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ON SERVICE PRODUCTIVITY - STRATEGIC MANAGEMENT PERSPECTIVES

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Preface

Services are pervasive in modern economies. Statistics bear witness to the expanding service sector, which accounts for three quarters of GDP in developed economies. The abundant evidence on differing productive performance across service industries bears witness to divergent technological and institutional trajectories that outline the evolutionary progress of the tertiary sector. While conceptual knowledge on services and their performance has accumulated substantially, theoretical advances in the research on service productivity and competitiveness are still limited. The shortage is striking, bearing in mind the pervasiveness of the subject matter itself.

Based on previous contributions and new insights, *Productivity of Business Services – Towards a New Taxonomy* (Viitamo, 2007) develops the analytical framework of service productivity further. The approach in that report builds on the notion that service definitions, classifications and performance measurement are strongly interdependent. Given the ongoing restructuring of business activities with higher information content, it argues that the dichotomy between manufacturing and services should not be taken too far. Industrial evolution also suggests that the official industry classifications are increasingly outdated, and new taxonomies for empirical research are needed.

The present report, *On Service Productivity – Strategic Management Perspectives*, is a logical extension to the ideas presented in Viitamo (2007). The principal driver for this inquiry is the enduring need to widen the analytical perspective on service performance into new terrains of disciplines. The diversification into the field of strategic management looks particularly promising. Why? As the theory of the firm is intrinsically a theory of its existence, a viable theory should also explain the competitive advantages and competitive strategies of the firm. Once the focus is geared to competitiveness and its sustainability in a firm, then one is inevitably dealing with the determinants of productivity and its growth. As demonstrated here, new insights into the fundamental issues of the established theories can be gained.

The main purpose of this report is not, however, a revival of the classical works on strategic management per se. Instead, the interest is in the practical implications of these theories on service productivity, and how these contributions relate to the analysis conducted in Viitamo (2007), in particular. The value added in this regard derives from the fact that strategic management is not intrinsically, or explicitly, focused on a firm's productivity, least of all service productivity. The general observation drawn from this study is that the two theoretical schools on strategic management examined here provide useful ingredients that can be utilized for further development of the theoretical framework on service productivity. In effect, the strategic approach confirms some of the fundamental premises on which the service management and marketing literature rests on.

1 Introduction

From a broad perspective, the productivity of any service activity consists of two components, efficiency and effectiveness, which account for the technological opportunities and constraints to achieving simultaneously low unit costs and high quality for a unit of service that is produced and delivered to the customer (Viitamo, 2007). The technological constraint stems from the *stylized fact* that there exists a trade-off between effectiveness and efficiency at the highest attainable level of productivity. This means that a higher quality of the service for the customer leads unavoidably to higher unit costs of producing the same service[1], and vice versa.

While manufacturing processes are principally subject to an equivalent constraint, there are essential differences entailed in the high intangibility of the service processes and the service outcome. This results in higher uncertainty, which impedes effective preplanning and control of the service process and outcome relative to tangible manufacturing processes and the delivered products. Owing to the higher flexibility of service technologies as well, the trade-off for services shows a higher degree of continuity approximated by a constant productivity frontier (Viitamo, 2008; Porter, 1998).

Two established schools on service productivity, called demarcation and assimilation, highlight the characteristics of service productivity and differences in relation to the other production activities, in particular manufacturing (Metcalfe and Miles, 2006; Salter and Tether, 2006; Viitamo, 2007). While the demarcation and the assimilation schools and their synthesis provide further insights on the issue, these perspectives lack a sound theoretical basis on the mechanisms that explain the underlying sources of service productivity. Accordingly, what is missing in the mainstream analysis is a sound theory on a firm´s productivity and competitiveness that accounts for the distinct features of service activities as well. The shortage is striking, given the pervasiveness of the subject matter itself.

1.1 Economic realism

An immediate question is then, whether and to what extent the shortage can be remedied. As there are no ready-made tools available, the chosen way to proceed here is to assess how the theories of strategic management, which regard the firm as a bundle of business activities and a range of technologies, can further contribute to the analysis of service productivity[2]. This is a useful point of departure for two reasons. As the theory of the firm is intrinsically a theory of its existence, it should also explain the competitive advantages and competitive strategies of the firm. Once the focus is geared explicitly to competitiveness and its sustainability in a firm, then one is inevitably dealing with the determinants of productivity and its growth. It is suggested here that these interacting drivers are partly external, i.e. characteristics of the business environment, and internal, which is related to the objectives and the “ways of doing” things through “internal services” of the firm.

Related to the theoretical dispute between demarcation and assimilation over the robustness of the neoclassical framework for the analysis of service productivity, there exist other theories of the firm that share with strategic management the dissatisfaction on the neoclassical approach and its

[1] More specifically, similarity of services implies that services with similar or different cost structures are used for the same purpose.
[2] A detailed taxonomy of business activities based on technological characteristics has been constructed in Viitamo (2007).

conceptual treatment of an enterprise. This tension has in turn contributed to the converging views within the academic fields of strategic management and the "new" industrial organization (Rumelt et al., 1991; Teece, 1984)[3]. Initiated by the leading academic professionals in the USA, the discussions of how these disciplines can benefit from each other - or even constitute a more integrated framework for competitiveness - can be taken as a starting point for a coherent analysis of productivity of various fields of businesses. Theoretical insights of the organizational theories on the issue will be discussed in two forthcoming papers in this publication series.

As demonstrated elsewhere, the assumptions that the neoclassical theory heavily rests on, are distant to the realities of the business world. This stems simply from the fact that the formal, "orthodox", economic theory is shaped by a concern with normative questions in the public policy[4]. These questions are very different from the daily problems general managers face (Teece, 1984). In particular, the undisputable mission of the orthodox theory is to predict the behaviour of the entire segment of economic actors and assess the efficiency consequences of collective, and representative, actions from the perspective of the entire economy. Management sciences, and to a lesser extent economics of organization, are focused on the efficiency and strategies of individual or limited groups of enterprises, which generates an unwelcome sub-optimization within the framework of neoclassical economics.

Perhaps the key objection by the management literature and economics of organization concern the neoclassical treatment of a firm as a "black box" characterized by a simplistic production function. The main interest in the analysis of a business firm - the critics assert - is not the transformation of inputs to volume of outputs per se, but the internal structure, coordination of assets and activities within a firm, which determine its ability to survive and enhance competitiveness. Economics of organization in particular postulates that orthodox economics is mainly concerned with static equilibrium analyses, which fail to capture the key processes of industrial capitalism, innovation, technological change and firm heterogeneity. One of the key preconditions enabling the equilibrium analyses is the presumption of decreasing marginal productivity of technologies, which contradicts e.g. the realities of the knowledge-intensive service industries.

Within the neoclassical framework the price system of competitive markets is assigned a complex task of coordinating activities of economic actors, leading to equilibria unaffected by any discretionary strategies by the actors themselves. In reality, as recognized by managerial economics and organizational approaches, the distinguishing feature of firms as compared with markets, is their ability to make decisions. As Kay (2000) observes, markets can only simulate and inform decisions. While price movements are signals to support effective decision making, these signals are influential only if there is some one at the other end, listening and willing to incorporate the information into his or her decision-making. "A firm can allocate resources without a market, but markets cannot allocate resources without firms" (Kay, 2000, p. 9).

1.2 Strategic management

Strategic management - or corporate strategy - is a field of inquiry with rich traditions of research and teaching in business schools (e.g. Ansoff, 1965; Andrews, 1971; Buzzell and Gale, 1987). Guided by the evolving needs for effective managerial models, strategic management is firmly grounded in practice, and exists because it is worthwhile to the wealth creation of modern industrial societies. Codification, teaching and expanding the knowledge in effective management practises

[3] "New" should not be taken here as something invented recently. More generally, it refers to the theories of organizational economics which break away from the standard neoclassical discipline.
[4] The terms orthodox and neoclassical are used interchangeably here.

benefits not only the profit seeking enterprises per se, but also indirectly all major segments of the economic systems. In this regard there is a distinct analogy with, and causal relation between, the competitiveness policies of national governments and strategic management of enterprises. Both are concerned with the competitive direction of organizations and avoiding managerial failures, respectively.

From a broader theoretical perspective, the strategy of a firm highlights a special case of the fundamental choices which all organizations are compelled to make. Decisions have to be made on markets and clients the organization intends to serve, the basis on which it competes in its domain, the specific tactics the organization employs, and the output goals it sets for itself (Scott and Davis, 2007). Accordingly, the theories of strategic management discussed here are *also* derivable from more generic fields of organizational research (Nadler and Tushman, 1997) which look into the efficiency and effectiveness properties of organizational sub-systems.

Within the context of strategic management, firms are regarded as specific types of organizations competing in the output and input markets and, ultimately, competing on the revenues that cover the costs of their chosen strategy of surviving (Rumelt et al., 1991). To prosper and survive, a firm has to make strategic choices on the goals, services and products to offer, configuration of policies of how to position on the product markets with the available resources, the scope and degree of vertical integration, and design of organizational structure to coordinate and manage the diversity of activities. Ultimately, competitive strategy is about integrating all the critical choices within the firm.

Strategic thinking is pervasive, and an integral part of human behaviour. To quote, “every firm competing in an industry has a competitive strategy, whether explicit or implicit. This strategy may have been developed explicitly through a planning process or it may have evolved implicitly through the activities of the various functional departments of the firm. Left to its own devices, each functional department will inevitably pursue approaches dictated by its professional orientation and the incentives of those in charge. However, the sum of these departmental approaches rarely equals the best strategy” (Porter, 1980, p. xxi).

Traditionally, strategy has been regarded as a combination of the ends (goals) of the firm and the means (policies) by which the goals are intended to be achieved (Porter, 1980). More specifically, corporate strategy can be defined as a match the firm pursues between its internal resources and skills and the opportunities and risks created by its external environment (Grant, 1991). The theoretical attempt to answer the question of which one of these driving forces – external or internal – dominates in strategic planning has created two theoretical schools, which are discussed in the following sub-sections. In both cases strategy is concerned with a pre-planned set of “sticky” rules with which the firm operates in all future contingencies.

1.3 Service strategy

The usefulness of “sticky” strategies is contingent on the characteristics of an industry, its products and services and associated technologies. Most of the academic literature is focused – implicitly or explicitly – on the strategic management of manufacturing firms, or industries with highly standardized processes and tangible resources and products. In many service industries, in contrast, firms operate with unique processes and intangible inputs and outputs. Moreover, if the survival on the markets with high uncertainty assumes responsiveness and continuous adaptation, the commitment to sticky strategies may have an adverse influence on the competitiveness of the firm. In particular, this holds for the business activities within knowledge-based industries, “where firms

evolve through processes in which flexibility of adding new clients, services and competent professionals is absolutely crucial" (Løwendahl, 2005, p. 75).

Knowledge-based or professional service firms, which will be examined in Section 3.2, are of special interest here, since most of their characteristics reflect the opposite of the attributes of manufacturing firms (Viitamo, 2007). Consequently, it is argued here that most of the observed characteristics of the professional services are, to some extent, applicable to other services as well, as their distinctive characteristics are located along the service-manufacturing continuum. Accordingly, Løwendahl (2005) notes that the growth and evolution of professional service firms is typically driven by the effort, competence, and personal relationship of individuals with the ability to convince potential clients of their problem solving capabilities in specific areas, rather than by a pre-planned growth strategy targeted to specific markets.

The avoidance of rigid and formal structures and deliberate strategy by the professional services is founded on other reasons too. First, lacking the culture of planning, service firms are often handicapped in their efforts to focus on long term issues. Second, professional "norms" and industry-wide principles exert substantial influence on the appropriate conduct of service business[5]. As a consequence, for instance, marketing activity may be interpreted as a sign of trouble. Finally, industry-specific factors, such as the competitive situation, market structure and service technology may favour ad hoc goal setting unsupportive of deliberate pursuit of efficiency and effectiveness.

