



# Exploring the roots of Porter's activity-based view

Norman T. Sheehan

*Edwards School of Business, University of Saskatchewan,  
Saskatoon, Canada, and*

Nicolai J. Foss

*Copenhagen Business School,  
Center for Strategic Management and Globalization,  
Frederiksberg, Denmark and  
Department of Strategy and Management,  
Norwegian School of Economics and Business Administration,  
Bergen, Norway*

## Abstract

**Purpose** – Porter's activity-based view of the firm is a comprehensive strategic framework which analyzes firm-level competitive advantage. Although Porter's activity-based view is widely cited by academics, taught to students, and applied by practitioners, little is known about its intellectual roots. Given that a framework's intellectual antecedents not only determine its current content, but also its future development, this paper aims to examine the intellectual roots of Porter's activity-based view and the value chain.

**Design/methodology/approach** – The paper examines Porter's writings in an effort to document his influences while developing the activity-based view and value chain. Porter's and other scholars' explanations are found to be lacking, so the paper ventures further down paths first suggested by Porter and others.

**Findings** – Whereas Porter's five forces framework built on the existing industrial organization paradigm, the activity-based view is not derived from any existing paradigms. While consultants of the 1970s impacted Porter's development of the value chain and the activity-based view, its deeper roots lay in operations research, particularly activity analysis; and the work of Arch Shaw, who was the first to teach a business policy course at Harvard Business School. Porter's contribution is to bring the diverse threads together into a coherent whole which managers can apply to analyze and improve their competitive positions.

**Practical implications** – Following Porter, the authors argue that activities are a key link between resource holdings and strategic positions. Therefore, it is only when the activity-based and resource-based views are integrated that they provide a comprehensive explanation of firm value creation.

**Originality/value** – The paper is the first to critically examine the intellectual antecedents of the activity-based view.

**Keywords** Value chain, Strategic management, Activity based management

**Paper type** Research paper



## Introduction

The value chain – a generic activity template that can be used to analyze and improve a firm's competitive position – is frequently and widely cited by academics, taught to business students, and applied by practitioners. The value chain was first introduced by Porter (1985) in his book, *Competitive Advantage*. While the value chain is one of the most frequently cited, taught, and applied strategic analysis frameworks, little is known about its roots. In the case of individuals, technologies, firms, etc. initial conditions matter because they influence development trajectories in certain ways. In the case of frameworks, theories, and paradigms, the initial sources from which inspiration and insights have been drawn also influence the actual content of the theory, framework or paradigm, as well as its future development paths. In other words, intellectual antecedents partly determine the content of a theory, as well as where it will likely go in the future (Ghobadian and O'Regan, 2008).

Porter (1998, p. xv), who later labels the strategic framework in which the value chain resides, "the activity-based view," says it was derived from a number of sources, with no one source making a significant contribution. This is in stark contrast to our knowledge of the roots of the other two dominant strategic frameworks; Porter's (1980) five forces model and the resource-based view (Barney, 1991; Wernerfelt, 1995). Porter (1981) provides a full description of the influence that the field of industrial organization, particularly Bain (1956, 1959) and Mason (1939), had on the development of the five forces model. The leading exponent of the resource-based view of Barney (1997), Barney and Arikan (2001), and Barney (2007) fully acknowledges the work done by Harvard lecturer Arch Shaw and his colleagues on firm-level strengths and weaknesses, Selznick's (1957) work on distinctive competence, Ricardian rents, Demsetz' (1973) work on industrial economics, and Penrose's (1959) theory of firm growth had on the development of the resource-based view. Foss (2000) explores the intellectual path-dependencies that these precursors have installed in the resource-based view. Nothing similar has been done in the case of the activity-based view.

Given that the activity-based view is widely used by researchers, instructors, and practitioners, this paper aims to fill this gap by outlining the potential intellectual antecedents of the activity-based view, and by association, the value chain. In order to review the activity-based view's roots, it is necessary to define what it is. The next section provides a summary of the key characteristics of Porter's activity-based view. Porter's own reflections as to the roots of the activity-based view follow, after which the paper reviews what other academics have written regarding its roots. A compelling, comprehensive explanation is found lacking, so the paper attempts to provide an integrative explanation as to the probable roots of the activity-based view. The final section critically examines Porter's contribution to the development of the activity-based view and speculates on the future of this view.

## The activity-based view

### *A brief summary*

The activity-based view of the firm is a comprehensive strategic framework which analyzes firm-level competitive advantage using activities as the unit of analysis. Porter (1985, 1991, 1994, 1996, 1998, 2008) proposes that the key to improving firm performance is to understand how customer value is created (Priem, 2007).

The starting point is the argument that it may be more useful to think of firms as being paid, not for their outputs *per se*, but rather for the “discreet, yet interdependent” activities it performs to produce the output, that is, for the things firms actually do to create value. Value is created when there is a wedge between the (opportunity) cost of producing goods and services and the prices that consumers and buyers are willing to pay for those goods and services. As Porter (2006, e-mail) explains:

Activities link directly to cost and buyer value, the two types of competitive advantage. The nomenclature “value chain” reflected the fact that it was the activities the firm performed that actually created value for the buyer. But there was a cost involved in performing the activities, and hopefully there was a margin between the price buyers were willing to pay and the total costs of the necessary activities. I wanted to be able to draw a direct line between company choices, price, cost, and relative profitability.

Porter (1985) argues that it is only by breaking the firm into activities – such as receiving, manufacturing, storing, transporting, hiring, training, purchasing, and marketing – that it is possible to identify the potential sources of competitive advantage. Competitive advantage is the firm’s potential to create and appropriate more value than the competition. The root of competitive advantage is being different, notably by configuring activities with different efficiencies in different ways.

To help managers achieve a competitive advantage, Porter (1985) outlines the value chain, which is a generic activity template that can be used to decompose the firm into the individual activities it undertakes to create value. In Porter’s world, formulating firm strategy starts by looking for ways to improve the buyers’ willingness to pay and/or reduce the cost incurred by the firm’s individual value chain activities. This result of this analysis determines the firm’s strategic position; that is how its activity set will be configured differently relative to its rivals.

The key characteristics of the Porter’s (1985) activity-based view are:

- *The activity is the unit of analysis.* The firm is broken up into activities that incur large costs, have differing cost behaviors, and/or are performed differently by competitors.
- *A systemic view should be employed.* The value chain seeks to optimize at the business system level, rather than at the level of the individual functions, departments, or business units. Porter’s (1996) seminal article, “What is strategy” extends the activity-based view by illuminating the role that activity fit and trade-offs play in achieving competitive advantage.
- *There are two types of activities.* Primary activities directly create customer value while support activities exist to enhance the value created by the primary activities.
- *It includes cost and value drivers.* Drivers are the underlying structural factors that explain why the cost/value generated by a firm’s activity set differs from its rivals. Manipulation of activity drivers forms the basis for successfully positioning the firm as low cost or differentiator relative to its rivals.

#### *Impact*

Porter’s (1985) book is the second most frequently cited work in the *Strategic Management Journal* during the period 1987-2000 (Ramos-Rodriguez and Ruiz-Navarro, 2004). The use of the value chain concept by scholars extends,

however, beyond the field of strategy. A search of the term “value chain” in the “citation and document text” of scholarly articles in the ABI/Inform Global database found 8,469 hits[1]. If the search is narrowed to just the “abstract text,” it is mentioned 981 times[2], the majority of which (764) occurred since the turn of the century (January 2000-October 2008). These “abstract” hits occur in diverse management fields such as information systems, operations and production management, logistics, marketing, economic development, and health care administration.

