

## **SMR Introduction Essay**

Hopping Tables – An Introduction to the SMR Special Issue on Open Innovation

Janet Bercovitz and Henry Chesbrough

Since the publication of Chesbrough's 2003 book, *Open Innovation (OI)* has emerged as an influential concept within the domain of Innovation Studies. Open innovation - a distributed process based on purposefully managed knowledge flows - focuses on the need for an organization to transcend its boundaries by searching for new business models that both source and seed knowledge and technology externally (Chesbrough & Bogers, 2014:17). Chesbrough's OI work spawned an active conversation in a community of scholars that has generated numerous research papers which have garnered significant citations. A recent Google Scholar search on the term "open innovation" yielded hundreds of thousands of academic citations. No fewer than twelve review articles dedicated to the topic of Open Innovation have been published over the last decade (e.g., Elmquist, Fredberg, & Ollila, 2009; Dahlander & Gann, 2010; Van de Vrande, Vanhaverbeke, & Gassmann, 2010; Huizingh, 2011; Lichtenthaler, 2011; Chesbrough, 2012; Remneland-Wikhamn & Wikhamn, 2013; West & Bogers, 2014; West, Salter, Vanhaverbeke, & Chesbrough, 2014; Chesbrough & Bogers, 2014; Randhawa, Wilden, & Hohberger, 2016; Bogers, et al, 2017). In addition, since 2014, an annual international conference, the World Open Innovation Conference (WOIC), brings together more than 200 senior executives and top academics for two days of networking and conversation centered on Open Innovation themes and the sharing of best practices.

There also is an annual Professional Development Workshop on open innovation at the Academy of Management which attracts more than 100 participants each year.

Yet, with all of this activity, there remains an interesting shortcoming. This vibrant conversation is happening mainly within a stand-alone community of “true believers”. A common critique of the Open Innovation literature is that researchers do not sufficiently integrate external theoretical perspectives nor effectively link their work to conversations in the broader management field (Randhawa, Wilden, & Hohberger, 2016). Perhaps as a result, the majority of OI articles tend to appear in a limited set of innovation-specific journals, such as *Research Technology Management*, *Research Policy*, *R&D Management*, and *International Journal of Technology Management* (Randhawa, et. al., 2016). This concentrated footprint constrains the broader dissemination of findings and reduces the influence of this research beyond the Innovation Studies area. Somewhat ironically, the study of Open Innovation seems to suffer from some Closed Innovation, as knowledge is not freely flowing across theoretical, academic and practice boundaries.

At the same time, attempts of Open Innovation scholars to engage the strategic management scholar community have yielded relatively little interaction from the latter side. Chesbrough and Appleyard’s (2007) article titled “Open Innovation and Strategy” has been widely cited in the innovation domain. It is a clear call for scholarly engagement that has been largely neglected by strategy scholars. As they stated in the article:

“Individually, these [open] examples might seem to be mere curiosities.

Taken together, though, they imply that something new is going on;

something that cannot adequately be explained through the classic conceptions of business strategy. Items that were of central importance in earlier strategy treatments, such as ownership, entry barriers, switching costs, and intra-industry rivalry are of secondary importance in the genesis of the above phenomena. Forces that were either peripheral to the earlier treatment or ignored entirely, such as attracting the participation of individual volunteers, the role of community participation, the construction of innovation networks, and the notion of innovation ecosystems all lay beyond the explanatory power of current notions of strategy.”

The Open Innovation conversation is ongoing, intense and buzzing within the innovation studies community. This conversation documents a number of anomalous phenomena that challenge traditional strategy perspectives. One recent example is IBM’s acquisition of RedHat. RedHat distributes a version of the Linux operating system, which is built on open source code. RedHat’s underlying technology is available to anyone, including customers and competitors, for free. Yet IBM paid \$34 billion to acquire the company. It is difficult to comprehend this behavior without employing concepts of openness.<sup>1</sup> Such anomalies should be integrated into the mainstream strategy discussion. For the most part, however, mainstream strategy scholars are engaging only at the periphery of the exchange of ideas and phenomena that are central to Open Innovation.

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<sup>1</sup> Microsoft also recently acquired GitHub, a repository of open source projects, for \$7 billion. Without openness, this too is difficult to understand.

