.A. Hitt, W.P. Wan, and D. Yiu. 1999. Theory and research in strategic management: Swings of a pendulum. *Journal of Management* 25: 417–456.

Mahoney, J.T., and A.M. McGahan. 2007. The field of strategic management within the evolving science of strategic organization. *Strategic Organization* 5: 79–99.

Penrose, E.T. 1959. *The theory of the growth of the firm*. New York: Wiley.

Porter, J.E. 1980. *Competitive strategy: Techniques for analyzing industries and competitors*. New York: Free Press.

Rumelt, R.P., D.E. Schendel, and D.J. Teece. 1991. Strategic management and economics. *Strategic Management Journal* 12: 5–29.

Schendel, D.E., and C.W. Hofer. 1979. *Strategic management: A new view of the business policy and planning*. Boston: Little, Brown.

Selznick, P.A. 1957. *Leadership in administration*. Berkeley: University of California Press.

Simon, H.A. 1947. *Administrative behavior*. New York: Macmillan.

Thompson, J.D. 1967. *Organizations in action: Social science bases of administrative theory*. New York: McGraw-Hill.

Wernerfelt, B. 1984. A resource-based view of the firm. *Strategic Management Journal* 5: 171–180.

Business Process Re-engineering

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Definition Re-engineering is 'the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality, service and speed' (Hammer and Champy 1993: 32).

In his 1990 *Harvard Business Review* article 'Reengineering work: don't automate, obliterate', Michael Hammer argued that succeeding in an environment of increasingly fierce international competition required dramatic, radical 'quantum leaps' that could not be achieved through incremental changes to existing practices. His answer – re-engineering – was a direct challenge to the idea of continuous, incremental improvement associated with total quality management. Existing business processes and structures were defined as outmoded, obsolete products of a bygone era that could not be changed, even through the application of increasingly sophisticated information technology (the 'automate' solution). What was needed, according to Hammer, was a 'blank slate' that could be achieved only by 'obliterating' the dysfunctional heritage of the status quo.

By 1993, re-engineering was being described in *Fortune* as 'the hottest trend in management', and Hammer, due to his quasi-evangelistic style, as 'reengineering's John the Baptist, a tub-thumping preacher' (Stewart and Davis 1993: 41). In their bestselling book, *Re-engineering the Corporation*: *A Manifesto for Business Revolution*, Hammer and Champy described businesses as commonly constrained in their capacity

to attain desired levels of performance because of being (among other things) 'bloated, clumsy, rigid, sluggish, non-competitive, uncreative (and) inefficient' (Hammer and Champy 2001: 9) and the re-engineering of business processes as the solution, 'the path to change' (p. 34).

The response to business process re-engineering was divided. It tended to be popular with senior executive teams because it often produced an improvement in key performance measures, at least in the short term. However, the application of reengineering, very commonly with the assistance of management consultants, often involved significant downsizing and delayering. As a result, re-engineering became very unpopular among many middle managers and non-managerial employees because it came to be closely associated with major structural upheavals and substantial job losses.

The merits of re-engineering soon became highly contested. Its critics (see, e.g., Grint 1994; Manganelli and Klein 1994; Geisler 1996) portrayed re-engineering as naively conceived and often disastrous in its effects. Critics have viewed the idea of starting with a blank slate as simplistic and unrealistic. Similarly, critics were concerned that widespread removal of workers in the name of a clean start had become associated with the loss of valuable organizational memory.

Others vociferously argued the alternative point of view. In a revised edition of *Reengineering the Corporation*, Hammer and Champy (2001: 3) characterized the 'ill repute' in which re-engineering had come to be held as 'the inevitable backlash to the excessive enthusiasm' for re-engineering. While acknowledging that there had been a high failure rate amongst re-engineering efforts, they argued that this was due to companies too often treating re-engineering as an 'easy panacea' and thus applying it incorrectly. From their perspective (p. 4), companies that have correctly applied reengineering have produced 'spectacular benefits'. Hammer and Champy also rejected the characterization of re-engineering as a management fad of the 1990s. Rather, they (p. 2) called it 'one of the success stories of business history' and argued that its lowering profile – far from being due to re-engineering having been a failed experiment – was because its once-revolutionary practices were now 'commonplace'.

More recently, the development of e-business has led to a resurgence of interest in re-engineering (see, e.g., Altinkemer et al. 2011).

See Also

▶ Organizational Restructuring

References

Altinkemer, K., Y. Ozcelik, and Z.D. Ozdemir. 2011. Productivity and performance effects of business process reengineering: A firm-level analysis. *Journal of Management Information Systems* 27: 129–161.

Geisler, E. 1996. Cleaning up after reengineering. *Business Horizons*, September–October, 71–78.

Grint, K. 1994. Reengineering history: Social resonances and business process reengineering. *Organization* 1: 179–201.

Hammer, M. 1990. Reengineering work: Don't automate, obliterate. *Harvard Business Review*, July–August, 104–112.

Hammer, M., and J. Champy. 1993. *Reengineering the corporation: A manifesto for business revolution*. New York: HarperBusiness.

Hammer, M., and J. Champy. 2001. *Reengineering the corporation: A manifesto for business revolution*, 2nd ed. London: Nicholas Brealey.

Manganelli, R.L., and M.M. Klein. 1994. Should you start from scratch? *Management Review*, July, 45–47.

Stewart, T.A., and J.E. Davis. 1993. Reengineering: The hot new management tool. *Fortune* 23: 40–48.

Business Schools

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Abstract

Business schools have served as a main institutional home for the field of strategic management since its inception and continue to be central to modern strategic management

scholarship and ideas. Business schools have undergone changes during their history, and embody some of the tensions and changes that are also inherent to the field of strategic management.

Introduction

Since the beginnings of the strategic management field, its main institutional home has been business schools; and business schools have for the last few decades nurtured the scholarly development of the main perspectives and concepts within strategic management, in addition to its teachings and applications and the education of future managers. Furthermore, some schools have been become particularly well known for certain developments and approaches, including the "Carnegie School" and its influence on, for example, evolutionary and behavioral perspectives (see, Carnegie School; ▶ Winter, Sidney G. (Born 1935)), and the case method often associated with Harvard (see, ▶ Case Method, the). Business schools have also housed other initiatives (such as the applications of strategic management and management to public policy and nonprofit institutions) and continue to foster much of strategic management scholarship and teachings.