The value chain is widely taught to business policy students, if its inclusion in nearly all leading strategy texts is an indication (Barney and Hesterly, 2008; Dess *et al.*, 2007; Ghemawat, 2008; Hitt *et al.*, 2009; Johnson *et al.*, 2007; Lynch, 2005; Marcus, 2005; Saloner *et al.*, 2005 ; Thompson *et al.*, 2007; Walker, 2006; Wheelen and Hunger, 2007). It is also widely applied by managers and consultants; a search of the term “value chain” in the “citation and document text” of practitioner articles located in the ABI/Inform Global database resulted in 10,300 hits[3]. If we narrow the search to just the “abstract” text in the same practitioner article database, it results in 1,548 hits[4], the majority of which (1,204) occurred since the turn of century (January 2000-October 2008).

### Porter's explanation as to the roots of the activity-based view

#### Background

Porter wrote *Competitive Advantage* to complement his 1980 book, *Competitive Strategy*. Porter (1985, p. xvi) felt that although firms were following his advice with respect to strategic formulation in the 1980 book (i.e. they should either follow a low cost, differentiation or focus strategy), they were not always successful in implementing these strategies. Porter (1985) book was an attempt to address this shortcoming; in his words: “*Competitive Advantage* is about how a firm actually puts the generic strategies into practice.” Porter (1994, p. 265) later expands on this:

While the positioning concepts in *Competitive Strategy* provided the overall framework, to operationalize strategy I had to go further. How could a firm actually attain the lowest cost position? How could it create non-price buyer value? [...] To pursue these questions I began research on *Competitive Advantage*, which was to take almost five years.

Porter's activity-based view (and value chain) first came into the public domain with the publication of *Competitive Advantage* in 1985. There are no references to activity-based analysis in Porter's (1980) book, the accompanying case collection (Porter, 1983), nor in his articles published in Porter (1981, 1982). Porter's work published prior to *Competitive Advantage* is in the industrial organization tradition as he focuses solely on the firm's external environment. Porter (2006, e-mail) writes:

My research roots were put down in industrial organization during my Ph.D years. IO focused on the industry as a unit of analysis, which is where I started. Chapter 2 of *Competitive Strategy* (on generic strategies) was added at the very end, in a book that was mostly about industries. Chapter 2 was, for me, a breakthrough because it was the first effort to think about strategy and taxonomies for different strategies based on the underlying competitive advantage rather than the content of the strategies themselves (vertical integration, internationalization, etc.).

Foss (1996) suggests the reason that Porter focuses only on the external environment is due to Bain (1959) states that industrial organization should not be concerned with the

internal workings of firms, which are best left to management scientists. It is not until Porter begins research for his book, *Competitive Advantage* that his focus shifts inwards. With its publication in 1985, Porter turns into a “management scientist,” using activities to analyze the inner workings of firms.

*Porter on the roots of the activity-based view*

In the preface to *Competitive Advantage*, Porter (1985, p. xvi) acknowledges that the foundations of the activity-based view are in business strategy and industrial economics. However, he later writes in the preface, “It is not possible to acknowledge all the contributions in the various disciplines that have influenced in some way the ideas here.” arguing that it is only by integrating ideas from a wide range of disciplines that one can understand firm-level sources of competitive advantage. In a footnote, Porter (1985, p. 36fn) acknowledges McKinsey’s Business System notion (Buaron, 1981; Gluck, 1980), noting that it had also been previously used to analyze firm-level advantages. In the same footnote, Porter also briefly refers to Bower’s (1972) note: *Simple Economic Tools for Strategic Analysis*. Bower’s (1972) Harvard Business School (HBS) teaching note illustrates how firms add value in each step of the industry’s vertical chain and discusses a firm’s ability to maintain this value in light of competition. In a subsequent footnote, Porter (1985, p. 39fn) acknowledges the influence of (production) economics, writing that individual firm activities are similar to production functions, adding that the value chain can be seen as a bundle of production functions. A production function is a mathematical specification of the optimum technical possibilities of a firm; that is, how it best combines inputs in the production of outputs, given technological knowledge. The references to Bower and McKinsey are the only citations listed in the 1985 book’s bibliography that have any connection to the value chain and activity-based view.

A chapter from a 1994 book broadly outlines his influences while writing *Competitive Advantage*. Porter (1994, p. 266) notes that the field of economics, with its notion of the production function, was “suggestive, but little help.” Strategy, with its focus on critical success factors, was “similarly barren.” Only operations research, with its focus on the “optimization of complex systems,” was deemed useful by Porter.

Later in 1997, Porter and co-author Nicolai Siggelkow describe how McKinsey’s Business System and other consultant tools were used to more accurately describe firm costs. Acknowledging the impact of McKinsey on Porter’s thinking, Porter and Siggelkow (1997, p. 114) write:

In his 1985 book *Competitive Advantage*, Porter drew upon these threads to present an overall framework for analyzing how a firm could actually attain the lowest cost position and how it could create more value for buyers.

As for the specific roots of the activity-based view he (Porter, 1994, p. 266) states:

I developed the notion that competitive strategy is manifested in the discrete activities a company performs in competing in a particular business. Activities such as order processing, process design, repair and sales force operations, are narrower than functions (e.g. marketing and production).

Porter (1994, p. 266) then adds: “The value chain [. . .] grew out of research in a wide array of companies and industries.” Porter (1998, p. xvii) reiterates this position in the new Introduction of the re-issue of *Competitive Advantage* in 1998, stating that

---

although the field of industrial organization was the basis of his 1980 work, the 1985 work “[...] had no clear antecedents in the literature on management or economics. Instead, it emerged from my attempt to solve a puzzle.”

As outlined above, Porter broadly acknowledges his influences while developing the activity based view and value chain: McKinsey's Business System (Porter, 1985; Porter and Siggelkow, 1997), industrial organization (Porter, 1985), vertical industry chain (Porter, 1985), classical economics (Porter, 1985, 1994), operations research (Porter, 1994), and business strategy (Porter, 1985). The next section will examine and discuss what other scholars have postulated as to Porter's influences.

### Critically reviewing the threads

Although Porter (1998) clearly distinguishes the activity-based view and the value chain, others do not. Rather they tend to comment only on the tangible manifestation of Porter's activity-based view, the value chain. Most scholars follow Porter's lead in naming McKinsey, industrial organization economics, vertical value chain, and economics as influences. However, several scholars suggest two areas not named by Porter, systems theory and cost accounting. Starting with cost accounting, this section critically examines each of the proposed influences and discusses their potential contribution to the development of the activity-based view.

#### *Cost accounting*

Balderston (1985) and Roos *et al.* (1994) suggest that the genesis of the value chain is in costing and control techniques. Dating back to Kohler in 1938 (Aiyathurai *et al.*, 1991) and Shillinglaw in 1961 (1977), the field of management accounting has used activities as the basis for costing and control. For example, Anthony *et al.* (1972) encourage accountants to model the firm using production activities in order to increase control. While cost accounting uses activities as a basis for analysis, activity-based costing did not originate until after *Competitive Advantage* was published. In fact, Porter appears to have had more influence on cost and management accounting than the other way. Johnson (1991) notes (as does Porter (1991, 1994)), the roots of activity-based costing and activity-based management are in Porter's value chain. Other examples of how the value chain impacted management accounting are found in Shank (1989) and Shank and Govindarajan (1992), who use the value chain to strategically analyze firm costs.