The idea for this special issue of the *Strategic Management Review (SMR)* emerged against this backdrop. The aim of SMR, as stated by the editorial team, is to “promote insights on core questions in the strategic management field through impactful essays” that integrate literatures to better grapple with the field’s canonical problems. Of central interest to the field of strategy is how firms create and capture value through their competitive actions and resource allocation decisions. Choices of firm boundaries – what is done inside the firm and what activities are conducted across boundaries through alliances, licensing, or more arms-length contracts – are also key. Additionally, the identification and study of strategic decisions, defined as those management decisions that are interdependent with other decisions – across contemporaneous activities, across time, and across economic actors—distinctively characterize the strategic management field and offer a lens for understanding the causes and consequences of variation in firm performance (Leiblein, Reuer, and Zenger, 2018).

Given the potential, and likely high, relevance of OI to the core strategic themes and decisions regarding how to organize and compete in the creation and capture of value, we felt it was imminently logical to dedicate this early issue of the SMR to the exploration and explication of the intersection between Open Innovation and Strategy. To kick-off and facilitate this dialog, we organized a small conference on this topic. The original conference invitation letter noted:

“The concept of open innovation is one of the most important new management topics that has emerged over the last two decades. While the open innovation literature has made extensive progress describing how

knowledge is transferred across organizations, the role of networks in facilitating or hindering innovation, and the manner in which institutions codify ideas and practices, opportunities remain to examine whether and why particular forms of open innovation are more effective in certain contexts and how open innovation decisions affect a firm's competitive position."

With this invitation, we solicited participation of scholars with the goal of building a better understanding of how Open Innovation affects a firm's competitive position. The response to our invitation was quite positive and we were able to bring more than 30 academics spanning these two research communities together at the University of California, Berkeley for two days in October of 2018. In total, 14 papers covering different aspects of the Open Innovation-Strategy intersection were presented (See Appendix for the conference program).

While the presentations at the front of the room were thought provoking, equally, if not more, intriguing was the "self-organization" of scholars in the room. We saw 5 main "physical" tables of thought emerge as the people in the room chose where, and with whom, to sit. At one table were the Open Innovation stalwarts – those scholars with a deep and focused interest in the OI phenomenon. At a second table sat the mainstream strategy and organization scholars focused on boundary of the firm, dynamic capabilities, and competitive advantage issues. A third grouping included those leveraging disciplinary tools to study the economics of "open" innovation. Scholars considering OI from the ecosystem and/or community perspective coalesced around a fourth table. Finally, a group of individuals

interested in questions about basic research and open science initiatives congregated at the remaining round-top. It was fascinating to observe conversations arising within tables in response to the presentations, spilling across tables, and then engulfing the entire room. As per its reputation the Berkeley catering was great, but the conversation generated equally “tasty” food for thought. We have assembled this special issue to share some of the conversations, which are now distilled in 6 peer-reviewed papers. This introductory essay offers a brief overview of these papers, followed by a discussion of common ground, contested ground and open questions for a shared research agenda that the conference conversations as well as the papers included in this special issue generated.

The included papers span a variety of topics and different levels of analysis. Four of the included papers are situated at the firm level of analysis. Two of these essays approach the Open Innovation phenomenon from a base in the traditional strategy literature. The other two articles are more deeply grounded in Open Innovation and leverage strategy concepts and frameworks to advance understanding of key elements of OI activities. The remaining two essays in this issue incrementally move from a firm-level perspective towards an ecosystem-level perspective.

One challenge that has constrained the development of research on Open Innovation has been the lack of a single accepted definition of the concept. Chesbrough has put forward three definitions over time, anchoring his definition in the economics of spillovers (Chesbrough, et al, 2006; Chesbrough et al, 2014). The most recent definition of Open Innovation in his work is the following:

“Open innovation is a distributed innovation process based on purposively managed knowledge flows across organizational boundaries, using pecuniary and non-pecuniary mechanisms in line with the organization's business model.”

However, other scholars working in innovation employ other definitions, either explicitly or implicitly. Von Hippel and his colleagues view Open Innovation as a synonym for user innovation (von Hippel, 2005), or free innovation (von Hippel, 2015). Other scholars implicitly define Open Innovation as crowdsourcing, or outside-in open innovation, or user communities, or collaborating with startups, or collaborating with universities. The lack of a shared definition has obvious impacts on the ability to explore and understand the concept, let alone connect it to strategy research.<sup>2</sup> And this problem persists in this special issue as well.

