

**Uncover to Discover: Finding Value Co-creation Opportunities in
Commoditised Business Ecosystems**

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ABSTRACT

Firms in commoditised industries, such as natural resources firms (NRFs), face challenges, such as uncertain market growth, weak pricing influence and volatile markets. To address these, the typical response is to seek internal innovations. However, we argue that this offers limited scope to enhance a firm's position. Greater opportunities may lie externally, in the firm's business ecosystem. Three emerging business concepts—business ecosystem, business model and service-dominant logic—offer potentially effective paradigms and strategic tools so that firms could get out of the commoditisation trap. So far, capturing these frameworks into a holistic strategy framework is absent. We demonstrate that these conceptual areas fit together and, when combined, present a potentially effective way for NRFs to uncover value co-creation and differentiation opportunities.

Keywords: Strategy formulation, competitive advantage, industry analysis, value chain, competitive environment

Natural resources firms (NRFs) increasingly face a number of significant strategic challenges including: product commoditisation, volatile demand and pricing, declining resource-grades and increasing cost of production inputs, such as labour, energy, transport and capital. Of these challenges, commoditisation is of crucial importance, especially in periods of falling demand. With commoditised products, there is little that resources firms can do to defend their market position against competitors, or to sustain their pricing for long term attractive economic returns to the business. Consequently, NRFs need to strengthen their competitive market positions by seeking new strategies, such as those aimed to maximise innovation (Port Jackson Partners, 2012), greater value co-creation and capture (Amit & Zott, 2012; Vargo, Maglio, & Akaka, 2008) and creation of new markets (Iansiti & Levien, 2004; Moore, 1996).

A default pathway that an NRF usually takes is to strengthen its business position through internal innovation, for instance by driving its cost-base as low as possible (Bartos, 2007; Chesbrough, 2007). However, among NRFs, this is already a given—and is expected of all firms in the resources industry. Crucially, in parallel, an NRF could also pursue external innovation and external market opportunities. One might expect that this would have been explored in great depth. However, industry strategic studies seem to skip over these possibilities. For example, in a 2012 industry report commissioned by the Minerals Council of Australia, proposed industry strategies were

mostly focused on inward-looking innovations—externally-focussed innovations appear lacking (Port Jackson Partners, 2012).

Among various types of external innovations, maximising co-creation of value with other actors in the firm’s business ecosystems offers a potentially significant opportunity (Amit & Zott, 2012; Ramaswamy & Ozcan, 2013; Trimi & Berbegal-Mirabent, 2012; Tsai, 2009). Benefits are multi-layered—greater value capture, greater likelihood for differentiation, stronger customer relationships and deeper capture of market information. If a firm aims to get out the commodity trap, what strategy framework could it then use? In the past decade, three conceptual areas have been attracting substantial attention in research and in business practice: business ecosystem, business model and service-dominant logic. A quick overview of these concepts shows why, potentially, these could assist commoditised firms in breaking off from the commodity cycle.

This study has two primary aims: 1) to develop a strategy framework that an NRF could use in order to identify and pursue external innovation and new market opportunities; and 2) understand how NRFs might uncover value co-creation opportunities with customers and other market participants using concepts in Business Ecosystem, Business Model and Service-Dominant Logic. In this paper we present a conceptual model of how these three interrelated conceptual frameworks can be integrated to provide a platform for future research.

BUSINESS ECOSYSTEMS, SD-LOGIC AND BUSINESS MODELS

The conceptual framework of a “Business Ecosystem” breaks down the usual boundaries of industries—a firm is encouraged to widen its lens when looking for opportunities, such as by looking for ways to collaborate with other actors outside its own traditional industry (Iansiti & Levien, 2004; Moore, 1996). The conceptual framework of a “Business Model” provides an impetus for identifying innovation opportunities in the business logic of the firm (Amit & Zott, 2001). Finally, S-D Logic views service provision, rather than goods (the commodities), as the most important aspect of economic exchange (Vargo & Lusch, 2004). Hence, for resources firms, these concepts provide the paradigms and right focus to address commoditisation issues. A holistic framework integrating these three potentially useful concepts could assist identification of new opportunities for leveraging

competencies, create higher value-adding offerings and move a firm's strategic focus from cost leadership to differentiated competitive position (Amit & Zott, 2012; Chesbrough & Schwartz, 2007; Chesbrough, 2007; Mele, 2009; Prahalad, 2005; Teece, 2010; Tsai, 2009).

