

Research

Best Practices: Co-Creation & Ecosystem Development



A Note From Our Sponsor

Ever since University of California Professor Henry Chesbrough first used the term “open innovation” in 2003, there has been some inconsistency in how enterprises have defined and applied the concept.

Often, market application of open innovation concepts was limited to mergers and acquisitions. Companies that were struggling to innovate internally would turn their attention to innovative startups for the sole purpose of leveraging their intellectual property. Today, companies are embracing open innovation as the underpinning of an enterprise-wide innovation ecosystem, applying the notion that the nature of the innovation ecosystem changes based on need, value, and market fit.

As companies continue to innovate in the digital era, we are beginning to see the long-term value of innovation ecosystems, which have grown in size, variation, and complexity to fit the strategies and processes of the enterprises they serve.

For Sopheon, innovation is much more than a business buzzword. We believe it is the foundation of the future success of your business. We have been helping some of the largest and most successful global companies improve their enterprise innovation performance for more than 20 years, and we understand the critical importance of an enterprise-wide approach to innovation management and execution. We're pleased to share our expertise with Innovation Leader readers (see p. 21), and hope you'll visit www.sopheon.com to learn more about our industry-leading approach to enterprise innovation management.

ANDY MICHUDA
CEO
Sopheon
info@sopheon.com



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Introduction & Data Overview



Understanding co-creation and innovation ecosystems is no longer optional...

For years now, we've all heard (and maybe even repeated) the platitudes about how much innovation is happening outside the walls of company headquarters...how the smartest people in the world don't work for you...how much value there is in building an ecosystem of players that can leverage each other's strengths.

But over the past five years, a small group of companies have moved beyond understanding the buzzwords and mastering the concepts. They've actually been forging new kinds of partnerships, collaborations, and ecosystems—getting outside of the building to tap new sources of ideas and go-to-market capabilities.

Broadly, you might think of this activity as falling under the umbrella of “open innovation,” the term popularized roughly 15 years ago by Henry Chesbrough in his book of the same name. Co-creation, as we define it, is a type of open innovation that typically involves a defined set of partners working together for a specific period of time to come up with solutions or new concepts. The partners in a co-creation effort often share influence and decision-making responsibilities. Ecosystems tend to involve more partners, a more extended interaction, and a defined set of rules. Sometimes there is a central player with outsized influence or control over the ecosystem.

One example of a company with an ambitious ecosystem development strategy is Johnson & Johnson, which has now set up labs and innovation centers that host startups around the world. After years of investing in this model, Robert G. Urban, the recently-retired head of Johnson & Johnson

Innovation, estimates the risk-adjusted value of the company's follow-on startup investments at \$5 billion. J&J lavishes careful attention and mentorship on every company that it invites to participate.

Another is Bose Corp., the maker of audio products, where Fuat Kuro, head of corporate strategy and ventures, is inviting startups and others to build applications for the electronics maker's new AR Audio Sunglasses, which have speakers built into the frame, and can be linked to a smartphone. The goal? Enhancing the utility of the glasses for customers by encouraging others to create new content and services that would be helpful to someone walking around a foreign city, for instance.

Others, like the telecom equipment maker Ericsson, are pursuing collaborations—most often with existing suppliers or customers—that can broadly be called co-creation. The end result can be a new product or service that might never have existed without vital contributions or input from multiple parties.

At their foundation, however, both co-creation and ecosystem development seek to create new growth through creative partnering. That is what makes them such important skills for every company in the 21st century. You simply cannot go it alone and expect to win in increasingly dynamic markets, as you serve increasingly fickle, digitally-demanding customers. We researched this phenomenon by interviewing 11 corporate innovation leaders and five other experts. We also conducted a survey on the topic that collected data from 257 corporation innovation leaders.

Our research has revealed widespread enthusiasm for these new models. Co-creation produces

“better solutions every time,” one survey respondent in the advertising industry told us. Another in the tech sector described ecosystem development as “so core, [we] can’t exist without it.” As an innovation leader at one packaging company insisted, “Do [innovation] outside your company, like all successful digital innovation. And do it with customers!”

But stimulating and benefiting from innovation driven by creative partnerships has proven challenging for many companies to embrace. In this report, we’ll showcase some successful models and advice from our survey respondents, 30 percent of whom said they had “extensive” experience with co-creation, and 46 percent of whom said they were “actively building” an ecosystem.

As you read the stories of these co-creation and ecosystem innovators, you’ll see a number of themes that run through them:

- Don’t approach open innovation as a mosh pit or free-for-all. Companies pursuing this path need to start with a clear objective—ideally one that is linked to one or more already-established corporate strategies.
- Pursuing new kinds of collaborations at a quick clip works best when there are some guardrails in place, but also some flexibility. As a result, companies need to put aside some of their “standard operating procedures” to create streamlined processes, simplified contracts, clear definitions of roles and responsibilities, and models for establishing ownership of intellectual property, for example.
- Open innovation has a real and surprising benefit: it reinvigorates a company’s internal innovation programs by exposing them to new and different kinds of thinking from outside the company—or as one respondent in our survey put it, “not just us running around our old rut.”

There’s one other trend that is worth watching. Everybody—tech companies or not—wants to be at the center of a thriving, growing ecosystem. The most admired companies in our survey of innovators

included Apple and Amazon. It’s tempting to say that this is an unrealizable dream—that if you sell frozen food or airplanes or financial services, you’re not in the same situation as someone who sells smartphones or internet-connected speakers. But as the world becomes increasingly digital, innovations are more and more likely to be digital, or digitally-enabled extensions of existing products. No, not every company will end up being Apple, reaping revenue (and increasing customer loyalty) thanks to millions of apps built on a technology platform that Apple has established. But even so, as business processes and customer relationships become more digital, that will inevitably drag innovation in a platform-like direction.

It’s now essential to ask questions like, How can you lower the bar to collaboration? Identify the right partners and create win-win value propositions? Create simpler models for partnerships? Build iTunes-like platforms that enable others to build with you and add value to what you do?

Going it alone is a strategy of the past. It is being replaced by doing it together.

Defining Co-Creation and Ecosystems

For more than a decade, innovation executives have recognized that collaboration with people outside their companies could accelerate their efforts. In his seminal 2005 book *Open Innovation*, UC Berkeley professor Henry Chesbrough called for a new vision of the innovation process that

. . . [E]agerly seeks external knowledge and ideas, even as it nurtures internal ones. It utilizes valuable ideas from whatever source in advancing a company’s own business, and it places the company’s own ideas in other companies’ businesses. By opening itself up to the world of knowledge that surrounds it, the twenty-first century corporation can . . . renew its current business and generate new business.