In the opening essay of this volume, “Open Innovation: A Theory Based View,” Teppo Felin and Todd Zenger anchor the conversation about the strategy/OI intersection, contending that openness will only generate competitive advantage when theoretically guided. Specifically, they argue that a clearly articulated firm-specific theory about “*what the firm should be open to*” is a necessary condition for openness to catalyze value creation. A reliance on theory focuses management’s attention allowing them to separate the “wheat from the chaff” and identify key kernels of external knowledge that may complement the firm’s existing knowledge base allowing for fruitful and unique recombination. Given that external knowledge rarely comes in the form of a freely available public good, a firm-specific theory

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<sup>2</sup> One might observe that there is no single accepted definition of “strategy” in the voluminous literature on that subject either, although the field is coalescing around a few key themes. So perhaps open innovation is not so unique in its definitional challenges.

provides the framework to evaluate search, access and development costs and to determine the potential for sustained value capture from OI activities. Finally, the authors note that a firm-specific theory also informs the question of *when* to be open by highlighting the differences in the underlying problems to be solved and the gains from selecting between open and closed innovation in a discriminating way. Note that this article implicitly defines open innovation from an exclusively outside-in perspective.

Similarly, the second article in this issue pushes to place OI logics within accepted strategy-based theoretical frames. In “Hand in Glove: Open Innovation and the Dynamics Capabilities Framework,” David Teece delves into the strategy/OI intersection to explicate the relationship between open innovation and the dynamics capabilities (DC) framework. Teece argues that OI and DC are strongly linked and mutually reinforcing. He highlights three key points: (1) “Sensing and seizing activities” are at the core of Open Innovation, thus OI requires dynamic capabilities; (2) A firm’s dynamic capabilities can be strengthened through astute use of OI processes, a learning by doing effect, and (3) Compared with DC, OI is more narrowly focused, concerned mainly with the firm’s R&D and commercialization processes. Thus, while OI contributes to value creation and value capture, a dynamic capabilities framework is needed to enact strategy that builds from a holistic understanding of how competitive advantage is developed and sustained. A case study of Haier rounds out the article illustrating the three key points articulated and connecting the theoretical discussion to practical implementation.

In this article, Teece also implicitly assumes that open innovation is outside-in open innovation.<sup>3</sup>

The contribution from Keld Laursen and Ammon Salter, “Who Captures Value from Open Innovation – The Firm or its Employees,” spotlights the appropriation risks and value capture challenges of Open Innovation with a unique twist to focus on how OI gains are split within a firm rather than across firms. Providing a strategic perspective on the micro-foundations of Open Innovation, Laursen and Salter note that employees filling in-bound OI roles are at the nexus of knowledge flows and thus are well positioned to expropriate rents. The bargaining power of these individuals turn, they suggest, on the appropriation regime and the nature of the knowledge (general/specific) involved in the OI effort. To manage OI employee appropriation risks, firms face a choice of safeguarding via imperfect contractual and oversight mechanisms (to limit leakage) or safeguarding via selection and prioritizing employee probity above employee OI competence. This essay leverages established TCE reasoning often applied to strategic boundary of the firm decisions to issues of internal talent organization. A trade-off between “optimizing” value creation and “maximizing” value capture is often at the core of this strategic decision.

Henry Chesbrough and Christopher Tucci’s article, “The Interplay between Open Innovation and Lean Startup, or, Why Large Companies are not Large Versions of Startups,” explores the relationship between the Lean Startup and Open

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<sup>3</sup> And note also that “dynamic capabilities” is another concept whose definition is contested among leading scholars (Teece, this issue; Eisenhardt, 2000).

Innovation approaches. Lean Startup is itself a phenomenon that lacks a strong connection to an underlying academic literature. Notwithstanding this deficiency, it has made an enormous impact on both industry practice and academic instruction. Chesbrough and Tucci acknowledge that the adoption of Lean Startup principles appear to drive value creation in new, entrepreneurial ventures. However, the authors assert that implementation of Lean Startup, in its current form, is far more problematic in the context of large, established firms. Chesbrough and Tucci argue that Lean Startup advocates err in applying its principles outside the domain of its initial application when they apply it in a corporate context. Large firms with established business models face a markedly different context from that of a startup venture, with no existing business model to defend. Many of the corporate processes and capabilities that large companies have scaled up to serve their existing business are ill-suited to the experimentation and adaptability required by new ventures. All is not lost, however. In the corporate context, the authors argue, these tensions can be mitigated by melding Open Innovation with Lean Startup. The essay is unique in that it gives equal attention to both outside-in and inside-out OI, providing novel insights and practical advice on boundary of the firm choices that can enhance Lean Startup efforts inside incumbent firms. In turn, Lean Startup can serve as a process model for implementing Inside-out open innovation, something that heretofore has been lacking.