However, attempts to explore such a holistic framework for assisting firms engaged in commoditised market environment appear to be missing. Due to the nascent stage of theory development of these three business concepts, key gaps are apparent that render application to real-life industry situations difficult. Common gaps in the research trajectory of these three business concepts are:

- 1) Sparseness of empirical studies;
- 2) Construct operationalization, and
- 3) Theoretical models—all needed to support foundational premises.

Business Ecosystems

Specifically, in Business Ecosystems, the concept is still understood relatively poorly, especially in the non-ICT (Information and Communications Technology) sectors (Visnjic & Neely, 2013). Most of the case studies in current business ecosystems literature are prominent ICT companies (see Iansiti & Richards, 2006; Isckia, 2009; Nachira, Nicolai, Dini, Le Louarn, & Leon, 2007; Wan, Zhang, Wan, & Luo, 2011; Zhang & Liang, 2011). It is uncertain, therefore, how far the insights of these studies could be applied to complex ecosystems outside of ICT boundaries. Hence, this study attempts to apply the concept into a non-ICT ecosystem—the natural resources.

Business Model Design

In Business Model design, despite the large body of work undertaken on business models in the past decade, scholars have raised criticisms that the business model construct possesses unresolved overlaps, such as with theories, analysis and concepts (Arend, 2013). More importantly for this study, there is scant research on how business models of firms interact and adapt with changing circumstances in its business ecosystems (Zott & Amit, 2013). Hence, this study attempts to explore adaptation responses of a firm's business model to its evolving business ecosystems.

SD-Logic

Finally, in S-D Logic, it is recognised that research to understand better business ecosystems using the S-D Logic lens is one of the next research frontiers—so as ‘to create better normative theory for facilitating their progress’ (Vargo & Lusch, 2013, p. 93). Scant study has been devoted in this research trajectory so far. Hence, this study attempts to contribute in understanding how S-D Logic could be used as a viewing lens into the frontier of business ecosystems.

STRATEGY FRAMEWORK BUILDING BLOCKS

Business Ecosystem Orientation

In the late 1980s, scholars observed an evolving new business dynamic in the computing and information technology industries. Increasingly, firms in these industries needed to organize as interdependent network of firms—or *business ecosystem* as first termed by Moore (1993) as a metaphor derived from natural ecosystem literature—to deliver value and complex solutions to end-customers (Iansiti & Richards, 2006). Being imbedded in such networks provided a different set of challenges than participating in traditional business environments. Of key importance were: 1) the need for co-evolution with other ecosystem participants (Moore, 1993); 2) a shared fate among the ecosystem players (Iansiti & Levien, 2004); 3) an acute need for close collaboration with key partners (Williamson & Arnoud, 2012); 4) an extensive leveraging on resources and capabilities that are outside of individual firms (Iansiti & Levien, 2004; Moore, 1996), and 5) a need for a far more outward-looking and relationship-focussed managerial and organisational capabilities (Zahra & Nambisan, 2012).

The significance of the business ecosystem continues to this day. It has achieved prominence in business strategy (Adner & Kapoor, 2010; Iansiti & Richards, 2006; Moore, 2013; Zahra & Nambisan, 2012). In reality, changes in business conditions in many industries opened greater need for business ecosystems. This is driven by: 1) intensifying pressure to limit core activities due to increased investment costs and desire to reduce complexity; 2) increasing knowledge content in business activities; 3) increasing business uncertainty; and 4) increasing power and cost-effectiveness of information and communications technology (Williamson & Arnoud, 2012). As a result, for firms wanting to be successful in their fields, it is of utmost importance for them to understand deeply the

ecosystems where they participate in. By doing so, they could define in the best way possible how to participate in the ecosystem—how to best deploy their capabilities, capture value, and compete and collaborate with other actors.

Importantly, a key benefit of gaining deep understanding of a firm’s business ecosystem is to clearly see the *opportunity* environment, defined as a ‘space of business possibility characterised by unmet customer needs, unharnessed technologies, potential regulatory openings, prominent investors, and many other untapped resources’ (Moore, 1996, p.16).

This opens up doors to new opportunities that a firm could aim to address by leveraging on its internal and external capabilities. Furthermore, Visnjic and Neely (2013) found in their research that by deeply understanding its ecosystem, a firm could build an ecosystem advantage that allows “creation of opportunities and seize opportunities that might otherwise have eluded them” (p.6). A reality of the ecosystem landscape is that boundaries are unclear—business ecosystems often extend across several industries. Therefore, from a firm’s view, its opportunity environment is extended beyond its own traditional industry. In fact, it rests across an ecosystem, composed perhaps of several industries, or possibly several ecosystems, with even wider scope.

