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# **The Co-Evolution of Organizational Value Capture, Value Creation and Sustainable Advantage\***

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## **Abstract**

Despite recent emphasis on intra-organizational issues, scholarship on organizations, management and strategy remains unduly reliant on economic models, such as the industrial organization (IO) market structure-based analysis. The focus of such models is on price-output determination by firms and the economy-wide efficient allocation of scarce resources under conditions of full knowledge and certainty. This limits their usefulness for students of organizations who have concerns that are simultaneously wider and also focused on organizations, as opposed to just markets. In this paper, we aim to provide an answer and framework for analysing the most fundamental, indeed existential, issue of organization studies and strategic management scholarship. This is whether and how the pursuit of value capture from economic agents who perceive that they possess appropriable value creating advantages, capabilities and action potential, can motivate the emergence of organizations and their strategies and actions intended to capture socially co-created value in conditions of real life . To do so, we explore (the co-evolution of) value capture and creation and (their relationship to) organizational sustainable advantage (SA). In particular, we delve into the nature, determinants and relationship between organizational value capture and creation and explore causal pathways, trade-offs and their co-evolution, as well as vehicles through which SA can be effected in an evolving and uncertain environment. We also discuss implications for managerial practice, limitations and future research opportunities.

## **I. Introduction**

The aim of this paper is to provide a framework and answer to the most important, indeed existential, concern of organization studies (OS) and strategic management scholarship. This is whether and how the pursuit of value capture by economic agents who perceive that they possess advantages, capabilities and action potential that can help them create appropriable value, can inform the question of the emergence of organizations as well as their strategies and actions to capture as much as possible out of the overall value they and others co-create, in a sustainable way and under real life conditions and behaviours.

The creation of value and the pursuit of sustainable advantage (SA) are widely regarded as two critical concerns of strategic management and organization scholarship (Collis and Montgomery 1998; Saloner et al. 2001; Ghoshal et al. 2002; MacDonald and Ryall 2004; Teece 2007; Lepak et al. 2007). Yet the framework and even the terminology employed by students of organizations are often borrowed from the economics of IO, such as the market structure-based analysis and its underlying concepts and assumptions (Lippman and Rumelt 2003a, b). The main focus of the IO perspective is on price-output determination by “firms”, which are seen as no more than points in a cost curve (Penrose 1959), under very specific assumptions concerning their objectives, conduct, the structure of the industry and the conditions of information and knowledge. The results from the analysis of different types of market structures are then used to derive economy-wide efficiency implications. Importantly, by assuming profit maximisation under conditions of perfect information and certainty, IO scholars can derive exact price-output equilibria and

show that under conditions of perfectly competitive market structures, there will be no excess (monopoly) profit and the economy-wide outcome will involve the efficient allocation of scarce resources (the first “fundamental” theorem of welfare economics). On the other hand, imperfect competition will engender monopoly rents, which firms can pursue by weakening the forces of competition (Porter 1980).

Throughout, the focus of IO is on the economic or “opportunity” cost of firms. It is assumed that cost and demand conditions are well determined and known to all firms in the industry, including potential entrants (Tirole 1988). Importantly, technology and innovation are taken to be exogenous to firms (Pitelis and Teece 2009).

The economics IO focus is simultaneously narrower and broader than that of Organization Studies (OS) scholars. Students of organizations pay less attention to economy-wide considerations but have a keen interest in intra-organizational issues, which are ignored by IO (Coase 1937), not least innovation and strategy for value capture from appropriable advantages and actions. In addition, OS focuses on real life organizational decision making under real life-informed intra-organizational and environmental conditions. Such conditions are normally alien to those assumed by IO, such as perfect knowledge and certainty. Moreover while the main focus of IO is on decision making at a given point in time, OS is concerned with intertemporal decision making. It is arguable therefore that a novel framework that is better suited to the concerns of management and OS is required, one that focuses on intertemporal resource and value creation and capture through innovation and the pursuit of organizational SA under conditions faced by real life organizations. Despite recent extensive criticisms of the IO-centric concepts of extant OS scholarship (Makowski and Ostroy 1995; Lippman and Rumelt 2003), there has been no

attempt so far to provide a comprehensive, alternative perspective for OS that addresses its main scholarly and methodological interests. We aim to provide such a framework in this paper through an analysis of the nature, determinants, and co-evolution of organizational value capture and creation and their relationship to SA under conditions of uncertainty, change, limited rationality and learning, as well as anticipatory and pro-active behaviour by economic agents. We claim that despite recent interest and advances on value creation, value capture and SA, such a framework is still missing.

Structure-wise, we first provide an historical account of the nature and theory of value in economics, OS and management scholarship and propose a novel, more general definition of value (Section II). In section III, we delve into the nature, determinants and trade-offs between value creation and capture at the organizational level. Section IV discusses the process and causal pathways whereby value is created and captured by organizations, as well as the co-genesis, co-determination and co-evolution of value creation and capture, their relationship to SA and vehicles through which SA can be effected in an uncertain, evolving environment. Section V concludes and discusses managerial practice, limitations and directions for future research.

## **II. The Nature of Organizational Value Creation and Capture**

‘Value’ is an elusive term in social science and management scholarship (Dobb 1973; Ramirez 1999). The term ‘value added’ is less so. For example Kay (1995) defines ‘value added’ as “the difference between the (comprehensively accounted) value of a firm’s output and the (comprehensively accounted) cost of the firm’s inputs” (1995: 19). He regards ‘value added’ as ‘the key measure of corporate success’ (1995: 19).

‘Value added’ in the quote above is defined by reference to value, which is not defined. More recently, Bowman and Ambrosini (2000) draw on earlier contributions to discuss what is valuable, the types of value (such as ‘use value’ and ‘exchange value’) and theories of value (for example ‘marginal utility’ and ‘cost of production’), but provide no separate definition of ‘value’. Makadok and Coff (2002) critically assess a debate on value in the context of the Resource-based View (RBV) between Bowman and Ambrosini (2000), Priem (2001) and Priem and Butler (2001a, 2001b), on the one hand and Makadok (2001), on the other. They acknowledge that in much of the RBV literature (such as the work of Barney 1986; Collis and Montgomery 1995; Peteraf 1993) the focus is on value capture, not value creation. They claim that value creation, requires a theory of consumer utility. This is absent from the RBV, but present in the marketing literature, and as such of no separate concern to RBV scholars.