Although relatively short (compared with other professional schools and educational institutions), the history of business schools has some interesting controversies; some of them relevant to the development of the field of strategic management. Although most will not be covered in this brief discussion, a few dimensions are relevant as they are also reflected in current debates in strategic management research, and in the discussions on the future education of strategic managers. One issue of debate is a tension between *rigor and relevance*, something that strategic management as a field has tried to integrate and bridge. Another less explicitly articulated tension is one between education for *profit* and educating for *purpose*. Both have to do with the essential nature of business schools as professional schools, spanning different stake holders, disciplinary perspectives, and interests (Flexner 1915; March and Sutton 1997; Simon 1967; Augier and March 2007, 2011; Augier and Teece 2005). As noted by Herbert Simon in his discussions on the management of business schools:

> Organizing a professional school . . . is very much like mixing oil with water: It is easy to describe the intended product, less easy to produce it. And the task is not finished when the goal has been achieved. Left to themselves, the oil and water will separate again. So also will the disciplines and the professions. Organizing, in these situations, is not a once-and-for-all activity. It is a continuing administrative responsibility, vital for the sustained success of the enterprise. (Simon 1967, p. 16)

Strategic management as a field also faces this tension, which also offers opportunities for the field to be both academically sound and practically relevant (thus perhaps helping to move the conversation from rigor vs relevance to rigor *and* relevance and from profit vs purpose to profit *and* purpose).

Very Brief History

Not unlike other professional schools (such as medicine and law), the early history of business schools and the education of managers were built on apprenticeship and learning of the crafts and functions of business, rather than on an understanding of its underlying principles (Daniel 1998; Augier and March 2011, chapter 2). With the industrial revolution, business colleges began to emerge, focusing on training practices for workers who were carrying out business functions such as book-keeping and marketing, but it was not until the rise of the perspective of political economy that the study of business had a disciplinary home. As a result, business schools did not have a firm institutional base in academia until the end of the nineteenth century, when business men and trade organizations started pointing out the need for professional education. For example, a president of the Boston Board of Trade noted:

> You put a man into the pulpit or at the bar or in the school room without any training, and let him undertake to preach or practice or teach, and he will prove a miserable failure. . . .. Into business life, however, men rush with no certificate and nothing in the way of qualification for the calling on which a certificate would be based. Without any

> business talent or training or foresight they buy and sell, but no gain. Only failure can be looked for in such cases. (quote in Fitz 1884, p. 7)

Early discussions on business education were met with resistance amongst academics who pointed out that businesses do not have much of social conscience and its focus on money was not conducive to professionalism (as Flexner pointed out, noting that an important criterion for being a profession is that it is altruistic in nature, Flexner 1915). It was also seen to be without intellectual merit or basis (Daniels 1998); thus, perhaps it was not surprising that an early President of Harvard University, Charles Eliot, did not support the idea of educating for business in separate schools of business, but suggested instead that potential businessmen might benefit from studying traditional academic curricula. "A young man who is going into business," he noted, "had better take an academic course. That is an indisputable proposition and there is no use discussing it" (quoted in Cruickshank 1987, p. 25).

Despite resistance, business schools did emerge within universities, not least because of the need for business programs articulated by businesses and potential businessmen who wanted training in the functions of business. The need was made slightly more acceptable in academic terms by emphasizing the role that businesses played in society; educating future businessmen was therefore an important part of contributing to the shaping of society's future and improving national competitiveness and learning. Thus, an emphasis was placed on more than just a trade, narrow practical skills, and on making profit, but also the potential contributions of business and businessmen to societal progress and welfare, i.e., a higher purpose of business. An early dean of the University of Chicago business school, Leon Marshall, noted in this spirit (articulating some of the aspects of the role of business schools in social and societal problems):

> However important it may be to turn out business men who can make money, social workers who can command good salaries, civic workers who can rise to positions of influence and affluence, the most important task for all is to aid in promoting the progress and welfare of society. (Marshall 1913, p. 101)

Despite the slow beginnings, business schools then increased from only three programs in business in 1900 to 20 in 1911, 40 in 1915, and 66 in 1918 (Daniel 1998, p. 49). With the first steps toward the business school establishment as an industry, steps also were taken toward professionalization, and the establishment of professional associations and societies (often around functional specialties at first) helped the process. Early professional associations included the American Marketing Association and the Mortgage Bankers Association, but two more general professional associations also emerged: the American Management Association (AMA), established in 1923, and the American Association of Collegiate Schools of Business (AACSB), in 1916. Although the AMA focused mostly on practitioners, the AACSB turned to the academic and educational side and quickly became (and remains today) an important force in shaping the future of business schools and management education, discussing issues such as admissions, curricula, and research, often including topical surveys, task forces, and reports (for example, a task force on ethics in business education, emphasized the need to advance ethical awareness and principles in business students), recognizing the importance of business in the larger society. Other professional associations for business schools have emerged more recently, sometimes with a regional focus.

Despite some attempts to establish business schools and the education of managers on solid academic grounds (as had been done with medical schools in the early twentieth century following the Flexner report), business schools remained at first firmly focused on practical training in business practices for several years after the early professionalization step. Business schools were hiring instructors with careers in business, and faculty staff doubled as consultants, resulting in business schools becoming carriers of best practices – not being ahead of them (Bach 1958).

This vocational focus was articulated by Herbert Simon:

> Accurately or not, we perceived American business education at the time as a wasteland of vocationalism that needed to be transformed into science-

> based professionalism, as medicine and engineering had been transformed a generation or two earlier. (Simon 1991, p. 138)

The problem of the lack of a broader (and intellectually deeper) education for business people was acknowledged by deans and faculty staff across the country, but it was not until the Gordon–Howell report came out that a good countrywide analysis of the problem was provided.