The final two contributions move from an internal focus on the firm as the focal actor to considering the firm in context, bringing community and ecosystem factors to the forefront of the Open Innovation discussion. In this respect, these

final two essays move to emphasize interdependencies that arise across economic actors and the effect of these interdependencies on OI-related strategic decisions.

In their essay, “Why Do User Communities Matter for Strategy?” Sonali Shah and Frank Nagle provide a comprehensive characterization of user communities, a key player in the open innovation ecosystem. Defining user communities along three dimensions (knowledge development & exchange, participation, control & governance), the article proceeds to detail the potential innovation-based differentiation benefits and outsourcing-based costs firms may accrue by engaging with user communities while simultaneously noting the key trade-offs in control and representative participation firms face in these interactions. From this foundation, the authors offer sage advice for firms on how to effectively and productively manage OI activities, highlighting common missteps to be avoided. User communities are a nascent strategic resource that needs greater attention from the strategy scholarly community. The essay closes by outlining a plethora of research opportunities at the intersection of the strategic management and Open Innovation literatures centered on better understanding the process and impact of user communities and firm interactions.

The final essay in this special issue, “Dear Enemy: The Dynamics of Conflict and Cooperation in Open Innovation Ecosystems,” by Gurneeta Vasudeva, Aija Leiponen, and Stephen Jones develops a theoretical framework to illuminate the varying strategic responses of ecosystem participants given unanticipated changes in the value of co-created and shared technological resources. Noting that the gains from cooperation can materialize as private benefits accruing to individual firms,

club benefits shared between a specific subset of firms in the ecosystem, or public benefits that are available to all, the framework details conditions under which cooperation can be maintained following incidences of conflict. Broadly, the authors conclude that if unanticipated changes in value only affect the public benefits, cooperation is easily maintained. However, if such changes impinge on the private and/or club benefits available, subsequent cooperation activity may be significantly altered. Based on their conceptual framework, the authors submit that the degree to which cooperation suffers or expands turns on the appreciation/depreciation of the value of the focal technological resource, the scope of complementary elements in the system, and the level of relational interdependencies among participating firms. Further, firms can make strategic choices that reshape ecosystem boundaries – activating and enhancing outside options, inviting entry of new players, and/or organizing for collective punishment and expulsion/ostracism of overly aggressive ecosystem members – in response to conflict. This essay shows what insights can be achieved when innovation studies and strategy research are applied jointly to a topic.

In sum, the essays in this special issue meet the goals of the *Strategic Management Review* – catalyzing the exchange of ideas across different research communities so as to generate insights on canonical problems in the field of strategic management. Moreover, this set of essays also operates to provide valuable commentary that adds to the existing Open Innovation literature. There are many gains to specialization where concepts are propounded, tested, and exchanged within a single academic community. As noted above, research on Open

Innovation has developed at an accelerating rate within the Innovation Studies area. But these essays show that there can also be considerable gains from trade across communities, or what we observed as “table hopping”. Taken as a whole, these essays delineate and highlight the common ground where traditional strategic management concerns and Open Innovation activities intersect. They draw attention to some contested ground where the perspectives of expounded in these two communities offer conflicting views and contrary interpretations. We consider and amplify each of these pastures in turn.

### *Common Ground*

There are many common touch points between the Open Innovation and the strategy literatures and their associated scholarly communities. We share interest in subjects like the impact of technology upon firm performance and industry evolution. We share a common understanding that how firms organize to respond to technological shifts can determine successful or failed adoption of that innovation. For example, when is vertical integration a superior approach to organizing innovation vs. a distributed process involving many outside actors vs. transacting in the market? These boundary-of-the firm questions interest both scholarly groups (though these groups may have different priors on the risks and benefits of each mode of organization). There are also similar levels of analysis employed in both research communities. The level of the firm is the focal level of analysis, but there has been a growing body of research on the network or ecosystem or community level of analysis.