A more recent Special Topic Forum of the *Academy of Management Review* (2007) on ‘value creation’ aims to shed more light on value creation and capture. In their thoughtful introduction Lepak et al. point out that “value creation is a central concept in the management and organization literature” and that value creation is “not well understood” (Lepak et al. 2007: 180). They suggest that “value creation depends on the relative amount of value that is subjectively realised by a target user (or buyer) who is the focus of value creation” (Lepak et al. 2007: 182). They proceed to discuss the process of value creation and the mechanisms that allow the creator of value to capture it. The authors provide very valuable insights, but take the term “value” as extant and attempt no definition. Even more recently, Helfat et al (2007) build on Peteraf and Barney (2003) and define both ‘value’ and ‘value creation’ as “willingness to pay minus opportunity costs” (pp.12-13 for ‘value

creation' and p.122 for 'value' respectively). Their definition aims to account both for consumer's 'willingness to pay' and the producer's economic (opportunity) costs. However, it does not distinguish between 'value' and 'value creation'.

The debate and the difficulties with the notion and theory of 'value' are not new - they go at least as far back as in the works of ancient Greek philosophers like Plato, Aristotle and Xenophon. It assumed renewed interest in the works of classical economists such as Adam Smith, David Ricardo and Karl Marx and more recently in the works of scholars in the 'marginalist' tradition of Jevons, Menger and Walras. Maurice Dobb (1973) provides an authoritative account of the historical evolution of these debates while more recently Ramirez (1999) revisits these from a strategy perspective. Their gist lies in that 'classical economists' considered labour (in Marx's most developed variant, socially necessary labour of average skill and competence) expended in a product, as the sole source of 'value' (Brown 2008), while the 'marginalists' considered marginal utility as the sole source of 'value' (Dobb 1973: 168). Subsequent developments in the 'neoclassical' marginalist tradition refer to the 'theory of value', as a theory of price determination (Robbins 1935; Hicks 1939; Debreu 1959). The celebrated Keynesian economist Joan Robinson (1964), for one, considered the notion of 'value' as 'one of the great metaphysical ideas in economics', namely ideological propositions of some content, use, and even indispensability, which, however, are outside the realm of science proper (Dobb 1973: 2).

In economics, IO scholars and texts employ a combination of the cost of production and the marginal utility theory, as reflected respectively in the use of an (opportunity) cost and a demand schedule. Modern strategy literature also relies on this convention (Peteraf and Barney 2003; Helfat et al 2007; Sirmon et al 2007). This is despite the fact that strategy



scholars, such as Lippman and Rumelt (2003a,b), question the relevance and even definition of the concept of ‘opportunity cost’ and the nature and derivation of a supply curve in neoclassical economics and that marketing scholars, such as Hunt (2000), also question the relevance and even existence of a demand curve as a portrayal of consumer ‘willingness to pay’. Such critiques of extant convention point to the need for a more generic definition of value that is immune to them. On the above basis, we propose such a definition of ‘value’ as follows:

“Value is perceived worthiness of a subject matter to a socio-economic agent that is exposed to and/or can make use of the subject matter in question”.

Perceived worthiness can be due to rarity, aesthetic appeal, a perceived satisfactory price for what is on offer (‘value for money’), their combination and/or other attributes of the subject matter, perceived by others to be worthy. Advantages of our proposed definition include the fact that it does not rely on the idea of ‘willingness to pay’, which presupposes the existence of market prices. It also allows for the possibility that some “subject matters” can have intrinsic value even when there is no market and/or someone who is willing to pay for them (indeed concepts such as ‘decency’ and ‘reliability’ are often defined as ‘values’ and our perceptions on these as ‘value systems’, Ramirez 1999). For our purposes in this article, in what follows we focus on organizational value, namely on activities, products and services engendered by organizations in market economies, which are perceived to be worthy by potential beneficiaries, such as consumers, suppliers, or competitors. The focus on all potential beneficiaries also recognises the social dimension of value and value creation (Pitelis and Teece 2009).

Organizational ‘value’ can be conjectured or realised. Conjectured value is what an organization believes it can engender by undertaking a certain action, for example an innovation or a transactional activity. Conjectured value becomes realised through sale in the market. At the individual level, such as that of a firm, value created is only realised as value captured - ontologically value is created and only manifests itself as value captured. In this context, producer value creation equals consumer value creation at the point of exchange, for the agreed price. Prior to this, however, producer value created is only potential and it can well diverge from perceived consumer value (Kim and Mahoney 2002).

The realisation of value as price raises the issue of consumer awareness and the existence of substitute products and competitors – therefore issues of promotion, marketing, and competitive strategy. ‘Perceived worthiness’ can be effected through efficiency, effectiveness and innovativeness in the production of a good or service that can lead to lower cost and price for given characteristics or ‘quality’, or to higher differentiation, namely higher perceived quality. In this sense ‘value added’ equals ‘value creation’ and is the additional perceived worthiness effected through reduced prices or increased differentiation, minus the costs or payments made for the purpose by the agent (such as the producer) who creates value (Lippman and Rumelt 2003a), realised as value captured by this economic agent.

While realised value creation and value captured coincide at the individual level, this is not the case at more aggregate levels, such as the industry, the economy or the globe. For instance, potential value creation by one agent can be realised as value captured by another agent who, for example, is in a better position to capture such value through appropriate strategy (Teece 1986). Value creation and value capture need not coincide also

because value can be co-created by other economic agents, including competitors, suppliers, customers and users (Pitelis and Teece 2009). As such, an organization can capture more, the same or less value than the one it helps create. This calls for an appreciation of the strategies through which organizations can create and/or capture value and their interrelationship (including the possibility of trade-offs) and their impact on organizational SA (MacDonald and Ryall 2004; Amit and Shoemaker 1993; Sirmon et al. 2007).

In the mainstream IO approach, the canonical value creation/value capture in the form of price model is the market structure-based analysis of competition versus monopoly. According to this, ‘perfectly competitive’ market structures result in a ‘zero profit’ condition, where firms can only cover the economic (or opportunity) cost of their inputs, such as capital, labour, management and entrepreneurship. The possibility of capturing value as ‘rents’ appears whenever the existence of monopolistic conditions restricts supply, and therefore given the demand schedule, it raises prices above those just sufficient to cover average costs (see Peteraf and Barney 2003 and Lippman and Rumelt 2003a,b for discussions on the nature and types of rents). Given the assumption of exogenously given technology and resources-skills, the IO approach is good in showing how value can be captured in the form of monopoly rents, given the potential value creation encapsulated by the cost and demand curves. Subsequent developments in IO discuss the condition under which such ‘rents in equilibrium’ can be effected (Baumol 1982; Tirole 1988), notably the existence of barriers to mobility (entry and exit). The absence of barriers to mobility help establish the ‘zero waste’ condition (Baumol 1991) and/or the ‘zero profit’ one (Augier and

Teece 2008). For the last mentioned, escaping this ‘zero profit’ condition is of essence to business strategy.