This is not to say that strategic planning is redundant and impossible for service firms. As Løwendahl (2005, p. 101) notes "strategy is necessary in order to achieve coordinated activities in a highly decentralized and non-routinized structure, where precisely the lack of detailed plans makes an agreement on goals and priorities fundamental". Yet, service strategy cannot involve a top down formulation and implementation of plans and procedures, or a detailed description of how the goals should be achieved. Accordingly, the strategy of a professional service firm should involve the development and communication of the vision, focal competence areas, explicit goals, and priorities set for market segments[6] (Løwendahl, 2005).

To make the link between strategic management and productivity more comprehensible, the focus in the subsequent sections is geared to a deeper analysis of the currently dominating schools of strategic management. These two traditionally contrasting and competing approaches have evolved from the general notion that strategic management is about searching "the best fit" between internal strengths and weaknesses of a firm, and the external threats and opportunities of the business environment. Whereas the former, called *the structuralist approach*, regards the characteristics of the business environment as the key driver for strategy formulation, the latter approach, *the resource-based view*, takes an opposite stance, stressing the significance of the internal strengths and weaknesses of the firm.

[5] "Altruistic service to clients" means that in cases of conflict of interest between what is profitable for the supplier and what will be the best solution for the client, the latter alternative must be chosen (Løwendahl, 2005).
[6] The market segment includes the choice of client groups, as well as the geographic dimension of the market.

2 The Structuralist Approach

The essence of the structuralist approach draws mainly on Michael Porter´s extensive work on strategic management and competitiveness (Porter, 1980; 1985; 1998), and is reducible to the conflicting objectives of the competition policy and profit-seeking incentives of private business firms. Whereas public policy makers use their knowledge on the sources of entry barriers to lower them, business strategists and entrepreneurs use theirs to raise the barriers, within the regulatory framework of anti-trust policy. Since competitive strategy, within this framework, seeks for a position where the company can best defend itself against competitive forces of the market, or can influence them in its favour (Porter, 1980), strategizing[7] is also generally associated with anti-competitive behaviour.

2.1 Main characteristics

Originally, the logic of the structural approach grew from the industrial organization, which until the 1980´s was dominated by the structure-conduct-performance (SCP) paradigm (Scherer, 1980). In short, the SCP paradigm maintains that the characteristics of the industry structure, attributable to such factors as the number and size of buyers and sellers, vertical integration and product differentiation, explain the strategic behaviour, i.e. the conduct of the sellers and buyers. The conduct includes pricing, investment, and policy, as well as inter-firm co-operation. Performance, which results from the strategic actions taken by the enterprise, is indicated by profits, employment, efficiency of processes etc. (Teece, 1984). In this regard the SCP paradigm should be regarded implicitly as a theory of productivity, as long as efficiency refers to the operational efficiency component of the overall productivity.

The “trick” made by Porter was to apply the SCP paradigm to strategic analysis, which transforms the normative theory of industrial organization into a positive theory of strategic management (Teece, 1984). Hence, the principal concern of how to increase consumer welfare through intense competition was replaced by the managerial objective of increasing profit through restrictions on market entry. In his earlier work *Competitive Strategy (1980),* Porter equalled the structure of an industry with the determinants of rivalry, which reduce to five forces external to a company. The conduct results from the implementation of the company strategy, which may take three generic forms. Finally, performance is reflected by the ability of a firm within an industry to earn, on average, rates of return on investment in excess of the cost of capital[8] (Porter, 1985). Implicitly, prior to starting its operations, a firm is faced by two strategic choices, whether and when to enter a particular industry and how to compete in that context once it has been entered (Scott and Davis, 2003).

The essence of formulating a competitive strategy is to relate the company’s strengths and weaknesses to its environment, that is, the structure of the industry. The main characteristic in this regard is the intensity of competition, which through the profit potential for the companies determines the attractiveness of an industry. For Porter, competition is not restricted to the rivalry among the incumbent firms on the market, but it captures also indirect competition from substituting products and potential entrants. Substitutes and potential entrants constitute the horizontal dimension of rivalry in Figure 1. More generally, indirect competition is a threat to the incumbent firms, which may or may not possess a retaliatory capacity to deal with the threat

[7] In this setting, strategizing, with its improved protection from competition, simultaneously deteriorates the relative position of competing companies.
[8] Note that the conclusions of the model are not distorted if alternative performance indicators are used instead.

successfully. The fourth and fifth forces conducive to the intensity of competition are the bargaining power of the buyers and suppliers of the industry. More specifically, the degree of concentration of the supplier and buyer industries determines the relative bargaining power exerted in adjusting the price and quality of the firm's output and input. As illustrated in Figure 1, bargaining power defines the vertical dimension of competition within the industry.

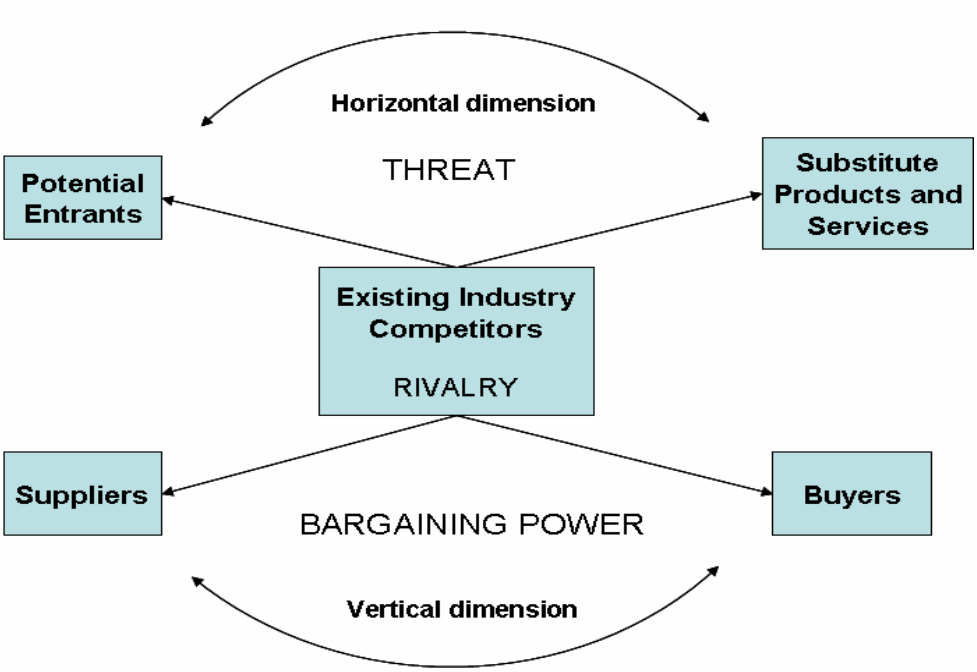

Figure 1. Five forces of industry competition (modified from Porter, 1980).

From the analytical point of view, the five forces seem to be equally important for a comprehensive modelling of competition. In Porter's reasoning, this is not the case, however. Accordingly, the threat of entry by potential competitors is assigned a central role in the defensive strategic planning of the incumbent firms. There are a number of sources of barriers to entry (Porter, 1980), which have to be considered by the potential entrants. Economies of scale, for example in the case of contestable markets, deter entry effectively if it would bring significant excess capacity to the market. The cost disadvantage is further amplified if there exists economies of scope of joint production based e.g. on intangible assets. With the other cost disadvantages unrelated to scale, the entry may also be deterred by the need to differentiate the products and services to overcome existing customer loyalties.

Complementary to the diagnosis of the competitive forces the firm has to cope with, is identification of the strengths and weaknesses of the firm relative to the industry average. More specifically, a company's strengths and weaknesses reflect its profile of assets and skills (relative to competitors) that have to be matched with the threats and opportunities of the environment, i.e. the structure. As a general guideline for strategy formulation, the search for an optimal match should lead to strategic actions of three alternative forms. Positioning means building defences against competitive forces or finding a position in the industry where the forces are weakest. Offensive strategy is designed for more than merely coping with the forces themselves. It is meant to alter their balance and causes as

well. Finally, there may be an option to anticipate the industry evolution and exploit the change in the underlying forces before the competitors[9].

Through these three routes of action, the firm aims to create a defendable position in an industry. Applicable to each route, Porter further identifies three generic strategies to create a defendable position to outperform competitors in the long run. These strategies are 1) the overall cost leadership, 2) differentiation and 3) focus. Cost leadership is based on the utilization of scale economies, cost reduction through experience, or more generally, tight cost control of the functional activities of the firm. Through differentiation, the firm provides something regarded as unique within the industry and valuable by the customers. Hence, the control of the drivers of differentiation allows the firm to command a premium price or to gain equivalent benefit, such as buyer loyalty, in cyclical downturns (Porter, 1985. Focused strategy in turn, is used to serve a particular buyer group, product segment or geographic market. Based on either cost leadership, differentiation, or both, focused strategy rests on the premise that the firm is able to serve a narrow target more efficiently and effectively than competitors with an industry-wide scope (Porter, 1980).

With the logic of the SCP-paradigm, *Competitive Strategy* (Porter, 1980) describes the industry characteristics that dictate the rules of the competition and how value is created and divided among the competing companies. *Competitive Advantage*, instead (Porter, 1985), deals with the prerequisites of the conduct and how competitive strategy that is actually implemented by the firm should lead to superior performance. From the company perspective, superior performance builds on sustainable competitive advantage created by the three generic strategies defined in Competitive Strategy (Porter, 1980). "If a firm is to attain competitive advantage, it must make a choice about the type of competitive advantage it seeks to attain[10], and the scope within which it will attain it" (Porter, 1985, p. 12). As Competitive Advantage shifts the focus from the macro level down to the micro level, strategizing gives way to economizing on the internal competitive advantages.

At the core of *Competitive Advantage* (Porter, 1985) is an activity-based view of a firm. Eventually, competition and strategy are reducible to the performance of functional activities of the firm, such as production, logistics and marketing, which entail costs and generate value to the customer. As a bridge between strategy and its implementation, activities make strategy operational. Activities are thus the basic units of analysis, and, competitive advantage and financial performance of a firm should reflect the capability of implementing the generic strategies of cost leadership and differentiation in each activity. The question then why some firms within an industry perform better than other, lies in their differing capabilities to control the drivers of uniqueness (differentiation) and cost advantage for a specific activity (Porter, 1991)[11].

A central issue related to the managerial capabilities to scan the business environment is the ability to identify the evolutionary path of an industry. To make the Porterian framework more operational, McGahan (2004) proposes that each industry follows a distinct pattern of evolutionary change, or trajectory, the identification of which is a precondition for a successful strategy design. The type of

[9] A fourth alternative is a diversification strategy (Porter, 1980), which is further analyzed in Competitive Advantage (1985). Diversification is outside the scope here, as the five forces –framework is applicable to diversification as well.
[10] That is, cost leadership or differentiation.
[11] The same set of drivers determines both relative cost and differentiation. The most important drivers of an activity include its scale, cumulative learning in the activity, linkages between the activity and others, the ability to share the activity with the other business units, the pattern of capacity utilization in the activity over the relevant business cycle, the location of the activity, the timing of investment choices in the activity, the extent of vertical integration in performing the activity, the institutional factors affecting how the activity is performed, e.g. regulation, and the firm policies how to configure the activity independent of the other drivers (Porter, 1991).

the four industry trajectories[12], which are characterized by the threats posed on the firm's assets and activities, bear on industry boundaries, operational efficiency, and the locus of innovation. Moreover, the determinants of the trajectories shape the pattern of how "the five forces" evolve in time. The dynamic extension of the five-forces -model by McGahan (2004) corresponds to Porter´s notion on the anticipation of the industry evolution and exploitation of the change in the underlying forces before competitors.