The larger societal and institutional forces that helped the Gordon–Howell report to get underway included institutional and intellectual developments in and of places such as the Ford Foundation and the RAND Corporation; the Gordon–Howell report was as much a symptom of societal changes as a cause of them (Augier and March 2011, chapters 4 and 5). In a time and culture of "optimistic urgency" in the post-war years (with important problems in the world serving as the focal point for attracting various disciplinary minds to think together), intellectual developments that would prove important for the content of business education according to Simon and colleagues included operations research and linear programing, game theory, evolutionary economics (which was pioneered at RAND), in addition to developments in the behavioral and social sciences, which were a priority for the Ford Foundation in the early 1950s (Augier and March 2011, chapter 5; Augier et al. 2015).

The Gordon–Howell report, also considered to be the "Flexner report for business schools," called for a major upgrading of both students and faculty staff in business schools, rebuilding business education on a solid intellectual foundation, and bringing to bear behavioral social science, mathematics, and statistics in the analysis of business problems. It also stated in the opening pages,

> Today it [the business school] is a restless and uncertain giant in the halls of higher education . . . but it is an uncertain giant, gnawed by doubt and harassed by the barbs of unfriendly critics. It seeks to serve several masters and is assured by its critics that it serves none well. . . . They search for academic respectability, while most of them continue to engage in unrespectable vocational training. They seek to be professional schools, while expressing doubt themselves that the occupations for which they prepare students can rightfully be called a profession. (Gordon and Howell 1959, p. 4)

To some extent, their criticism resulted from a tension that exists in all professional education between being "relevant" to a profession and pursuing rigorous academic research (Simon 1967; Bach 1958; Augier and March 2007). This is a struggle that most (if not all) professional schools have, with strong internal and external forces working against them and what Simon called a problem of "mixing oil and water." But with the Gordon–Howell report, and a companion one supported by the Carnegie Corporation with similar findings (Pierson 1959), the upgrading of the intellectual and research foundations for business schools began.

An important intellectual cornerstone in the "business school revolution" was the belief in fundamental academic research. As Lee Bach, founding dean of the Graduate School of Industrial Administration (GSIA) and later a key player in the reorganization of Stanford Business school, noted: "I want to stress as strongly as I can my own belief that fundamental research is a major part of every leading business school, especially those which offer graduate work. . . The function of the university is to be ahead of best practice, not to be trailing a few steps behind the operating business world" (Bach 1958, pp. 363–364). Herbert Simon also noted "business school does not stand a chance of recruiting first rate scientists if it insists that all research done within its walls must have direct relevance to business. It will do better to demonstrate its respect for fundamental research by having, and valuing, in its faculty at least some members of whose work does not have obvious relevance to business, but does command high respect in its discipline." (Simon 1967, p. 10). Despite the constant struggles between academic research and practice, both businessmen and academics have warned against concentrating on the short term and vocationalism, which seem to be part of the ebbs and flows of management education (Mintzberg 2004; Augier 2006), definitely a key issue for "strategic managers" of business schools to focus on (Simon 1967).

Business Schools as a Context for Early Strategy and Management Work

Business schools became (and continue to be) the main institutional homes for major developments within the fields of strategy and strategic management, disciplines and perspectives, which although mostly apply to business organizations, also provide frameworks and insights that are useful to nonprofit management and governmental organizations.

Business schools have also provided institutional homes for several of the teaching approaches and methodologies that have been used in strategic management scholarship, practice, and education.

In particular, business schools have been associated with the case method (although it originated in the context of law schools). Kenneth Andrews provided an early definition of a case as "a carefully written description of an actual situation in business which provokes in the reader the need to decide what is going on, what the situation really is, or what the problems are – and what can be and should be done" (Andrews 1951, p. 60). Although cases became (and remain) important for business schools and for the teaching of strategic management, they did not always capture or convey the more conceptual and analytical skills also needed for understanding the fundamental issues in business and in strategy. As Lee Bach, early Dean at Carnegie, noted: "Use of cases . . . is excellent for many purposes – for integration, for emphasis on orderly problem solving, for experience in the application of analytical concepts. On the other hand, it does not seem to be very useful where the primary emphasis is on development of sharp analytical concepts" (Bach 1958, p. 328). Thus, other teaching methodologies also emerged in business schools, including simulation/gaming approaches to business and strategic management, an approach with roots in early management games and simulation exercises developed at RAND and Carnegie Tech. Gaming and simulations were intended to capture the reality of decision processes in simulations. As Dill and Doppelt noted regarding an early management game:

> The game was not intended to teach specific concepts or techniques of management as we try to do, say, in a course on marketing or finance. It was designed as part of the integrative stem of our curriculum to challenge students to deal effectively with the kinds of problems that real executives face. (Dill and Doppelt 1963, p. 31)

Cases, along with business games and simulations, remain important tools and teaching methods in business schools today, and although the precise mix differs amongst business schools (and within programs in business schools), all provide important insights into the dynamics of business (and nonbusiness) organizations and the management of them.

As indicated above, business schools also emerged as institutional homes for the teaching of management in organizations other than for-profit firms. This is important for several reasons. First, the concepts and the practice of management (and perhaps in particular, strategic management) are central to all organizations, not just business firms; thus, teaching future managers on how to effectively manage organizations in other areas can help business schools to educate good managers of organizations such as universities, governmental institutions, and other nonprofit-making organizations. This in turn may help to build a mutual understanding across organizations on issues and problems larger than themselves – problems of education, national security, and environments, for instance, often call for collaboration across industries, and, having some degree of common language (and management tools) seems useful in this regard. Second, research and education on public management issues and problems may help to induce a more interdisciplinary mindset that is useful for the development of the theory and concepts involved (as was the vision for some of Simon's early work in public administration theory). Academic disciplines, left to themselves, often drift apart (like the oil and water in Simon's 1967 analogy): a focus on problems can help them to integrate, and a focus on public problems can also help them to integrate the profit and purpose issue mentioned earlier.

Such issues (and others) motivated the establishment, for instance, of the emphasis on public management of the Graduate School of Business under Arjay Miller in the 1970s, and similar thinking found in Cyert's (1990) book on the management of nonprofit-making organizations. Although public management programs often drift toward public policy schools, there are good reasons for having them (back) in business schools: to help business schools contribute to thinking about social issues, to help educate managers for organizations that are not for profit, and to help blend the disciplines within business schools. This also illustrated the potential and relevance for the application of strategic management ideas to nonprofit and governmental institutions.