The stylised assumptions of IO are not met in practice (Loasby, 1996). In real life, costs and demand conditions faced by individual firms may differ, firms may be endowed with, or themselves aim to build, heterogeneous skills and capabilities, they can be more or less efficient, effective and innovative than their rivals. Such differences, moreover, can be attributed and/or reflected in production and/or transaction costs. For example, firms which are more efficient, can capture higher profits than their competitors in a sector, even when they charge the average market price, when they face lower costs (Demsetz 1973; Schumpeter 1942; Williamson 1968).

The resurfacing of Coase’s (1937) transaction costs analysis, the elaborations and extensions of Coase by Williamson (1975, 1985), and the analysis of their links to property rights and the RBV, provide more reasons why large firm size and the concomitant more concentrated industry structures, may be seen as the outcome of firm-level capabilities in reducing market transaction costs through the internalisation of market transactions (Foss and Foss 2005).

More recently the RBV focused on the nature and determinants of firm heterogeneity (Barney 1991; Foss 1993; Mahoney 2005; Peteraf 1993; Peteraf and Barney 2003; Teece 1982 and Wernerfelt 1984). There are arguably two variants of RBV: the ‘rents in equilibrium’ and the ‘value creation’ one (Foss 1999). The former can be seen as a complement to the IO literature on barriers to mobility, only now the reason for rents is the possession by firms of resources which are valuable, rare, inimitable and non-substitutable (VRIN). The ‘value-creation’ variant focuses on the resource-creation

potential of firms, through endogenous knowledge, innovation and growth (Penrose 1959). Building on Penrose, Richardson (1972) provided an additional production efficiency-based reason for the division of labour between markets, firms (integration) and inter-firm cooperation, based on the similarity and complementarity of activities (Kay 1998; Foss and Loasby 1998). Moreover, Teece (1986) explored conditions under which an innovator (such as the music company EMI which first invented the CT scanner), might fail to profit from its value creating innovations. He attributed such failures to the lack of strong appropriability through patents and/or the possession by firms of complementary skills and capabilities vis-à-vis their competitors. This focus on the nature and wider determinants of appropriability goes far beyond the IO focus on monopoly rents through barriers to mobility and brings the issues of firm-level capabilities and organizational strategy centre-stage.

The aforementioned contributions focus on the production-supply-side. However, firms can also face (or try to engender) different demand conditions through advertising and other sale promotion activities that aim to create new demand and/or to make the demand schedule they face less elastic (Scherer and Ross 1990; Penrose 1959). Galbraith (1967) went as far as suggesting that the ability and effectiveness of firms to create demand is such that one should be talking about ‘producer sovereignty’, not consumer one. In addition, ‘marketing’ scholars explored conditions under which consumers will be more inclined to buy (Adner and Zemsky 2006). In addition, Priem (2007) emphasized firm ability to create value by engendering ‘consumer benefits experienced’ (p. 219), while Hunt (2000) questioned the relevance and even existence of aggregate demand schedules, focusing instead on the concept of ‘market offerings’.

All the above issues are central to OS and (strategic) management, but are not even addressed by the IO ‘competitive model’. This renders it almost superfluous for organization scholarship (Makowski and Ostroy 2001). Unfortunately, however, the Porterian and transaction-costs focus on ‘strategising’ versus ‘economising’ (Porter, 1980, Williamson, 1991) and the focus of the RBV on concepts borrowed from IO fail to break away from the economics straightjacket (Lippman and Rumelt, 2003a). It is arguable that a new framework is required, more appropriate to OS. We aim to provide such a framework in this paper, based what have emerged as the central issues of OS and (strategic) management, namely the nature, determinants, causal pathways, trade-offs and co-evolution of organizational value capture and creation, their relationship to SA – as well as vehicles employed by firms to achieve SA - under conditions of uncertainty, change, limited rationality and anticipatory-proactive behaviour by economic agents. Despite intense recent interest on value capture, value creation and SA by OS and (strategic) management scholars, we submit that such a framework is not yet available.

### **III. Determinants of Firm-level Value Creation and (Strategies for) Value Capture**

#### **Determinants of Value Creation by Firms**

Strategy scholarship on value creation did not initially pay much attention to the determinants of value (Makadok and Coff 2002; Ramirez 1999). Amit and Zott (2001) provide one of the earlier discussions of determinants of value creation. They emphasise ‘virtual markets’, ‘value chains’, ‘(Schumpeterian) innovation’, intra-firm resources, strategic networks and transactions costs economics, as such determinants. More recently,

Lepak et al. (2007) emphasize invention and innovation, management and entrepreneurship, the creation of advantages and factors underlying such creation (to include managerial capabilities and cognition), knowledge creation, learning and entrepreneurship, social networks and strategic human resources. Despite the evident progress, that helped establish value creation and capture as canonical themes in strategy, it is arguable that the nascent literature on the determinants of value creation can benefit from a more systematic analysis. We suggest that such an analysis should distinguish between the generic determinants of value, the theories from which these generic determinants derive (such as transaction costs, agency, the RBV and property rights) (Kim and Mahoney 2002; Foss and Foss, 2008), and any vehicles- means through which value creation is effected (such as strategic networks). Put differently we submit that the literature so far bundles together all three categories and that progress can be made by un-bundling them. We propose to do this below by drawing on the relevant economics and management scholarship and by focusing on what we claim to be the four generic determinants of value creation: innovation, human resources and their services, unit costs economies/returns to scale and firm infra-structure and strategy, as well as the theories from which they derive.

Innovation, first, is arguably the determinant of value par excellence - the *primus inter pares*. ‘Adam Smith (1776), the father figure of economics, regarded the benefits from intrafirm division of labour, teamwork and ‘inventions’ by labourers, engendered through learning by doing, as a critical determinant of productivity and wealth creation (Smith 1776, Chapter 1). Marshall (1920) extended Smith’s analysis by identifying knowledge as “our most powerful engine of production” (Marshall 1920: 138). Schumpeter’s (1942) focus on competition and ‘creative destruction’ highlighted the role of

innovation on intertemporal efficiency. The importance of innovation for intertemporal efficiency is now acknowledged by mainstream IO economists too (see Baumol 1991, 2002). The economics focus is on efficiency and productivity, not value creation as such. In strategic management scholarship, however, innovation, knowledge and creative destruction have in recent years been linked directly to value creation (Amit and Zott 2001; Felin and Hesterly 2007).