Chesbrough drew a sharp contrast between this open, collaborative model and the internally-focused

FOR THE PURPOSES OF OUR SURVEY....

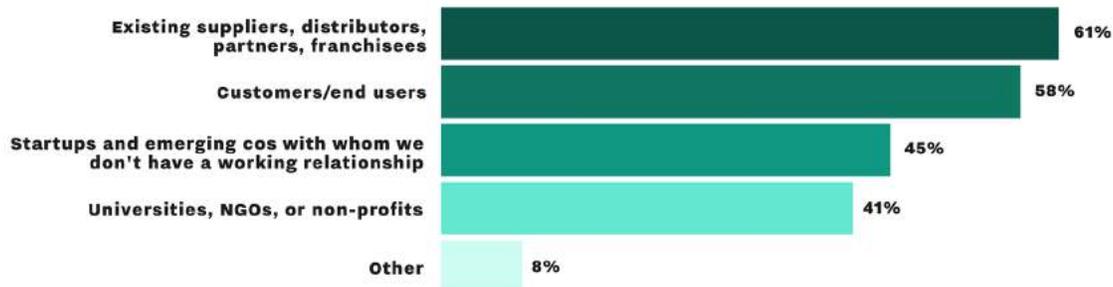
We defined **co-creation** as: a product development approach that brings multiple entities together to come up with solutions or new concepts — often customers, suppliers, startups, or business partners.

We defined an **ecosystem** as: a group of parties that work together to enhance a product, process, or platform. Ecosystems may deliver economic benefits to the parties involved, but they may also generate new insights or other kinds of benefits to the parties.

My company's experience level with co-creation:



We tend to pursue co-creation most often with (check all that apply):



research and development labs that preceded it.

There are as many open innovation models as there are companies. To analyze the patterns in this space, we researched two types of frameworks for collaboration with external companies.

In a co-creation paradigm, a company engages in collaborations with other companies or groups of people, usually with an end goal of bringing a new offering or solution to the market. Our co-creation examples include collaboration with external entities like partners, customers, and suppliers to create or refine new product ideas.

An ecosystem is a more sophisticated framework in which a company stimulates and supports dozens or hundreds of possible collaborations in a systematic way. This include things like corporate venture capital efforts; a new API (application programming interface) or developer kit that allows others

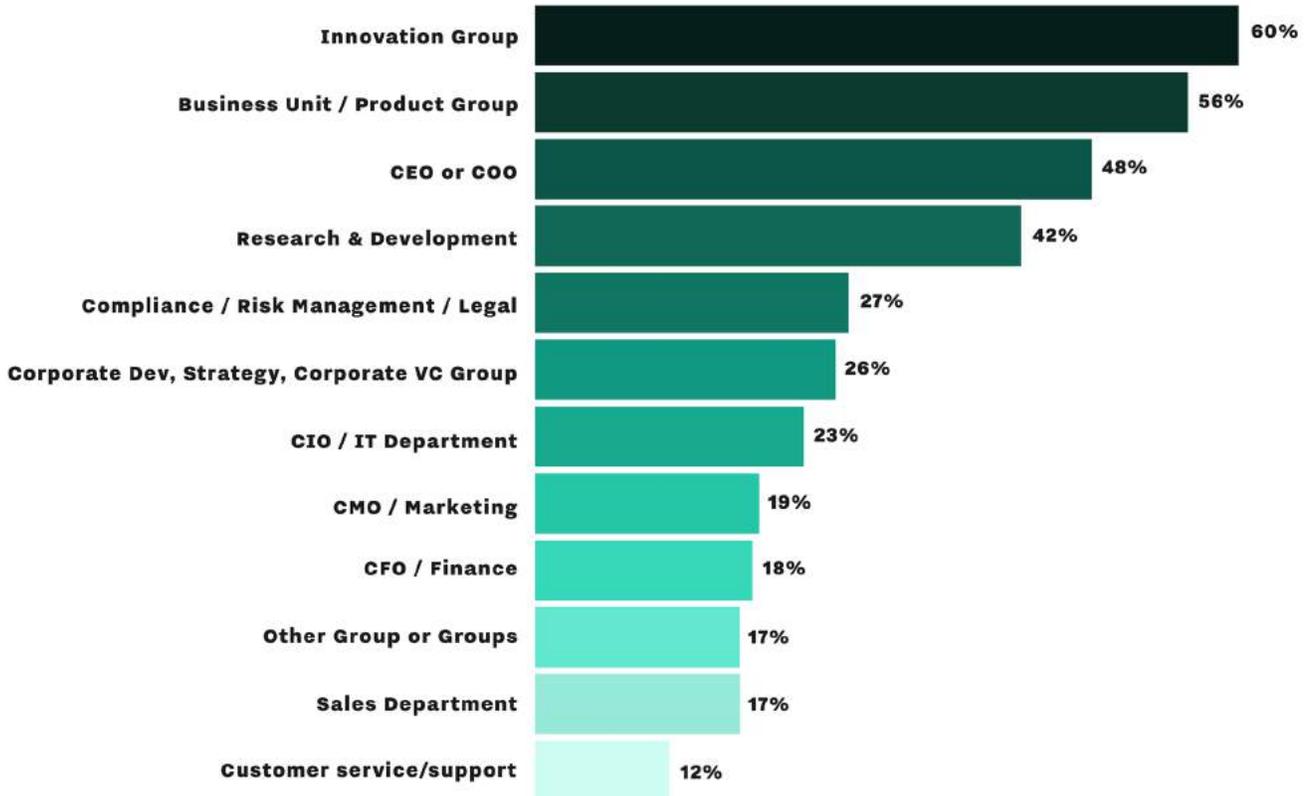
to enhance or build onto your offering; or shared workspaces that host startup companies. Ecosystems are all, to a greater or lesser extent, platforms for collaborative innovation.

Co-Creation Leads to Productive Partnerships

Co-creation is a popular innovation method. Over 90 percent of the respondents in our survey had experience with co-creation, based on the definition we shared, “a product development approach that brings multiple entities together to come up with solutions or new concepts—often customers, suppliers, startups, or business partners.”