Finally, business schools also became (and remain) the institutional home for most of the research in the field of (strategic) management. Although early business leaders (such as Henry Ford and Alfred Sloan) did not have Masters in Business Administrations, and other intellectual pioneers in strategy came from disciplinary areas (such as economics and political science) and early on were in disciplinary departments (e.g., Williamson, Winter, Simon, etc.), subsequent generations of scholars and practitioners in strategy have studied and/or do research and teach in business schools. The major "schools"/eras in strategic management since at least as far back as Michael Porter have originated (and much work has been developed) within business schools – including Porter's five forces, through resource analysis, to capabilities work. Although this can be seen as a sign of the institutional success of business schools overall, it also contains some possible weaknesses, such as fields and developments that become too content and contained within themselves tending to communicate less to neighboring fields and developments, thus damaging the long-term health of the intellectual movements (Kuhn 1970; March 1991).

Conclusion

The history and development of business schools have provided institutional and intellectual homes for the development of strategic management since before the field existed. The "strategic management" of business schools, and the context of business schools for the evolution of strategic management as a field, is an example of a process of "evolution with design"; and the strategic managers of business schools (e.g., Deans) have important decisions to make, for instance, around how to best integrate oil and water, and profit and purpose, in addition to providing ground for fruitful research into the interdisciplinary problems relevant to the education of future managers.

Cross-References

- ▶ Behavioural Strategy
- ▶ Case Method, the
- ▶ Porter, Michael E. (Born 1947)
- ▶ SWOT Analysis

References

Andrews, K., ed. 1951. *The case method of teaching human relations and administration*. Cambridge: Harvard Business School Press.

Augier, M., and D. Teece. 2005. Reflections on (Schumpeterian) leadership. *California Management Review* 47(2):114–136.

Augier, M. 2006. Making management matter: An interview with John Reed. Academy of Management Learning and Education 5(1): 84–100.

Augier, M., and J.G. March. 2007. The pursuit of relevance in management education. *California Management Review* 49(3): 129–146.

Augier, M., and J.G. March. 2011. *The roots, rituals, and rhetorics of change: North American business schools after the Second World War*. Stanford: Stanford University Press.

Augier, M., J.G. March and A. Marshall. 2015. *The Flaring of Intellectual Outliers. Organization Science* 26(4): 1140–1161.

Bach, L. 1958. Some observations on the business school of tomorrow. *Management Science* 4: 351–364.

Cruickshank, J. 1987. *A delicate experiment: The Harvard Business School 1908–1945*. Boston: Harvard Business School Press.

Cyert, R. 1990. *The management of nonprofit organizations*. New York: Lexington Books.

Daniel, C. 1998. *MBA: The first century*. Lewisburg: Bucknell University Press.

Dill, W., and N. Doppelt. 1963. The acquisition of experience in a complex management game. *Management Science* 10: 30–46.

Fitz, E. 1884 [2009]. *The high school in its relation to business life*. Ann Arbor: University of Michigan Library.
Flexner, A. 1915. Is social work a profession? In *Proceedings of the National Conference of Charities and Corrections*.
Gordon, R., and J. Howell. 1959. *Higher education for business*. New York: Columbia University Press.
Kuhn, T. 1970. *The structure of scientific revolutions*. Chicago: Chicago University Press.
March, J.G. 1991. Exploration and exploitation in organizational learning. *Organization Science* 2: 71–87.
March, J.G., and R. Sutton. 1997. Organizational performance as a dependent variable. *Organization Science* 8(6): 697–706.
Marshall, L. 1913. The college of commerce and administration of the university of Chicago. *Journal of Political Economy* 21(2): 97–110.
Mintzberg, H. 2004. *Managers, not MBA's*. San Francisco: Berett Koeler's Publisher.
Pierson, F., ed. 1959. *The education of American businessmen*. New York: McGraw Hill.
Simon, H.A. 1967. The business school: A problem of organizational design. *Journal of Management Studies* 4(1): 1–17.
Simon, H.A. 1991. *Models of my life*. Cambridge: MIT Press.

Business Strategy

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Abstract

Business strategy refers to the strategy of a single business firm or a strategic business unit in a diversified corporation. According to Michael Porter (Porter, M.E. Competitive strategy. New York: Free Press, 1980), a firm needs to formulate a business strategy that incorporates either cost leadership, differentiation or focus to achieve a competitive advantage. More recently, the meaning of business strategy has expanded, ranging from the document that contains the firm's business plan to the strategy of the whole firm, to the strategy of departments and divisions inside the firm. On the other hand, hybrid strategies chasing the lower/lowest cost and product differentiation concurrently have appeared under the label 'integrated cost leadership-differentiation strategy'. For this reason, extracting a unique meaning of the phrase 'business strategy' has become increasingly difficult. In this article I sketch the rise of business strategy, discuss its meaning in academia and in practice, and endeavour to connect these meanings to the evolution of ▶ competitive strategy, cooperative strategies and the ▶ business model.

Definition Business strategy refers to the strategy of a single business firm or a strategic business unit in a diversified corporation. However, business strategy presents an expanded meaning today: from the document that contains the firm's business plan to the strategy of the whole firm to the strategy of departments and divisions inside the firm.

If asked, any informed reader who has a nominal understanding of the common base of knowledge that has accumulated over the last three decades in strategic management would say, at first sight, that defining business strategy is a relatively easy task. Business strategy refers to the strategy of a single business firm or a strategic business unit (SBU) in a diversified corporation. In a diversified firm, business strategy conventionally rests midway between ▶ corporate strategy and functional strategy (Rumelt et al. 1994). According to Michael Porter, a firm must formulate a business strategy that incorporates either cost leadership, differentiation or focus to achieve a competitive advantage and long-term success.