When analysing a business ecosystem, what are the key components necessary to be assessed? A number of components were proposed by the early works of Moore (1993) and Iansiti and Levien (2004), as well as the more recent work of Visnjic and Neely (2013), of Cambridge Service Alliance. Content analysis of the components employed by these strategic frameworks show that four fundamental components could be defined (see Figure 1).

Insert Figure 1 about here

The first area deals with the complex challenges being addressed by the business ecosystem and their solutions (Visnjic & Neely, 2013). Business ecosystems are observed to focus in addressing complex challenges or goals. The second area looks at the roles and linkages of the various actors in the ecosystem. Moore (1996) mainly focussed on the role of the business ecosystem leader, which indeed has a most important role. However, the others more numerous actors also have substantial roles. Iansiti and Levien (2004) addressed this gap by differentiating the roles into several

categories—the “Keystone”, “Niche player” and the “Dominator”. From a different stand point, Visnjic and Neely (2013) proposed to define roles based on the specific contributions of the actors.

The third area of the model is the evolutionary stage of the ecosystem. Moore (1996) defined four ecosystem stages: 1) Pioneering; 2) Expansion; 3) Establishment and lastly, 4) Renewal or Death. Understanding the stage of the ecosystem evolution allows firms to determine what key challenges are apparent in each stage. Therefore, this allows determination of most effective business strategies to deploy. Finally, there is the state of health of the ecosystem. Iansiti and Levien (2004) defined three health measures of a business ecosystem: productivity, robustness and niche creation. Deep insight into the health of the business ecosystem allows determination of opportunities and risks that a firm must consider in crafting its strategy.

Undertaking a deep look into the business ecosystem allows a firm to view the opportunity environment: where the gaps lie, where unmet needs reside, where value co-creation opportunities with other actors could best be approached. Furthermore, results of such analysis could advise a firm if its business model needs to be re-configured or, in the extreme, a new business model to be designed and deployed to address compelling opportunities, including new markets (Amit & Zott, 2012). Understanding the real needs of players allow firms to craft “uniquely valuable propositions” that generate superior value capture (Rangan & Hirsh, 2014, p.1.).

Business Model—linking the firm to its business ecosystem

In the 1980s, the strategic management discipline equipped firms with the tools to address business challenges, such as analysing the competitive environment, positioning products, developing and sustaining competitive advantage amidst competitive pressures and threats (Casadesus-Masanell & Ricart, 2010). However, new disruptive drivers appeared in the business landscape that pushed businesses to the edge of their strategic management capabilities. Accelerating technological development, deregulation of markets and globalisation, among others, were drastically changing the competitive landscape. In those times, scholars and practitioners observed that the fastest-growing businesses were those that re-configured their business models to address the difficulties. Hence, that started the interest on the business model as a concept.

Despite its popularity the business model as a construct is not strongly theoretically supported in either the traditional economic or management disciplines (Amit & Zott, 2001; Teece, 2010). While it has been used for decades in the business literature as a loose descriptor of how a business operates, no widely accepted definition existed and it was not used as a research construct (Casadesus-Masanell & Ricart, 2010). For the first time, a precise definition was proposed by Amit and Zott (2001), p.19: ‘a business model depicts the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities.’

Their detailed study of how young e-business, publicly-traded companies create value revealed four interdependent dimensions of value creation: efficiency, complementarities, lock-in and novelty (Amit & Zott, 2001). These dimensions, they found, generated value which were far greater than predicted by traditional value creation views of the firm.

Lacking theoretical support in existing business literature, Amit and Zott (2001) proposed the business model construct to serve as a basis for future research. Clearly, that initial work paved the way for much research work to be undertaken on the subject, driven no doubt by the subsequent and continuing fast growth of the ICT industry and disruptive technologies in the global economy. In the past decade, business model attracted extensive attention among scholars and business practitioners (Coombes & Nicholson, 2013; Lambert & Davidson, 2013; Zott & Amit, 2013; Zott, Amit, & Massa, 2011).

What are the key elements of the business model? An analysis of the meanings and content of business model elements in relevant works shows that most have almost similar fundamental content. Simplification yields four categories: value proposition, value creation and capture, value architecture and, lastly, value ecosystem. The latter category, as may be noticed, bundles together all linkages and relationships with partners and alliances in the external network—that is, in the firm’s business ecosystem. Figure 2 presents visually this simplified categorisation of elements.