The value of co-creation was clear to many in our survey. An entertainment industry executive told us that “co-creation was really the most efficient and

Who were the internal parties who were most essential to have on board for your co-creation work? (Check all that apply.) (All respondents)



compelling way to pioneer in an area of emerging technology and content creation. Co-creation augmented our capabilities and enabled us to amass sufficient resources.” Another said that the “primary value [was] fantastic ideas that were right in front of us, cost us nothing to implement, and gained huge customer buy-in. We needed our customer’s [point-of-view] to see what we already had!” As a health insurer was happy to report, “We have recently seen two products go to market as a result of co-creation; both went from idea on a sticky note to product in market in less than a year, which is tremendously faster than our typical product development pipeline. They also cost about a tenth of what a traditional project would cost our organization.” (See the blue-shaded sidebars for more perspectives and advice from our survey respondents.)

Among those who were pursuing co-creation, the most popular dance partners were existing suppliers, distributors, or partners (61 percent) and customers

or end users (58 percent). This makes intuitive sense; companies are most comfortable collaborating on new ideas or solutions with those they already work with on a regular basis. But many looked elsewhere for partners. Forty-five percent of respondents were collaborating with startups and emerging companies they hadn’t previously worked with, and 41 percent were collaborating with universities and nonprofits.

Collaborations of this kind tend to touch many parts of the company beyond the innovation group. In addition to the 60 percent of co-creation partnerships that involved the innovation group, 56 percent found participation from business units or product groups essential, and 48 percent had involved the CEO or COO.

We also looked at a subset of survey respondents who said they had “extensive, on-going experience” with co-creation activity. They tended to involve the finance and IT departments more than average.

Respondents in the survey shared advice about how best to succeed. An auto industry executive

suggested that co-creation works best when you “establish clear objectives at the start of the project.” Another respondent recommended clearly defining the problem: “Be very rigorous about defining the problem statement you are going to address, and then be rigorous about testing all assumptions in the statement.” Multiple respondents suggested starting small; for example, an innovation leader in the food industry had this suggestion: “Start small, with proof of concepts. Find projects that don’t require capital and are easier to show progress. Find like-minded allies.”

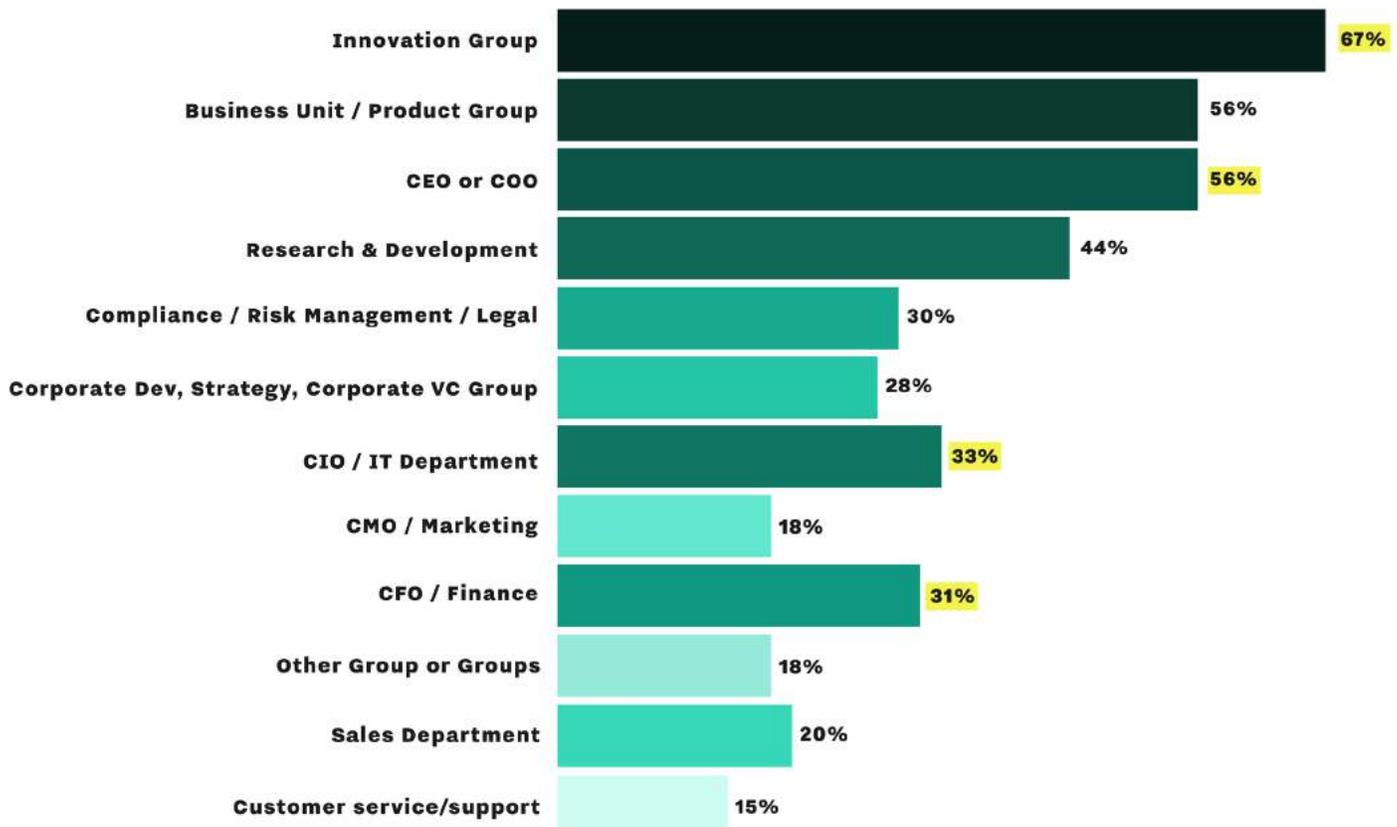
The experience of Jennifer Hsieh, the VP of Customer Experience Innovation at Marriott International, exemplifies best practices for co-creation with partners, customers, and employees. Like many hotel chains in the 1990s, Marriott had built out thousands of new properties in a bid for market share. These properties tended to be built on a common set of standards—a Courtyard by Marriott in one location was often eerily similar to other Courtyards around the country, or around the

world. But duplicating a single concept designed by corporate had risks.