2.2 Strategy and productivity

Internal and external services

In its explicit treatment of competitiveness, the structural approach literally ignores the issues related to service production or productivity. In the introduction to *Competitive Strategy* (Porter, 1980), Porter notes, however, that his framework is universally applicable to all kinds of industries, including services (Porter, 1980). Later, he adds (ibid. p. 5) that "product" rather than "product and services" will be used to refer to the output of an industry, even though the principles of structural analysis developed here apply equally to product and service businesses. Yet, this is the case only intentionally, since the analysis draws distinctively on the modes of organizing manufacturing.

The manufacturing-oriented approach is demonstrated by the definition of the value activities of the firm. In general, the value chain of a firm consists of the sequence of primary activities; inbound logistics, operations, outbound logistics, marketing & sales, and service (see Figure 2). Operations are defined as a collection of activities, such as machining and packaging, related to the transformation of inputs into final products. Hence, operations are conceptually equivalent to the traditional production function of a neoclassical firm. Service, instead, consists of activities to enhance or maintain the value of the product, such as installation, repair, training etc. In this setting the main purpose of services is to enhance the competitiveness of operations, i.e. the processes of manufacturing. With the primary activities, the value chain contains diverse support activities which are common to and shared by the primary activities.

Interpreted within Gadrey´s (2002) framework on service transformation (Viitamo, 2007), the services operational in Porter´s value chain represent one specific mode of service transformation. In general the value chain perspective may be insufficient for a number of service industries. For instance, Løwendahl (2005) suspects that the value chain is difficult, if not impossible, to adapt to professional service firms lacking a linear production process with input, transformation and output. With these critical remarks, however, the value chain perspective contributes to the general analysis of service productivity. In particular, activities can themselves be interpreted as specific internal services needed to provide value to the customers (Penrose, 1959). Hence, the productivity of a firm is determined by the productivity of the service activities provided by the firm's value chain.

As with the service management and marketing literature, productivity of the physical processes is not regarded as a primary issue within the structuralist framework, either. To follow the reasoning of the SCP paradigm, the overall goal of the company is high profitability and the return on invested capital. Productivity as defined e.g. in Viitamo (2007) is relevant only conditionally, as long as it is conducive to improved profitability and return on invested capital[13]. This means that insights on

[12] These trajectories are progressive change, creative change, intermediating change and radical change (McGahan, 2004).

[13] This is not to say, however, that Porter ignores the importance of productivity entirely. In his *Competitive Advantage of Nations* (1990) Porter maintains that the productivity of industries and firms is the key determinant of the prosperity of nations. Similarly, operational efficiency is analyzed in his later work, *On Competition* (1998).

productivity analysis derivable from the structural approach are inevitably implicit. Linking the analysis of service productivity, as discussed in Viitamo (2007), with the present arguments on competitive strategy and advantage, interesting analogies can be distinguished. In particular, two cases of productivity are discussed here, a general and a more specific one.

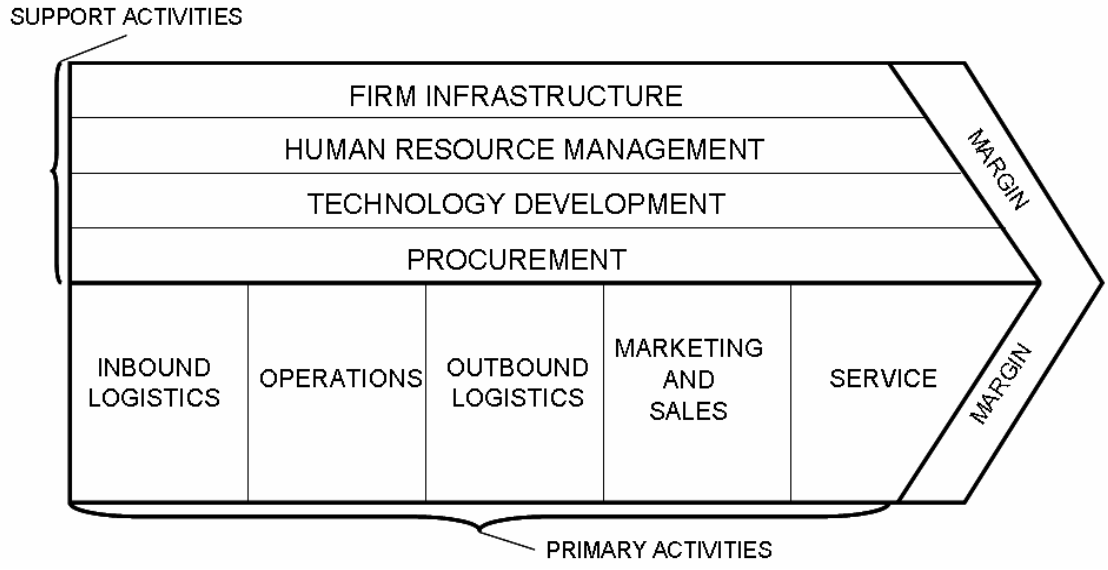

Figure 2. The generic value chain (Porter, 1985).

Technological perspective

Porter's superficial treatment of technological issues notwithstanding, technology is assigned a prominent role in developing firm-specific competitive advantages. As Porter notes, technological change is not important for its own sake, but is important if it affects the competitive advantage and industry structure. Technology pervades a firm's value chain and extends beyond the technologies directly associated with the product, i.e. operations in Porter's terminology (Porter, 1985). Hence, any firm involves a large number of technologies, and any of the technologies involved in the firm can have significant impacts on competition. In general, the value chain of a firm is the basic tool for understanding the strategic role of technology.

The central argument by Porter is that technology is embedded in each value activity of a firm. To quote, "every activity uses some technology to combine purchased inputs and human resources to produce some outputs" (Porter, 1985, p. 166). In Figure 2 this implies that the primary activities, as well as the supporting activities are conducted by a specific production function, the effectiveness and efficiency of which reflects the productive performance of an individual activity. Hence, the productivity of a firm and its value chain can be defined as a weighed sum of the individual productivities of the activities the firm performs. This goes far beyond the neoclassical analysis, which regards the firm as a "black box" defined by the general production function (Viitamo, 2007).

There is an analogy with the neoclassical approach, however, if the firm is assumed to operate like the national economy. In that case the technical productivity of the economy (firm) can be defined in terms of the productivities of its constituent industries (activities). Also consistent with the neoclassical assumption of unrestricted access to new technology, Porter notes that technology be may an important determinant of the overall industry structure, and hence its productivity, if the

technology employed in the value activity becomes widespread, i.e. "leaks out". Technological change that diffuses can potentially affect each of the competitive forces and improve or erode the attractiveness of the industry (Porter, 1985). Thus, even if technology does not yield competitive advantage to any one firm, it may affect the profit potential of all firms.

Technological considerations demonstrate why a firm's activities should be regarded as the basic unit of analysis of competitive advantage[14]. Yet, as demonstrated by the critique of the neoclassical approach on productivity analysis (Viitamo, 2007), measurement problems associated with the comparisons of the outputs of different activities impede the assessment of their contribution to the overall productivity of a firm. The problems of comparability and measurement of physical productivities are further aggravated by factors raised by Porter himself.

First, technologies vary from fully automated processes to a simple set of procedures for the personnel (Porter, 1985), or "organizational routines", as defined by the evolutionary approach (Nelson and Winter, 1982). Second, technologies are often embodied in the purchased inputs used in each activity, or they are embedded in other technologies, the efficiency of which they are expected to support (Viitamo, 2003). In particular, this is the case with information and communications technologies (ICT), which are pervasive in all value activities in Figure 2. Through the interdependencies of firms' activities technologies are also inter-linked, which constitutes a source of productivity externalities available for the firm. Ultimately, it is a particular combination of technologies which the technology strategy has to be focused on to generate maximum productivity.

Linking to service productivity

Given the inseparability of firm's activities, why then should one be concerned by their individual performance? For the management, the productivity of the firm is of interest, if it supports the increased profitability of the firm. From this perspective, the value of technologies lies in their actual contribution, which results from the effect of the implementation of the chosen strategy i.e. cost leadership, differentiation or focus, on a sustainable basis. The strategy, in turn, is valuable to the extent it creates value to the customer over the costs incurred by the firm. In this respect structural approach of strategic management creates a link between operational efficiency in a spirit of the neoclassical theory, and financial productivity concepts advocated by the service management literature (Grönroos and Ojasalo, 2004).

In reference to Figure 2, the value chain of a firm displays the total buyer value which the customer is willing to pay for the product and services offered. For the firm's productivity, as measured financially (value of sales per costs), the buyer value corresponds to the nominator of the selling firm's productivity. The denominator of the productivity indicator is the production costs, whereas the difference of the buyer value and cost is the margin indicated in Figure 2. For the business-to-business transactions, which Porter implicitly assumes, the buyer value of a product and service can be symmetrically increased by reducing the buyer's costs or rising the buyer performance through the product and service purchased.

Intuitively, with the strategy of cost leadership, the firm increases the buyer's value by reducing the buyer's cost, i.e. the purchasing price of the service or the product. Differentiation associated with a higher customer value reflective of a premium price enables both cost reduction for the buyer and increase in the buyer's performance. Hence, the strategy conducive to a firm's own productivity

[14] Decomposition of competitive advantage into individual effects has its analogy in the "rational school" of organizational theories (Thompson, 1967).

determines implicitly the productivity impact of the product and service for the buyer's production processes, as well. More specifically, the impact of the financial productivity of the selling firm on the client firm's productivity is further reducible to the generic strategies, implemented at the level of individual value activities of the selling firm[15]. This is the main idea behind the productivity model derived from the structural approach.

For the sake of simplicity, the analysis here is focused on strategic options at a company level. As a rule of thumb, competitive performance necessitates a "fit" between the strategic goals and means, between the firm's activities, and between the actions taken to conduct a chosen strategy. This means that the strategic position is not sustainable unless there are trade-offs with other positions (Porter, 1998). A trade-off occurs when some of activities or actions potentially available are mutually incompatible, that is, more of one thing cannot be attained without less of another.

With regard to the two generic strategies the reasoning implies that at the optimum, that is, at the highest attainable level of productivity there is a trade-off between cost leadership and differentiation for a specific industry. Differentiation is costly, as higher uniqueness and a premium price lead, at the margin, to higher expenses compared to the low cost competitors. Notice here the distinct analogy with the socio-economic models of service productivity discussed in Viitamo (2007)[16]. In particular, since the strategic options and associated technologies are by assumption continuous variables, the analysis conducted here is consistent with modelling service productivity, as well.

The trade-off between competitive strategies conducive to "operational effectiveness" – as defined by Porter (1998) - is highlighted in Figure 3. Porter (1998) defines the level of operational effectiveness as the ability of a firm to perform similar activities better than rivals perform them, which means higher value to buyers with the given costs, or lower costs with a given buyer value, or both. Conceptually, operational effectiveness is equal to the generic productivity discussed in Viitamo (2007), as it is a co-product of operational efficiency and effectiveness (quality). These two components capture the main characteristics of service productivity as well. In contrast with the productivity of uni-dimensional and homogenous output, operational effectiveness for differentiable (heterogeneous) output can be depicted two-dimensionally (see Figure 3).

The productivity frontier for an industry, which constitutes a continuous combination of the best practises, yields the maximum value that a company, delivering a unit of service or a product, can create at a given unit cost, with the best available technologies, skills, management practises and purchased inputs (Porter, 1998). Points D and B in Figure 3 represent the best practises achieved through an increased operational effectiveness from points A and C. Note that the pair of points D and B show equal levels of productivity, but they differ in their repertoire of activities, and hence their strategic positions. For the first best points D and B there is a trade-off between the strategies, whereas for the inferior points A and C this is not the case.

In reality, variations in operational efficiencies among firms within an industry are pervasive. These differences account for differences in profitability, which result from the firm's performance with respect to their cost position and level of differentiation. A firm moving for instance from point A to

[15] "The basic unit of competitive advantage is the discrete activity. The economics of performing discrete activities determines a firm's relative costs not attributes of the firm as a whole. Similarly, it is discrete activities that create buyer value and hence differentiation" (Porter, 1991, p. 102).