Insert Figure 2 about here

What are the benefits derived from having a clear view of a firm’s business model? Business models represent the high-level conceptualisation of value co-creation, including the evolution by

which value is created (Chesbrough, 2007; Coombes & Nicholson, 2013; Teece, 2010; Zott & Amit, 2008). Importantly, business models show how firms interact with a network of customers, suppliers, partners and other stakeholders, including how capabilities and resources are deployed to create and capture value from opportunities (Amit & Zott, 2012; Casadesus-Masanell & Ricart, 2010; Chesbrough & Schwartz, 2007). Therefore, a firm desiring to identify and address value co-creation opportunities must have a deep understanding of both its current business model and that of the other ecosystem players. It must be willing to explore possibilities to enhance or, in some cases, drastically change its business model if substantial value could be had by the firm (Chesbrough, 2007; Chesbrough, 2010; Osterwalder, Pigneur, & Tucci, 2005). Furthermore, Nenonen and Storbacka (2010) highlighted that using the business model concept allows a firm to understand value co-creation opportunities available to a firm in a deep way.

It is clear that there is real value to be gained by using in tandem both Business Ecosystem and Business Model concepts to analyse the internal and external situation in a resource firm. Both concepts facilitate identification of opportunities, both internally and externally. Importantly, a resources firm's value proposition and value creation logic could be analysed systematically to address specific opportunities and reconfigured as necessary using the concepts and analysis frameworks discussed previously.

Service-Dominant Logic—enabling value co-creation

Vargo and Lusch (2004) outlined the key shift from the traditional-based marketing view that the main carriers of value in economic exchange are the tangible products (or goods-dominant logic paradigm, also called G-D Logic), to an emerging view that in fact, the carriers of value are services exchanged between providers and beneficiaries (or service-dominant logic paradigm, also called S-D Logic). The article generated substantial attention, primarily because the new paradigm was considered to capture the heart of the recent evolution of marketing discipline towards greater collaboration and network linkages between players in business ecosystems. Prior to the article, no clear integrative set of vocabulary, assumptions and perspectives that encapsulated with good fit the widely observed trends existed (Maglio & Spohrer, 2008). Less than a decade since publishing the

work, Vargo and Lusch's work has been cited more than 4,000 times and has spurred hundreds of related research work on S-D Logic in relation to other marketing, strategic management and other business disciplines (Vargo & Lusch, 2013).

During the early days of the S-D Logic, Vargo and Lusch (2004) defined eight fundamental premises that underlie the S-D Logic. Thereafter, the number of the fundamental premises was increased to 10 (Vargo & Lusch, 2008). At the heart of the set of axioms is FP1, which states service, defined as the use of one's competences and knowledge for the benefit of another, is the basic unit of exchange (Vargo & Lusch, 2008). This premise implies that in general the basis of economic exchange between commercial parties as well as at the societal level is service for service and in situations wherein goods are involved; this is best interpreted as service-delivery systems.

Another key premise is FP4, which claims that 'operant resources are the fundamental source of competitive advantage' (Vargo & Lusch, 2008, p.6). Since every exchange has service as basis and service emanates from the use of knowledge (and competencies, which are essentially, active form of knowledge), then it follows that the capabilities of a firm's operant resources relative to its competitors determine its competitive advantage (Vargo & Lusch, 2004; Vargo & Lusch, 2008). FP6 states that 'the customer is always a co-producer' (Vargo & Lusch, 2008, p.8). Customers are viewed as operant resources, rather than passive operand resources. Collaboration therefore with customers is a crucial objective for companies (Lusch & Vargo, 2006; Vargo & Lusch, 2008). FP10 is another key premise, which explains that 'value is always uniquely and phenomenologically determined by the beneficiary' (Vargo & Lusch, 2008, p.9). This premise positions value as experiential in essence. Therefore, it is implied that full realisation of value could only be realised when the necessary activities of both providers and beneficiaries are undertaken and experienced (Vargo & Lusch, 2008; Vargo et al., 2008). Such participative activities facilitate (and are basic requirement) for the co-creation of value.

The discussion in this section underlines the advantages of taking a Service-Dominant Logic when viewing how value is co-created and how a resource firm could approach the actors in its ecosystem in a highly collaborative and relational paradigm. The concepts in SD-Logic fit in perfectly

with the concepts discussed in both Business Ecosystem and Business Model, ‘as if they are perfect parts of a puzzle’ (authors’ quote and emphasis). SD-Logic’s paradigm—SD orientation—could be the overriding set of value co-creation thinking in a firm’s organisation (made up of thinking minds); hence, provide the directions and mind-set for driving the firm towards greater co-creation of value in its business ecosystem.