“Historically, it was, ‘We need this program, [then] headquarters would work on it for seven or eight months, and then it was, ‘Here you go, this program is ready;’” she said. “The market would get it, and if it didn’t work, or the consumer wasn’t liking it, that generated a back-and-forth with headquarters.”

To increase the chances of acceptance, Hsieh and Marriott pivoted to a human-centered approach built around careful concept testing. For example, as Marriott prepared to roll out a new collection of boutique hotels called Moxy, Hsieh’s group was responsible for figuring out the best configuration to supply food service in a hotel that, by design, didn’t have a traditional kitchen. They tested 10 food-service concepts in Europe with 30 to 40 frequent travelers. After those experiments surfaced a few promising ideas, Hsieh and her colleagues prototyped them in a hotel and stress-tested them with actual hotel employees, gen-

We looked at parties that said they have had "extensive, on-going experience" with co-creation to understand how their responses were different when it came to the internal parties whose support they depended on most. (Respondents could check all answers that applied.) Parties that increased 5 percent or more over the average are highlighted.



The Value We Get From Co-Creation

WE ASKED SURVEY RESPONDENTS TO DESCRIBE THE VALUE THAT COMES FROM EFFECTIVELY ENGAGING IN CO-CREATION WORK. THE ADVICE BELOW COMES FROM THE RESPONDENTS WITH THE MOST EXPERIENCE WITH CO-CREATION.

- “Can make the impossible possible. But it is always still very hard, and failure is common and is OK. Have to learn, adjust, retry.”
- “We are able to do things that we could never accomplish internally with co-creation, while de-risking the overall program.”
- “Innovation that simply isn’t possible with other methods.”
- “More intuitive and empathetic products and services.”
- “New ways of thinking—not just us running around our old ruts.”
- “Major value [in] both direct revenue and downstream revenue. Brand awareness.”
- “Successful franchise-level products justify the investment.”
- “Our most successful co-creation project has opened new avenues for product distribution in cutting-edge ways.”
- “It helps you be a disruptor and keeps innovation thought flowing.”
- “New revenue opportunities.”
- “Speed and new ideas.”
- “We maintain relevance and competitiveness through co-creation (which leads to revenue accretion). We have seen our ‘go it alone efforts’ often fail as we overestimated our internal capabilities—this led to missed windows and lost opportunity.”
- “Significant value. People support what they co-create.”
- “Reduction in cost, speed to solution, and significant reduction in time-to-value from data.”
- “If one cannot co-innovate, they will lose the competitive edge.”
- “Brand new business models and market access that we would not have followed through with to invest in and scale. Justification: Access to a wide range of influential individuals, strong attempts to future-proof the business, branding, and positive influence by being seen as someone seeking to change the status quo for the better.”
- “Better solutions every time.”

eral managers, and franchise owners. The result was a “cockpit kitchen” café serving semi-prepared meals that could be heated in an oven on flat naan bread, and quickly served to customers.

Now “POC” (proof of concept) is a verb at Marriott. “We ask, is this a POC, should we POC this?” Rather than creating what Hsieh called the “Taj Mahal” of solutions which, if it failed, would be loaded with risk, Marriott co-creates concepts with customers and employees that have a much higher chance of success.

The focus on POCs works if the rest of the

organization has bought into the same goals and process. As one beverage executive in our survey recommended, “Set the right expectations. When you are working on a POC, brief internal stakeholders clearly on what the limitations of the POC will be.”

Compared to a hotel chain, Ericsson, the Swedish company that makes equipment used by mobile telecom operators, has far fewer customers—and more intense relationships with each of them. As a result, Ericsson EVP Shannon Lucas explains, their collaborations must be more focused on specific results, or at least specific overlaps of capability.

The driver behind these efforts is a chance to own a piece of an opportunity that McKinsey sizes at \$4 trillion to \$11 trillion per year by 2025—the market for connecting and managing 50 billion devices that have internet connectivity. According to Lucas, “One of the biggest growth opportunities is the intersection of IoT [Internet of Things] and 5G [fifth generation mobile connectivity].”

For example, Ericsson identified a problem: it was tedious and time consuming for its telecom partners to specify, price, and configure equipment to build out telecom infrastructure within office or residential buildings. Using funding that she secured from the Ericsson business units that sold to these customers, Lucas created a joint project with its telecom operator customers and a system integrator to solve the problem. In six weeks, they’d built an application that could configure and price the equipment needed for a building in minutes, rather than weeks—and now any operator who uses the application knows just what Ericsson equipment to order and how to set it up.

Ericsson also teamed up with GE to co-create solutions for Predix, GE’s software platform that collects and analyzes data from industrial gear like jet engines. Three sets of paired teams from the two companies workshopped solutions that would leverage each company’s capabilities; one of the resulting ideas was sufficiently viable that GE and Ericsson will explore moving closer to an actual product offering. These sorts of co-creation activities will allow both GE and Ericsson to identify and monetize the types of opportunities that IoT is creating.

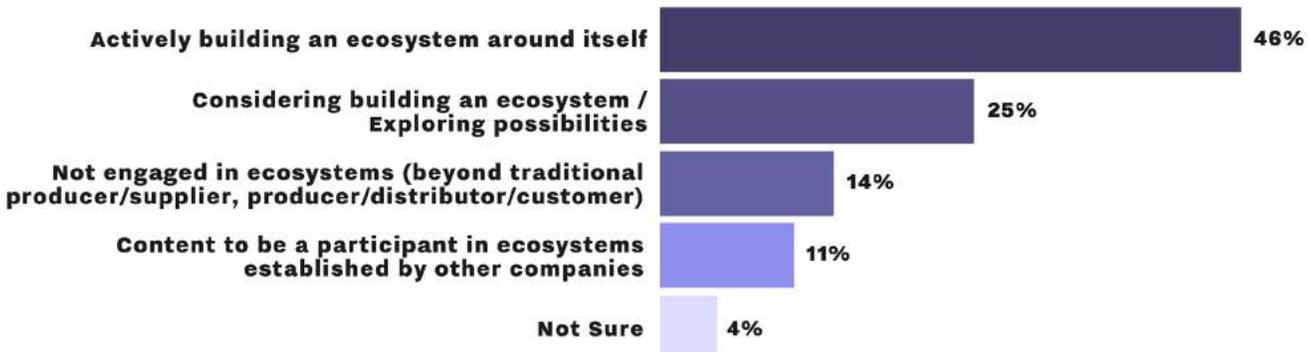
Similarly, Michael Britt, VP of the Energy Innovation Center at Southern Company, an Atlanta utility

holding company, looks for partnerships to extend innovations beyond the traditional utility sector. Britt and innovation leaders from other leading Atlanta companies in industries ranging from health-care to soft drinks meet regularly to share ideas and seek opportunities through collaboration. One outcome of a “speed-dating” type session at these meetings was a joint smart cities project between Southern Company’s subsidiary Georgia Power, AT&T, and GE. The resulting equipment, deployed on utility poles in prominent locations like Atlanta City Hall and Mercedes Benz Stadium, enhances public safety; when it detects the sound of a gunshot, it routes video and audio to the Atlanta police, and boosts the brightness on all the Georgia Power-supplied street lighting in the area.