[16] For instance, Parasuraman (2002) and Grönroos and Ojasalo (2004) assume that there is a trade-off between operational efficiency and service quality, which depends on the degree of customization of the service.

point B may increase its scale of production or capacity utilization, and at the same time attain a higher level of differentiation through after sales services for its customers.

Similarly, a competing firm locating at point C may, through learning, improved cost control, and better signalling of higher quality of its services to the customers, attain the productivity frontier at point D. Interpreted within the neoclassical duality framework on factor productivity and costs (Viitamo, 2007), improved cost control is equivalent to the movement of the firm downwards onto the minimum average cost curve, whereas utilization of scale economies implies a movement along the decreasing segment of the minimum average cost curve.

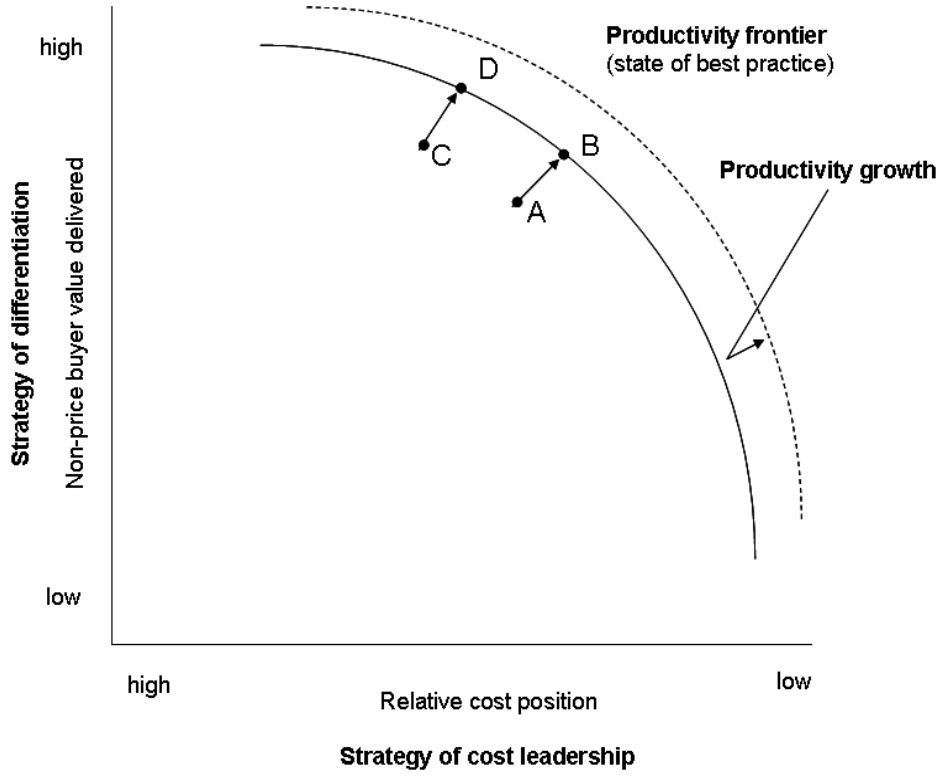

Figure 3. Operational effectiveness vs. strategic positioning (modified from Porter, 1998).

Through the differing strategic regimes companies pursue for, competition based on innovation and imitation may lead to a rapid diffusion of the best practises within an industry (Porter, 1998). Given such an assumption, the shape of the productivity frontier (technology) becomes "gradually" common knowledge within the industry, and the technological progress shifts the frontier outward, as depicted in Figure 3. While the improved operational effectiveness of an industry benefits the economy as a whole, it may, given the strategies of individual firms, leave the relative positions of the competing firms unchanged.

In effect, reflective of "economics of realism" (Teece, 1984, Rumelt et al., 1991), markets are implicitly assumed incomplete with regard to information on the technologies and strategic opportunities available. As a result, incumbent firms are heterogeneous not only with regard to their profile of strategies, but their levels of productivity as well. In such competition less productive firms are, according to Porter, outperformed by more productive firms, but the outperformed firms

do not necessarily exit from the market. This follows from the assumption of imperfect competition and ongoing changes in the first best technologies.

As the continuous productivity frontier in Figure 3 suggests, the argument on the strategic trade-off should be refined. In his original writings Porter makes it explicit that "stuck in the middle" between cost leadership and differentiation unavoidably leads to poor competitive performance (Porter, 1980). This is because firms in this situation are unable or unwilling to make explicit choices about how to compete[17]. For a focused strategy, on the other hand, "stuck in the middle" should be a minor problem, as competitive advantage stems primarily from the specialized knowledge on a specific market segment or a spatial market. The assumption of a continuous productivity frontier in Figure 3 rejects the invalidity of the stuck in the middle –argument, however.

If the value of differentiation and unit costs of production are measured in common units, it is clear that the most profitable strategy is to select the point on the frontier, where the marginal value of the trade-off, i.e. the slope, is equal to -1[18]. Any deviation from that point would decrease the profits of a firm. Even in the case of Figure 3, where the utility of differentiation for the customer is not measured in money terms, the "stuck in the middle" argument cannot be validated. All the points on the frontier are potentially available, but the model does not indicate which point on the productivity frontier a company should eventually choose. A refined model should make assumptions about the combinations of cost and differentiation the market prefers.

The "stuck in the middle" –argument has also been raised and criticized in the field of relationship marketing (Ravald & Grönroos, 1996), which investigates the profitability of the maintenance of a long-term customer relationship. The point made by the authors is that the dichotomy between differentiation and cost leadership should not be a template for making explicit strategic choices. An optimal strategy is always a combination of cost leadership and differentiation, but the highest priority is to provide value targeting on the right customers, whom the company is able serve profitably (Ravald & Grönroos, 1996). Within the structuralist framework this means that the only feasible option is the focused strategy and the associated choice of customer segment[19].

2.3 Implications

The structuralist stance that characterises the Porterian theory of strategic management has substantially influenced the academic and entrepreneurial thinking on the sources of competitive advantage over two decades. Undeniably, its merit lies in the economics of realism with which the competitive behaviour of a firm is modelled. Firms do indeed strategize, not in a profit maximizing sense, but by seeking high profits from the firm-specific competitive advantage and through the

[17] "Stuck in the middle is an extremely poor strategic situation…The firm stuck in the middle is almost guaranteed low profitability. It either loses the high-volume customers who demand low prices or must bid away its profits to get this business away from low-cost firm" (Porter, 1980, p. 42).

[18] The value of differentiation in Figure 3 is measured by the preferences of customers (perceived quality), and the form of the productivity frontier reflects a diminishing marginal utility of buyers of each strategy, and the prevailing technological constraints of the industry.

[19] Actually, the generic strategies are not independent in Porter's original framework, either. This is simply because the profitability of differentiation depends on how much the value perceived by the buyer exceeds the cost of differentiation. In particular "differentiation aims to create the largest gap between the buyer value created (the price premium) and the cost of uniqueness in the firm's value chain. The cost of differentiation will vary by value activity, and the firm should choose those activities where the contribution to buyer value is greatest relative to the cost. This implies pursuing low cost sources of uniqueness as well as high cost ones that have high buyer value" (Porter, 1985, p. 153).

control of the external environment. Firms dislike direct competition and pursue anticompetitive tactics, but eventually everything hangs on the profitability of the chosen strategy. Strategies are moreover path-dependent, as all initial conditions of competitiveness are preceded by earlier managerial choices (Porter, 1991; Nelson and Winter, 1982).

The unqualified emphasis put on the environmental sources of a firm's competitiveness is perhaps the major drawback of the Porterian framework. The negligence of the competitive sources internal to a firm and the criticism arisen thereupon has been partially remedied in Porter's subsequent and more integrative accounts on the competitiveness of a firm (Porter, 1991). To quote, "resources…are intermediate between activities and advantage…An explicit link between resources and activities, along with the clear distinction between internal and external resources that was drawn earlier, is necessary to carefully define a resource in the first place" (op. cit. p. 109). Yet, in this refined set-up, resources exist and are accumulated, because they are supportive of the firm's activities and exogenously chosen strategy. Hence, the inherent inconvenience with the uniqueness and internal origins of a firm's competitiveness looks inescapable in the structuralist framework.

The lesson of the Porterian economics of realism is the stylized fact that physical productivity is not an explicit objective of the management of a strategizing firm. This owes to the anti-competitive orientation of the theoretical approach, which puts forward the entry deterrence as an effective means of a firm's profitability. In this setting, productivity is pursued as long as it is advantageous for sustainable profitability. Physical productivity becomes a more explicit focus in Porter's subsequent work on the determinants of competitiveness of national economies (Porter, 1990). While essentially dynamic, the approach to national competitiveness stresses, even more pronouncedly, the importance of the environment as the origin of the competitive advantage of an individual firm (Porter, 1990)[20].

The aspects of the local environment, "the diamond"[21], constitute a dynamic system, the characteristics of which bear essentially on the firm's processes that give rise to competitive advantage (Porter, 1990). The diamond also bears essentially on a nation's ability to attract factors of production, rather than merely serve as a location to them. Individual skills and the dynamic capabilities of firms are mobile factors "which tend to be drawn to the locations where they can achieve the greatest productivity, because that is where they can obtain the highest profitability" (Porter, 1991, p. 113). This demonstrates the instrumental role of productivity interpreted from the managerial perspective. Conversely, since the theory focuses on the determinants of productivity, it also explains the attraction of mobile factors.

While *Competitive Advantage* (Porter, 1985) explicitly "overlooks" the physical productivity of an individual firm, the concurrent analysis of the generic strategies brought down to the level of firm's activities provides a realistic and useful micro-perspective on the agenda. In this light any firm's value chain can be decomposed into activities which employ resources through technologies or accumulated routines. Accordingly, the productivity of the firm's overall technology – technological system - is reducible to the physical performance of individual activities and the productivity of the technologies or routines with which the services of the activities are produced.

[20] While the focus of research in Competitive Advantage of Nations (Porter, 1990) is on the role of the national environment, it is also clear that successful firms are also geographically concentrated within nations. The same theoretical framework can be used to help explain the concentration of success in nations, regions within nations or even cities (Porter, 1991).

[21] The four interactive factors of the diamond are a) a firm's strategy, structure and rivalry, b) demand conditions c) related and supporting industries, and d) factor conditions (Porter, 1990).

Positive externalities through learning and technological complementarities between the activities should enhance the aggregate productivity of the firm.

More importantly, Porter's subsequent analysis of the generic strategies and the assumption of a continuous trade-off between cost leadership and differentiation provide an essential contribution to the theoretical modelling of productivity defined in physical terms of quality and the unit costs of production. The continuous trade-off model partly invalidates Porter's earlier key proposition that "stuck in the middle" between cost leadership and differentiation will be detrimental to competitiveness of any firm. Such a dichotomous view on strategic options seems to be outdated, as technological embeddedness and convergence enable effective mass-tailoring and modularization even in the traditional manufacturing industries. In this sense the two-dimensional, continuous productivity frontier can be regarded as an approximation of the production possibilities of an industry, or a firm within a specific industry.

The preliminary model outlined here is appropriate for the analysis of service productivity on two grounds, in particular. First, the most plausible indicator that enables comparative analysis of the performance of heterogeneous service businesses is the ratio between revenues and costs (Grönroos and Ojasalo, 2004; Viitamo, 2007). This is the implicit assumption made by Porter as well. Second, contingent on industry characteristics, service technologies are most often extremely labour- and knowledge- intensive, which enables high flexibility in combining quality (differentiation) and cost-based strategies in different proportions. Hence, service productivity within the structuralist framework is to a high extent determined by the focused strategies in choosing the target customers. Service strategies are discussed more explicitly in Section 3.2.