The neoclassical economic theory of growth helps highlight additional generic determinants of value. In early contributions, existing technology was considered to be embodied in the production function (which includes capital and labour), while technological change was seen as very important, but exogenous (Solow 1956). New ‘endogenous growth’ theories recognized the endogenous nature of technology and innovation, the role of increasing returns to scale and the significance of human resources such as management, in engendering growth (Romer 1986, 1990; Lucas 1988; Aghion and Durlaf 2005). Without always noticing it, such theories build on the ideas of Penrose (1959) and earlier contributions by Allyn Young (1928), Kenneth Arrow (1962) and Nicholas Kaldor (1970, 1972). While not explicitly couched in terms of value creation and despite limitations (see Solow 1997; Loasby 1997), the neoclassical growth theory’s focus on ‘returns to scale’, resources (capital and labour) and (its assumptions about) technology, provides hints on important additional sources of value creation, notably human resources and returns to scale.

Human resources play a prominent role both in classical economics and in management. In Adam Smith, labourers engender productivity enhancement through teamwork, learning by doing and inventions. In Karl Marx (1959), the capitalist was the



driving force of economic change. The ‘entrepreneur’ and entrepreneurship played this role in Schumpeter (1942), in ‘Austrian Economics’ (Ricketts 2002), in the recent literature on entrepreneurship (Casson et al. 2006; Alvarez and Barney 2007; Ireland 2007; Foss et al. 2008) and in strategic human resource management (Becker and Huselid 2006; Kang et al. 2007). In Penrose (1959) the hero was the ‘manager’ (Pitelis and Wahl 1998). Scholars such as Coff (1997) and Pfeffer (1998) underscored the importance of human resources in organizations. Human resources are unique and individual and their combination and relationships help create the distinct ‘personality’ of the organization (Peteraf 2006) and affect the strategy of the organization (Pitelis 2007). In all, it can be argued that the quantity, quality and relationship between HR and the services they provide are an important determinant of value creation. More recent work by Helfat et al (2007) on managerial capabilities and by Kang et al (2007) on HR architectures, links HR specifically to organizational value creation. Non-human resources can also be important in the RBV especially when they satisfy the VRIN conditions - thereby facilitating value capture.

Factors that lead to reductions in unit costs (unit costs economies thereafter), include economies of scale and scope (Chandler 1962), economies of growth (Penrose 1959), transaction costs economies (Coase 1937; Williamson 1975), economies of learning (Arrow 1962), economies of joint governance (Williamson 2005), external and agglomeration economies (Henderson 2005; Kaldor 1970; Krugman 1991, 1996; Porter 1980), economies of pluralism and diversity (Pitelis 2004b, Mahoney et al. 2009). The stronger a firm’s unit cost economies are, the lower will tend to be its unit costs and the higher its ability to create value. With the exception of transaction costs (Foss and Foss 2005), much of the economics literature on unit cost economies has not yet been linked

explicitly to value creation *per se*. However, their impact on unit costs clearly suggests that *ceteris paribus* they help create value and should be seen as generic determinants of value creation.

Absent from economics, but central to strategy is the fourth generic determinant of value creation-firm's infra-structure and strategy. Infra-structure refers to a firm's systems, routines and decision making processes, while structure refers mainly to its internal organization (for example, U-form, M-form, heterarchy, etc.). The role of a firm's systems, routines and internal decision making processes and dynamic capabilities, has been explored by Cyert and March (1963), Nelson and Winter (1982, 2002), Simon (1995), the RBV and the Dynamic Capabilities (DCs) view (Teece et al 1997; Teece 2007). The importance of internal organizational forms is discussed by Chandler (1962), Williamson (1981), and more recently, among others, Hedlund (1986) and Birkinshaw and Hood (1998). The choice of a firm's internal structure is considered by these authors as being of essence in implementing strategy, increasing efficiency and productivity, acquiring and upgrading knowledge.

Strategy is the pursuit of a long-term objective supported by the requisite allocation of human and other resources for its implementation (Chandler 1962). The common focus on the value capture/profitting from advantages aspect of strategy, underplays the idea that strategy is of essence in increasing efficiency by reducing transaction and production costs and by increasing perceived value through differentiation (Makadok and Coff 2002). More recently, the value creation attributes of strategy have been acknowledged and understood. Indeed Ghoshal et al (2002) went as far as prescribing that strategy should focus on value creation, not value capture. Firm infra-structure is not usually couched in value creating

terms, except in Porter's (1985) 'value chain' analysis. Given, however, its efficiency benefits, it is only sensible to consider organizational infra-structure too as a determinant of value creation.

Other potentially growth promoting factors considered in the economic literature include physical and financial capital. Physical capital is important in neoclassical growth theory, financial in the life cycle hypothesis of saving, (Ando and Modigliani 1963). Physical and financial capital are not discussed by economists as determinants of value. It is arguable, that by facilitating entrepreneurial investments, these factors help create value. However, we propose that their contribution is indirect and operates through the four generic variables, especially human resources (Harcourt and Cohen 2003). Similarly, other resources (for example raw materials) can be taken to serve as a basis on which value is added but they are not independent determinants of value creation (Bowman and Ambrosini 2000).

The four proposed generic determinants of value creation interact with each other. Human resources are the source of firms' innovation and strategy. Technology and innovation can help reduce unit cost economies. Innovation and technological accumulation can be explicit elements of strategy (Cantwell 1989). Firm infra-structure is crucial for the implementation of strategy, the leveraging of human resources and technology (Cyert and March 1963; Loasby 1998; Nelson and Winter 1982). Unit cost economies enable innovation and the leveraging of HR for the undertaking of R&D and innovation (Chandler 1962).

The four generic determinants impact on both cost and perceived utility. For example, a process innovation can reduce unit costs and engender product differentiation.

Infra-structure and strategy can reduce costs (for example through integration) and help differentiate the firm itself through branding and business model innovation (Teece 2008). Human resources can affect subjective utility through strategy, product differentiation and/or innovation. ‘Subjective utility’ and cost reductions, can feed-back to the four generic determinants. For example, a firm’s ‘brand’ can help it receive better terms for advertising and from suppliers, thus engender unit cost economies.