A PROPOSED CONCEPTUAL MODEL OF VALUE CREATION FOR NRFs

Development of a holistic strategy framework

To address the strategic challenges facing NRFs, a unifying conceptual framework is needed, as the key features for moving forward is obviously resting on three significant and developing conceptual domains—Business Ecosystem, Business Model and S-D Logic. d'Amboise and Muldowney (1988) noted that three building blocks are needed in frameworks used for studying organisations, with a possible aim to develop a theory relating to it. The three building blocks are: 1) the task environment in which the firm operates; 2) the firm’s organisational configuration; and 3) the managerial characteristics of the firm’s management team. Such approach in developing analysis framework was successfully applied in studying strategic innovation in small firms (Mazzarol & Reboud, 2011) and in sustainable cooperative enterprise (Mazzarol, Reboud, Limnios, & Clark, 2014). Note that the three conceptual domains covered in this study are in fact, in close fit with the framework building blocks. That is, the Business Ecosystem forms the task environment; the Business Model forms the organisational configuration; and, lastly, the S-D Logic paradigm feeds into the managerial characteristics of not only the firm’s management team, but the whole organisation. A preliminary visual representation of such an analysis framework is presented in Figure 3, which can be used to guide future research and analysis.

Insert Figure 3 about here

The authors are aware that the use of business ecosystems concepts, while not yet mainstream, has already been applied by NRFs such as Royal Dutch Shell Group and Iluka Resources Limited. Deeper understanding of such adoptions could assist other NRFs that are also seeking to innovate in order to enable them to differentiate within markets dominated by low-cost producers.

This conceptual framework offers such firms a potential strategy development tool drawing together as it does the three major contemporary models for developing sustainable competitiveness.

Research Questions

There is a need to develop this proposed model through future research. Guiding such an investigation are several research questions developed from the foregoing discussions:

- 1) How might NRFs use business ecosystem frameworks to transition from cost leadership to market differentiation competitive positioning strategies?
- 2) What business model designs will NRFs need to generate and sustain customer value in its business ecosystem within a differentiation positioning strategy?
- 3) How might an NRF's SD-Logic orientation assist in identifying and addressing business ecosystem opportunities?
- 4) What are the barriers and triggers to a resource firm making the transition from a GD-Logic to an SD-Logic paradigm?
- 5) What might be the key features of a change management strategy for such a GD-Logic to SD-Logic transition?

CONCLUSION

The conceptual model outlined in Figure 3 is a starting point for future research that could benefit participant firms in commoditised business ecosystems—such as NRFs—with structured analysis and implementation frameworks for identifying and capturing value co-creation, new market opportunities and market differentiation opportunities. Importantly, firms will be provided with insights from real-life industry case studies to better equip them in achieving the desired fruits of such efforts.

Qualitative research methodology (e.g. case studies) is likely to be the most appropriate way to initially examine the research questions. Data would be collected from NRFs (e.g. oil and gas and minerals) through multi-case embedded case study design. As is usual for such approach, a large, rich set of empirical data would be collected, but at the expense of potentially low generalizability to other contexts, such as in non-natural resources ecosystems (e.g. retail ecosystems). To alleviate this, future research should aim to include case studies of significantly varied firms, in terms of size, geographical presence and level of engagement in their respective ecosystems.

This study also contributes to the nascent research areas of Business Ecosystem, Business Model and S-D Logic—all these areas widely recognised as needing greater depth in empirical research. Yet so far the linkages between these three areas remain tenuous. As such, this study breaks new ground in attempting to link together the three research areas into a holistic framework (to assist NRFs). Current research in these linkages is scant (Vargo & Lusch, 2013, p. 93; Zott & Amit, 2013). Hence, this study will generate greater understanding of the linkages among the three concepts.

In relation to public policy, this study could benefit industry-level associations in opening up new avenues for value creation. For example, as mentioned earlier, the Australian resources industry tend to focus on identifying and pursuing internal innovation and internal cost leadership strategies. The reality is that, potentially, there could be substantial value co-creation and new market opportunities waiting to be picked up external to the resources firms.