3 The Resource-Based View

With the normatively positioned approach developed by Porter, there is a competing view stressing firm-specific characteristics as the ultimate sources of competitive advantage. The resource-based view provides a more objective, but also relatively abstract, explanation for the persistence of profit differentials within industries. In contrast with the pursuit for strategic position and monopoly rents, the resource-based view (RBV) maintains that market structure should rather reflect efficiency outcomes, that is, strive for productive allocation of the firm-specific resources. As the differences in performance tend to signal the differences primarily in the resource endowments, the attention is shifted away from product market barriers to (non-strategic) factor market impediments on resource flows (Rumelt et al., 1991).

If disengaged from the structural analysis of Competitive Strategy (Porter, 1980), it is evident that Porter's firm level analysis in Competitive Advantage makes an equivalent shift in the focus, as well, though in a more rudimentary way. Yet the resource-based theories make the point explicit that firms build enduring advantages only through efficiency and effectiveness of firm-specific assets and capabilities (Teece et al., 1997). Consequently, in comparison with the structuralist view, the resource-based theories offer an analytically more convenient explanation on how the variation in the productivities of idiosyncratic resources of competing firms is reflected in the differences in their profitability. This also enables a broader set of potential strategies. In this spirit Teece (1982) notes that a firm's capability lies upstream from the end product – "it lies in a generalizable capability which might find variety of final product applications" (Teece, 1982, p. 45).

3.1 Main characteristics

Origins

The development of the resource-based explanation to a distinct school on competitive advantage and strategy owes substantially to the seminal work of Edith Penrose. In her path-breaking work *The Theory of the Growth of the Firm* (1959), Penrose delineates a coherent theory of the management of a firm's resources, productive opportunities, growth, and diversification. In their assessment Kor and Mahoney (2004) note that "Penrose (1959) provides an explanatory logic to unravel causal links among resources, capabilities, and competitive advantage, which contributes to the resource-based theory of competitive advantage" (op. cit. p. 184).

For Penrose the firm is an administrative unit distinguishable by its productive resources, the disposal of which between different uses and over time is determined by an administrative decision, i.e. by the management. This demonstrates an axiomatic view on the relation between good management and economic performance. Hence, for Penrose it is never the resources themselves that are the "inputs" in the production process, but only the *services* that the resource can render (Penrose, 1959). In this regard the refined notion Penrose makes, points to the pervasiveness of services, interpretable as an initiative towards a service-based theory of production.

The services yielded by the resources are a function of the way in which they are used - exactly the same resources when used for different purpose or in different ways and in combinations with different types or amounts of other resource provides a different service or set of services (Penrose, 1959). The distinction between resources and services is central from the point of view of productivity. While a unique resource gives directly a strategic position and option for market power, it is the actual services, however, that determine the efficiency and effectiveness and the degree of the realized potential of the firm resources. In particular, management is seen as a

distinctive resource, which through the capacity and quality of the managerial services determines the productive co-deployment of other resources.

In the Schumpeterian spirit, Penrose makes also a substantial contribution to the theorizing of entrepreneurship, innovation and growth of the enterprise. Given the bundle of resources the firm possesses at any point of time, the conduct of the business activities results from the productive opportunities, which comprise all the productive possibilities that the entrepreneurs see and can take advantage of (Penrose, 1959). New productive opportunities and resources are created through learning and accumulated experience of the managers. To the extent the managers are capable and willing to exploit emerging business opportunities, there inevitably exists some unused service potential, i.e. excess capacity.

Unused productive services, which can also result from indivisibilities of physical resources, are for the enterprising firm a challenge to innovate, an incentive to expand, and a source of competitive advantage (Penrose, 1959). This excess capacity facilitates the introduction of new combinations of resources, i.e. innovation, within a firm. New and more productive combinations may be found among existing resources and services, as well as products and organizational structures. This is the essence of the subsequent theory on dynamic capabilities introduced by Teece et al., (1997) and Teece and Pisano (1998). More generally, the creation and utilization of excess capacities is the main source of growth for the enterprise and in particular, its productivity. These issues will be discussed in more detail below.

Later developments

Much of the later work supportive of the resource-based analysis focuses on the duality of input and output markets, and hence, the apparent controversy with the Porterian theory (Barney, 1991; Grant, 1991). This can be called a chicken-egg dilemma. As Wernefelt (1984) notes, resources and products are two sides of the same coin. In particular, given the characteristics of product market activities it is possible to infer the minimal necessary resource commitment. Conversely, given the resource profile of the firm, it is straightforward to choose the needed product market activities (Wernefelt, 1984)[22]. Though symmetric, such a duality often yields non-symmetric outcomes at the firm level, which is influenced by the choice of taking the sources of competitiveness as either state variables or control variables.

Theoretically, however, if competitive advantage is based on resources the firm possesses, they should generate above average profits. Equivalent to Porter's (1980) argument that superior profitability should be based on strategies that give a defendable position on product market, and sheltered by entry barriers, one can identify resource position barriers that generate excess profits as well. Logically, the dichotomy becomes more conceivable in situations where the excess profits result from superior efficiency and ingenuity of the entrepreneurs. As a result, the principles of competitive advantage of firm activities outlined by Porter (1985) mitigate the dichotomy relative to the mainstream of the resource-based school.

Barney (1991) questions the Porterian theory for its inconsistencies in the analysis of competitive advantage. The implicit assumption in the Porterian theory is that firms are identical by their strategically relevant resources, which are perfectly transferable between firms. In reality this is not the case. Put differently, competitive advantage and strategizing require that the resources that firms possess are, at least to some extent, heterogonous and immobile (Barney, 1991). Therefore, Barney

[22] Though limited, there is a distinct analogy with the duality theorem of the neoclassical production theory (Kreps, 1990).

maintains that only a distinct sub-set of a firm's physical, human and organizational capital, which enable a firm to conceive and implement strategies that improve its efficiency and effectiveness, are by definition firm resources.

Whereas resource heterogeneity and immobility are necessary conditions for the existence of competitive advantage they do not guarantee its sustainability[23]. Barney suggests four additional attributes of firm resources which sustainability should assume (see also Grant, 1991). First, the resources must be valuable, which they implicitly are, if they enable strategies to exploit external opportunities and neutralize threats in a given market (Porter, 1991). Second, resources must be rare, or scarce by neoclassical terminology. Third, to enable sustainable competitive advantage, the resources have to be imperfectly imitable[24], and fourth, there cannot be strategically equivalent substitutes for a specific resource (Barney, 1991).

The argument raised by Grant (1991) is that the business strategy should be viewed less as a quest for monopoly rents, i.e. returns to market power, and more a quest for returns to the resources which confer competitive advantage over and above the real costs of these resources. This means that Porter's *Competitive Strategy* (1980), which delineates the determinants of industry attractiveness and advises how to choose among industries to make a profitable entry, does not discuss an effective business strategy. The focus of *Competitive Advantage* (Porter, 1985) on the other hand, is right and consistent with the criterion of business strategy, but here Porter neglects the actual sources of competitive advantage.

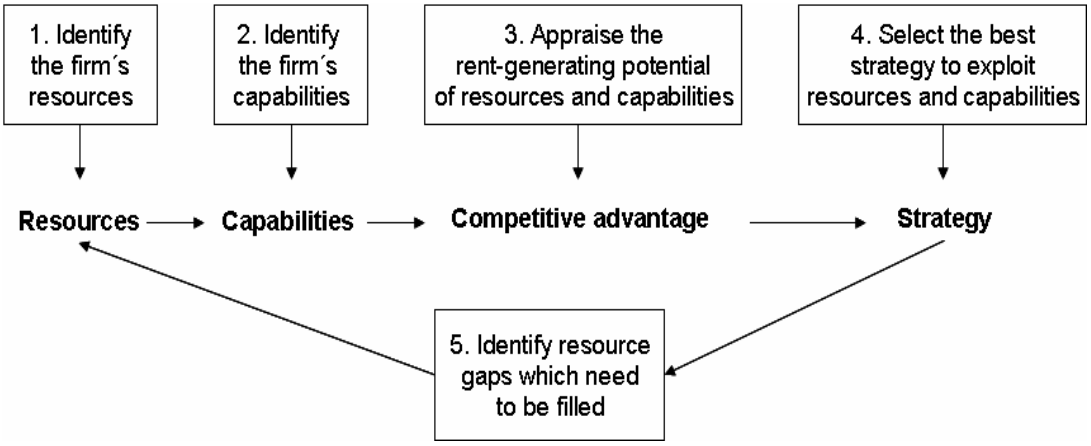

Figure 4. A resource-based approach to strategy design (Grant, 1991).

Accordingly, the fundamental issue is not the choice between cost and differentiation advantages, but the resource position of the firm which enables the introduction of these generic strategies. Yet, the main concern of Grant (1991) is that the various contributions under the resource-based view lack a coherent framework, which is required to develop practical implications for effective strategy formulation. For that purpose Grant proposes a five-stage procedure. This procedure involves 1) analysis of the firm's resource base, 2) appraisal of the firm's capabilities, 3) analysis of the profit-earning potential of the firm's resources and capabilities, 4) selection of the strategy, and 5)

[23] Though sustainability is a key attribute of competitive advantage for Porter as well, it gets little attention in his analysis.

[24] There are several factors that inhibit imitation linking the resource-based analysis with the organizational theories. Among these factors are the unique historical context of the firm (Nelson and Winter, 1982), causal ambiguity between the resources and performance (Williamson, 1985), and social complexity based on tacit information (Thompson, 1967).

extension and upgrading of the firm's pool of resources and capabilities. The schematic model is depicted in Figure 4.

In Grant's model the resources are inputs into the production process, and the basic unit of analysis. The resources include the skills of individual employees, patents, brand names, finance etc. Identification of the firm's resources involves the appraisal of strengths and weaknesses relative to competitors, as well as the identification of opportunities for better (more productive) utilization of the resources. Few resources are productive in their own, however. In particular "productive activity requires the cooperation and coordination of teams of resources". A capability is "the capacity for a team of resources to perform some task or activity…While resources are the source of a firm's capabilities, capabilities are the main source of its competitive advantage" (Grant, 1991, p. 119).

There is a distinct analogy with the Penrosean argument on the services provided by the inputs. That is, the core of competitiveness is how effectively the resources are actually utilized among their actual and potential uses. Capabilities serve as a kind of technology which transforms the productive potential of resources into exploitable action. Moreover, with reference to evolutionary economics as outlined by Nelson and Winter (1982), Grant maintains that capabilities involve complex patterns of coordination between people and between people and other resources, so that improved coordination requires learning through repetition. In this regard capabilities correspond to organizational routines, or number of interacting routines (Nelson and Winter, 1982).

The identification of the firm's capabilities is attended with the assessment of the capabilities of the competing firms, and, what the firm does more effectively than rivals. Consequently, there is a hierarchy of a firm's capabilities, on the top of which are what Prahalad and Hamel (1990) call core competences[25]. Core competences are conceptually interesting, as they explain much of the inconsistency with the Porterian reasoning. Namely, if the planning procedure from stage one to stage four is reversed in Figure 4, the process approximates the causality of competitive advantage within the Porterian framework. That is, the core competences and capabilities can be interpreted as superior organizational skills employed in controlling the cost drivers and the drivers of uniqueness of firm activities. While these capabilities evolve through experience and learning, this results ultimately from the chosen strategy.

In Grant's model the realization of competitive advantage of the firm is dependent, not only on the sustainability of the advantage, but, also on the appropriabilty of the returns (Teece, 1986; Teece, et al. 1997)[26]. These two issues are central for the appraisal of the rent-generating potential of the resources and capabilities (Stage 3 in Figure 4). The issue of appropriability concerns the distribution of returns of the resources in circumstance where the property rights cannot be explicitly defined. This is typically the case with the technology owned by the firm and the human capital owned by an individual employee. Thereby, the more the performance of employees is contingent upon other resources and organizational routines of the firm the more control the

[25] Prahalad and Hamel (1990) define core competences as collective learning in the organization, especially how to coordinate diverse production skills and integrate multiple streams of technologies. "Core competence does not diminish with use. Unlike physical assets, which do deteriorate over time, competences are enhanced as they are applied and shared. But competences still need to be nurtured and protected; knowledge fades away if it is not used. Competences are the glue that binds existing businesses. They are also the engine for the new business development. Patterns of diversification and market entry may be guided by them, not just by the attractiveness of markets" (Prahalad and Hamel, 1990, p. 82).