Both groups also share an interest in business models and their role in influencing the allocation of resources, in shaping the development of technology and in explaining persistent differences between firms and firms' competitive performance. Within these research domains, the functions of value creation and value capture are both subjects of considerable academic inquiry (a theme that is a consistent presence in all of the articles in this special issue). Further, both groups of scholars recognize that there can be tensions between these two different functions. Laursen and Salter (2014) present a "paradox of openness", in which actions that stimulate greater value creation limit the ability to capture value, and vice-versa. So a stance that seeks to leverage the knowledge of many diverse contributors might diminish the ability to protect that knowledge, and contributors might dispute how much of the value created should be able to be appropriated by the focal firm instead of the wider community. Shapiro and Varian (1998) distinguished between Open and Sponsored projects, but held that once made, these were irreversible choices. Customers would only adopt Sponsored technologies when there was sufficient value creation to warrant being locked into that vendor later on. Open projects, however, credibly committed not to lock in the customer later on. However, Appleyard and Chesbrough (2017) present evidence that these choices of open and closed approaches can and do reverse. Yet, in-line with recent discussions in strategy, this open vs. closed decision is clearly strategic as it is generally highly interdependent with other decisions – across contemporaneous activities, across time, and across economic actors. So the question of Whether or When to be Open is one of great interest to both research communities.

In sum, the common ground noted above provides a foundation to build upon with clear intent to integrate the perspectives from OI and Strategy.

### *Contested Ground*

While a goal of the conference was to find common ground, we found that the OI and Strategy approaches were not always able to find that common ground. For example, it has been recently argued that a decision is of strategic importance only when it is interdependent in character. But, an open (and oft contested question) is what subset of OI decisions are truly strategic decisions? In particular, some inside-out OI activities may, in fact, be stand-alone decisions. Strategy scholars, thus, would find these decisions less worthy of study. This “contested ground” might help explain why inside-out OI has, to date, garnered much less research attention. Of course, it is an open question whether and when this characterization of the inside-out path is accurate.<sup>4</sup>

Another area where the open innovation and strategy communities differ is how each looks at the concept of sustainable competitive advantage. The core idea of competitive advantage is perhaps the North Star of the strategy field. Michael

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<sup>4</sup> Another study presented at the conference, “Open Science and the Dark Kinase,” by Feldman, Bercovitz and Graddy-Reed uses a case study of open science at GlaxoSmithKlein to delve into the inside-out open innovation finding that such openness can indeed be strategic. The GSK case highlights that, even when knowledge is placed in the public domain and seemingly open, there can still be significant transaction costs that limit the ability of others to capitalize on inside-out knowledge flows. GSK overcame these costs by doubling-down on openness and making a large set of kinase inhibitor compounds available to external researchers under a simplified material transfer agreement (MTA). Building from the case, the essay applies a value creation and value capture lens to delineate drivers, costs and returns to outbound-focused open science initiatives. The case highlights how the strategic decision on extended openness catalyzes future opportunities recognizing that while some of the value from openness may be captured by other firms in the industry, the focal firm may still realize a potential upside relative to keeping their science closed

Porter wrote a book entitled *Competitive Advantage*. Dick Rumelt (1982; 1991) pointed out that competitive advantage differed more within industries than between industries. The RBV branch of strategy sought to identify the factors that gave rise to these intra-industry differences (Wernerfelt, 1985). Dynamic capabilities is a more recent construct that explicitly tries to study the trajectory of competitive advantage over time (Teece, et al, 1997). By contrast, OI scholars see industry boundaries as increasingly fluid, and would argue that sustainable competitive advantage is no longer a meaningful objective in many industries. Instead, in a VUCA (volatile, uncertain, complex, and ambiguous) world, the best one can do is to build a series of temporary competitive advantages (McGrath, 2013). Moreover, today's competitors may become tomorrow's collaborators, and vice-versa (Vasudeva, et al, this issue). Co-opetition is the new normal in many ecosystems. Instead of focusing on one's (current) competitors, focusing instead on the broader set of stakeholders and exploiting new technological possibilities is a more sensible approach to create these temporary advantages.