#### *Systems theory*

Farmer (1985), Reimann (1989), and Rowe *et al.* (1994) propose that the value chain is derived from systems theory. According to Churchman (1968, p. 11), “Systems approach is simply a way of thinking about the total systems and their components.” Systems theory appears to account for one key characteristic of the activity-based view, systemic thinking, however, this may also be derived from the field of operations research as will be discussed below.

#### *Production economics*

Hergert and Morris (1989) use a resource-based logic in developing the argument that the roots of the value chain ultimately are in economics. They argue that as some activities are not freely traded, rents can be derived from these if they are based on scarce resources. One could update this argument, relying on Porter's (1996) later

argument that ultimately it is the systemic nature of the multiple links between activities that may yield sustainable competitive advantage, because complex activity systems are very costly to imitate (Porter and Rivkin, 1998). In other words, activities may not only yield rents, they may also serve to make these rents and the underlying scarcities sustainable. While we think that Hergert and Morris' argument is ingenious, the economics influence is probably a different one than the one they focus on. Notions of rent and non-tradeable resources are not present in Porter (1985). Instead, the economics influence lies in industrial organization economics (Porter, 1981) and in production economics, including not just the production function view (Langlois and Foss, 1999), but also the classical division of labour view (Smith, 1776; Babbage, 1832; Leijonhufvud, 1986). Porter himself states he started with the production function, but then writes (Porter, 2006, e-mail):

It became clear that to do so, I would need a "theory of the firm" that captured the incredible richness of what firms actually do rather than abstract the firm into a production function (the approach in economics). The value chain started to take shape as a way of thinking systematically about what a firm does, in a way that would illuminate the choices that could and needed to be made about how various activities, as I came to call them, would be performed.

#### *Industrial organization economics*

Gartner (1985) and Rumelt *et al.* (1994) do not make a clear distinction between Porter's 1980 and 1985 works, implying that Porter's inspiration for both was industrial organization. For example, when Gartner (1985, p. 873) reviews *Competitive Strategy* and *Competitive Advantage* he states, "Porter conceived his ideas within the context of industrial economics."

It is fair to argue that parts of Porter's (1985) *Competitive Advantage* have its roots in industrial organization economics. Specifically, Part II of *Competitive Advantage*, which examines competitive scope and segmentation of industries, and Part III which discusses horizontal coordination, have clear roots in Bain/Main School of industrial organization. In addition, the genesis of cost drivers can be linked to Joe Bain's (1956, 1959) structure-conduct-performance framework. Bain lists a number of structural factors which Porter later adopts in his five forces framework, including scale, learning, capacity utilization, scope, location, and policy choices. These industry level structural forces, which can be seen as the relational and relative properties of industry actors, explain why some industries are more profitable than others. Porter later bases his conception of activity level drivers on these industry level structural forces. However, there is not a one-to-one mapping from industry forces to activity drivers as Porter defines drivers as the structural properties of a firm's activities, rather than as structural properties of the industry actors. The activity-based view marks a shift in Porter's focus from explaining firm-level value appropriation (Porter, 1980) to explaining firm-level value creation (Porter, 1985).

This change reflects the evolution of Porter's thinking between 1980 and 1985, as the 1980 book essentially identifies the industry forces that divide the profit created by the industry (Foss, 1996). To do so, the 1980 book, *Competitive Strategy*, completely adopts the market and bargaining power lens of traditional industrial organization economics. Thus, competition and market power help determine how much profit there is to appropriate; bargaining with buyers and sellers determine the division of profit

among the parties. However, these power considerations have little to say about how much value is created.

Instead, one may find the roots of value creation in the Chicago School of industrial organization (Demsetz, 1973; Conner, 1991; Foss, 2000). The emphasis in the Chicago School is explaining the dispersion of observed returns in terms of achieving higher revenues by improving buyer willingness to pay or lower costs by increasing efficiencies, rather than in terms of using market and bargaining power to force buyers to pay higher prices or to force suppliers to accept lower input costs. Thus, the activity-based view is rooted in the Chicago School of industrial organization rather than the Bain/Mason School as the goal of the activity-based view is to increase profitability by enhancing buyer value and hence being able to increase prices, or by improving manufacturing efficiency and hence being able to lower costs.

### *Vertical industry chain*

Many authors see the value chain as a firm-level application of the notion of the vertical industry chain (Besanko *et al.*, 1996; Grant, 1991; Hergert and Morris, 1989; Reve, 1996; Stacey, 1996). Prescott (1987) and Lynch (2005) argue that Porter received inspiration from Bower's notion of the value-added chain, which is a variation of the vertical industry chain.

Porter may have been influenced by the "make or buy" literature, which focuses on which activities should be performed within the firm and which should be left to "the market" (i.e. other firms; Williamson, 1996). Stigler (1951), working in the tradition of Smith (1776) and Coase (1937), uses activities as the unit of analysis. Stigler (1951, p. 187) writes:

For our purpose it is better to view the firm as engaging in a series of distinct operations: purchasing and storing materials; transforming materials into semi-finished products and semi-finished products into finished products; storing and selling outputs; extending credit to buyers, etc.

Stigler (1951) documents which activities should be in the firm and which should be left to the market; activities with decreasing costs functions should be kept in the firm, while activities that exhibited increasing cost functions should be outsourced, market size allowing. Richardson (1972, p. 888) follows in Stigler's footsteps:

It is convenient to think of industry [or a firm] as carrying out an infinitely large number of activities, activities related to the discovery and estimation of future wants, to research, to development and design, to the execution and co-ordination of processes of physical transformation, the marketing of good and so on.

Richardson (1972) argued that firms should retain activities that require like capabilities in-house, while those activities that have dissimilar capabilities should be left to other actors in the industry vertical chain. Of course, the focus of these papers is different from Porter's (i.e. explaining the organization of the vertical chain rather than the drivers of value creation), but it is quite likely that Porter knew these classical papers in industrial organization economics, and may have been inspired by them.

### *McKinsey's business system*

Consultants, in particular McKinsey and Boston Consulting Group (BCG), influenced Porter's thinking (Porter and Siggelkow, 1997). Wright (1987), Reimann (1989),



and Kay (1993) suggest that the value chain is an extension of McKinsey's Business System. In particular, Nadler and Slywotzky (2005, p. 79) state that Porter popularized the value chain, arguing that it was already used by several consulting firms. Day and Wensley (1988, p. 3) wrote that "the value chain or business system framework was attributed to McKinsey and Co. but largely developed into a management tool by Porter (1985)." Kogut (1985, p. 27fn) adds credence to this, "Although the concept of the value-added chain has been circulated among consultants and academics for several years, it has only recently been discussed in academic publications." Lastly, after discussing McKinsey's Business System, Barney and Hesterly (2008) note that Porter developed a second generic firm-level value adding framework, which he labeled the value chain.

There are several similarities between McKinsey's Business System and Porter's value chain. McKinsey's Business System is described by Buaron (1981, p. 33) in *McKinsey Quarterly* as a "sequence of steps by which companies in a given business produce their goods or services and get them to the customer." The aim of Porter's value chain and McKinsey's Business System is also similar, "the business system serves as a framework for putting together an integrated set of actions to achieve sustainable competitive advantage" (Gluck, 1980, p. 26). However, as Porter (1985, p. 36fn) notes, there are critical differences between McKinsey's Business System and his value chain framework:

- McKinsey's Business System is focused on functions, which are broader than activities.
- McKinsey's Business System does not discriminate between primary and support activities.
- McKinsey's Business System does not have the rigor relating to the derivation and application of drivers, particularly in regards to linkages and interrelationships between the activities within the firm and across value chains of other firms.

