

Interview

Ron Adner: managing the interdependencies and risks of an innovation ecosystem

Brian Leavy

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In 1993, Professor James F. Moore proclaimed “the end of industry as a useful concept in contemplating business” and urged the adoption of the concept of business ecosystem as a more insightful alternative.[1] While “industry” remains a robust concept in strategic analysis, there is no doubt that the ecosystem view of strategy and innovation continues to grow in importance. In *The Keystone Advantage* (2004), Harvard professor Marco Iansiti and consultant Roy Levien, argued that in the evolving competitive landscape, “the crucial battle” is no longer between individual firms but “between networks of firms” and that strategy was fast becoming “the art of managing assets that one does not own.” In the same book, the authors provided valuable guidance on how to think about strategy and positioning in such a networked environment.

One of the current exponents of the ecosystem concept, the innovation guru Ron Adner, warns in his latest book, *The Wide Lens*, that many firms will have to rethink not only their approach to strategy but also to innovation if they are to continue to survive and thrive. Innovation in an ecosystem context poses additional challenges and risks not typically associated with stand-alone innovation in products and services, but also exciting opportunities and sustainable paths to longer-term growth for companies that get it right. Adner, a professor of strategy and entrepreneurship at the Tuck School of Business at Dartmouth College and, previously at INSEAD, is noted for his studies of the root causes of innovation success and failure.

Strategy & Leadership asked Professor Adner to discuss the special challenges and opportunities offered by innovation ecosystems, along with some of the perspectives, principles and tools that he has developed to help firms to become more successful in this exciting and demanding context.

His interviewer, Brian Leavy, is the AIB Professor of Strategic Management at Dublin City University Business School (brian.leavy@dcu.ie) and a *Strategy & Leadership* contributing editor.

Theme 1: the need for a “wider lens” on innovation – getting all of the major risk types on the radar

Strategy & Leadership: In your new book, *The Wide Lens: A New Strategy for Innovation*, you argue that even companies with great ideas and great innovation execution can still end up with massive failures on their hands. What are companies failing to take into account when they plan their innovation initiatives?

Ron Adner: Over the past two decades we have seen companies shifting their focus from standalone products to integrated solutions. We see this in many industries – manufacturing, financial services, retail and healthcare, for example. In such cases, when delivering value depends on the combined efforts of multiple partners – both within and across firms – executing brilliantly doesn't assure success. When success depends on collaboration, if partners stumble you too will fall. For example, being first to market with a great high definition television doesn't matter if the cable and network content offered in HD isn't compelling yet. Thus a company may be meeting the more conventional "execution challenge" of getting its own piece of the solution to market early, while still failing to meet the wider "complementor co-innovation challenge" of ensuring that the other vital elements of the value proposition are also in place for full market take-off. Philips found this out the hard way with HDTV in the early 1990s, and Sony and Samsung have "rediscovered" this problem with their recent 3D television efforts. Such missteps can arise in any industry where success depends on collaboration.

S&L: To avoid market missteps, you talk about the need to view the innovation challenge through a much wider lens than most companies have tended to use up to now. Why is this so important, and why now?

Adner: In the wake of the information revolution, progress in the technologies that enable collaboration has far outpaced the strategies that we have to manage collaboration. Customers are no longer the only stakeholders that matter. A company might have developed a beautiful innovation that customers love. But if the firm hasn't managed to align its interests with those of its critical partners, it has only solved part of the larger puzzle.

The Wide Lens is a collection of tools and frameworks that I have developed and tested over the past decade through my research and work with companies. The book offers a structured approach to uncovering the hidden sources of dependence that can undermine collaboration efforts.

S&L: You say that viewing innovation as an "ecosystem" can help to highlight three major sources of risk, two of which have tended to be overlooked in the past.

Adner: Historically, companies have obsessed over managing their execution risk – coming up with innovations that are valued by their customers, and delivering them better than the competition. But this focus often leads them to neglect critical dependencies in their ecosystems. Because innovation success in ecosystems requires partners that are both able and willing to participate in a novel solution, innovators need to be aware of two new kinds of risk: co-innovation risk and adoption chain risk.

S&L: What do company strategists most need to know about the nature of "co-innovation risk" and how it has undermined innovation efforts in the past? How can innovation strategists assess and manage it?



Ron Adner

Adner: Co-innovation risk considers the question "Who else needs to innovate for my innovation to matter?" The point here is that brilliant customer insight and heroic development efforts will not make up for the absence of key complements (see box, "The essentials of co-innovation and adoption risk"). Software as service models – today's cloud computing – collapsed in the early 2000s not because of bad innovation, but because of missing co-innovation, particularly in the areas of broadband and security. It was only when the co-innovation challenges were finally overcome that the value propositions took off. Sadly, by then, many of the pioneering firms found themselves left out of the take off.