### *Open Questions and a Joint Research Agenda*

While OI and strategy may take different approaches, each is interested in similar questions. Thus, building a shared research agenda might come from examining situations where the observed behavior differs sharply from prior theoretical explanations. These are what Thomas Kuhn termed "anomalies" (Kuhn, 1972). Anomalies that engage both communities are promising areas for scholarly inquiry. The above examples of RedHat and GitHub being acquired for many billions

of dollars deserve careful examination. Other canonical examples would also benefit from closer scrutiny under both OI and strategy lenses. How, for instance, does one describe the strategy of a company like Amazon? It began in a large but focused niche in 1994, and today employs more people than almost any other private company. What is the company's strategy going forward? Even at its high stock price of \$1,900 as of April 3, 2020, the company has a price-earnings multiple of 82. This means that investors believe that the company has tremendous growth prospects, and that most of its value lies in future businesses (Apple, by contrast, has a high stock price as well, but a P/E ratio of only 19). Going deeper, Amazon opens its website to others (more than 60% of sales on the site come from third party merchants) and sells access to its own IT infrastructure to others (Amazon Web Services), providing great examples of both outside-in and inside-out open innovation. Yet Amazon is rapidly vertically integrating into its own delivery system, gradually moving away from Fedex, UPS and even the Post Office. So is Amazon's behavior better explained by OI or Strategy or a co-imagination of the two?<sup>5</sup>

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<sup>5</sup> Tesla is another canonical case. The company was quite open in its inception, utilizing a design from Lotus for its initial Roadster. The company attracted investment from Daimler and Toyota in its early days, and entered into a JV with Panasonic for the critical battery technology it needed. It later opened up its IP for its charging technologies. Yet the company has also been vertically integrating key parts of its product design and manufacturing, most recently building a plant in China. So is Tesla open or not? And the company also has a high stock price, and does not even have a meaningful PE ratio due to its operating losses. Why do investors assign such a high value to Tesla's stock? A third canonical case might be Airbnb or Uber. Both startups began in a different business from the one they subsequently succeeded in. Airbnb began quite literally as a service where the host would supply an air mattress to her guest, and offer breakfast to the guest in the morning, hence the "Air" and "bnb" in the company name. Uber began as a service to hire a black car limousine. This is actually a common pattern for many successful startups, namely that their actual success differed substantially from their initial entry choices.

Further, it would seem a fruitful to build-out our understanding of the OI/Strategy intersection by starting with one foot in an area of common ground and moving forward to clarify issues in the contested ground. The two communities appear to agree that, as Laursen and Salter noted above (2014), research needs to address more fully the value creation and value capture trade-offs in a world that includes open source software and other open institutions. Fortunately, exploration of this issue is starting to garner significant attention. For example, Chesbrough et al (2018) developed a simple 2x2 typology that examines both processes of value creation and of value capture in two domains: value in exchange and value in use (See Figure 1 below). The value in exchange refers to use of the market, while value in use refers to value obtained from direct participation and use. As is often the case with a 2x2, the most theoretically interesting quadrants are off of the main diagonal. It is not surprising the value creation is stimulated by value in use, and similarly the idea that value capture is enhanced by value in exchange seems perhaps obvious. But there is value capture even in the value in use domain (Value Partaking), and there is certainly value creation in the domain of value in exchange (Value Provisioning). These off-diagonal quadrants might be particularly fruitful areas for research exchange going forward.