In all, the four generic determinants of value creation help reduce costs and effect a firm’s unique personality and character, often encapsulated in the complex interactions of tacit and codified knowledge, embodied in its ‘business model’ (Chesbrough and Rosenbloom 2002; Teece 2008). These engender ‘firm differentiation’ and can add perceived value to consumers. They can also help firms to capture value.

In Figure 1, we summarize our discussion of the four generic determinants of value creation. In the remainder of this section, we focus on strategies for value capture.

**Figure 1 about here**

### **Firm-level Strategies for Value Capture**

Capturing value from conjectured value creating advantages, assets and actions is arguably the main objective of firms (Brandenburger and Nalebuff 1995; Teece 1986; Teece et al. 1997; Pitelis and Teece 2009). Assuming that a firm possesses an advantage, from which it believes it can profit, the fundamental question becomes how to obtain the maximum possible net present value (NPV) of the anticipated future income streams of this advantage. In addition, the firm has the wider consideration of how to capture the

maximum possible value created by other firms and the economy at large. This is of essence to competition (Brandenburger and Stuart 1996, 2001, 2007; MacDonald and Ryall 2004). Through market power, strategy, ingenuity, imagination and luck, firms try to out-compete rivals in order to capture value. In general, firms can capture less, equal or more value than the one created through their activities (Brandenburger and Nalebuff 1995). The size of the pie captured by a firm depends on factors such as barriers to entry (Bain 1956; Porter 1980), firm-level 'generic strategies', namely cost leadership, differentiation and niche strategies (Porter 1985), integration co-operation and diversification strategies (Penrose 1959; Chandler 1962; Williamson 1981; Teece 1986), and firm-wide differentiation strategies.

The literature on barriers to entry goes back to Bain (1956), who identified three main barriers to entry for new firms, which allow incumbents to capture super-normal profits; absolute cost advantages, economies of scale and product differentiation. Bain's empirical work showed that differentiation (or the 'preference barrier') was most important. Subsequent literature focused on pricing, (Modigliani 1958), investments in excess capacity (Spence 1977), product proliferation, and advertising, (Scherer and Ross 1990). Bain and the IO did not explicitly link barriers to entry to value capture, focusing instead on the related theme of price determination. Strategy scholars such as Porter (1980), built on Bain and the IO and made this link explicit. A limitation of this perspective is that it focuses on the level of the industry, not the firm.

Firm-level 'generic strategies' such as 'cost leadership', 'differentiation' and 'focus' or 'niche', on the other hand, focus on the firm level and have been explicitly couched in terms of value capture (Porter 1985). They allow firms to position themselves in a sector,

so as to capture value by reducing the forces of competition. On the other hand, integration, diversification and cooperation strategies aim to capture value, either through efficiency, for example in the transaction costs literature (Foss and Foss 2005), or through market power for example in Bain (1956) and Porter (1980). The two are often linked. For example, firms can often obtain market power through the successful implementation of transaction costs reduction - motivated integration strategies (Pitelis 1991).

Penrose (1959) discussed both Bain-type barriers to entry, and intra-firm barriers, which she termed technological or ‘relatively impregnable bases’ (Penrose 1959: 137). These represent a package of skills, competences, innovation, capabilities and advantages that distinguish them from other firms and allow them to grow by diversification by building on strength (Pitelis 2004a and below).

Hard to imitate intra-firm resources and capabilities, as well as ‘relatively impregnable bases’ and the overall ‘business model’ (Chesbrough and Rosenbloom 2002; Teece 2008), can also help shape a firm’s “distinct identity” (Peteraf 2006; Peteraf and Shanley 1997; Richardson 1998), therefore engender a ‘firm differentiation’ barrier to entry. This can serve as a value capture strategy.

The four types of value capture strategies interact. From Bain’s three barriers, two relate to Porter’s generic strategies (cost leadership and differentiation). Integration, cooperation and diversification strategies are often viewed as barriers to entry (Porter 1980). They also impact on ‘firm differentiation’ as they help determine a firm’s ‘business model’-distinct identity.

In their interactions, the four types of strategies for value capture are also linked to value creation. Bain’s cost and differentiation barriers and Porter’s generic strategies help

reduce unit costs and/or increase perceived value. Intra-firm barriers, ‘relatively impregnable bases’ and the ‘business model’ help firms create potential value through ‘branding’. Integration strategies help create value by reducing transaction costs (Foss and Foss 2005). Even Bain-type barriers can help create potential value, by providing an incentive to potential entrants thereby engendering Schumpeterian ‘creative destruction’. This interaction points to the possible co-determination and co-evolution between value capture and value creation, which we explore below.

Some of the above relationships have been formalised in the context of game theoretic models (Brandenburger and Stuart 2003; MacDonald and Ryall 2004). The latter derive conditions under which strategy (such as capacity choices) competition and value creation, can help firms to capture value, taking value creation opportunities as given (MacDonald and Ryall 2004: 1324). The authors acknowledge the restrictive assumption and results of their game theoretic framework, critically the assumption that all agents have the same perceptions of value. It is arguable that this denies the very notion of entrepreneurship, which is based on subjectivism (Lipman and Rumelt 2003b, Foss et al 2008). This provides an additional reason why, without denying the usefulness of formal theorising for its purposes and uses, we adopt below an appreciative, theory-based co-evolutionary perspective. Further important reasons for doing so are discussed in the next section.

An implication from our analysis is that organizational innovation, in its conventional sense, as for example R&D, is not necessary for a firm to capture value. Firms like IBM, Microsoft, Cisco, Intel, Sun and Oracle can capture value through strategy without any additional innovation advantages (Chesbrough 2003). Looked differently, such

firms are innovative in devising strategies for value capture; which are therefore value creating-value capture strategies. Importantly, technology and innovation can be seen as part and parcel of a value capture strategy. Strategy itself is a potentially value creating ‘advantage’ from which firms can capture value, so as to obtain SAs. Clearly not all advantages lead to improved performance. In addition to competition, this will depend in part on stakeholder bargaining power (Coff 1999; Lippman and Rumelt 2003), the type of human capital and HR practices (Bowman and Swart 2007; Coff 1997) and the extent of intra-organizational conflict (Amit and Shoemaker, 1993; Pitelis 2007). It will also depend on the relative mix and potential trade-offs between value creation and capture strategies discussed below.