In fact, defining business strategy is anything but an easy task. In the realm of strategic management, business strategy has progressively acquired a variety of meanings. They actually range from the document that contains the firm's business plan to the strategy of the whole firm, to the strategy of departments and divisions inside the firm. For this reason, to define a unique meaning of the phrase 'business strategy' has become increasingly difficult. In the following, I trace the rise of business strategy, discuss its meaning in academia and in practice, and endeavour to connect them to the evolution of ▶ competitive strategy and cooperative strategies, and eventually to ▶ business model based strategy.

In the last two decades business strategy has increasingly permeated core discussions in strategic management. This contention is corroborated on one hand by the extensive number of articles, books and textbooks that have accumulated, and on the other by the growth of a large number of courses and cases dedicated to business (and competitive) strategy analysis in universities and management schools all over the world. In addition, many strategy scholars and researchers would have no hesitation in identifying themselves as business strategy scholars.

That business strategy is connected to the very heart of strategic management as a scientific discipline, as well as to practitioners' domains, comes as no surprise. First, when anyone interested in management and strategy (e.g., an MBA student, a business executive, a consultant or an entrepreneur) hears or reads about 'business strategy', he/she immediately understands the phrase's connotations, even if this interpretation is rather mechanical. This mirrors the path that the phrase has traced in strategy textbooks (e.g., Porter 1980; Kay 1993; Ghemawat and Rivkin 1999; Besanko et al. 2000; Saloner et al. 2001; Barney 2002; Hitt et al. 2011; Thompson et al. 2011; Rothaermel 2013) since the early 1980s.

Second, strategy consultants have contributed by generating (on occasion), adopting and widely applying a kit of rough-and-ready analytical tools (such as the SWOT analysis, the BCG and GE-McKinsey matrixes, the five competitive force framework and the value chain), which are consultants' standard equipment today.

Third, for the reasons above, from the early 1990s – roughly speaking from the publication of Porter's *The Competitive Advantage of Nations* (1990) – the use of business strategy has also managed to trespass from its original realm of strategic management into other fields of inquiry, such as marketing, operations management, regional economics, innovation and technology economics and management, business history and international affairs. It is now one of the quintessential components of the inner circle of strategic management.

Notwithstanding, we still lack a definitive, non-tautological and unambiguous understanding of business strategy. Statements about it abound in the arenas mentioned above, and there are broader and narrower meanings as well, but a single shared definition is elusive. When one reviews the use of the term in the literature, the initial underlying meaning is 'how to achieve a competitive advantage in a typical and unique way'. This is eventually expanded to include the pursuit of inter-firm cooperative strategies and cooperative advantage (Contractor and Lorange 1988; Dussauge and Garrette 1999; Faulkner and de Rond 2002), then coopetitive strategy and coopetitive value creation (Dagnino and Rocco 2009).

Some commentators have equated business strategy with competitive strategy (Scott 2010). Taking this contention further, we argue that business strategy can encompass both cooperative and coopetitive strategies.

In Michael Porter's (1980) vision, business strategy refers to how a company competes in a particular business. Rumelt (2003) relates it to how a company can gain a competitive advantage through a distinctive way of competing. In *Competitive Strategy* (1980), Porter identifies four basic generic strategies (i.e., cost leadership, differentiation, focus on cost, focus on differentiation) and lays out the required skills and assets, organizational elements and risks associated with each strategy.

In short, competitive advantage results from a firm's ability to perform required activities at a collectively lower cost than its rivals or to perform these activities in unique ways that create more value for buyers, thus allowing the firm to command a premium price. Pursuing one of these courses will make a firm's product or service unique, and will prevent the firm being 'stuck in the middle' (Porter 1980: 40). Table 1 illustrates Michael Porter's contribution.

Actually, cost and differentiation strategies are not – according to Porter – absolutely incompatible, but a hybrid cost-differentiation strategy is, indeed, very unusual and sporadic. Porter (1985: 18) stated that, on the rare occasions when firms were successful at simultaneously pursuing both competitive advantages, they reaped even greater benefits than firms that pursued only one competitive advantage.

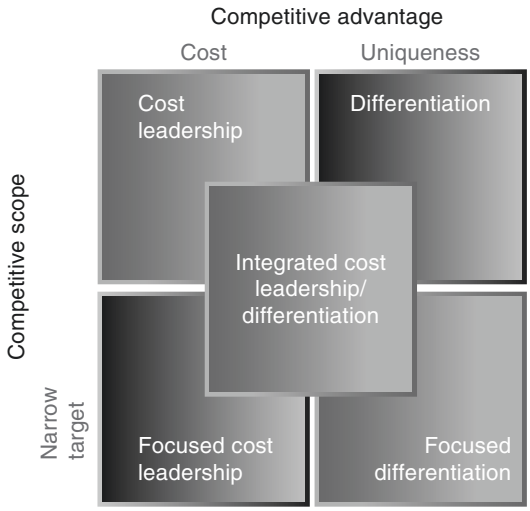
More recently, thanks to the gales of globalization (Sirkin et al. 2008), increased

Business Strategy, Table 1 Competitive strategy: skills, assets, organizational elements and associated risk

Business strategy	Required skills and assets	Organizational elements	Associated risks
Cost leadership	Sustained capital investment and access to capital	Tight cost control	Technological change that quashes past investments or learning
	Process engineering skills	Frequent detailed reports	Low-cost learning by industry new-comers or followers through imitation, or through their ability to invest in state-of-the-art facilities
	Intensive supervision of labour	Structured organization and responsibilities	Inability to see required product or marketing change because of the attention placed on cost
	Products designed for ease of manufacture	Incentives based on meeting strict quantitative targets	
	Low-cost distribution system		
Differentiation	Strong marketing abilities	Strong coordination among functions in R&D, product development and marketing	The cost differential between low-cost competitors and the differentiated firm becomes too great for differentiation to hold brand loyalty. Buyers sacrifice some of the features, services or image possessed by the differentiated firm for large cost savings
	Product engineering	Subjective measurement and incentives instead of quantitative measures	Buyers' need for the differentiating factor falls. This can occur as buyers become more sophisticated
	Creative flair	Amenities to attract highly skilled labour, scientists or creative people	Imitation narrows perceived differentiation, a common occurrence as industries mature
	Strong capability in basic research		
	Corporate reputation for quality or technological leadership		
	Long tradition in the industry or unique combination of skills drawn from other businesses		
	Strong cooperation from channels		
Focus	Combination of the above policies directed at the particular strategic target	Combination of the above policies directed at the particular strategic target	The cost differential between broad-range competitors and the focused firm widens, to eliminate the cost advantages of serving a narrow target or to offset the differentiation achieved by focus
			The differences in desired products or services between the strategic target and the market as a whole narrows Competitors find submarkets within the strategic target and out-focus