[26] In Grant's model the sustainability of the competitive advantage is determined by durability, transparency, transferability and replicability of the resources and the associated capabilities (Grant, 1991).

management and the firm can exercise over the returns of the resources (Løwendahl, 2005)[27]. As a result, the realization of the competitive advantage of the firm depends crucially on the firm´s capability to balance the power between individual skills and organizational routines, and hence balance their development.

Strikingly, Grant (1991) does not specify how to select a strategy which best exploits the firm's resources and capabilities relative to external opportunities at the fourth stage in Figure 4. Yet, it can be assumed that the generic strategies of cost leadership, differentiation and focus are applicable here too (Porter, 1985, 1980). Stage 5 in Figure 4 adds dynamics to the standard resource-based analysis. In effect, filling the gaps involves the maintenance and augmentation of the resource base to buttress and extend the competitive advantage and strategic opportunity set. Implemented optimally, the strategy should push slightly beyond the limits of the firm's current capabilities to meet future challenge (Grant, 1991). In this respect a coherent extension of these ideas is the theory of dynamic capabilities developed by Teece et al., (1997) and Teece and Pisano (1998).

Dynamic capabilities

Reflecting a progressive inclination, and deviation from the antecedent theories, the term "dynamic" refers to the shifting character of the environment, which necessitates strategic responses in the face of high uncertainty and accelerating innovation[28]. While the importance of the industrial environment is also put forward in Porter's framework, the dynamic capabilities makes the case more pronounced and connects the analysis to evolving high-tech and knowledge-based industries. The term "capabilties" emphasizes the key role of strategic management in adapting, integrating, and re-configuring internal and external organizational skills, resources, and functional competences toward a changing environment (Teece and Pisano, 1998). The authors make a distinct reference to Edith Penrose and her point on the high quality of managerial services[29].

To highlight their point further, Teece and Pisano (1998) put forward the distinctiveness of the firm as a productive organization in comparison with the alternative organizational forms, in particular markets. Here the authors draw on the transaction cost theories of the firm of Coase (1937) and Williamson (1985). The hallmark of a firm is that is supersedes high-powered incentives of markets, which are destructive of cooperative activity and learning (Teece and Pisano, 1998). Hence, capabilities which are the distinct features of a firm cannot be readily assembled through a market mechanism. In a similar vein, a firm's resources are defined as firm-specific assets that are difficult, if not impossible to imitate and trade (Teece et. al. 1997).

The competitive advantage of firms competing in environments of rapid technological change rests on three determinants: processes, positions and paths. Managerial and organizational processes and the asset position define the pool of a firm's dynamic capabilities[30]. The dynamic capabilities most conducive to uniqueness locate on the top of the organizational hierarchy. In this setting,

[27] As Grant notes, a firm's dependence upon skills possessed by highly trained and mobile key employees is particularly important in the case of professional service companies where the employee skills are an overwhelmingly important resource (Grant, 1991).

[28] The dynamic capabilities approach builds essentially on the intellectual legacy of Penrose (1959) and the evolutionary theories of the firm (Nelson and Winter, 1982).

[29] By relaxing the implicit assumption of "sticky" resources of the earlier resource-based contributions and including the external resources in the framework, the opportunity set for an effective management is enlarged in Teece and Pisano (1998).

[30] More precisely, dynamic capabilities are a subset of the competence/capabilities which allow the firm to create new products and processes, and respond to changing market circumstances (Teece and Pisano, 1997).

sustainability is a minor problem for competitiveness as, owing to the nature of the firm, the dynamic business environment and bounded rationality, the key processes of integration, learning and reconfiguration, are hard to replicate and imitate by competitors.

With the coherence and integration of internal and external processes, the strategic posture of a firm is determined by its market position with respect to the business assets, which brings the analysis closer to the Porterian framework. The business assets involve, by definition, the difficult-to-trade knowledge assets possessed by the firm, the assets complementary to them, as well as reputational and relational assets, which are external to the firm. As pointed out by Teece and Pisano, business assets will ultimately determine the firm's performance, i.e. market share and profitability, at any point in time (Teece and Pisano, 1998).

Of the business assets listed by Teece and Pisano (1998), the complementary assets are of special interest, since their governance – internal or contractual - is highly decisive on how profits from innovations are distributed among competing firms (Teece, 1986). Namely, successful commercialization of innovation frequently requires that the knowledge is utilized in conjunction with other capabilities and assets. "Services such as marketing, competitive manufacturing, and after-sales support are almost always needed…These services are often obtained from complementary assets which are specialized (to the innovation)" (Teece, 1986, p. 288)[31].

The notion of path-dependence acknowledges that "history matters" (Nelson and Winter, 1982). Hence, where a firm can go is a function of its inherited position of assets and the paths ahead that are constrained by the repertoire of evolving routines (Teece and Pisano, 1998). This was also noticed by Edith Penrose forty years earlier. Most resources can provide a variety of different services, which is of great importance for the productive opportunity of a firm and gives each firm its unique character (Penrose, 1959). The heterogeneity of resources notwithstanding, no firms produce just anything that happens to be in strong demand of any time in the economy. The selection of the relevant product markets is necessarily determined by the "inherited" resources of the firm – the productive services it already has (Penrose, 1959).

3.2 Resource productivity

As noted in the introductory chapter, the resource-based theories provide a convenient platform for the analysis of resource productivity at the level of an individual firm. This can be demonstrated by the theoretical contributions discussed above, and more specifically, their applicability in situations where the sources of firm-specific advantages are confined to few types of resources utilized in service production. Accordingly, subsequent to the examination of the general implications on the analysis of productivity, the focus will be geared to the productivity of knowledge assets within the context of professional service firms (Løwendahl, 2005). The analysis of professional services manifests the inter-relationship between strategic management, firm-specific assets and service productivity.

Excess capacity

A useful starting point for the productivity analysis is Edith Penrose's notion of the "resource idleness" as a driver of the growth of the firm. This means that the expansion of firms is largely based on the opportunities to use their existing productive resources more effectively than they are

[31] Notice the correspondence with Penrosean analysis of the relation between resources and services. The characteristics of the appropriability regime are influential in deciding whether to internalize or contract out the complementary assets.

currently used (Penrose, 1959). First, through the accumulated experience which improves the ability to exploit objective information, there is a continuous increase in the entrepreneurial and managerial services available to the firms. The new "potential" services that are generated will remain unused if the firm fails to expand. Second, concerning most of the other inputs acquired from the market, firm are not – or should not be - interested in the resources *per se*, but the actual services they are expected to yield. Yet, it is resources that in most cases must be acquired in order to obtain services. In general, "resources are only obtainable in discrete amounts, that is to say, a bundle of resources have to be acquired even if only a single service should be wanted" (Penrose, 1959, p. 67), which is the inevitable source of excess capacity. Consequently, if expansion can provide a way to use resources more profitably and efficiently than they are currently used, a firm has an incentive to expand.

Given the problem of indivisibility the key question is, whether a balance of processes to eliminate such a waste, or alternatively, to utilize "free" services profitably to gain competitive advantage, can be achieved. While the answer given by text book economics may be yes, drawing upon e.g. the least common multiple[32], Penrose identifies factors that preclude such a state of rest, and an equilibrium size of a plant. This stems from the fact that there is a vast number and variety of indivisible resources, each capable of rendering not only different amounts, but also different kinds of services. Within the limits of bounded rationality, the "full utilization of services may call for an output larger and more varied than can be organized by a firm in a given period of time" (Penrose, 1959, p. 69).

With the avoidance of scale-based idleness of resources, there is also an incentive to allocate resources in their most profitable use, and specialize. With regard to the efficiencies brought about an improved division of labour (Smith, 1776) there is a distinct analogy between a firm and the economy. That is, to be more effective, the division of labour within a firm necessitates a larger volume of output, creating a virtutuous circle of specialization and larger common multiples. Moreover, based on the accumulated pool and quality of managerial services, an increasing number of new services from complementary resources become available, creating new opportunities for expanded productivity growth.

Growth strategies

Penrose makes a distinction between various scale effects conducive to higher productivity. Thus *technological economies* arise, when, under given conditions, and for given products, changes in the amounts and kinds of resources used in production permit a larger output to be produced at a lower average costs. The sources of cost reduction may be increased specialization of labour or the introduction of automatic machinery and similar technical alterations in the organization of production. Yet, "the effect of any of these technological changes on costs depends not only on the physical productivity of the combination of inputs, but also on the prices of the factors of production required" (Penrose, 1959, p. 90).

Technological economies with the given prices of productive inputs are the primary source of *economies of operation.* Such economies refer to the decreased average cost of production and distribution, as the expansion in the current market of the firm has been completed. *Economies of expansion* prevail if the unit costs after the expansion into new products or markets are lower than the unit costs of another, specialized firm. Economies of expansion are often based on the existence

[32] If a collection of indivisible productive resources is to be fully used, the minimum level of output at which the firm must produce must correspond to the least common multiple of the various maximum outputs obtainable from the smallest unit in which each type of resource can be acquired (Penrose, 1959).

of managerial economies, that is, when the expansion utilizes the excess capacity of managerial services and managerial division of labour. In contrast with the economies of operation, economies of expansion are usually transient and available until the expansion is completed. As the original sources of excess capacity of the managerial services tends to disappear in the process of expansion, the relative cost advantage of the expanding firm relative to a specialized firm, may disappear, as well. This means that weakly related or unrelated diversification cannot be, in the long run, justified on the grounds of efficiency gains[33].

Innovative and dynamic growth

With a lesser emphasis on the growth of a firm, Grant (1991) urges business managers on a productive employment of the firm's resources (stage 2 in Figure 4). The ability to maximize productivity is particularly important in the case of tangible resources such as plant and machinery, finance, and people[34]. Consistent with the Penrosean reasoning, Grant refers to the opportunities of using the existing resources in more profitable employment, which underlines an extended scope for productivity growth comparable with diversification (Porter, 1985). This motivation is fostered by the notion that there is no predetermined functional dependence between the resources and capabilities of a firm, although their characteristics set certain limitations to what a firm can do (Grant, 1991). The essential feature of the relationship between resources and capabilities is the ability of an organization to achieve cooperation and coordination within *teams* to develop smooth-functioning routines[35].

Equivalent to the Porterian model of the continuous trade-off between cost leadership and differentiation (Porter, 1998), the resource-based view identifies a trade-off between efficiency and flexibility inherent in the performance of teams and organizational routines. According to Grant (1991), routines to an organization are what skills are to an individual[36]. While skills and routines involve a large component of tacit knowledge, which limits their explicit articulation, their efficiency can be enhanced by limiting the repertoire of routines or alternatively, limiting the repetition of the specific contingencies the firm faces. Consequently, efficient routines are by nature sticky and incapable of responding effectively to novel situations. In comparison with differentiation in the Porterian productivity model, flexibility and alternative use of productive resources implies is a broader interpretation of effectiveness.

For the dynamic capabilities -approach the productivity of assets, or their efficient utilization, is not a central issue. This follows directly from the axiomatic view of resources as difficult-to-trade knowledge assets, the cost and capacities of which are difficult, if not impossible to define. More importantly, knowledge assets are subject to increasing marginal returns, which amplify the value creation effects of innovation-driven productivity growth (Teece, 1998). Yet, productivity matters, through the conduct of organizational and managerial processes (Teece and Pisano, 1998, p. 198). As the price system determines the efficiency of the markets, the qualities of business managers determine the productivity of coordination and integration within a firm. How efficiently and

[33] More specifically, the original economies may disappear if a) the resources used in the new activities become specialized in their new use and are no longer significantly connected with any of the older activities of the firm; and b) if the original advantage was primarily an entry advantage based on knowledge, managerial ability and the general reputation of the firm (Penrose, 1959).