Marriott, Ericsson, and Southern Company share an objective in their co-creation quests: to create viable products by tapping into the expertise and capabilities of others. Boeing goes a bit further. The acknowledged goal of Boeing HorizonX is to invest in emerging trends, technologies, and business models—the very shifts that might disrupt Boeing’s core businesses. As Mike Hauser, director of investing for Boeing HorizonX Ventures, puts it, “We do the things that the core business can’t or won’t do. We are outside the core, but deeply connected to it. We like to think of HorizonX as the complete operating system for the new and different, so we can act differently.”

Those disruptive technologies include hypersonic transportation, pilotless vehicles, and even new air traffic control systems that can manage the likes of drones. Boeing CEO Dennis Muilenburg has explicitly charged HorizonX with investigating areas

My company is (check the answer that is most applicable):



where their aircraft and aerospace businesses may be vulnerable. One Boeing subsidiary even created a partnership with Uber to develop autonomous flying taxis. (HorizonX also invests in startups, as we'll describe in the next section).

Despite the ambitions of companies like Boeing, many of our survey respondents said they found co-creation challenging. A financial services executive complained about "bureaucracy in decision-making," while another respondent lamented "competitive posturing among participants." Multiple respondents mentioned the challenge of "not invented here" thinking, or cited the need to iron out IP ownership issues before starting any partnership. And getting a project over the finish line is harder than getting out of the starting gate: as one survey participant said, "Ideas are easy, plentiful, and can be generated quickly. Vetting, deciding, building, and producing results from new innovative ideas is less easy, with more scarcity in

available resources, and [it] takes more time."

But the spirit of Boeing's investment is a model for the future of these sorts of multi-party co-creation activities. Every business is subject to disruption. Every business has opportunities that it can't easily respond to, due to the limitations of its own business models, or competencies that it lacks. The first question for innovation leaders considering partnerships of these kinds should never be, "How can we use this to defend our core business?" It should instead be, "How can this partnership give us a foothold in the future?"

Ecosystem Investments Need a Clear Objective

Co-creation activities tend to have an endpoint that's fairly well-defined. Ecosystems are different. When a company commits to support an ecosystem, it's seeking to stimulate innovation in directions

The Challenges of Co-Creation

WE ASKED SURVEY RESPONDENTS TO TELL US ABOUT THE CHALLENGES OF CO-CREATION. THESE ARE CHALLENGES CITED BY THE RESPONDENTS WITH THE MOST EXPERIENCE IN CO-CREATION ACTIVITY.

"Getting started!"	recognize step-outs of the normal process. 5) Creating a safe zone for co-creation."
"Strategic and values alignment."	
"Breaking out of 'not invented here' thinking internally."	"Humility/modesty of each player in the project — each is prone to over-value their own contribution relative to the success of the overall project."
"Similar time and resource commitment from all sides."	"Building a product that was the minimum viable product for the start-up, but met our regulatory requirements."
"Problem statement definition."	
"Why customers should engage with us vs. others."	"Monetizing appropriately for all parties. It can be difficult to balance everyone's needs."
"Breaking away from the everyday grind, and keeping people focused when they are in the co-creation activity."	"...Legal and IP hurdles."
"Transforming mindsets."	"Internal sponsorship to scale after [a] pilot."
"1) Clear alignment of interests. 2) Clear alignment of goals. 3) Getting management buy-in (especially Finance). 4) Get the administrative part of the organization to	"Time. Publicly-traded companies need to produce results quickly. We often don't give new ventures enough runway to take off."
	"Funding and continuing development of [the] next generation [product] after delivery of first iteration."

that are diverse and unpredictable. Even so, ecosystem success depends on knowing, up front, what the company hopes to accomplish once all of the fish start showing up at the coral reef.

Building innovation ecosystems weren't quite as common an activity as co-creation among our survey respondents, but we were surprised that almost half of our respondents (46 percent) reported that they were actively building an ecosystem, while another 25 percent were considering doing so.

The one piece of advice we heard in most of our ecosystem interviews was to know what you're aiming for—and how you will measure it. Claudia Reuter is a managing director at Techstars, a Boulder, Colo. organization that operates startup accelerators—including many with corporate partners. She explains, "Each corporate partner has their own set of reasons to do this—to invest, to learn, to build business development, or to understand more about emerging technologies." Reuter is a former entrepreneur who now manages an accelerator program in partnership with Stanley Black & Decker, the maker of tools and hardware.

In the rest of this report, we'll highlight these differences as we share the strategies in place at companies such as Johnson & Johnson, Stanley Black & Decker, Barclays, Boeing, IBM, Hubspot, and Bose.

To understand one of the key differences in ecosystem strategy, consider the analogy of r/K selection theory in evolution. Organisms like whales use what's known as a K-selection strategy. They have few offspring and expend significant energy nurturing each one. Fish use an r-selection strategy, having as many offspring as possible but expending little energy on each, with the sheer numbers ensuring that a few will survive to adulthood. As University of Texas Professor Art Markman, who has made a systematic study of innovation ecosystem success, pointed out to us, companies managing ecosystems make the same sorts of choices. Platform owners, like Apple, create a generalized system and invite thousands of developers to join up, hoping that a few will build standout applications and validate the platform. Corporate venture capital investors, by contrast, will invest in only a few startups and lavish attention on those, hoping to own a piece of promising companies (and maybe acquire a few) that could change the game in their industry. The companies we interviewed tended to lean towards one end or the other of the r/K strategy continuum.