Source: Adapted from Porter (1980) and Nickols (2000)

hyper-technological rivalry and the advent of hypercompetitive markets (D'Aveni 1994; Ferrier et al. 1999; Smith et al. 2001), some authors (Flynn and Flynn 1996; D'Aveni 2010) have severely criticized the idea that cost and differentiation strategies are generally self-excluding and postulate instead that they are all but incompatible. An integrated cost leadership-differentiation



Business Strategy, Fig. 1 Five generic strategies (Source: Adapted from Porter 1980, 1985)

strategy is a hybrid strategy that chases the lower/lowest cost and product differentiation simultaneously. This has various benefits. While differentiation allows a firm to charge a premium price, cost leadership makes it possible to charge the lowest price. This means that the firm may be capable of achieving a competitive advantage by delivering value to customers based on both product features and low price. In this way, the generic strategies become five instead of four (see Fig. 1).

Furthermore, in the last decade or so a new concept that appears to be closely related to business strategy has emerged: the concept of business model. A business model illustrates how an organization creates, delivers and captures value (Zott et al. 2011). The process of business model design and construction is part of business strategy, since business model design defines the business logic of a firm at the strategic level. This, in turn, includes a broad range of informal and formal descriptions that represent core aspects of a business (including purpose, offerings, strategies, infrastructure, organizational structures, trading practices, and operational processes and policies). Accordingly, a business model offers a comprehensive picture of an organization from a decision-making standpoint.

To summarize, the core of business strategy today can be interpreted as formed by two key sections that interact dialectically with one another: a first part that has accomplished virtual maturity and consolidation in academic conversation, as well as in management and entrepreneurial practice (being concerned with generic strategies and analytical tools); and a second part that is more exploratory and developmental in nature (e.g., as related to hybrid strategies and business models).

See Also

- ▶ Business Model, the
- ▶ Competitive Strategy
- ▶ Corporate Strategy

References

Barney, J.B. 2002. *Gaining and sustaining competitive advantage*, 2nd ed. Reading: Addison-Wesley.

Besanko, D., D. Dranove, and M. Shanley. 2000. *Economics of strategy*, 2nd ed. New York: Wiley.

Contractor, F., and P. Lorange. 1988. *Cooperative strategies in international business*. New York: Lexington Books.

D'Aveni, R.A. 1994. *Hypercompetition: Managing the dynamics of strategic manoeuvering*. New York: Free Press.

D'Aveni, R.A. 2010. *Beating the commodity trap: How to maximize your competitive position and improve your pricing power*. Boston: Harvard Business Press.

Dagnino, G.B., and E. Rocco. 2009. *Coopetition strategy: Theory, experiments and cases*. London: Routledge.

Dussauge, P., and B. Garrette. 1999. *Cooperative strategies: Competing successfully through strategic alliances*. Chichester: Wiley.

Faulkner, D., and M. de Rond. 2002. *Cooperative strategy: Economic, business, and organizational issues*. New York: Oxford University Press.

Ferrier, W.J., K.G. Smith, and C.M. Grimm. 1999. The role of competitive action in market share erosion and industry dethronement: A study of industry leaders and challengers. *Academy of Management Journal* 42: 372–388.

Flynn, E.J., and B.F. Flynn. 1996. Achieving simultaneous cost and differentiation competitive advantages through continuous improvement: World class manufacturing as a competitive strategy. *Journal of Managerial Issues* 8: 360–379.

Ghemawat, P., and J. Rivkin. 1999. *Strategy and the business landscape*. Reading: Addison-Wesley.

Hitt, M.A., D. Ireland, and R.E. Hoskisson. 2011. *Strategic management: Competiveness and globalization*, 9th ed. Mason: South-Western Cengage Learning.

Kay, J. 1993. *Foundations of corporate success*. Oxford: Oxford University Press.

Nickols, F. 2000. Competitive strategy: The basics à la Michael Porter. Available at http://www.nickols.us/strategy_competitive.htm. Accessed 7 July 2011.
Porter, M.E. 1980. *Competitive strategy*. New York: Free Press.
Porter, M.E. 1985. *Competitive advantage*. New York: Free Press.
Porter, M.E. 1990. *The competitive advantage of nations*. New York: Free Press.
Rothaermel, F. 2013. *Strategic management*. New York: McGraw-Hill/Irwin.
Rumelt, R.P. 2003. *What in the world is competitive advantage?* Policy Working Paper 2003–15. Los Angeles: Anderson School, UCLA. Available at http://www.anderson.ucla.edu/faculty/dick.rumelt/Docs/Papers/WhatisCA_03.pdf. Accessed 30 Oct 2010.
Rumelt, R.P., D. Schendel, and D.J. Teece (eds.). 1994. *Fundamental issues in strategy: A research agenda*. Boston: Harvard Business School Press.
Saloner, G., A. Shepard, and J. Podolny. 2001. *Strategic management*. New York: Wiley.
Scott, D.L. ed. 2010. Competitive strategy. In *American heritage dictionary of business terms*. Boston: Houghton Mifflin.
Sirkin, H.L., J.W. Hemerling, and A.K. Bhattacharya. 2008. *Globality: Competing with everyone from everywhere for everything*. New York: Business Plus.
Smith, K.G., W.J. Ferrier, and C.M. Grimm. 2001. King of the hill: Dethroning the industry leader. *Academy of Management Executive* 15: 59–70.
Thompson, A., M.A. Peteraf, J. Gamble, and A.J. Strickland III. 2011. *Crafting and executing strategy: The quest for competitive advantage*, 18th ed. New York: McGraw-Hill/Irwin.
Zott, C., R. Amit, and L. Massa. 2011. The business model: Recent developments and future research. *Journal of Management* 37: 1019–1042.