[34] To quote, "it may involve using fewer resources to support the same level of business, or using the existing resources to support a larger volume of business" (Grant, 1991, p. 119).

[35] "The organization's style, values, traditions, and leadership are critical encouragements to cooperation and commitment of its members...These can be viewed as intangible resources which are common ingredients of the whole range of corporation's organizational routines" (Grant, 1991, p. 122).

[36] This remark is a direct citation of Nelson and Winter (1982).

effectively internal coordination and integration is achieved is the source of differences in the firm's competence in various domains (Teece and Pisano, 1998, p. 198).

Of the dynamic capabilities of the firm, learning is even more central in productivity growth. As defined by Teece and Pisano (1998) learning is a process where repetition and experimentation enable tasks to be performed better and more quickly and new production opportunities to be identified. In comparison with learning, reconfiguration and transformation of assets bear more fundamental changes on routines and technologies brought about innovation. The effects on the resulting discontinuity in productivity growth are analogous with the Schumpeterian "creative destruction" that in this case guides the re-creation of the productive routines of the firm.

The Professional services

The high level of generality and abstraction notwithstanding, the dynamic capabilities –approach and the other resource-based arguments provide useful insights for the analysis of service productivity. In particular, based on the empirically validated arguments by Løwendahl (2005) and Løwendahl et al. (2001), it is suggested here that the resource-based analysis in conjunction with the Porterian approach offers a plausible framework to examine the productive processes of knowledge-based professional service firms. Professional services are comprised of such business services as engineering, advertising, consulting, accounting, and juridical services.

Among the distinct features of professional services are a high degree of customization of the services delivered, a high degree of intangibility and knowledge intensity of the service processes, and high interaction of the professionals with their clients (Viitamo, 2007). The professional service industries are of special interest here, since - compared to other services – their distinct features are more distant to the characteristics of standard manufacturing (Viitamo, 2007). Moreover, evolving business strategies and practices implemented by professional service firms manifests the generic industrial evolution within the broad service sector as well[37].

The original purpose of Løwendahl (2005) and Løwendahl et al. (2001) is to introduce a comprehensive framework for the analysis of the value creation process and knowledge development for professional service firms. Apart from the dynamics of the service processes assessed by the authors, their analytical departure approximates the value creation approach to service productivity discussed in Viitamo (2007). Furthermore, the value creation process of the professional services is equivalent to the value chain analysis of Porter (1985) within the context of manufacturing processes. The analysis here is adjusted from Løwendahl (2005) and Løwendahl et al. (2001) to pinpoint the linkages with the resource-based theories, and service productivity in particular.

Balancing between the resource-based view and the structuralist view, the Løwendahl-model regards firm-specific assets and market environment equally important for strategy formulation. The *strategic domain* of a professional service firm consists of the choices of what is delivered, to whom, where and how. The strategy does not remain unchanged, however, but is influenced by evolutionary processes of learning and adjustments between the resource base and the strategic domain[38]. In practise strategy works loosely as prioritizing clients and projects, and is subject to the chicken-and-egg dilemma. A given pool of processes, employees and knowledge will support

[37] The characteristics of service industries are discussed at further length in Viitamo (2007).
[38] Given the high degree of innovation, the responsiveness to unique client needs and unpredictability of which target projects will be won by the firm, strategic management in professional service firms cannot be centred on the development of a detailed long-term plan.

specific strategic choices, whereas a certain portfolio of clients and projects attracts professionals with specific skills and competences.

Knowledge is the most strategic resource for professional services (Løwendahl, 2005; Teece, 1998). In particular, knowledge assets play a key role in the development of superior value creating processes for clients, as well as for the owners of the firm. To make the point further, it is not the stock of knowledge per se (Barney, 1991) that accounts, but the services the knowledge resource can provide (Penrose, 1959), i.e. the dynamic capabilities (Teece and Pisano, 1998)[39]. Within a broader setting, knowledge generates complementary and the most critical services utilized in pursuit of higher efficiency and effectiveness of the routine processes. Through the firm-specific knowledge management system[40] conducive to innovation, knowledge assets are the key competences in maintaining sustainable competitive advantage (Løwendahl, 2005; Adams and Lamont, 2003).

From value creation and productivity perspectives, it is crucial who owns and controls the knowledge assets and competences. Organizational competences owned by the firm consist of codified information, culture and routines, whereas employees hold their skills, experience-based knowledge and aptitudes. In between are located team and managerial competences some of which are embodied in the firm's competences, some in the competences of the employees and owners of the firm. As pointed out by Penrose (1959), managerial competences play a key role in mobilizing other competences. Some key competences, such as loyalty, reputation and track records are external to the firm (Teece et al. 1997), and are possessed e.g. by the clients of the firm.

With the strategic domain and knowledge base there exists a third basic element in the value creation process, namely *service delivery*, characterized by the associated technologies and knowledge management strategies (Hansen, 1999). The key dimensions, by which the delivery regimes of professional services differ, are the degree of customization of the services – or effectiveness – and the extent to which joint efforts by complementary resources of the firm, teams, are needed. A high degree of team production enables standardized and pre-planned coordination of activities and hence, economies drawn on specialization and scale-based production[41]. For highly customized services interaction with the customer, and the customer's participation in the delivery process is intensive, and preplanning of activities is thus limited.

The features of technology applied in the service delivery processes determine the complexity and costs of managerial coordination, which increases with the higher degree of customization (effectiveness) and decreases with the higher importance of routinized teamwork (efficiency) among the professional employees. Note that the technological characteristics are largely endogenous, since the delivery processes and their interdependencies are influenced by the choice of the strategic domain and the knowledge assets with the associated competences. Accumulated experience and learning, however, decrease the costs of coordination for all forms of delivery technologies. In this regard path-dependency for the efficiency outcomes is crucial (Løwendahl et al. 2005).

[39] Løwendahl (2005) suggests competence as an appropriate term for information-based resources which involves knowledge, skills and aptitudes.
[40] The knowledge management system is a firm-based network that enables the acquisition, storage, distribution, and retrieval of organizational knowledge and information (Adams and Lamont, 2003).
[41] For the discussion on the value creation of consulting companies see e.g. Hansen et al. (1999) and the dichotomy between "reuse economics" and "expert economics".

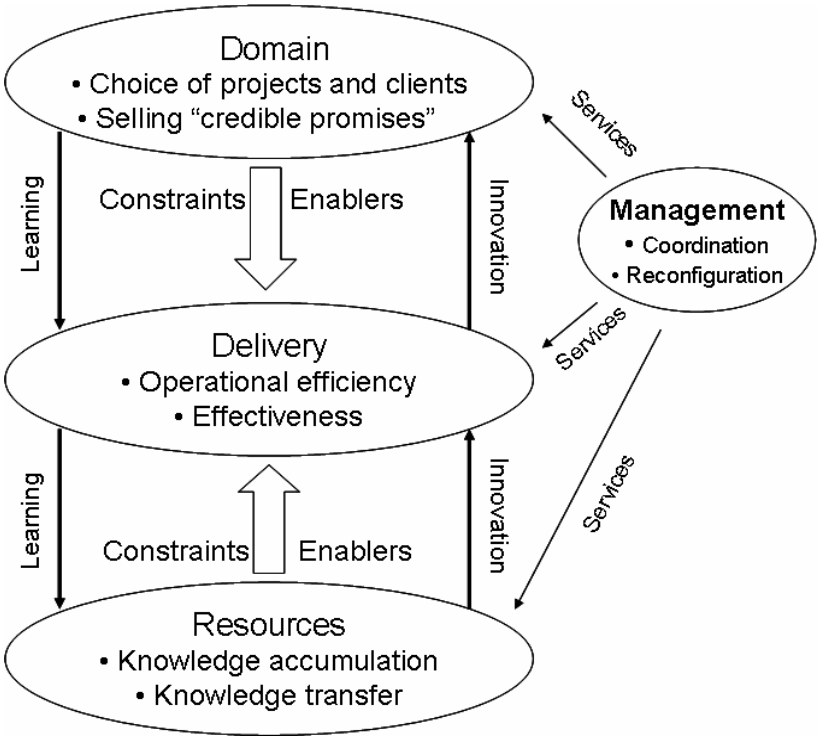

Figure 5. Value creation of professional services (modified from Løwendahl, 2005).

The value creation process of a professional firm is depicted in Figure 5. Through the value (productive input) delivered to the clients the firm receives financial value in the form of revenues and profits. Moreover, the owners of the firm gain from the knowledge development, which is, to the extent that accumulated knowledge is possessed by the firm, comparable with the retained earnings. This source of value added is of high importance and demonstrates the complexity of the value-based productivity analysis, as discussed in Viitamo (2007). Accordingly, if learning is adopted as an explicit company strategy, the value of new projects with only moderate expected profitability may be leveraged to yield a high discounted value of accumulated human and organizational capital.

The value creation process is constrained and also enabled by the strategic domain and resource base, which are "sticky" in the short sun. Experience improves the productivity of the delivery process, and through learning-by-doing it also enhances the knowledge assets to match better with the requirements of the delivery processes and customer needs. In the long run, constraints are less binding and they enable innovations of new technologies as well as extension of the domain towards new customer segments and projects. Independent of the length of the planning horizon, professional service firms compete simultaneously for resources in the input the market and for clients in the output market. As pointed out above, a firm's competitiveness in one of the markets depends on its position in the other.

Given the centrality of the knowledge assets and the value creation process for professional service firms, it is clear that the standard measures of performance, such as return on investments (ROI), are alone insufficient for the measurement of success, the value of the firm, and hence, productivity (Porter, 1998). That is, more important than the historical record on financial performance is the competitive potential embedded in the competences of the firm. As Løwendahl (2005) suggests, the appraisal of the firm should be based on weights given to the five p:s, which are profits, processes,

projects, people and persuasiveness. Note that the first two competences are owned by the firm, whereas the competences of people are owned by the employees and persuasiveness, i.e. reputation, and projects by the clients.

With the logic of the resource-based reasoning it is maintained here that the ultimate determinant of the success and value-based productivity of a professional firm is the efficiency and effectiveness of the firm's processes and competences. In reference to Figure 5, there is a correspondence between the three elements of the value creation process (domain, deliver and resource) and the successive phases of activities that have to be performed and managed, respectively. First, for the strategic domain there is the process of selling a credible promise. The efficiency and effectiveness of the process is highly dependent on the utilization of the relational assets and reputation, and the knowledge gap between the firm and the client. Moreover, the delivery technology and earlier experience on similar projects determine the information available ex ante, which influences and is the outcome of the contract ex post.

The second phase is the service production and delivery process and interaction, the characteristics of which were discussed above. In contrast with tangible processes of manufacturing, the productivity of service delivery is based on the efficiency and effectiveness of an intangible production function. To quote, "in this process the firm is concerned with both the actual quality of what is delivered, the perceptions of quality of by all relevant client firm representatives, and the efficiency of the delivery" (Løwendahl, 2005, p. 47). Relatedly, maximization of productivity is more or less sequential. Given the desired effectiveness of the services, agreed on ex ante, the objective of the firm is to maximize the efficiency of the delivery within the limits of the resources available, ex post. Efficiency outcomes are highly contingent on the experience included in the firm's resources.

Finally, the most important but often neglected phase is learning from the projects and the institutionalization of this learning to the extent that it can be utilized for improved service quality and improved efficiency with future clients (Løwendahl, 2005). More generally, the essential aspects of learning and innovation are reducible to the characteristics and productivity of the firm-specific knowledge management system and the firm's absorptive and transformative capacities, in particular[42]. Again, the choice of the strategic domain and the associated delivery modes influence the development of an effective knowledge management and enhancement of individual and organizational competences. From the firm´s perspective, the key issue of knowledge management is whether and to what extent experience-based knowledge of individuals is transferable to a collective knowledge asset of the firm (Nonaka and Takeuchi, 1995).