Johnson & Johnson, for example, is a classic example of the high investment K-selection strategy. As Urban explains, J&J is seeking exposure to opportunities for its pharmaceutical, medical devices,

and consumer healthcare businesses that extend beyond what its internal R&D labs are working on. It implemented this strategy by building innovation centers in Boston, San Francisco, London, and Shanghai. The company has also set up incubators, called JLABS, that have rented lab space to over 450 startups. The result, Urban says, is that fledgling healthcare companies can run experiments and "get the data to set the stage for rapid growth at a fraction of the cost" they'd otherwise have to pay.

J&J has brought in companies working in spaces like gene therapy, surgical robots, and the microbiome (the collections of bacteria that live within our bodies). As a result, J&J gets a close-up look at the leading edge of healthcare innovation.

J&J puts few restrictions on the companies it hosts and supports – they're free to leave the labs or take investments from other pharma companies. But after getting a close look at these startups, J&J decides to invest in a large proportion of them, on the order of 25 percent.

According to Urban, JLABS participants must fit three criteria:

1. They are working on something that could significantly change healthcare;
2. They have a team with the capacity to contribute to that objective;
3. They are willing and able to pay rent for lab space and access to an array of high-end scientific gear.

"Our job," he says, "is to make sure there is an extraordinarily high degree of collision, maximizing every opportunity to meet with J&J mentors, other startups, investors—and even our competitors."

J&J puts few restrictions on the companies it hosts and supports—they're free to leave the labs or take investments from other pharma companies. But after getting a close look at these startups, J&J decides to invest in some of them, on the order of 25 percent. The initial investment is intended to be a prelude to something bigger. Urban explains: "We don't make a living off owning stock in small companies, we make a living in offering incredible medical solutions." For example, one of J&J's investments is in a startup that makes customized 3D-printed implants for patients with gaps between bones due to trauma or surgery. In the past, some of these patients might have lost limbs, but the implant acts as a substrate, allowing the bones to grow together and heal an otherwise tragic fracture.

Ecosystem Metrics

WE ASKED SURVEY RESPONDENTS TO DESCRIBE THE WAYS THEY MEASURE THE VALUE THAT STEMS FROM BUILDING OR PARTICIPATING IN AN ECOSYSTEM. THE ADVICE BELOW COMES FROM THE SEGMENT OF RESPONDENTS THAT SAID THEY WERE ACTIVE BUILDERS OR PARTICIPANTS IN ECOSYSTEMS. BUT EVEN AMONG THESE RESPONDENTS, ABOUT ONE-QUARTER ADMITTED THEY DIDN'T YET HAVE METRICS IN PLACE, OR SAID THEY WERE IN THE PROCESS OF DEVELOPING THEM. HOW TO MEASURE ECOSYSTEM VALUE IS "THE BIGGEST QUESTION WE HAVE," WROTE ONE RESPONDENT.

"Value-added in terms of efficiency, financial impact, and positive internal and external perception."	"Members, number [of] attendees, project spin-outs, press, testimonials, energy and enthusiasm, word-of-mouth referrals."
"Tested POCs and betas, ready [to] go-to-market beta products and concepts."	"Deal flow, network activity."
"Business units developing products with our new technologies."	"We look at the ongoing evolution of the ecosystem and [make] sure that it is growing. That being said, it is outputs that matter here."
"Sales / number of customers."	"Number of participants. Degree of engagement."
"Number of partners."	"Products sold, plain and simple."
"Number of new commercial models or new tech used / number of engagements with ecosystem."	"It's so core, [we] can't exist without it."
"Creating use cases, POCs, and prototypes."	"Data usage."
"Indicators would include variety of organizations where there is a path for collaboration, collaborations that are mutually beneficial (not just outsourcing), established processes, and models for bringing new organizations into the ecosystem."	"Subjectively [we aim to be] viewed as an innovator. Objectively [we want to be in a] position to survive any downturn..."
"Return on investment."	"For both of the ecosystems we manage, the key metric tends to be the impact of the innovation. Sometimes this is financial, but often it is qualitative, as the goal is introducing new 'capabilities'..."
"We are letting the initiatives or projects that come out of the ecosystem be the [metric]."	"Publications, invited presentations, minimum viable products."
"Number of market launches, speed of market launch, speed of scale-up."	"New business through ecosystem partners."
"Project by stage (discovery, incubation, scaling.)"	"Number of connections, number of interactions, number of collaborations."
"We focus on number of positive interactions; product demonstrations; iterations of co-designed business models with positive and valid experience & evidence; learnings gained. ... Rather than number of successful pilots [or] profits."	"Speed to X (typically learning value, sometimes business outcomes.)"
	"Increases barriers to entry."

An investment like this allows Johnson & Johnson to gain a foothold with a possible acquisition in a space that's not a direct outgrowth of its existing capabilities, but may spawn a whole new area of innovation in the future.

Building a program like this is not cheap. J&J innovation has more than 150 staff and has invested hundreds of millions of dollars. But Urban estimates that the result is several billion dollars of risk-adjusted value to the company, tapping opportunities that would not be accessible in any other way.

Of the 48 accelerator programs that Techstars runs, two-thirds are set up and run in partnership with corporate sponsors. Like J&J, Techstars' sponsors gain exposure to innovative ideas in their industries in a carefully-structured environment. In a typical accelerator, Techstars and its sponsor would choose 10 companies, invest up to \$120,000 in each for an equity stake, and meet regularly with them and mentor them in an open-plan space over a 90-day period. The objective is to refine the idea and present it at a demo day at the end of the cycle. Techstars accelerators have convened auto-focused startups for Ford in Detroit; startups working on additive manufacturing with Stanley Black & Decker in Hartford; and financial technology startups with Barclays Bank in London.

As David Drach, VP of Corporate Strategy at Techstars, explains, the program can benefit the sponsoring company in unexpected ways. "They use this as a tool to keep external innovation visible and engaging for their own employees. A team leader or general manager or senior director will be engaged in an accelerator, teamed up with this or that startup. It might be executives in customer service, analytics, or customer experience. ... The corporate manager gets experience around interaction with the founder. It helps them understand a new market that the founder is going after." And of course, these corporate mentors help the startups to understand industry structures, distribution channels, and sales strategies.