Porter (2006, e-mail) later elaborates on these differences:

The notion of functional policies was well established in the management and business policy literatures, but I decided that functions (e.g. marketing) were too broad to capture the important choices. As I looked at hundreds of firms in hundreds of industries via HBS case studies, reading, and a growing contact with practicing managers, I tried to come up with a general way of thinking about the types of activities a firm performed when competing in a particular business, and the way these activities related to each other. Hence, the distinction between primary and support, etc.

While the cost drivers originate from Bain's work, they were applied and refined by consulting companies in the 1970s. Ghemawat (2002), a former employee of BCG, notes that BCG and McKinsey used firm-level, activity-based decompositions to allocate joint product costs in the 1970s. In particular, BCG used its experience curve to understand why firms differ in terms of costs which may have inspired Porter to use drivers to explain activity level differences in cost (Shank and Govindarajan, 1989; Ghemawat, 2002). Finding that BCG's experience curve, an amalgam of learning, specialization and investment effects, was difficult to disentangle in practice, Porter's contribution was to

break it into separate parts (e.g. scale, learning, and capacity utilization; Ghemawat, 1986).

While consulting firms, particularly McKinsey and BCG, influenced Porter, it can be argued Porter significantly extended their ideas thus providing only a partial answer as to the roots of the activity-based view. It still begs the question: What fields was Porter basing his extension of McKinsey and BCG's work on? The next section discusses what may be seen as deeper roots of Porter's activity-based view; beginning with what lays at the heart of Porter's (1994) comment that operations research was helpful.

### **Towards an explanation of the roots of the activity-based view**

Given that Porter provides only broad indications of the antecedents of his activity-based view and other scholars do not provide a comprehensive account, the section follows two most promising trails suggested by Porter (1985, 1994) and other academics: operations research and strategy. Each stream is explored below. We start with Adam Smith and Charles Babbage as they can be seen as the earliest writers on operations research, and its predecessor, scientific management.

#### *The division of labor*

With his famous pin manufacturing example, Smith (1776) deftly illustrates how the division of labor improves productivity; dividing the work into micro-activities allows one to reap the benefits of specialization. Following closely in Smith's footsteps, Babbage (1832) emphasized the benefits of the division of labor, but also discusses the advantages of economizing on labor by employing those whose skill and wage level best match job requirements. Both classical economists describe how the division of work into individual activities improves efficiency and wealth, which provides a common foundation for the disciplines that follow. Starting from a division of labor perspective, the so-called "Austrian theory of capital" (Hayek, 1931) portrayed the division of labor in terms of temporally ordered tasks. Specifically, productive tasks were ordered in a vertical chain depending on how close they were to final consumption, essentially a society-wide value chain.

#### *Scientific management*

Smith and Babbage's emphasis on increasing manufacturing efficiency through the sub-division of work is strongly linked to the ideas of scientific management (Campbell-Kelly, 1994; Merrill, 1970). Scientific Management, or as Taylor (1911, p. 30) referred to it, "task management," was a movement led by Taylor to improve manufacturing efficiency and increase the share of spoils for workers and owners alike. Scientific management accomplishes this by searching for an optimal way to perform individual production activities. For example, Frank Gilbreth (Taylor, 1911, pp. 80-4) in his study of bricklayers, fashioned a camera to take slow-motion pictures so that he could study their individual movements. From this, Gilbreth invented devices such as an adjustable scaffold that moved with the bricklayer as he advanced up a wall, an optimal mortar mix, and a stance for laying bricks that minimized unnecessary motion. Gilbreth (Taylor, 1911, p. 81) reported that these changes improved a man's bricklaying output by almost 300 per cent.

The benefits of Scientific Management were documented in 1924 by H.H. Farquhar, then an Assistant Professor in Industrial Management at Harvard. According to Farquhar (1976) scientific management increased production, improved quality and delivery times, enhanced industrial peace, provided higher wages, and reduced employee turnover. These benefits were achieved by operational refinements including: better costing and control methods, improved organization, more effective utilization of equipment, more effective use of labor, strict regulation of materials, and more accurate routing. In many ways, Taylor can be seen as the first business process re-engineer (Crainer, 1995). The application of Taylor's scientific principles allowed American industry "[...] to produce good-quality, if relatively unsophisticated, products at low prices" (Locke, 1996, p. 20), which is similar to the objective of Porter's low cost strategy.

Although there are many similarities, the activity-based view is not a clone of Scientific Management. There are three key differences: first, Porter worked on the business system level focusing on firm strategy, whereas Taylor concentrated on the shop floor. Second, although the principles of scientific management were incorporated into lower levels of administration, Taylor has no concept of primary and support activities. Last, Taylor had no concept of activity drivers.

#### *Operations research*

Operations research, born out of wartime necessity, was first applied to business problems in the aftermath of W.W. II (Waring, 1991). There is a strong link between Babbage, Taylor, and operations research as Simon (1960, p. 14) notes that if alive today Babbage and Taylor would have been "[...] made, retroactively, charter members of the operation research societies." Further, Simon (1960, p. 14) writes the difference between operations research and scientific management is only in degree, as "the operations researchers tend to use rather high-powered mathematics."

Linear programming, which is a subset of operations research, is concerned with the optimal allocation of resources (Churchman *et al.*, 1957). One branch of linear programming, which deals with firm/industry-level optimization, is activity analysis. Activity analysis has roots in the general equilibrium models of Quesnay and Walras, equilibrium models proposed by von Neumann and Wald in the 1930s, Leontieff's work on input-output systems, as well as work done by Dantzig (1963), Dorfman (1953), and Koopmans (1951) on linear programming methods. Activity analysis sprung to prominence in 1949 when the Cowles Commission sponsored a conference held at the University of Chicago. This conference on linear programming resulted in a book, edited by Koopmans (1951), *Activity Analysis of Production and Allocation*. The tools of activity analysis were quickly adopted by economists, as it offered an alternate approach to the dominant neo-classical paradigm of marginalism (Malinvaud, 1967); one that required less stringent mathematical assumptions (e.g. continuity). Much of the existing body of neoclassical economic thought could be reinterpreted in an activity frame, and the approach yielded novel insights, such as inter-temporal resource allocation and optimality conditions (Malinvaud, 1967). Relative to the huge interest immediately post World War II interest in activity analysis waned, perhaps caused by the recognition that while activity analysis offered progress in economic methods and analysis, it did not amount to a revolution (Smolinski, 1977).

Despite its limited time in the limelight, activity analysis attracted some of the brightest economists of the day if the Nobel Prize in Economics is any measure. Koopmans won the 1975 prize primarily for his work on activity analysis, which he shared with Kantorovich, who independently developed methods to tackle resource allocation problems[5]. Koopmans extended economic theory, as he was concerned not only with inputs and outputs, but also with the variety of processes that could transform inputs into outputs (Christ and Hurwicz, 1987). Koopmans may therefore, to a certain extent, be described as a management scientist who helped to open the black box of the firm and apply mathematical techniques to the problem of optimizing combinations of various activities and inputs therein.

As with the activity-based view, activity analysis has activities as the basis for optimizing operations. The earliest conception of a firm as a set of activities was laid out by Wood and Dantzig (1951, p. 15):

The economy or organization for which a program is to be constructed is here conceived of as comprising a finite number of discrete types of activities each of whose magnitudes is to be specified over a certain time period.