To some extent, transferability is limited by the characteristics of the knowledge itself. For instance, information-based knowledge can be shared, stored and transferred more easily than experience-based tacit knowledge, skills and dispositional knowledge (Penrose, 1959). An even bigger challenge for knowledge transfer is, however, the inherent conflict of interest between the employed professionals and the firm (Teece, 2003). A common characteristic of knowledge-based services is the attempt by professionals to safeguard their individual knowledge asset and competitiveness, whereas the managers of the firm want to develop the knowledge required for the enhanced

[42] According to Adams and Lamont (2003) **absorptive capacity** refers to an organization's ability to recognize the value of new, external information, assimilate the information, and then apply the learned knowledge to own internal product and service outputs. **Transformative capacity** refers to an organization's ability to gather, assimilate, synthesize and re-deploy relevant knowledge and technology previously developed internally into new technologies and processes designed to meet the organization's specific, current needs.

competitive advantage of the firm, and minimize the dependence on specific individuals[43]. Consequently, if knowledge and experience remain personal and are not shared somehow, then the firm can at best expect to achieve constant return to scale with regard to the firm's growth.

In circumstances of information impactedness, Teece (1998) predicts that larger organizations will have no specific advantage over boutiques and will possibly suffer bureaucratic burdens that will sap productivity. This demonstrates that also the value creation analysis of the Løwendahl-model is subject to the Penrosean interplay between excess capacity, firm's growth and productivity. Moreover, the similarity of the approaches is also demonstrated by the emphasis given to the managerial competences in making the value creation process productive. The Løwendahl-model points out that the different domain-delivery-resource regimes reflect different cost outcomes of coordination, which, with reconfiguration and re-bundling of the firm's resources, is the principal task of the management (See Figure 5). A genuinely Penrosean counterargument is that – given the differentiated costs of coordination what really counts in orchestrating a firm's dynamic competences, is the quality of services of the managerial resources.

3.3 Implications

The resource-based view on the firm and strategic management involves a collection of complementary theories that emphasize the uniqueness of a firm's assets and capabilities as the basis of the firm's competitiveness. In this regard the internal orientation of the theories is distinct deviation from the structuralist view, for which the origins of competitiveness resides in the environment of the firm and its strategy. While some theoretical convergence of the approaches is gradually taking place (Porter, 1991) the chicken-and-egg dilemma still persists and is far from resolved. In a way both views are firmly rooted in empirical observations, which may indicate that they are two halves of the same truth.

The structuralist approach stresses the successful employment of the *means* to attain competitive advantage, while the resource-based view stresses the distinct *source* with which the advantage is attained. The ultimate answer to the question of which of these dominates may be irrelevant, since the original advantage may be based on either one of the explanations or both of them simultaneously. In that case the issue is only a matter of degree. The structuralist explanation assumes that the ability to follow the pre-determined rules of the game in a consistent manner should lead to a profitable outcome on the market. Any failures to do so should weaken the market position and profitability of the firm. The point made here is that the more competitive advantage originates – or is expected to originate – from the uniqueness of the firm´s core assets, the more degrees of freedom exit to allow a deviation from the predetermined (assumed) rules of the game, and more innovativeness is thereby allowed to attain high competitiveness.

The dichotomy bears on the central issue of productivity as well. Within the structuralist framework productivity of a firm is determined at the level of individual activity in relation to the competitors, and productive performance results from the way how cost leadership and differentiation are combined. Accordingly, while productivity is distinctively composed of efficiency and effectiveness, the opportunities to combine them are constrained by a "smooth technology" which is potentially known to the competing firms within an industry. Even quality, which is the approximate of the effectiveness of the product and service, is more or less explicit information and

[43] Hence, contrary to the predictions transaction cost economics, a firm as governance structure cannot eliminate high-powered incentives completely (Williamson, 1985).

attainable if things are made right. This means that productivity, in total, is highly efficiency-driven concept.

From the resource-base perspective there are more unknown parameters on the technology and markets of the firm, and hence market and technology cannot be defined as explicitly as they are defined within the structuralist framework. It is reasonable to assume, however, that the market behaviour of a resource-based firm is inefficient in the structuralist sense, even if they show high profitability and actual competitive advantage. This is because a firm's competitiveness is based on uniqueness and difficult-to-imitate assets lacking horizontal benchmarks. In such a competitive situation a firm does have to be extremely efficient, as profitability is based on effectiveness, which is driven by innovation. Owing to the heterogeneity of routine-guided technologies, efficiency becomes more a firm-specific matter.

The resource-based theories provide a convenient framework for a flexible analysis of resource productivity, which is not tied up by neoclassical constraints. The notion of excess capacity by Penrose and the dynamic capabilities by Teece and Pisano acknowledge that no equilibrium size of firm or level of productivity exists. There is always the option to do more things or to do things differently and in a better way with a given set of resources. Another central observation by Penrose is that the competitiveness of the firm's resources is contingent on the productive services which the resources are able to generate. Learning and routinization expand the available set of services, and hence, through excess capacity, they increase the productivity potential. The process is fostered by externally owned complementary resources, such as brand loyalty.

A counterpart of the trade-off between differentiation and cost leadership within the Porterian productivity model is the trade-off between efficiency and flexibility identified by the resource-based school. The productivity of resources is then determined by the extent to which the resources are specialized to generate a specific number of different kinds of services. Specialized services bring about high efficiency, whereas allocation of the services among several uses and transferability of the services increase the effectiveness of the resources. The conceptualization of effectiveness this way brings it closer to the theory of diversification and analysis of the multi-product firm. Contrasting with the assumption of sticky routines suggested by evolutionary economics (Nelson and Winter, 1982), resource flexibility approximates well the characteristics of service technologies (Viitamo, 2007).

In general, the resource-based theories lack the depth of a normative stance towards strategic management as held by the structuralist view. This follows fundamentally from the uniqueness of the firm's assets. As noted by Porter (1991) the promise of the resource-based view for the strategy field is the effort to address the longitudinal problem[44], or the conditions that allow firms to achieve and sustain favourable competitive positions over time. "At its worst, the resource-based view is circular. Successful firms are successful because they have unique resources" (Porter, 1991, p. 108.) The questions of what are unique resources or what makes them valuable are not addressed satisfactorily. The lesson is that competitive advantage derives from more than just resources. Strategies, activities and the drivers behind are influential as well unless the resources are defined so broadly that they strain credibility of the resource-based view.

Theoretically an innovative effort would be to combine the aforementioned strategic perspectives. This has been done by Løwendahl in her value creation analysis of professional services. In

[44] Porter himself addresses cross-sectional problems as what makes some industries and some positions within them more attractive than other, what makes particular competitors advantaged or disadvantaged, and what specific activities and drivers underlie the superior positions.

merging the resource-based and the structuralist approaches the Løwendahl-model regards the firm-specific assets and market environment equally important for the strategy of the professional services. As the survival on markets with high uncertainty assumes responsiveness and continuous adaptation, commitment to sticky strategies may, however, influence adversely the competitiveness of the firm. This is not to say that strategic planning is redundant and impossible for service firms.

As Løwendahl (2005, p. 101) notes "strategy is necessary in order to achieve coordinated activities in a highly decentralized and non-routinized structure, where precisely the lack of detailed plans makes an agreement on goals and priorities fundamental". Yet, service strategy cannot involve a top-down formulation and implementation of plans and procedures, or a detailed description of how the goals should be achieved. Accordingly, the strategy of a professional service firm should involve the development and communication of a vision, focal competence areas, explicit goals, and priorities set for market segments (Løwendahl, 2005).

The adjusted Løwendahl-model suggests that the productivity implications for professional service firms are highly contingent on the chicken-and-egg dilemma. A given pool of processes, employees and knowledge will support specific strategic choices, whereas a certain portfolio of clients and projects attracts professionals with specific skills and competences. This is the underlying reason, why the dual approach, i.e. merging the structuralist and the resource-based views, is required in the first place. For professional services in particular, productivity is created through the value creation process and the inter-relationship between the strategic domain, the resource base, and the service delivery technology. The operational importance of efficiency and effectiveness along the value creation process becomes manifested by these three interacting elements.

Examined through the integrated approach of strategic management, the adjusted Løwendahl-model suggests that the productivity of professional services is conceptually a highly dynamic and evolutionary phenomenon, which sets specific requirements for the analytical tools. An immediate question arises then, whether and to what extent, the modelling is applicable to other services along the service-manufacturing dimension. Intuitively, it would be appealing to propose that the model is universal, since knowledge-intensity is pervasive in the service economy. This is not the case, however. The answer depends also on the tangibility of the technology, i.e. the extent to which human skills and tacit information are required to intervene in the service processes.

4 Conclusion

As suggested by this report, strategic management provides a viable approach not only for its principal focus of a firm's competitiveness, but also for the multifaceted issue of a firm's productivity, which lies behind the sustainable competitiveness. As pointed out by the academic literature, the productivity of a firm's processes manifested by the physical performance of the inputs and outputs is not the principal concern of the two discussed schools of strategic management. Such a conclusion is consistent with the more general observation, or stylized fact, that business firms are interested in enhancing the physical productivity of their processes to the extent it is conducive to the higher profitability and value of the firm itself.

Enhancing physical productivity is a costly effort, and if the costs incurred are expected to exceed the discounted value of the enhanced sales thereby attained, productivity growth turns out to be an infeasible strategy. Alternatively, if entry deterrence, collusion, or other anti-competitive forms of strategizing available to the firm seem to yield more profitable outcomes, productivity growth in such circumstances cannot be expected. Reflecting a simple business logic, the strategic considerations of a firm should provide far-reaching implications for industrial and competitiveness policy. Any policy actions and programme that should contribute to the enhanced physical productivity of firms and industries should account for the prevailing rules of competition and strategic behaviour.

With the emphasis on the environmental sources of competitiveness, the Porterian approach clearly demonstrates that viable assessment of a firm's productivity has to account for the physical as well as the financial facets of the business performance. This conforms to the pronounced requirements for measuring service productivity to (Viitamo, 2007; Grönroos and Ojajärvi, 2004). For service activities this requirement is further justified by the intangibility of the used inputs and the outputs produced and delivered. The Porterian assumption of a continuous trade-off between the generic strategies of differentiation and cost-leadership is also consistent with the propositions, though less systematic, on service productivity presented in the fields of service marketing and management.

In comparison with the Porterian explanation facilitated by product market and demand conditions, the resource-based theories provide an opposing explanation of the origins of a firm's competitive advantage. The supply-oriented point of departure of the resource-based view fits more conveniently with the neoclassical conceptualization of productivity, but allows a more unconstrained framework on the issue of how a firm's resources and key competences can be utilized most profitably among the alternative uses. As with the Porterian theory, business managers guided by resource-based reasoning are faced by a trade-off, which in this case means the extent to which resources are allocated efficiently (specialization) and effectively (diversification).

The Porterian approach stresses the successful employment of the *means* to attain competitive advantage, while the resource-based view stresses the distinct *source* with which the advantage is attained. The ultimate answer to the question of which of these dominates may be irrelevant, as the original advantage may be based on either one of the explanations or both of them simultaneously. In that case the issue is only a matter of degree. The structuralist explanation assumes that the ability to follow the pre-determined rules of the game in a consistent manner should lead to a profitable outcome on the market. Any failures to do so should weaken the market position and profitability of the firm. The point made here is that the more competitive advantage originates – or is expected to originate –

from the uniqueness of the firm's core assets, the more degrees of freedom exit to allow a deviation from the predetermined (assumed) rules of the game and more innovativeness is thereby allowed to attain high competitiveness.

An innovative amendment has been the combination of the aforementioned strategic perspectives in the analysis of professional services. In merging the resource-based and the structuralist approaches, the examined model regards firm-specific assets and the market environment equally important for the strategy of professional services. As the survival on markets with high uncertainty assumes responsiveness and continuous adaptation, commitment to sticky strategies may, however, influence adversely the competitiveness of the firm. Strategic planning is not redundant and impossible for service firms, but given the diversity of technological configurations, it assumes high degree of flexibility to meet future contingencies.

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