### **Value Creation - Value Capture Trade-Offs**

Despite their interrelationship, some value-based strategies are almost exclusively concerned with value capture - such as strategic entry deterrence and monopolistic restrictions (Penrose 1959). Others, like explorative innovations (March 1991), such as EMI’s CT scanner, focus more on value creation. In this context there are likely to be trade-offs between value capture and value creation strategies (much like in March’s (1991) exploration and exploitation strategies). In particular, it could be argued that at any given point in time, resources allocated in pursuing value capture, may be taken away from resources required for value creation (for example explorative innovation), see Mizik and Jacobson (2003), and vice versa. It is also arguable that the pursuit of value creation versus capture may require different types of knowledge and capabilities (Loasby 1998). This helps explain why some firms (such as EMI) were more successful in creating value, some



others (like Apple), in capturing value. Arguably, the successful management of this trade-off is of the essence of firm strategy and performance. Too much focus on value capture today may undermine long-term success, too much focus on value creation, may deprive an organization from the means to compete and thus keep creating value.

The above calls for ambidexterity, and the need for organizational structures, divisions of labour and vehicles that can engender value creation and value capture, exploration and exploitation (Smith and Tushman 2005), simultaneously and intertemporally. In turn this too invites a co-evolutionary analysis of the relationship between value creation and capture, under real world conditions of change, uncertainty, limited rationality, learning and anticipatory and proactive behavior, as well as their link to organizational SA. This is our focus in the next section.

#### **IV. Co-evolution and Co-determination of Value Creation and Capture and (Vehicles for) Organizational SA**

In real life conditions, economic agents operate in a context of uncertainty, often radical (one where no probabilities can be assigned on expected future outcomes, Knight 1921) and change. Moreover, agents are not globally rational, but instead possess limited, bounded and/or procedural rationality (Simon 1995; Loasby 1996). In this context, agents are unlikely to hold the same perceptions of value, let alone them being able to identify the optimal mix between value creation and capture that will lead to SA. Instead they try to do as best as they can under the circumstances, as well as to change the circumstances to facilitate the realization of their choices as far as possible. For example, firms may not go for profit maximization at a given point in time (short run) but pursue other objectives such

as growth and market share (Marris 2002). This is because they may believe that by so doing they will be in a stronger position to achieve long-term profits (Best 1990), or because the process of growth itself is endogenous in firms (Penrose 1959). For Richardson (1998) the presence of uncertainty and divergent beliefs about the chance of success is of the essence to the competitive process- as it fuels creativity, (and, we might add, risk taking). Such issues are largely unexplored in the still nascent literature on value creation and capture, while game theoretic models mostly abstract from such divergence (Lippman and Rumelt 2003b; MacDonald and Ryall 2004).

Another limitation of extant literature is the absence of discussion of the causal pathways through which value is created and captured. In what follows, we try to fill these gaps by bringing together our analysis of conjectured and realized value and our discussion on value capture, in order to identify causal pathways between the two, explore their potential co-evolution and co-determination and identify potential vehicles through which firms try to capture and create value intertemporally and simultaneously in order to achieve SA. We do so in terms of Figure 2.

### **Figure 2 around here**

In Figure 2 we portray an aspiring principal-entrepreneur (or a team thereof), who conjecture that they possess advantages or capabilities that could create appropriable value to end users, from which they can themselves capture as much as possible. Their choice is to sell the advantage or capability in the market, or to create an organization that allows them to build the product or service, and then sell it to end users. At this stage, value creation is conjectured or imagined. It only exists in the mind of the economic agents in question, as an ‘image’ (Penrose, 1959). In the case these agents can sell the advantage or

capability in the market at what they perceive to be a satisfactory price, they realize automatically the conjectured-imagined value. By capturing value they translate conjecture to reality. Value creation and value capture at the level of the chosen unit of analysis coexist. This case is more akin to commerce or licensing. Its realization will depend on the degree of existence of complete and perfect, present and future markets.

In the event the agents in question believe there is no market for their ideas/advantages, namely when markets are thin or inexistent, especially likely in the case of intangible assets and ideas, and/or that they can capture more value by creating an organization to produce and sell the product or service, they may decide to do so (Pitelis and Teece 2009). The existence of the organization may also help its members to capture value created by others, such as suppliers, customers, and distributors, who may help co-create value by appreciating ('valuing') and/or improving and promoting the product or service in question. This for example, can be the case when other organizations develop assets complementary to the value creating organization in question (Teece 1986). Similarly, the value from an organization's advantages can be captured and/or improved upon by other competitors. While at each level of analysis total value created also equals total value captured, at each individual organization's level it is quite possible and indeed likely that more or less value is captured from the ideas, advantages, capabilities and value co-created by the organization in question and/or by others. Under uncertainty and limited rationality, it is not possible to predict or even guess-estimate the potential for value capture and creation of any original ideas, not least because the potential and extent of value co-creation is both unknown and partly endogenous to entrepreneurial action. In this context the next best thing organizations can hope to do is create the preconditions that will allow

them to compete in the market place from a position of relative strength, that is co-create markets, value and prices, so as to capture as much of it as possible (Pitelis and Teece 2009). In the case of an aspiring entrepreneur, this could often involve the creation of an organization -firm that helps them do so (Pitelis 2005).

In the scheme above, causality goes from conjectured or imagined value creation to realised value creation, directly or through the setting up of an organization. In our analysis, conjectured-imagined value creation causes organization, value capture strategies and in turn realised value creation, thus value capture. As, however, value created is only realised as value captured, value capture capabilities can in turn interact with, and help create, value. In addition, value capture capabilities can help capture value created by others. In this sense, value creation and capture are co-determined and co-evolving. The conjecture of a value creating advantage, the potential value of which is perceived as appropriable, motivates the setting-up of an organization that can help realize the conjectured and co-created value, by co-creating markets thus prices and by valorising its offerings. The process of social market co-creation therefore aids firm's pursuit of private appropriation, which is effected through the adoption of value capture strategies.

The complex interrelationship between different types of value capture and value creation strategies, and the absence of full knowledge and rationality, makes it all but impossible for organizations to select an 'optimal' value capture strategy at any given point in time. In the context of uncertainty and limited rationality, therefore, an important question is how best can an organization go about capturing value intertemporally, or what 'vehicles' it may deploy to do so. Such 'vehicles' could combine elements of the value

capture strategies we discussed, yet allow firms to change their mix over time, depending on their shifting ‘productive opportunity’.