Many innovation discussions get bogged down in the question of "if" something can be accomplished. A "wide lens" approach expands the dialogue to include co-innovation concerns, and introduces the critical question of "when."

S&L: In what way is "adoption chain risk" different, and how should innovation strategists try to assess and deal with it?

The essentials of co-innovation and adoption risk

Complementor co-innovation risk measures the likelihood of failures associated with innovation interdependencies or complements. The extent of the co-innovation risk depends on the probability that all of your ecosystem partners will be able to satisfy their innovation commitments within a specified time frame. The key principle is that the logic of co-innovation is one of multiplication, not of average. For example, if you believe that the probability that each of your four main collaborators will deliver their piece of the overall solution on time is 85 percent or 0.85, then the probability that all of them will deliver on time is $0.85 \times 0.85 \times 0.85 \times 0.85 = 0.52$ or 52 percent. In the context of co-innovation, a 52 percent likelihood of success reminds managers to plan contingencies accordingly.

Adoption chain risk measures the likelihood that when one or more intermediaries are placed along the value chain between the innovation and the end consumer, these players will make the necessary adaptations to their own activities to allow the innovation to reach optimum sales in the market. Innovation planners will need to factor in the likely sales adoption cycles of each of the main intermediaries into their overall “time-to-market” planning. Furthermore, they will need to ensure that the benefits of adoption must exceed the costs for every intermediary along the adoption chain if the innovation is to eventually reach the end consumer.

Adapted from *The Wide Lens: A New Strategy for Innovation*.

Adner: Adoption chain risk considers the question “Who else needs to adopt my innovation before the end customer has a chance to assess the full value proposition?” The issue is, what are the incentives for partners to participate? For example, if a new wall insulation offers huge energy savings to home buyers but is a headache to install, contractors will not present it as an option to their clients, who as a result, won’t have the chance to decide whether they want it or not!

The key to managing this risk is to recognize that alignment with the interests of adoption chain partners is as important as delighting end customers.

Michelin learned this the hard way with their promising run-flat tire innovation. The PAX system was an innovative solution to a clear customer need, but because Michelin’s launch strategy focused primarily on drivers and car makers, they were blindsided by the apathetic reception from garage owners who were reluctant to buy the essential tire-repair equipment (see box, “Innovation ecstasy and agony at Michelin”).

Theme 2: innovation ecosystem strategy positioning and timing – principles and frameworks

S&L: You urge innovators to develop a clear “value blueprint” for their projects. Can you explain how this differs from a value proposition and why it is so useful?

Adner: A critical assessment of co-innovation risk and adoption chain risk will help innovators identify and align all the partners that need to succeed in order for them to succeed. The next step is to decide and understand what the actual structure of the collaboration looks like.

The value blueprint is a mapping methodology that helps clarify the actual structure of collaboration – not just who the partners are, but where exactly they are positioned in the overall value creation and delivery system. The value blueprint shows how activities come together: who hands off to whom; who is touching the customer and who is in a support role; who is an eager participant and who will need persuading.

S&L: What are the main steps involved in creating a value blueprint and why do you see it as an important “exercise in team discipline?”

Adner: The steps to creating a value blueprint are straightforward. The first part entails working backwards from your customer to identify all the different partners involved in creating the value proposition, including partners with whom you have no direct contact. The second part entails characterizing the extent of co-innovation risk and adoption chain risk

Innovation ecstasy and agony at Michelin

In the early 1990s, Michelin believed its new PAX System run-flat tire to be its greatest innovation since the introduction of the radial tire almost 50 years earlier, and one that seemed likely to reinvent the tire and the industry. The new tire was designed to run flat for more than 125 miles following a blow out, with no significant reduction in performance up to 55 mph.

In 1998, Michelin launched its new innovation, and two years later concluded a deal to license the technology to main rival Goodyear. Mercedes, Cadillac and Renault were among the first of the automakers to adopt the PAX on selected models, and a 2004 survey by J.D. Power & Associates predicted that over 80 percent of cars would be fitted with run-flats tires as standard by 2010.

Yet, in spite of getting to market first with a pioneering and technically unmatched product the PAX story is ultimately one of failure.