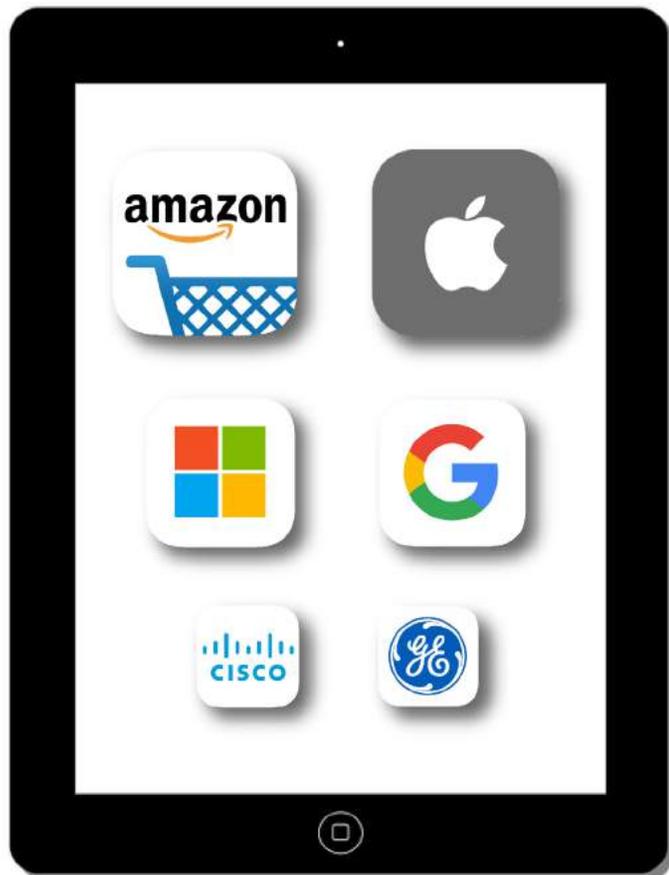
In collaborations like this, both the startups and the sponsoring companies must be supportive, while maintaining careful control of their respective pieces of intellectual property. "We go through an education process with both sides, to help them to understand how to communicate properly [around proprietary IP]," Drach says. "No leaks have happened. Startup founders are good business partners. While everyone is always concerned about it, after the first cycle, those concerns are alleviated."

At Boeing's HorizonX, Hauser's approach to corporate venture investing mirrors somewhat the Techstars accelerator approach, but with an explicit

focus on technologies and business models that could disrupt Boeing's core businesses. For example, Boeing has recently announced a joint venture, Skygrid, with one of its earlier startup investments, for drone air traffic control systems based on new technologies like blockchain and artificial intelligence. "The vision here comes in when we think about thousands of more air vehicles," Hauser says. "Just talking about what the FAA allows, drones below 400 feet, that's a hard problem. Safety is a big part of our value. It's relatively easy to make a novel airplane get in the air, but to do it safely, that's a whole different ball game."

According to Hauser, the archetypal Boeing HorizonX investment is one where Boeing would have high degrees of assumptions and low degrees of knowledge. "We've built this thing to allow us to collaborate with startups and nontraditional customers. ... It's a mode of collaborating based on test-and-learn, failing a lot, completely different metrics" from Boeing's core business.

Unlike Techstars or J&J, Boeing's HorizonX startup partners are not colocated and their



These companies were mentioned most often as role models for ecosystem development. Logo size correlates to how often a company was mentioned by our survey respondents.

programs are not standardized. “We start with the mindset of strategic investors,” Hauser says. “We make an investment because of strategic value, and after we have engaged in that relationship, we have an activity we call portfolio development: people whose job it is to make that [startup’s] value proposition real.” Nor are the investments time-limited or based on a template. “We can provide the gamut from access to technology, lab, suppliers, partners, IP, all the way through to the channel, go-to-market access, and brand—and for all different business models.” Boeing will invest at any stage—seed, Series A or B, for example—based on what’s needed by a particular startup.

A Platform Approach Can Create Promising Ecosystems

What is a platform? It’s a system that makes it easy and standard for other companies to interact with your company and reach your customers—as Apple does with app developers. As Phil Simon writes in his book *The Age of the Platform: How Amazon, Apple, Facebook, and Google Have Redefined Business*, “The most vibrant platforms embrace third-party collaboration. The companies behind these platforms seek to foster symbiotic and mutually beneficial relationships with users, customers, partners, vendors, developers, and the community at large.” In its ideal form, a platform creates a playing field on which the sheer number and diversity of players generates significant upside for the company that created it.

Think about Apple. When it launched the opportunity to create apps on its phone, it could not have conceived of—or created—the game Angry Birds, the traffic-savvy driving application Waze, or the addictive social photo-sharing app Instagram. Even as those apps succeeded, thousands of others went nowhere. Apple didn’t need to pick winners. Its iPhone thrived simply on the explosion of innovation from thousands of developers, most of whom had never even spoken with anyone from Apple. This ideal is the r-strategy of partnerships—like a fish that lays 10,000 eggs, Apple wins because of the cumulative impact of all the apps, regardless of the success of any single one.

It sounds great: set up a platform and let the startups innovate. But few are the companies that can build a platform successfully at the scale of Apple’s. Our survey respondents repeatedly cited platform companies like Amazon, Apple, Google, Microsoft, and Cisco as role models for ecosystem development. Platform thinking—or as you might call it, platform-envy—informs the ecosystem strategy of several of the companies we spoke with.

One company explicitly trying to build a plat-

form is Bose, the audio equipment company. Bose developed an innovative system for supporting augmented reality audio experiences and has built that system into products including \$199 sunglasses with integrated speakers. But other than playing music from your phone, what good are those sunglasses? The answer to that question has to come from third-party developers building new AR experiences that take advantage of them. So Bose is rolling out a platform and ecosystem based on its AR technology on the theory that more applications will make them more appealing.

According to Fuat Koro, Bose’s head of corporate strategy and ventures, the company’s strategy to attract developers to its platform includes three parts. “We have a developer relations team reaching out to startups or established companies, to communicate the benefits, give you our SDK [software development kit], and hold your hand,” he begins. “The second piece is a corporate venture capital fund, a \$50 million fund available to startups that will join us to create new software and experiences. And third is a marketing piece, making sure we [promote] this activity like [our event at] South by Southwest,” a massive conference in Austin that showcases new technologies. Because Bose’s wearable AR gear doesn’t (yet) have nearly the installed base that Apple started with, its investment and co-marketing activities will help to attract developers to the platform and jumpstart the rollout of applications.