Dorfman *et al.* (1958, p. 132) saw the firm in a similar light, “We conceive of a firm making choices among a number of processes.” Koopmans (1951, p. 6), like Porter, called activities “building blocks,” where, “The problem of efficient production then becomes one of finding proper rules for combining these building blocks.” Sounding like a strategist, Dantzig (1963, p. 6), quote marks in original) calls managers who utilizes activity analysis, “architects,” as they use models to “[. . .] manipulate ‘on paper’ the symbolic representations of the building blocks (activities) until a satisfactory design is obtained.”

Operational research views on production functions are also very similar to Porter. Activity analysis added flesh to the skeleton of the firm’s production function by conceptualizing production functions as being underpinned by activities, where there exists multiple ways to produce a good (Balderston, 1954; Varian, 1992). Dorfman (1953, p. 6) argues, “The conventional production function can be thought of as the formula relating the inputs and outputs of all the processes by which a given task can be accomplished.” This is similar to what Porter (1985, p. 39fn) proposes; each activity can be viewed as an individual production function, where top management has the ability to “configure and combine” each activity according to the strategy chosen.

Aside from using activities as the basis of analysis, and their views of production functions, there are strong similarities between activity analysis and Porter’s activity-based view:

- *Separation of primary and support activities.* Activity analysis splits activities into primary activities, which are defined as those “activities contributing directly to objectives (or final demand)” (Wood and Dantzig, 1951, p. 16); and the “required supporting activities,” whose “output is principally used by the final demand activities” (Wood and Dantzig, 1951, p. 16).
- *Prescriptive advice offered.* In his seminal paper from 1939 (translated and reprinted in 1960), Kantorovich (1960) says that there are two ways to improve productivity. The first is through technological change, new equipment, new inputs, etc. The second, and which Kantorovich claims is often overlooked, is improving current processes. This resembles Porter (1985, p. 99) as he also offers

firms two choices to improve their cost position: Managers can either reconfigure their value chain, which implies new and different ways of producing, selling, and servicing products, or they can improve coordination of current activities through manipulation of drivers.

- *View of resources.* Operation researchers take the resources of the system as given and try to optimize on this basis (Waring, 1991). Porter also assumes that all resources are given (Foss, 1996).

Despite their similarities there three key differences:

- (1) *Lack of drivers.* Owing to the assumption that all firms are alike, activity analysis does not consider the impact of activity drivers on a firm's relative cost or differentiation position.
- (2) *Activity analysis assumes perfect competition.* Dorfman *et al.* (1958) state they are not concerned with input or output prices as they are assumed to be set by the market (the assumption is, however, made for analytical convenience, and activity analysis is consistent with other market forms). As evidenced by his 1980 and 1985 works, Porter does not live in a world of perfect competition; on the contrary, "Porter's world" is one in which market power is manifest, that is, a world of oligopolistic competition.
- (3) *The level of analysis is different.* Although activity analysis can be employed in the service of firm-level profit maximization, it is perhaps best thought of as either:
  - a tool for optimizing manufacturing (linear programming), or
  - a tool that assists society-wide planning (i.e. socialism).

Porter's focus is unambiguously firm-level: his interest lies in improving firms' competitive position either by lowering cost or increasing buyer willingness to pay; he analyzes all areas in his search for competitive advantage.

Despite these differences it can be argued that some of the activity-based view's deeper roots are in activity analysis and its forerunners, Scientific Management, and those parts of economics that deal with production.

#### *Business strategy*

As Porter acknowledged in 1985, business strategy played a large role in the development of the activity-based view. The question is: Who were the key influences? Porter frequently and generously acknowledges the influence of C. Roland Christensen and Kenneth Andrews (Montgomery and Porter, 1991; Porter, 1980, 1981, 1985, 1991, 1994). As Porter (1980, 1994) notes, they significantly developed that idea that the key role of the general manager was to formulate strategy by matching external opportunities and threats to the firm's internal strengths and weaknesses, and then integrate all areas of the firm into a coherent direction. However, it is doubtful their influence extends to the activity-based view as there is no mention of activity-based analysis in the inaugural *Business Policy Text and Cases* by Learned *et al.* (1965), in the second edition from 1969, nor the third edition which is authored by Christensen *et al.* (1973).

The analysis of firm-level internal strengths and weaknesses has a long tradition at the HBS beginning with Arch Shaw (Learned *et al.*, 1969). Arch Shaw taught the first capstone Business Policy course at Harvard in the 1911-1912 school year (Wren, 2005). Shaw's, 1916 book, *An Approach to Business Problems*, summarized his Business Policy lectures. In his lectures, Shaw is concerned with improving firm performance and places activities at the centre of his analysis. Shaw (1916, p. 3) offers perhaps the earliest generic activity breakdown of business firms, stating that all firm activities may be broken down into three groups: production, distribution or administration. Production and distribution are similar to Porter's primary activities as they relate to the transformation and flow of goods from suppliers to customers. And administration, or what Shaw also labels facilitation, activities are similar to Porter's support activities. Leading the Harvard tradition, Shaw (1916, p. 6) takes a strategic view of the general manager's role; "The function of the general manager of a business is to coordinate and direct these three groups of activities." He advocates a consistent approach to managing these activities as, "This will bring out and establish the permanent strategic position."

Although Shaw was a contemporary of Taylor and was influenced by his writings (Wren, 2005), Shaw moves beyond scientific management. In particular, Shaw foreshadows Porter's business system level focus stating that if managers want to achieve efficiency they need to take a systemic view, rather than a localized, departmental view. Shaw (1916, p. 7) argues that "No business problems are strictly departmental. They all have implications reaching out and affecting activities in other departments." Shaw (1916, p. 15) concludes his thoughts on the importance of managing activities holistically by noting, "I am inclined to think that the difference between moderate and distinctive success in business is in the main just a sum of individually distinct advantages," a view revitalized in Porter (1996). Shaw (1916, p. 16, quotes in original) continues:

Moreover, all these advantages tend to augment and multiple one another. Greater output is not the only effect of the able manager's discriminating labor policy. He gets also a more even, if not a superior, product. This builds up his 'good will' and facilitates sales.

Shaw's contributions to the activity-based view are many and significant: activities are the unit of analysis, the firm is crudely divided into primary and support activities, and the importance of fit across all activities. The only critical ingredients missing from Shaw's (1916) *An Approach to Business Problems* relative to Porter's work is the concept of activity level drivers and a nuanced understanding of competitive rivalry.

### **Conclusion: whither the activity-based view?**

This paper discusses which literatures within economics and management could be considered intellectual antecedents to the activity-based view. Consulting firms appear to have, in the least, sparked Porter's interest in using activities as an analytical tool, which is supported by Porter's (1985); Porter and Siggelkow(1997) reference to McKinsey's Business System. Activity analysis has a strong connection to the activity-based view, which is supported by Porter's (1994) comment regarding optimization of complex systems and production functions. In addition, Arch Shaw's approach to business problems also appears to foreshadow some of Porter's key ideas.

What then is Porter's contribution to the activity-based view? As opposed to the five forces framework, where Porter extended the existing industrial organization paradigm to explain differences in industry profitability, there was not an existing paradigm for him to build on. While narrow concepts related to the activity-based perspective pre-existed, Porter's contribution was that he created a comprehensive firm-level framework to describe firm-level sources of cost and differentiation advantages at the activity level. He was the first to fully delineate the activity-based view, extend it by adding the concept of drivers, and then integrate it into the field of competitive strategy.