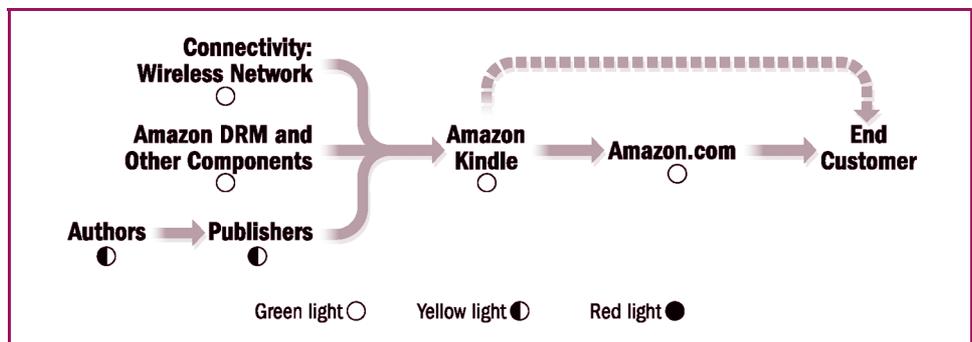
Soon after introduction, problems began to mount with the new PAX system. Foremost was consumer frustration with the difficulty of finding service garages capable of repairing the damaged tires. Unlike the case of earlier tire innovations, repairing the new PAX system turned out to require significant changes in service garage activities, equipment, facilities and repair skills, which few garage owners were willing to make in advanced of sufficient sustainable demand – a classic chicken-and-egg dilemma not adequately foreseen and provided for in Michelin’s innovation plans. In the absence of repair facilities, too many of the earliest consumers found themselves having to buy replacement tires at prices far in excess of traditional repairs. As the value proposition of the run-flat tire deteriorated, Michelin called a halt to any further development of PAX in 2007, citing insufficient demand to justify further investment.

Adapted from *The Wide Lens: A New Strategy for Innovation*. See also www.TheWideLensBook.com/excerpt.html

that each partner introduces. It gives a tangible form to the value proposition. Drawing it with your team is a great way to surface differing assumptions about partners’ positions and risks. The great benefit is that it helps pinpoint drivers of disagreement. And once these are clarified, companies can refine the strategy.

For example, in 2006 Sony and in 2007 Amazon launched promising electronic book readers. While their e-book devices were quite similar, the value blueprints of the two propositions were radically different (see Figure 4.4). Both Sony and Amazon were clearly aware of the need for high-quality, entertaining e-books to stimulate avid customer demand. But Sony assumed that a reader with a superior design would induce publishers to participate and find ways of getting books to buyers. In contrast, Amazon designed its entire proposition with publishers as a central constituency. Its Kindle reader not only took advantage of Amazon’s position as a content distributor, it was designed as a closed platform – that is, users couldn’t share or print books – to offset publisher concerns about piracy and digital rights management, thus making it easier for them to participate in the offer. Where Sony assumed the publishers would eventually come along, Amazon made certain that publishers were giving their offer the green light from the outset.

Figure 4.4 The Amazon’s Kindle value blueprint at launch





Ron Adner

S&L: In any innovation ecosystem strategy, it is important to decide whether or not to take the lead role. How should such a decision be determined, and is it a decision that is always in a would-be ecosystem leader's hands?

Adner: The ecosystem leader is the one who sets the direction and the timing for how the blueprint actually comes together to deliver the value proposition. Given in-house innovation and corporate hierarchy, this would be the project manager. But when innovation is interdependent and authority is not dictated, the leadership role is more open to contention. In such cases, the litmus test for ecosystem leadership is not, "Do I want to be the leader," but rather, "Why will the others choose to be followers?" An effective leader is one that has the ability and the commitment to create the ecosystem structure, establish fair standards and consistency and convince potential followers that there is value in it for them.

Typically, creating followership entails taking the up-front risks and making the up-front investments required to get the system working. This often requires that the ecosystem leader capture value and collect its rewards in the end, not the beginning. In the case of the e-book, for example, Amazon made certain to keep all of the players aligned and showed a willingness to sacrifice some margin to the publishers in order to ensure that they would feel less threatened and more fully incentivized by the new development, and this has been one of the keys to the Kindle's success.

S&L: You believe that "smart" followership can also be a strategically viable and commercially rewarding role. What do you mean by "smart" in this context?

Adner: Any successful ecosystem is filled with followers who win. The follower's first job is picking the winning ecosystem – assessing the quality of the leader's overall value blueprint and making sure they won't be passive victims of unmitigated co-innovation risk. Their second job is to assess the sustainability of their position within the collaboration and how closely long-term incentives are aligned. A critical question to ask here is, "Are the ways we win similar or divergent?" For example, if the leader makes money through one-time hardware sales and the follower depends on repeated content sales there is more divergence than if everyone makes profits along more similar lines. Divergence is not a deal breaker, but it does need to be managed more carefully.