Penrose’s concept of ‘relatively impregnable bases’ provides such an example, which moreover is akin to more recent developments by Teece (1986), and the RBV pertaining to innovation, firm heterogeneity, the need for appropriability, complementary assets and capabilities and the role of dynamic capabilities in allowing firms to sustain their advantages (Teece 2007). In Penrose’s words:

“In the long run the profitability, survival, and growth of a firm does not depend so much on the efficiency with which it is able to organize the production of even a widely diversified range of products as it does on the ability of the firm to establish one or more wide and *relatively impregnable ‘bases’* from which it can adapt and extend its operations in an uncertain, changing and competitive world” (p. 137 – emphasis added).

Penrose (1960) provided an example in her case study of the Hercules Powder Company. While Hercules’ original focus was on explosives, it gradually developed competencies in chemistry, customer relationships and reputation that allowed it to diversify, by building on the strength of such advantages and capabilities that were difficult for competitors to match. When Hercules accidentally came up with a new chemical substance, called CMC, with potential applications outside explosives, it adopted a highly innovative approach which involved advertising the characteristics of CMC in the national press and asking the question “what do you see in CMC?”. This allowed the company to exploit dispersed knowledge and diversify in other activities by building on its ‘relatively impregnable base’ to capture value from its new (and old) advantages. In this example

Hercules combined firm differentiation with cost leadership, careful dealing with potential competitors (entry deterrence) and VRIN-type intra-firm resources and capabilities – all built around a single technological-relatively impregnable base-‘platform’.

‘Relatively impregnable bases’, (as well as ‘routines’ and ‘dynamic capabilities’, Nelson and Winter 1982; Helfat et al. 2007) can therefore be seen as vehicles through which firms try to marry over time stability and change, diversity and direction, equilibrium and growth (Loasby 1996; Richardson 2002). ‘Relatively impregnable bases’ can allow firms to capture value, but also to create value by building on such bases.

Recent work on industry architectures (Jacobides et al. 2006) is complementary to that of ‘relatively impregnable bases’, in that the control of ‘industry architectures’ can help engender ‘relatively impregnable bases’ for incumbents. This idea can be extended to ‘system-integration’ advantages possessed by large multinational firms as well as to the concept of ‘business model innovation’ (Teece 2008). Such vehicles can also be employed in order to help firms shape their productive opportunity so this is better aligned to the shifting and partly endogenous to the firm’s actions environmental conditions.

It is arguable that some firms can be ‘too successful’ in building ‘impregnable bases’. Large companies, like Google and Microsoft, are sometimes accused for failing to pursue exploratory innovations, because their relative ‘impregnability’ is strong enough for them to be able to stem the forces of creative destruction and affords them the luxury to focus on exploitation-value capture. This can create a dissonance between organizational SA and system-wide sustainable value creation, eventually undermining the very sustainability of organizational advantage. The recent crisis is a case in point and has led to

calls for regulatory policy on the part of government and/or requisite action by the civic society at large to promote economic sustainability (Mahoney et al. 2009).

To summarize, in the real world of uncertainty, change, limited and procedural rationality, learning, and the pursuit of adaptative and proactive actions, based on anticipatory behavior as well as attempts to mould their ‘productive opportunity’, is a way through which firms try to survive, evolve and succeed in a shifting landscape.. In this context value creation and value capture are co-determined and co-evolve. A way to capture value and effect SA in such a context is by co-creating markets, value, and prices, so as more socially created value becomes available for private appropriation. Value capture strategies as well as vehicles such as ‘relatively impregnable’ (albeit evolving) bases, allow firms to appropriate as much value as possible.

## **V. Conclusions. Managerial Practice, Limitations and Future Research Opportunities**

The purpose of this paper was to make progress towards providing a novel framework for organization and management scholarship, better suited for its purposes than the economics market-based IO approach. While the purpose of the last mentioned is to analyze price determination under restrictive benchmark assumptions, the focus of management and OS is to appreciate the nature, determinants and co-evolution of organizations, their structure, performance and impact on their wider environment. We suggested that a framework that explores the nature, determinants, trade-offs, causal pathways and co-evolution and co-determination between value capture and creation, and their relationship to organizational SA, under conditions of uncertainty, change, limited rationality, learning, adaptive and proactive behaviour, can help serve this purpose.

In addition to the above main objective, our analysis extended extant literature on value creation and capture in the following ways. First, we provided a novel, more general definition of value and value creation, distinguished between conjectured and realised value creation and observed the coincidence of value creation and value capture at the individual unit level. Second, we discussed the generic determinants of value creation in a more systematic and discriminating way than hitherto available. Third, we discussed the major strategies for value capture and proposed the novel concept-strategy of ‘firm-differentiation’, which is more consistent with current research in the RBV tradition. Fourth, we discussed potential trade-offs between value creation and capture and their relationship to firm-level SA. Fifth, we analysed causal pathways of value creation and capture, and their interrelationships, co-evolution and co-determination in the context of an uncertain, path-dependent environment, limited rationality and learning. Sixth, we proposed that value is being co-created and that market and thus price creation and co-creation is a fundamental way through which firms can enhance the overall pie and capture as much as possible of the socially co-created value. Seventh, we discussed vehicles through which firms can aim to achieve SA in such contexts, notably that of developing ‘relatively impregnable bases’, as well as business and system integration architectures.

In terms of managerial practice, our analysis suggests that firm-level SA can be effected through the pursuit of innovation at all levels, to include market and value creation and co-creation, as well as value capture capabilities and strategies and the intertemporal management of the trade-offs between value creation and capture, that can be effected through the building of ‘relatively impregnable bases’. All these require both generic and firm-specific entrepreneurial and managerial capabilities which are not only unavailable in



extant markets but importantly precede, and are critical for, the co-creation of markets, prices and value (Pitelis and Teece 2009).

The strength of our analysis, lies in that it provides a framework and answers to some of the most generic and existential concerns of OS and strategic management scholarship. This is also a limitation and opportunity for further research. In terms of limitations, our framework and analysis involves multiple interacting categories that can benefit from further elaboration, modelling, testing and extensions. An indicative list of examples includes the following questions. Are all determinants of value creation and capture equally important? Does the role of determinants change over time and how? Are all types of the constituents of the various determinants (for instance different types of HR, of innovation, of unit cost economies and of firm infra-structure) equally important and does this change over time? Is the relationship between the various determinants and their constituents equally strong and significant? Importantly, what is their exact relationship and how does this evolve and/or is moderated by other factors. How testable are our proposed ideas and framework and whether and what type of evidence can be marshalled to test and support or reject some of our ideas?