Business-to-Consumer (B2C) Marketing

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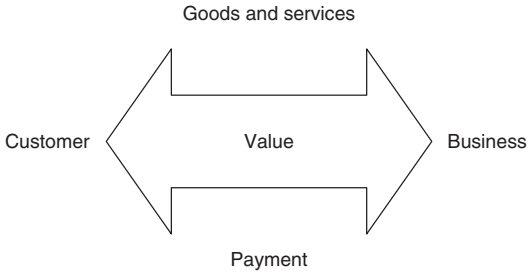
Abstract

This article defines business-to-consumer (B2C) marketing. First, the exchange process between a company and a consumer is explained. Next, the decision-making process that a consumer progresses through when deciding to purchase a product is examined, together with its significance to a business's marketing efforts. The ▶ segmentation, targeting and ▶ positioning strategy adopted by a business when marketing to consumers is described, as well as how this should be reflected in a business's marketing mix.

Business-to-consumer (B2C) marketing revolves around a business attempting to satisfy consumer needs and wants in exchange for some kind of compensation, usually financial in nature (Houston 1986). These needs and wants may range from physical needs such as for clothing, food or security through to more sophisticated wants, such as designer products, shaped by sociocultural influences. An organization will offer products and services that they anticipate will satisfy these needs and wants to consumers. If the consumer perceives the offer as valuable, then a monetary exchange of a product will take place (see Fig. 1). Understanding and responding appropriately to customer needs is a key aspect of B2C marketing. This is frequently achieved through ▶ market research and the establishment of marketing intelligence systems. As a result, business-wide, consumer-focused strategies may be planned and implemented. This planning process revolves around managing a set of marketing variables known as the marketing mix (product, place, price and promotion), in such a way that they appeal to specific sets or segments of consumers (the target market). From an understanding of consumers, a marketing mix is blended to best meet their needs and is then positioned in the market to create a competitive advantage for the business.



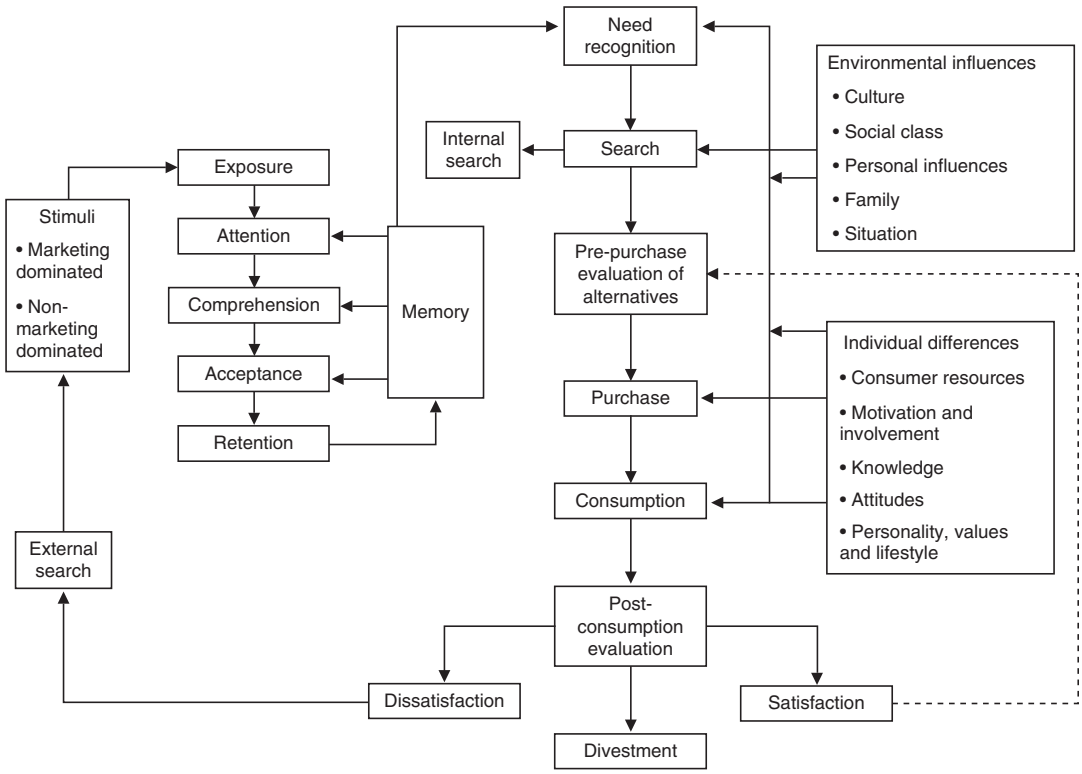
Business-to-Consumer (B2C) Marketing, Fig. 1 The B2C exchange process

Definition Business-to-consumer marketing (B2C) may be defined as satisfying consumer needs and wants through the exchange of services, information and/or products between a business and a consumer, as opposed to between one business and another.

The Decision-Making Process

Markets are aggregates of consumers who buy goods and services for personal consumption. Businesses have to understand consumers before they are in a position to develop effective marketing strategies. The thinking processes that consumers use when deciding whether or not to purchase a product are of particular interest to marketers, as this will inform the stimuli or marketing mix they decide to use (Blackwell et al. 2001). A number of internal and external factors will influence the consumer decision-making process (see Fig. 2).

During the need or problem-recognition stage, consumers perceive a difference between an actual and a desired state, which may be triggered by internal or external stimuli. An information search related to the problem recognized may be a subconscious or automatic review of information stored in the memory, or it may be based upon information available externally, such as advertising. Consumers vary the amount of time they spend searching for information according to the nature of the purchase decision. Search effort varies from passive information gathering to active information search modes, depending on the perceived level of risk associated with the purchase. Subsequently, consumers compare and evaluate alternatives using set criteria to assess each product's attributes. The consumer will then decide for or against the purchase and consumption of the product based on its anticipated performance against the set criteria. During the post-purchase behaviour stage, a comparison is made between expected and anticipated



Business-to-Consumer (B2C) Marketing, Fig. 2 The consumer decision-making process (after Blackwell et al. 2001)

performance of the product and a (dis)satisfaction judgement reached.