S&L: In relationship to innovation timing, you also make a distinction between "first mover" advantage (FMA) and smart mover or "right mover" advantage (RMA). What's the distinction and in what circumstances does it matter most?

Adner: When your success depends on the commitments of others, the question of timing is critical. The key question then becomes whether the first-mover competition is a race to the finish line – our traditional image of classic early mover successes like the Sony Walkman and Xerox copiers, or just a race to the starting line – as in the case of Philips in HDTV and Nokia in 3G telephony.

In a world of ecosystem innovation, it becomes crucial to consider the tradeoffs between the execution challenges that will keep rivals at bay and the complementor co-innovation challenges that will keep value from being realized. This core insight is captured in the first mover advantage matrix.[2] [For a further explanation, see Figure 6.1 and footnote 2].

Theme 3: building, extending and migrating ecosystem strategies

S&L: When an initial value blueprint runs into bottlenecks, you stress the importance of taking an "ecosystem approach" to solving problems. What process do you recommend?

Adner: A powerful approach to managing bottlenecks is to change relationships within the ecosystem. There are five basic ways to reconfigure elements and activities in an ecosystem: separation, combination, relocation, addition and subtraction. Every exemplar of ecosystem strategy that I have found has used some combination of these to overcome

Figure 6.1 First-mover matrix for determining relative advantage from early entry as a function of the level of innovator execution challenge and complementor co-innovation challenge

		COMPLEMENTOR CO-INNOVATION CHALLENGE	
		LOWER	HIGHER
INNOVATOR EXECUTION CHALLENGE	LOWER	<i>Quadrant 1: First in Gets the Win</i> • Baseline level of early-mover advantage	<i>Quadrant 3: Hurry Up and Wait</i> • Reduced level of early-mover advantage
	HIGHER	<i>Quadrant 2: Winner Takes More</i> • Increased level of early-mover advantage	<i>Quadrant 4: It Depends</i> • Level of early-mover advantage depends on which challenge is resolved first

Source: From *The Wide Lens: A New Strategy for Innovation* © Ron Adner 2012 [3]

the obstacles to success. Amazon bundled the previously separate elements of the e-book reader with an electronic bookstore and used ecosystem partners to relocate the task of connectivity from the consumer to the Kindle device, making it easier for the consumer to download new titles. Apple combined hardware with music management software and then added the new element of simple, secure online music purchase. Hasbro shifted from being a manufacturer of licensed movie characters to using its own toy brands and stories as the source inspiration for blockbuster movies.

A fascinating example of ecosystem reconfiguration is currently underway in the context of electric cars. The startup auto maker Better Place LLC is pursuing a model that changes the proposition for every single actor in the ecosystem – including drivers, car makers, utilities, governments and battery makers – in an attempt to bring a profitable electric car offer to the mass market. Perhaps the most original element of this reconfiguration is the company’s approach to the battery, one of the electric car’s most expensive components. Better Place changes the typical electric car value blueprint from one where the consumer owns the battery as part of the car, to one where consumer owns the car, but Better Place owns the battery. It leases it to the consumer as a normal part of the running cost and, in so doing, removes a number of very significant obstacles to the potential mass appeal of the electric car. The purchase price of the car is reduced to levels comparable with the gasoline equivalents, the resale value is more assured (because the depreciation of the battery is no longer a buyer concern), and the time to recharge at the service station is reduced to that equivalent to filling up the tank, because the depleted battery can be switched out at a roadside depot for a fresh one. In sum, what we see in this particular example is the company not merely innovating the product, but rather the ecosystem around the product.

“When delivering value depends on the combined efforts of multiple partners – both within and across firms – executing brilliantly doesn’t assure success. When success depends on collaboration, if other partners stumble you too will fall.”

“The Wide Lens is . . . a structured approach to uncovering the hidden sources of dependence that can undermine collaboration efforts.”

S&L: To build a robust ecosystem innovation strategy you suggest a progressive process that “marries smart timing and smart strategy,” beginning with the creation of a “minimum viable footprint” and expanding step-by-step from there. How does this work in practice?

Adner: The traditional approach to scaling up in product development is to begin with a prototype, then a pilot and finally a full roll-out. This sequential approach is well suited to the world of stand-alone innovation. However, the world of innovation ecosystems often requires a somewhat different approach, one that involves the establishment of a minimum viable footprint (MVF) as the first step to be followed later by expansion in several stages. MVF is the idea of identifying the smallest number of partners that you need to align within the ecosystem in order to deliver some unique value, just the minimum required to attract customers. Staged expansion then extends the value proposition by attracting new complementors to the ecosystem, which helps to expand the market.