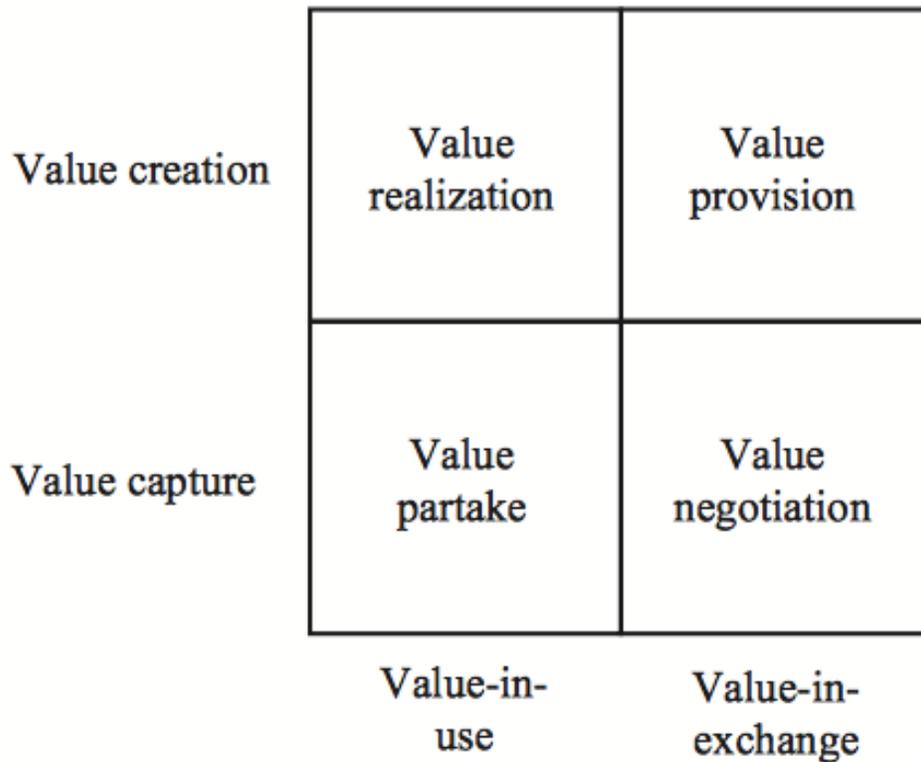


Figure 1: Four Value Processes

Similarly, while business models themselves are a shared topic of interest between OI and strategy, there remains an open question as to where do innovative business models come from? To what extent do these innovations arise from intentional strategic decisions (Rumelt, 2012; Teece, 2010), and to what extent do they arise from effectuation processes (Simon, 1995; Sarasvarthy,2008) supported, in part, by the exchange of ideas across organizational boundaries? Deliberately approaching this issue by simultaneously applying OI and Strategy theoretical lenses to highlight key issues of sustainable competitive advantage versus transitory competitive advantage would be valuable. Strategy scholars would seek to unpack

the sources of sustainable competitive advantage, while innovation scholars might challenge the stability of any competitive advantage. Pushing further, how does the organization exploit a competitive advantage when it arises? Should it extract as much value as possible, or should it strive to develop the next competitive advantage? One example of this comes in telecommunications equipment, and the move to 5G. Should leaders in 4G technology milk their leadership positions for as long as possible by delaying 5G deployment, or should they invest heavily now to deploy 5G technologies early into the market?

General Purpose Technologies (GPTs) are another area of mutual interest. Whether it is AI, or blockchain, or IoT, GPTs can offer prospective value in many applications and uses. No single firm can explore all of these on their own. Is an OI approach or a strategy approach better able to explain or guide firms in their decisions – or should there be a mix? Are industry boundaries even meaningful in these cases, when the technology has so many potential ways to be used? Can competitors be co-opted into joining a firm's ecosystems? How does a firm use GPT's to engage with potential customers?

We see benefit in using both OI and traditional Strategy approaches to jointly address certain questions. For example, what role, if any, does openness play in competitive advantage? Do firms that are more open demonstrate superior business performance? How do firms manage the trade-offs between value creation and value capture? A joint research agenda could lead to our better understanding of firm behavior.

Finally, there are numerous questions as we move from the firm level of analysis to the ecosystem level of analysis. While the strategy field has increasingly considered issues of inter-organizational relationships and means for supporting repeated interactions, the dynamics of interactions become increasingly complex as one moves beyond dyadic relationships or portfolio of relationships, to consider a community or ecosystem of interconnected ties. OI researchers are increasingly focused on how to sustain communities and vibrancy in ecosystems, particularly where reciprocity is more generalized rather than directed (Adner and Kapoor, 2010; Cusumano, Gawer and Yoffie, 2019; Gawer and Cusumano, 2014; Parker and Van Alstyne, 2018). There are many potential gains to integrating traditional strategy perspectives with emerging OI perspective (as exemplified by the final two essays in this volume), to enhance our understanding of firm-specific actions and ecosystem dynamics.

## **Conclusion**

During the two-day conference, we observed the behavior of our colleagues tackling research questions at the OI/Strategy intersection. The first day witnessed the gathering of these scholars into five tables of inquiry, as we noted above. Each table had valuable insights to offer, and useful critiques as well. By the second day, these tables became more diverse, due to the table-hopping where scholars mixed more freely with those outside their initial perspectives. A richer conversation emerged during this second day of the conference, and we have tried to sketch some of the points of intersection in this introductory essay as well.

Journals like *SMR* can play a useful role in surfacing these cases where two important fields of research are not connecting well with each other. By isolating some common research questions, and by hopping to another table, scholars can start to bridge these academic siloes, and build a stronger body of strategy research as a result.

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