His development of activity level drivers is a unique contribution; according to Ghemawat (2008) most consultants were still only working with scale and learning drivers in the 1970s (or BCG's experience curve). Porter (1985) develops eight additional drivers to help explain why some activities generate a higher willingness to pay or have a lower cost relative to rivals. Echoing Day and Wensley (1988), we argue that Porter's most significant contribution is that he took ideas from economics, scientific management, activity analysis, and strategy and developed these into an expert system, the value chain, which practitioners can employ to improve their competitive positions.

Because of Porter's eclecticism in putting together his framework, it is hard to say that one influence has been more dominant than the other. Moreover, because of this eclecticism the framework is also a general and open-ended one, compatible with other approaches to firm-level success, rather than rival to them. Progress in the field of strategic management depends on how well it answers the question "why do some firms outperform others" (Rumelt *et al.*, 1994). Internal, firm-level factors are a key reason why firms may outperform others.

There are two frameworks which may be applied to analyze firm-level factors, the resource-based view and the activity-based view. The resource-based view, which hypothesizes that resources that conform to certain a priori characteristics (i.e. they must be valuable, rare, and costly to imitate and substitute, and well organized) lead to superior profitability, is currently the dominant paradigm in academic circles (Barney and Arikan, 2001). Although the activity-based view is widely cited and taught in the classroom, it is as of now not as popular as the resource-based view due to difficulties in applying the value chain (Porter, 1998). In an e-mail, Porter (2006) explains why he did not subsequently address this weakness:

In my mind, the value chain as laid out in Competitive Advantage was a foundational analytical tool. In retrospect, I probably should have written more about how to apply it, because it seemed to take a long time for practitioners to learn to actually use the tool. It was much more complicated than most management ideas floating around at the time. Instead of working more on the value chain, I took a giant turn towards looking at the influence of location on competition which was then the next puzzle I became interested in because of my appointment to a presidential commission on US competitiveness in the early/mid 1980s. Out of this came *The Competitive Advantage of Nations* and a bunch of other stuff.

The future of the activity-based view hinges on whether it becomes part of an integrative explanation of firm-level strategic factors. The activity-based and the resource-based views are sometimes portrayed as theoretical rivals. We rather think of them as complements. The two views address different aspects of how internal factors

---

may contribute to competitive advantage. Reflecting on the critical role of activities, Porter (2006, e-mail) writes that:

The reason I focused on activities, rather than key success factors, strengths and weaknesses, or “asset” like attributes that are stressed in the resource/capabilities/competencies lines of thinking was my conclusion that activities were actually the causal, first order unit of analysis where the choices needed to be made and where the advantages arose. “Resources” or ksfs are outcomes as much as causes. Their value in competition is indirect: they may allow a firm to enjoy buyer value advantages, but this works through the activities the firm performs.

Following this lead, we argue that activities are a key link between resources holdings and strategic positions; resources are only valuable when placed into activities which generate lower cost or high value than rivals (Porter, 1991, 1994). It is when the activity-based view is integrated with the resource-based view that they together provide the most comprehensive explanation of firm value creation (Sheehan and Foss, 2007). Explicitly studying the flows that create resource stocks (i.e. studying the activities) may provide insights into problems that focusing on the stock of resources may overlook (Porter and Rivkin, 1998). Just as stock analysts use both the balance sheet (which captures what a firm owns) and the income statement (which captures the activity flows) to assess a firm’s earnings potential, the activity-based and resource-based views should both be used to gain insights into how firms can gain and sustain superior competitive positions.

While the intellectual antecedents and path dependencies of the resource-based view are well-documented (Barney, 1997; Barney and Arikan, 2001; Foss, 2000), we knew little about the roots and potential path dependencies of the activity-based view. It is hoped that by making the intellectual roots of the activity-based view explicit, this paper will assist in the integration of the activity-based view and resource-based view into a single, comprehensive strategic framework.

### Notes

1. Accessed October 18, 2008 – searched term in “citation and document text” of scholarly articles.
2. Accessed October 18, 2008 – searched term in “abstract” of scholarly articles.
3. Accessed October 18, 2008 – searched term in “citation and document text” of practitioner articles, which was calculated by subtracting the total number of hits less the number of hits for scholarly articles.
4. Accessed October 18, 2008 – searched term in “abstract” of practitioner articles, which was calculated by subtracting the total number of hits less the number of hits for scholarly articles.
5. Other Nobel Prize winners who spent a portion of their careers working on activity analysis, as evidenced by their participation in conferences and published papers, include: Arrow, Allais, Samuelson, Solow, and Stone.

### References

- Aiyathurai, G., Cooper, W.W. and Sinha, K.K. (1991), “Note on activity accounting”, *Accounting Horizons*, Vol. 5, pp. 60-9.
- Anthony, R.N., Dearden, J. and Vancil, R.F. (1972), *Management Control Systems*, Richard D. Irwin, Homewood, IL.



- Babbage, C. (1832), *The Economy of Machinery and Manufactures*, William Pickering, London.
- Bain, J. (1956), *Barriers to New Competition*, Harvard University Press, Cambridge, MA.
- Bain, J. (1959), *Industrial Organization*, Wiley, New York, NY.
- Balderston, F.E. (1985), "Book review: competitive advantage", *California Management Review*, Vol. XXVIII, pp. 179-84.
- Balderston, J. (1954), "Models of general economic equilibrium", in Morgenstern, O. (Ed.), *Economic Activity Analysis*, Wiley, New York, NY, pp. 3-41.
- Barney, J.B. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17, pp. 99-120.
- Barney, J.B. (1997), *Gaining and Sustaining Competitive Advantage*, Addison-Wesley, Reading, MA.
- Barney, J.B. (2007), "Where does inequality come from? The personal and intellectual roots of resource-based theory", in Smith, K.G. and Hitt, M.A. (Eds), *Great Minds in Management: The Process of Theory Development*, Oxford University Press, Oxford, pp. 280-303.
- Barney, J.B. and Arikian, A.M. (2001), "The resource-based view: origins and implications", in Hitt, M.A., Freeman, R.E. and Harrison, J.S. (Eds), *The Blackwell Handbook of Strategic Management*, Blackwell Business, Oxford, pp. 124-88.
- Barney, J.B. and Hesterly, W.S. (2008), *Strategic Management and Competitive Advantage*, 2nd ed., Pearson/Prentice-Hall, Upper Saddle River, NJ.
- Besanko, D., Dranove, D. and Shanley, M. (1996), *The Economics of Strategy*, Wiley, New York, NY.
- Bower, J.L. (1972), *Simple Economic Tools of Strategic Analysis (Case No. 9-373-094)*, Harvard Business School Press, Boston, MA.
- Buaron, R. (1981), "New-game strategies", *The McKinsey Quarterly*, Spring, pp. 24-40.
- Campbell-Kelly, M. (1994), "Introduction", in Babbage, C. (Ed.), *Passages from the Life of a Philosopher*, Rutgers, New Brunswick, NJ, pp. 7-36.
- Christ, C.F. and Hurwicz, L. (1987), "Tjalling Charles Koopmans", in Eatwell, J., Millgate, M. and Newman, P. (Eds), *The New Palgrave: A Dictionary of Economics*, Macmillan, London, pp. 62-7.
- Christensen, C.R., Andrews, K.R. and Bower, J.L. (1973), *Business Policy: Text and Cases*, 3rd ed., Richard D. Irwin, Homewood, IL.
- Churchman, C.W. (1968), *The Systems Approach*, Dell, New York, NY.
- Churchman, C.W., Ackoff, R.L. and Arnoff, E.L. (1957), *Introduction to Operations Research*, Wiley, New York, NY.
- Coase, R. (1937), "The nature of the firm", *Economica*, Vol. 4, pp. 386-405.
- Conner, K.R. (1991), "A historical comparison of resource-based theory and five schools of thought within industrial organization economics: do we have a new theory of the firm?", *Journal of Management*, Vol. 17, pp. 121-54.
- Crainger, S. (1995), "Frederick Winslow Taylor", in Crainger, S. (Ed.), *The Financial Times Handbook of Management*, Pitman, London, pp. 242-4.
- Dantzig, G.B. (1963), *Linear Programming and Extensions*, Princeton University Press, Princeton, NJ.
- Day, G.S. and Wensley, R. (1988), "Assessing advantage: a framework for diagnosing competitive superiority", *Journal of Marketing*, Vol. 52, pp. 1-20.