An example is the M-PESA initiative in Kenya, a joint venture between Vodafone and Safari.com, the country’s dominant mobile network operator. It aimed initially at bringing a very basic banking function to the country’s huge unbanked population – 81 percent of Kenyans did not have access to a bank account at the time the initiative was launched in 2007. The minimum viable footprint for M-PESA (“pesa” is “cash” in Swahili) was a very basic ecosystem that facilitated money transfer between mobile phone users through simple, secure SMS messaging, with the cash collected by M-PESA representatives at one end, and dispensed by them at the other. Later, through progressive widening of the ecosystem, the viable footprint was extended to paying bills (in partnership with selected retailers and utilities), pre-authorized, once-off, ATM withdrawals (in partnership with PesaPoint, one of the country’s largest ATM service providers) and international remittances (in partnership with Western Union) in a carefully managed series of expansions.

In sum, with an MVF in place, as your starting point, you can attract partners to your ecosystem on much more attractive terms than you can without this initial commercial footprint, so, when it comes to ecosystem innovation, establishing an MVF can offer a strategic advantage over more traditional piloting approaches, as a prelude to scaling up.

S&L: Finally, there have been many explanations for Apple’s spectacular success over the last 12 years, but your “wide lens” view offers some fresh perspective on the company’s unique succession of wins in the digital music, smart phone and tablet markets, based on a strategy you call “ecosystem carryover.” Can you explain what this is and how you saw it playing out in the case of Apple?

Adner: The quality and design of Apple’s products has attracted a lot of attention since the launch of the iPod. But what is often overlooked, and misunderstood, is the systematic way in which Apple built the ecosystems that not only make the products so usable, but also allowed it to capture the lion’s share of the ecosystem’s profits.

Recall that the iPod launched without the iTunes music store and the iPhone launched without the App store. What they did launch with was a compelling MVF, which took full advantage of elements that were already in place from earlier efforts. This is the notion of ecosystem carryover: the iPod employed iTunes, Apple’s easy to use music management software, which was carried over from its Mac products. The iPhone incorporated the entire iPod ecosystem into its MVF, including the loyal user base that Apple proceeded to auction off to the highest mobile operator bidder, and the strategy of carrier exclusivity, itself a major innovation, is a further great example of ecosystem reconfiguration in its own right.

Notes

1. Moore, J.F., "Predators and prey: a new ecology of competition," *Harvard Business Review*, May/June 1993. See also Moore, J.F., *The Death of Competition: Leadership and Strategy in the Age of Business Ecosystems* (HarperBusiness, 1996, ISBN 0-88730-850-3).
2. In cases where the complementor co-innovation challenge is low, then the greater the execution challenge, the greater the competitive lead-time and the greater the FMA (this is the difference between quadrant 1 – less FMA, and quadrant 2 – more FMA). In cases where the complementor co-innovation challenge is high, then the level of early mover advantage is reduced – delivering a brilliant product will not be enough, if the key complementary elements needed to deliver the full value proposition are not in place as well (quadrant 3). Where the execution challenge and co-innovation challenge are both high, then the level of advantage to the early mover will depend on which challenge is resolved first (whether the situation then shifts to quadrant 2 – higher FMA or quadrant 3 – lower FMA.).

For example, the earliest movers into the MP3 arena tended to view their innovation as just the latest in a progression from "walkman" to "discman" to a third generation "MP3man" product that offered even greater storage and retrieval capacity in a personal entertainment device. The genius of Steve Jobs was to recognize the MP3 opportunity as a potential game changer, opening up the prospect for an integrated solution that could revolutionize how individuals might access and organize their music preferences. Where the walkman had entered the FMA matrix in quadrant 1, the "MP3man" entered in quadrant 3. Here, as Jobs recognized, the major prize was destined to go, not to the party that puts down the first piece of the puzzle, but to the one that put down the final piece. By the time the co-innovation challenge had been met, Apple had so differentiated its iPod offering around an integrated solution that it had raised the execution challenge for any would-be followers, shifting its offering into quadrant two and maximizing its RMA (right mover advantage).

3. Adner, R. and Kapoor, R. (2010). "Value creation in innovation ecosystems: how the structure of technological interdependence affects firm performance in new technology generations," *Strategic Management Journal*, Volume 31, Number 3, pp. 306-33.

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