The above and many other questions that emerge from our analysis, are also opportunities for further research. Three lines of such research that we currently pursue are as follows. First is the role of value capture on the nature of the firm, namely why and how firms emerge in market economies. Second is the adoption of formal models to derive exact relationships (such as intra-firm conflict management and the type of innovation most appropriate for value capture), under specific assumptions. Third is the empirical testing of the determinants of value creation and capture in real firms and industries through the

collection and use of primary data. In addition to our own efforts, much of the current research undertaken in OS and strategy has direct implications for our framework, despite the fact that it is not motivated by it. Our hope is that our research will help provide an alternative lens to that of IO and that it will motivate others to undertake similar, related and complementary critical work on these important issues, by adopting this lens as more appropriate for OS scholars.

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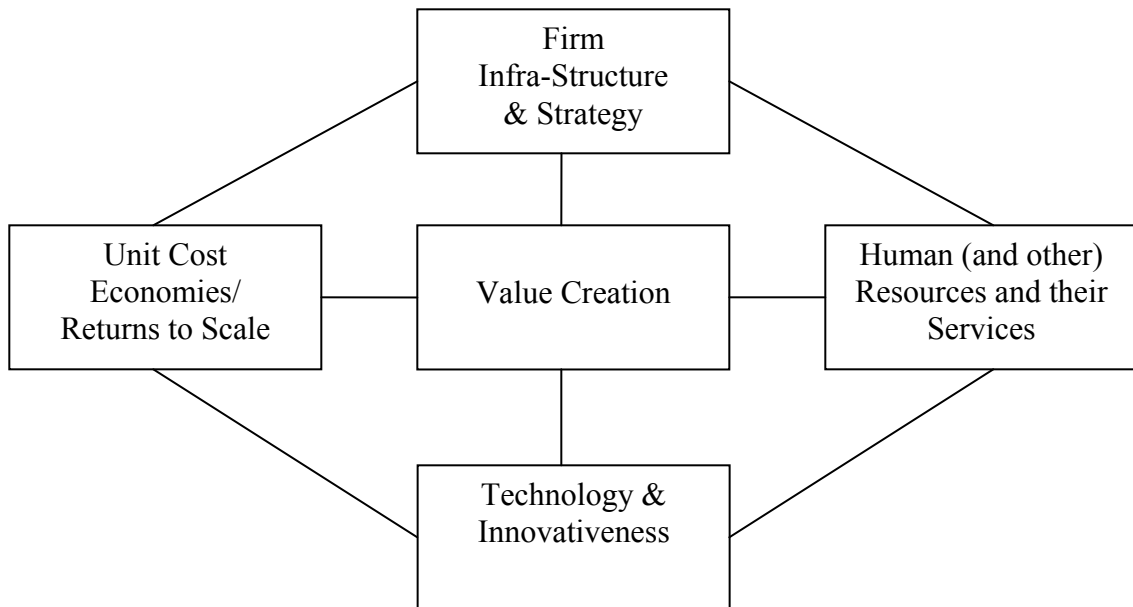
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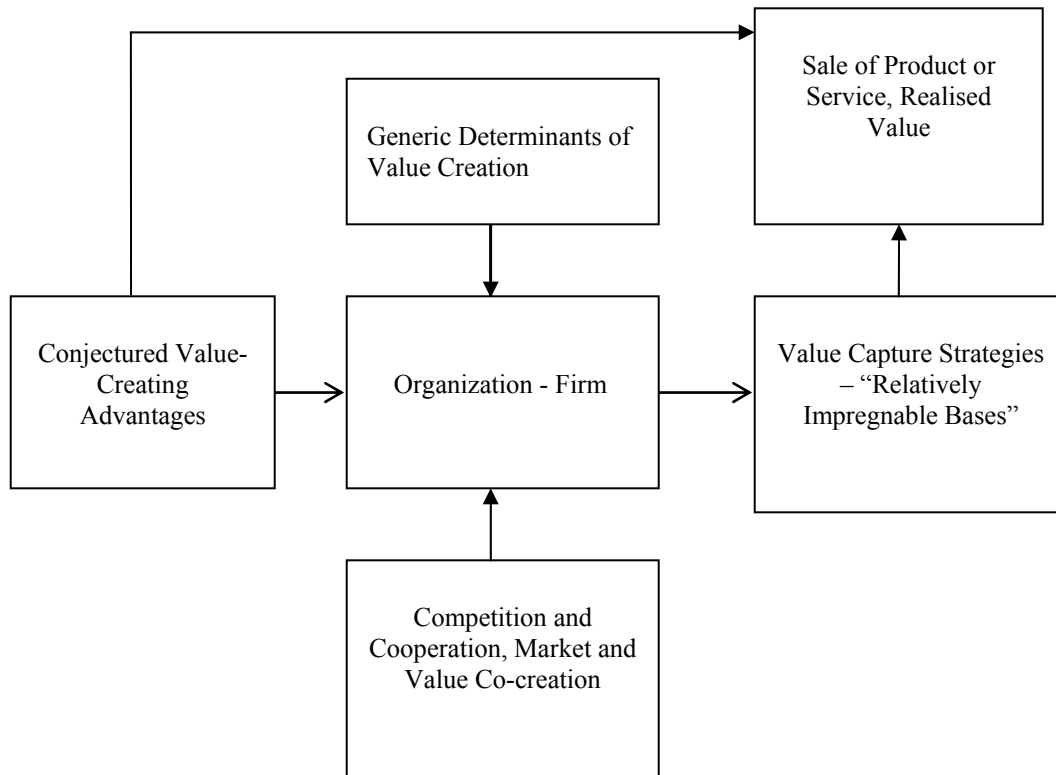
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**Figure 1. Four generic determinants of value creation**



- Figure 1, summarizes the four generic and interacting determinants of value creation at the level of the firm
- Other factors or subfactors can affect value creation, through their effect on the four generic determinants

**Figure 2. The process and causal pathways of value creation and capture**



- In Figure 2 Conjectured Value Creating Advantages cause (the pursuit of) value capture, either through direct sale (such as licensing in the case of perfect markets) or through the setting-up of an organization in the case of market failure – perceived need for market creation and co-creation.
  - Organization helps transform conjectured to realised value by developing value capture strategies, not available in the market. Such strategies help organizations also capture co-created value.
  - A vehicle for firms to achieve SA under uncertainty, change and limited rationality is the building of ‘relatively impregnable bases’.