- Demsetz, H. (1973), "Industry structure, market rivalry, and public policy", *Journal of Law & Economics*, Vol. 16, pp. 1-9.
- Dess, G.G., Lumpkin, G.T. and Eisner, A. (2007), *Strategic Management: Creating Competitive Advantage*, Irwin, Burr Ridge, IL.
- Dorfman, R. (1953), "Mathematical, or 'linear' programming: a nonmathematical exposition", *The American Economic Review*, Vol. XLIII, pp. 798-825.
- Dorfman, R., Samuelson, P.A. and Solow, R.M. (1958), *Linear Programming and Economic Analysis*, McGraw Hill, New York, NY.
- Farmer, D.H. (1985), "Book review: competitive advantage", *Journal of General Management*, Vol. 11, pp. 68-9.
- Farquhar, H.H. (1976), "A critical analysis of scientific management", in Del Mar, D. and Collons, R.D. (Eds), *Classics in Scientific Management*, Press, Tuscaloosa, AL, pp. 134-53.
- Foss, N.J. (1996), "Research in strategy, economics, and Michael Porter", *Journal of Management Studies*, Vol. 33, pp. 1-24.
- Foss, N.J. (2000), "Equilibrium versus evolution: the conflicting legacies of Penrose and Demsetz", in Foss, N.J. and Robertson, P. (Eds), *Resources, Technology, and Strategy*, Routledge, London.
- Gartner, W.B. (1985), "Book reviews: competitive strategy and competitive advantage", *Academy of Management Review*, Vol. 10, pp. 873-5.
- Ghemawat, P. (1986), *The Arithmetic of Strategic Cost Analysis*, Harvard Business School Press, Boston, MA.
- Ghemawat, P. (2002), "Competition and business strategy in historical perspective", *Business History Review*, Vol. 76, pp. 37-74.
- Ghemawat, P. (2008), *Strategy and the Business Landscape*, 3rd ed., Prentice-Hall, Upper Saddle River, NJ.
- Ghobadian, A. and O'Regan, N. (2008), "Where do we fit in the swings and roundabouts of strategy?", *Journal of Strategy and Management*, Vol. 1 No. 1, pp. 5-14.
- Gluck, F.W. (1980), "Strategic choice and resource allocation", *The McKinsey Quarterly*, Winter, pp. 22-33.
- Grant, R.M. (1991), *Contemporary Strategy Analysis: Concepts, Techniques, Applications*, Blackwell, Cambridge, MA.
- Hayek, F.A. (1931), *Prices and Production*, Routledge and Kegan Paul, London.
- Hergert, M. and Morris, D. (1989), "Accounting data for value chain analysis", *Strategic Management Journal*, Vol. 10, pp. 175-88.
- Hitt, M.A., Ireland, R.D. and Hoskisson, R.E. (2009), *Strategic Management: Competitiveness and Globalization*, South-Western Cenage Learning, Cincinnati, OH.
- Johnson, G., Scholes, K. and Whittington, R. (2007), *Corporate Strategy: Text and Cases*, 8th ed., Financial Times, London.
- Johnson, H.T. (1991), "Activity-based information: a blueprint of world-class management accounting", in Cooper, R. and Kaplan, R.S. (Eds), *The Design of Cost Management Systems*, Prentice-Hall, Englewood Cliffs, NJ, pp. 257-66.
- Kantorovich, L.V. (1960), "Mathematical methods of organizing and planning production", *Management Science*, Vol. 6, pp. 366-422.
- Kay, J. (1993), *Foundations of Corporate Success*, Oxford University Press, Oxford.

- Kogut, B. (1985), "Designing global strategies: comparative and competitive value-added chains", *Sloan Management Review*, Summer, pp. 15-28.
- Koopmans, T.C. (1951), "Introduction", in Koopmans, T.C. (Ed.), *Activity Analysis of Production and Allocation*, Wiley, New York, NY, pp. 1-11.
- Langlois, R.N. and Foss, N.J. (1999), "Capabilities and governance: the rebirth of production in the theory of economic organization", *KYKLOS*, Vol. 52, pp. 201-18.
- Learned, E.P., Christensen, C.R., Andrews, K.R. and Guth, W.D. (1965), *Business Policy: Text and Cases*, Richard D. Irwin, Homewood, IL.
- Learned, E.P., Christensen, C.R., Andrews, K.R. and Guth, W.D. (1969), *Business Policy: Text and Cases*, 2nd ed., Richard D. Irwin, Homewood, IL.
- Leijonhufvud, A. (1986), "Capitalism and the factory system", in Langlois, R.N. (Ed.), *Economics as a Process*, Cambridge University Press, Cambridge.
- Locke, R.R. (1996), *The Collapse of the American Management Mystique*, Oxford University Press, Oxford.
- Lynch, R. (2005), *Corporate Strategy*, 4th ed., Financial Times, London.
- Malinvaud, E. (1967), "Introduction", in Malinvaud, E. and Bacharach, M.O.L. (Eds), *Activity Analysis in the Theory of Growth and Planning*, Macmillan, London, pp. viii-vixv.
- Marcus, A.A. (2005), *Management Strategy: Achieving Sustained Competitive Advantage*, McGraw-Hill, Boston, MA.
- Mason, E.S. (1939), "Price and production policies of large scale enterprises", *American Economic Review*, Vol. 39, pp. 61-74.
- Merrill, W.F. (1970), *Classics in Management*, American Management Association, New York, NY.
- Montgomery, C.A. and Porter, M.E. (1991), *Strategy: Seeking and Securing Competitive Advantage*, Harvard Business Review Book, Boston, MA.
- Nadler, D.A. and Slywotzky, A.J. (2005), "Strategy and organization consulting", in Greiner, L. and Poulfelt, F. (Eds), *Handbook of Management Consulting – The Contemporary Consultant: Insights from World Experts*, Thomson South-Western, Mason, OH, pp. 75-96.
- Penrose, E.T. (1959), *The Theory of the Growth of the Firm*, Basil Blackwell, London.
- Porter, M.E. (1980), *Competitive Strategy*, The Free Press, New York, NY.
- Porter, M.E. (1981), "The contribution of industrial organization to strategic management", *Academy of Management Review*, Vol. 6, pp. 609-20.
- Porter, M.E. (1982), "Industrial organization and the evolution of concepts for strategic planning", in Naylor, T.H. (Ed.), *Corporate Strategy*, North-Holland, Amsterdam, pp. 183-96.
- Porter, M.E. (1983), *Cases in Competitive Strategy*, The Free Press, New York, NY.
- Porter, M.E. (1985), *Competitive Advantage*, The Free Press, New York, NY.
- Porter, M.E. (1991), "Towards a dynamic theory of strategy", *Strategic Management Journal*, Vol. 12, pp. 95-117.
- Porter, M.E. (1994), "Competitive strategy revisited: a view from the 1990s", in Duffy, P.P. (Ed.), *The Relevance of a Decade*, Harvard Business School Press, Cambridge, MA, pp. 243-85.
- Porter, M.E. (1996), "What is strategy", *Harvard Business Review*, November-December, pp. 61-78.
- Porter, M.E. (1998), "Introduction", in Porter, M.E. (Ed.), *Competitive Advantage*, The Free Press, New York, NY, pp. xv-xx.
- Porter, M.E. (2008), "The five competitive forces that shape strategy", *Harvard Business Review*, January, pp. 78-93.