Finally, in the context of applied management outcomes the study offers managers of NRFs a powerful “tool box” of conceptual models, analysis tools and frameworks that could substantially enhance their abilities to identify and address new market opportunities and craft value-adding strategies. The focus on SD-Logic as opposed to the more conventional GD-Logic potentially shifts thinking away from the extraction and processing mind-set that is dominant within most NRFs, and moves it towards a new frontier of customer-centric, co-creation of value. In doing so it helps managers of such firms revisit the underlying premises of their business models and embark on a process of business model innovation. The SD-Logic and Business Model frameworks already extant in the conceptual and applied literature offer managers the tools to work systematically through these issues. However, the inclusion of the Business Ecosystem framework significantly enhances this strategy formulation by placing the firm within the context of its macro-environment. It helps the managers within the NRFs to take a “macro-level” view of their environment from a different perspective to the more conventional industry analysis (Porter, 1980). In doing so it can assist them to think differently about how their industry is structured and where future opportunities lie.

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Figure 1: Assessment Components of Business Ecosystems

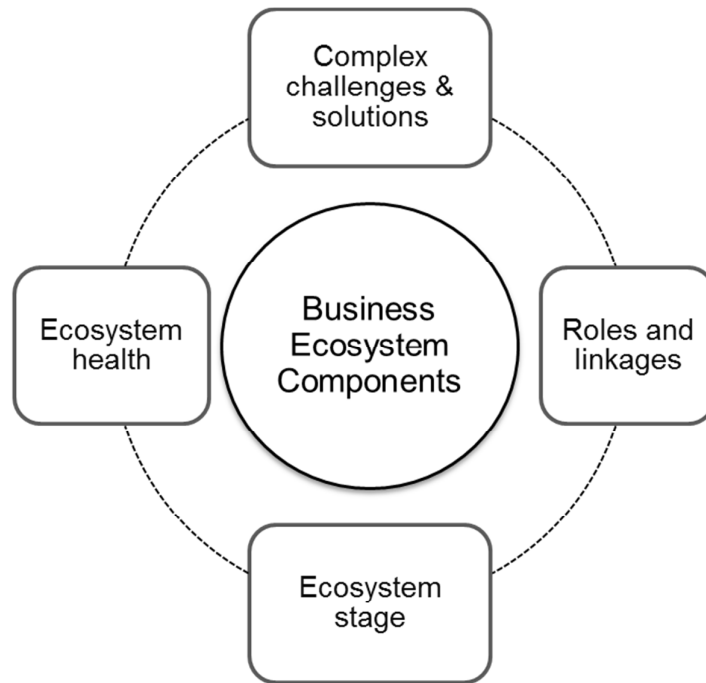


Figure 2: Business Model Elements (as simplified by authors)

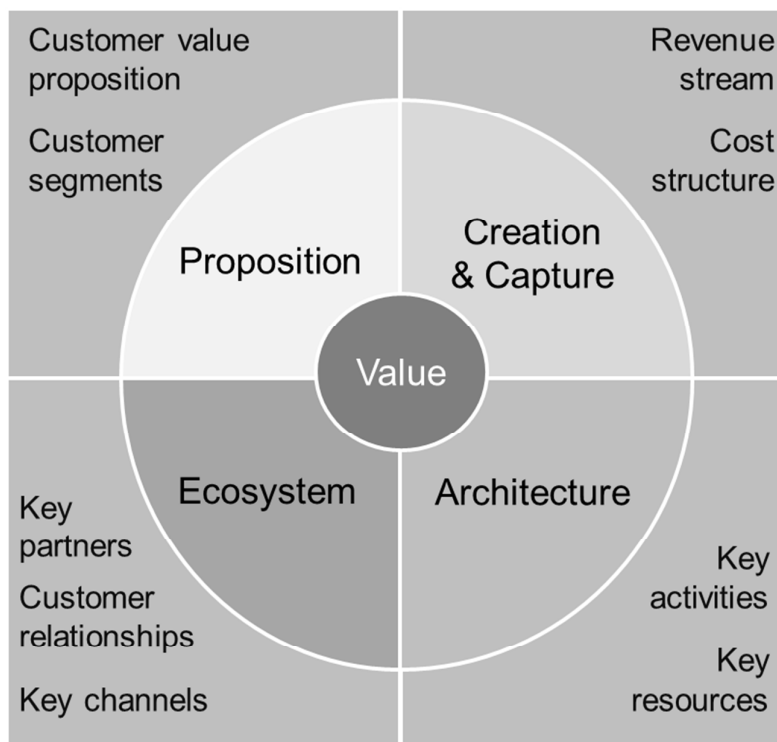


Figure 3: Conceptual Strategy Framework: Finding Value Co-creation Opportunities in the Business Ecosystem