The significance attached by a consumer to each of the above stages is determined by the consumer's *level of involvement*. Jobber (2007) defines involvement as the degree of perceived relevance and personal importance accompanying the choice of a brand. Laurant and Karpferer (1985) suggest there are a number of risks which determine consumer level of involvement: financial, psychological, product performance and social risks. When the involvement level is high, consumers are more likely to carry out a complex decision-making process to alleviate the potential risks, and pass through each of these stages. However, when the involvement level in a purchase is low, or is of no or limited interest, consumers will often use shortcuts to reduce the time and effort they expend in the decision-making process.

Marketers need to be aware of the level of involvement that consumers generally have in relation to their products. With high-involvement products, marketers need to understand how consumers gather and evaluate information. Consumers will be actively searching for lots of information and marketers need to provide it in a format with which consumers can identify and engage (e.g., websites, newspapers, magazine adverts, etc.). With low-involvement products, the consumer is often passive in their information search. They do not actively search for information so marketers attempt to create and increase awareness of their product and to reinforce its positive attributes. For example, television is often used to advertise low-involvement products because of the opportunity it provides for repetition and reinforcement and because of the large amount of people who potentially see the advert.

Marketing to Consumers

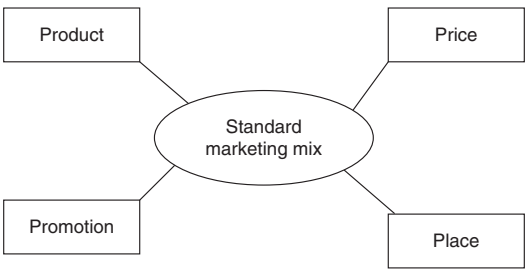
Consumers each have their own psychological characteristics or personality. Related to this, an understanding of the motives that drive consumers to purchase products is important from a marketing perspective because these are what determine consumer knowledge, attitudes and perceptions and, ultimately, the criteria by which consumers choose which products or brands to purchase. From an external perspective, culture, subcultures, social class, reference groups and family will all influence consumer behaviour.

Market research involves collecting qualitative and quantitative data from primary and secondary sources. This data is then analysed so as to anticipate and identify the attitudes and behaviours of consumers, and the relevance and significance of internal and external influences. From this information, markets may be segmented through consumer profiling, and target segments identified for the development and ▶ positioning of appropriate marketing mixes.

Market ▶ *segmentation* is the process of dividing a market into smaller distinct groups of consumers who might require separate products or marketing mixes. It is usually possible to identify relatively homogeneous portions or segments of a market according to shared preferences, attitudes or behaviours that distinguish them from the rest of the market. Marketers can use a number of variables to segment a market, including geographic, demographic, psychographic and behavioural bases. Once a market has been segmented, marketers must decide on a targeting strategy.

Target marketing is the process of evaluating each market segment's attractiveness and selecting one or more segments to target with an appropriate marketing mix (see Fig. 3). In deciding which markets to serve, the firm must consider its resources and objectives in setting its strategy.

When developing a marketing mix that will appeal to its target market, a number of key



Business-to-Consumer (B2C) Marketing, Fig. 3 The marketing mix

decisions related to each element of the marketing mix will need to be taken into account by the business.

Product decisions focus on the goods or services the business should be offering the target group of consumers. Frequently, such decisions will involve issues such as new product development, the range and depth of product portfolios, quality, branding, packaging, and the level and extent of after-sales service.

Pricing decisions involve consideration of consumer elasticity of demand, costs (fixed and variable), how much the competition is charging for their products and the product's market position. At a strategic level, for example, consideration needs to be given whether to position as a cost leader or at the premium end of the market. Both strategies significantly affect pricing decisions.

Promotional decisions focus on which is the most appropriate methods of communicating and/or interacting with consumers. What message does the business wish to send to consumers? Similar to the concept of the marketing mix, there is a promotional mix which a business can draw on, comprising a number of different promotional tools. These include advertising, personal selling, public relations, sales promotion and, increasingly, digital marketing activity. It is critical that these promotional tools be integrated. A decision needs to be taken as to which media to adopt to reach the optimum number of consumers in the target market. Options include TV, cinema, print, outdoor advertising and digital marketing.

Place or distribution decisions focus on the availability and accessibility of the product or service. For products, these mainly revolve around distribution issues such as the number and exclusivity of outlets, methods of inventory and transport, and other supply chain issues. For services, issues focus on the location of consumption activities (e.g., does the consumer go to the service or does the service go to the consumer?).

Because they have a number of distinct characteristics, services may be differentiated from products. They are intangible, cannot be stored, service standardization may be difficult, and production by a service provider and the consumption by consumer are simultaneous. Because of these distinctions, an extended marketing mix has been developed comprising a further three Ps (people, processes and physical evidence).

With "*people*"-related decisions, it is recognized that the firm's personnel occupy a key position in influencing customer perceptions of quality. Recruitment and training policies should reflect this.

Process decisions refer to the procedures, mechanisms and flow of activities by which a service is acquired by the customer. These need to take into account factors such as capacity management.

Decisions related to the place in which the service is delivered and consumed need to be considered. This is the *physical* "*evidence*" the consumer uses to assess quality within service contexts, and will include the layout, the ambient condition and tangible objects.

Market positioning is about managing customers' perceptions of the business and its products relative to those of the competition. Perceptual maps are a way of revealing how customers see markets. They show which products customers perceive as being similar and those they do not. Successful positioning involves developing a distinct competitive advantage in the mind of the customer. The key to selecting an appropriate competitive advantage is to develop a unique selling proposition (USP) for the product.

See Also

- ▶ Market Research
- ▶ Positioning
- ▶ Market Segmentation

References

Blackwell, R., P. Miniard, and J. Engel. 2001. *Consumer behaviour*. Orlando: Harcourt.

Houston, F.S. 1986. The marketing concept: What it is and what it is not. *Journal of Marketing* 50: 81–87.

Jobber, D. 2007. *Principles and practice of marketing*. Maidenhead: McGraw-Hill.

Laurant, G., and J.-N. Karpferer. 1985. Measuring consumer involvement profiles. *Journal of Marketing Research* 22: 41–53.