- Porter, M.E. and Rivkin, J.W. (1998), "Activity systems as barriers to imitation", Working Paper No. 98-066, Harvard Business School, Boston, MA.
- Porter, M.E. and Siggelkow, N. (1997), "Competition and strategy: the creation of a group and a field", in McCraw, T.K. and Cruikshank, J.L. (Eds), *The Intellectual Venture Capitalist*, Harvard Business School Press, Cambridge, MA, pp. 99-131.
- Prescott, J.E. (1987), "A process for applying analytical models in competitive advantage", in King, W.R. and Cleland, D.I. (Eds), *Strategic Planning and Management Handbook*, Van Nostrand Reinhold, New York, NY, pp. 222-50.
- Priem, R.L. (2007), "A consumer perspective of value creation", *Academy of Management Review*, Vol. 32 No. 1, pp. 210-35.
- Ramos-Rodriguez, A-F. and Ruiz-Navarro, J. (2004), "Changes in the intellectual structure of strategic management research: a bibliometric study of the *Strategic Management Journal*, 1980-2000", *Strategic Management Journal*, Vol. 25, pp. 981-1004.
- Reimann, B.C. (1989), "Sustaining competitive advantage", *Planning Review*, March/April, pp. 30-9.
- Reve, T. (1996), "Toward an integrative model of strategy development: from dynamic clusters to core competencies", in Falkenberg, J. and Haugland, S.A. (Eds), *Rethinking the Boundaries of Strategy*, Handelshøjskolens Forlag, Copenhagen, pp. 104-22.
- Richardson, G.B. (1972), "The organization of industry", *The Economic Journal*, Vol. 82, September, pp. 883-98.
- Roos, G., von Krogh, G. and Roos, J. (1994), *Strategi*, Green Valley University Press, Dublin.
- Rowe, A.J., Mason, R.O., Dickel, K.E., Mann, R.B. and Mockler, R.J. (1994), *Strategic Management: A Methodological Approach*, 4th ed., Addison-Wesley, Reading, MA.
- Rumelt, R.P., Schendel, D.E. and Teece, D.J. (1994), "Fundamental issues in strategy", in Rumelt, R.P., Schendel, D.E. and Teece, D.J. (Eds), *Fundamental Issues in Strategy*, Harvard Business School Press, Cambridge, MA, pp. 9-47.
- Saloner, G., Shepard, A. and Podolny, J. (2005), *Strategic Management*, Wiley, New York, NY.
- Selznick, P. (1957), *Leadership in Administration*, Harper & Row, New York, NY.
- Shank, J.K. (1989), "Strategic cost management: new wine, or just old bottles", *The Journal of Management Accounting Research*, Fall, pp. 47-65.
- Shank, J.K. and Govindarajan, V. (1989), *Strategic Cost Analysis: The Evolution from Managerial to Strategic Accounting*, Richard Irwin, Homewood, IL.
- Shank, J.K. and Govindarajan, V. (1992), "Strategic cost management: the value chain perspective", *The Journal of Management Accounting Research*, Vol. 4, pp. 179-97.
- Shaw, A.W. (1916), *An Approach to Business Problems*, Harvard University Press, Cambridge, MA.
- Sheehan, N. and Foss, N.J. (2007), "Advancing the resource-based view through Porterian activity analysis", *Management Decision*, Vol. 45, pp. 450-61.
- Shillinglaw, G. (1977), *Managerial Cost Accounting*, 4th ed., Richard D. Irwin, Homewood, IL.
- Simon, H.A. (1960), *The New Science of Management Decision*, Harper & Brothers, New York, NY.
- Smith, A. (1776), *An Inquiry into the Nature and Causes of the Wealth of Nations*, The Modern Library, New York, NY.
- Smolinski, L. (1977), "Introduction", in Smolinski, L. (Ed.), *L.V. Kantorovich: Essays in Optimal Planning*, Basil Blackwell, Oxford, pp. ix-xxxii.
- Stacey, R.D. (1996), *Strategic Management & Organizational Dynamics*, 2nd ed., Pitman, London.

- Stigler, G.J. (1951), "The division of labor is limited by the extent of the market", *Journal of Political Economy*, Vol. LIX, pp. 185-93.
- Taylor, F.W. (1911), *The Principles of Scientific Management*, W.W. Norton, New York, NY.
- Thompson, A.A., Strickland, A.J. and Gamble, J.E. (2007), *Crafting and Executing Strategy: The Quest for Competitive Advantage*, 15th ed., McGraw-Hill, Boston, MA.
- Varian, H.R. (1992), *Microeconomic Analysis*, 3rd ed., W.W. Norton, New York, NY.
- Walker, G. (2006), *Modern Competitive Strategy*, 2nd ed., McGraw-Hill, Boston, MA.
- Waring, S.P. (1991), *Taylorism Transformed: Scientific Management Since 1945*, The University of North Carolina Press, Chapel Hill, NC.
- Wernerfelt, B. (1995), "The resource-based view of the firm: ten years after", *Strategic Management Journal*, Vol. 16, pp. 171-4.
- Wheelen, T.L. and Hunger, J.D. (2007), *Strategic Management and Business Policy*, 11th ed., Prentice-Hall, Upper Saddle River, NJ.
- Williamson, O.E. (1996), *The Mechanisms of Governance*, Oxford University Press, Oxford.
- Wood, M.K. and Dantzig, G.B. (1951), "The programming of interdependent activities: general discussion", in Koopmans, T.C. (Ed.), *Activity Analysis of Production and Allocation*, Wiley, New York, NY, pp. 15-18.
- Wren, D.A. (2005), *The History of Management Thought*, 5th ed., Wiley, New York, NY.
- Wright, P. (1987), "A refinement of Porter's strategies", *Strategic Management Journal*, Vol. 8, pp. 93-101.

#### Further reading

- Caves, R.E. (1980), "Industrial organization, corporate strategy and structure", *Journal of Economic Literature*, Vol. 13, pp. 64-92.
- Chamberlin, E. (1933), *The Theory of Monopolistic Competition*, Harvard University Press, Cambridge.
- Robinson, J. (1933), *The Economics of Imperfect Competition*, Macmillan, London.

#### About the authors

Norman T. Sheehan, B.Com, MBA, PhD, CGA, CMA is an Associate Professor in the Edwards School of Business, University of Saskatchewan. He teaches, publishes and advises in the areas of strategy formulation, strategy implementation/performance measurement, and management of knowledge intensive firms. Norman T. Sheehan is the corresponding author and can be contacted at: sheehan@edwards.usask.ca

Nicolai J. Foss, PhD, MSc (Econ.) is a Professor of Economic Organization at the Copenhagen Business School and a Professor of Strategy and Organization at the Norwegian School of Economics and Business Administration. He is the author of numerous journal articles, mainly on strategic management and the theory of the firm.

To purchase reprints of this article please e-mail: [reprints@emeraldinsight.com](mailto:reprints@emeraldinsight.com)  
Or visit our web site for further details: [www.emeraldinsight.com/reprints](http://www.emeraldinsight.com/reprints)

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.