HubSpot, a rapidly-growing marketing technology provider, is another company hoping to boost its fortunes with a platform that will foster a thriving ecosystem. Its market is filled with powerful competitors like Salesforce.com, Adobe, and Oracle. Rather than engineer every possible feature, HubSpot has chosen to open up application program interfaces (APIs) to enable other companies to develop their own functionality for HubSpot users.

Scott Brinker, VP of the Platform Ecosystem at HubSpot, describes the company’s realization that “we can create the centralized platform that normalizes customer data and provides governance for activities like GDPR compliance [that is, compliance with European data regulations]. We provide the infrastructure and safe guardrails and then open it up as much as we possibly can, allowing the exchange of data so they can participate in common workflows.”

While HubSpot’s platform ecosystem currently includes 250 partners, it has catalyzed a change in thinking at the company. “It actually comes down to a change in product design mentality,” Brinker says. “Becoming a platform demands a different design, [because you’re] designing for other developers” as opposed to thinking only of end-users. HubSpot’s

designers now ask questions like, “What is the right way to package things so other developers will easily consume that and plug into that?”

There is an inherent tension in platform strategies like HubSpot’s. As one respondent in our survey asked, “What’s the right balance between cooperation and competition?” Brinker cites the example of SteelBrick, a price-quoting solution that originated on the Salesforce.com platform. Salesforce eventually acquired and integrated SteelBrick, which unsettled the equilibrium of all the applications that had competed with it and were now competing directly with the platform that sustained them.

Twitter developers faced a similar crossroads

when the company acquired a sophisticated social media tool, TweetDeck, and then closed it off, cutting off APIs that many Twitter developers had been depending on. For a platform to thrive, the companies on it must feel they have a fair and equal chance to succeed—and that the ground rules won’t suddenly shift. When the platform’s owner starts to play favorites, or acquire partners, or start competing with them, it may be furthering its own strategic goals, but it is threatening the environment that drew that mass of partners to it in the first place.

One company that appears to have mastered the dynamic of empowering partners is IBM. Perhaps its most dramatic move away from proprietary

Co-creation Advice

WE ASKED SURVEY RESPONDENTS TO SHARE THEIR BEST ADVICE ABOUT SUCCESSFUL CO-CREATION. THE ADVICE BELOW COMES FROM THE RESPONDENTS WITH THE MOST EXPERIENCE IN CO-CREATION ACTIVITY.

“Be patient, and willing to adjust processes to make the new offerings successful.”

“Get the right alliance managers in place, who care more about the partnership than about either party.”

“Create a successful PR campaign for the target audience.”

“Don’t get ‘alignment.’ Just go for it and show the value. Pick quick wins, and convince internal stakeholders with results.”

“Do it in short sprints. Don’t overthink, and [don’t] give in to the bureaucracy.”

“Have a clear business model on the table since the beginning. How is each party making money out of it?”

“Don’t fight over IP.”

“Establish great rapport and trust to ensure you do not need to refer to contracts.”

“[Create] a clear, compelling, and inspiring challenge statement or purpose — one that every stakeholder has had input [into] beforehand.”

“Keep agreements simple.”

“1. Build a core team and continue to expand the ‘in-

group.’ 2. Focus on the process, and don’t rush—the more time you spend understanding the problem, the better your solution.”

“Solve the following in order: 1) Clear definition of success and goal of the initiative. 2) Find internal champions (at the large organization) that understand and know how to manage the process. 3) The internal champions have credibility and political capital to spend on high-risk / high-reward initiatives. 4) Spin up contracts and legal ahead of time to get the process through with little delay. 5) Create expectations for the possibility of failure. Failure is part of the learning.”

“Ensure that each player recognizes that the failure rate is 9 in 10—so that each player realizes that if it’s successful, it’s against all odds—[which] requires each player to apply more effort and commitment than they are probably comfortable with.”

“Small, dedicated teams. Flexible mindsets. Stay away from big bang ideas that go nowhere or get watered down before market. Focus only on work that moves the process forward. Avoid extensive over-documentation, [and] too many executive presentations. Think incremental.”

“Find [the] balance between perfection (required by big brands and regulated entities) and good enough (the standard for most startups to launch.)”

services—and towards participation in a platform-like ecosystem—was its embrace of open-source software in the late 1990s. Simply put, IBM’s business as a system integrator soars when it can promote the embrace of new technologies where it has demonstrable expertise.

Sophie Vandebroek, VP of Emerging Technology Partnerships at IBM, has seen the industry’s momentum shift over the last two decades, from ivory tower captive research labs like Bell Labs, to co-creation with clients, to dynamic ecosystems with IBM as a leader and active participant. “While IBM continues to co-innovate with clients, in many cases, innovation can be even better if you get input of thousands or millions of users early on who can help you create a better product, service, or solution,” she says. IBM has embraced this idea. One example is IBM’s blockchain innovations, which are built upon the open-sourced Hyperledger platform in which many developers around the world participate.

To boost the company’s role in artificial intelligence with IBM Watson, it has built an open partnership with MIT based on a 10-year, \$240 million commitment. One hundred researchers from both MIT and IBM work together on core AI algorithms, the physics of AI, AI for industries, and prosperity enabled by AI. When joint work results in patents, both MIT and IBM get access to them. The first round of collaboration already includes 50 joint projects. Vandebroek explains, “Every project has both IBM researchers and MIT researchers, which is unusual for a collaboration between a university and a corporation. We also encourage professors and students to build startups.”

If the MIT/IBM partnership sounds more like a typical co-creation effort, IBM’s desire to boost quantum computing—called IBM-Q—looks more like a platform, and a free one at that. IBM makes its quantum computers available online. Anyone can do experiments on them. As of December 2018, 100,000 developers have performed over six million experiments on the IBM-Q, and over 100 scientific papers have been published so far. IBM’s view is that with this diversity of developers trying new things, quantum computing will take off and IBM’s quantum computers will be in greater demand.

What IBM has done is a model for building business around emerging technologies. Shannon Lucas, the Ericsson EVP, is pursuing a similar strategy with 5G, the newest wireless technology. Ericsson may stand up a corridor of 5G connectivity in Silicon Valley, stretching from Stanford University to San Jose, and give out access to companies like Google’s autonomous vehicle division Waymo, to see what they can do with it. Once the companies

figure out how best to use 5G, they’ll design applications; Ericsson will then partner with the mobile telcos in optimizing the networks to work well with those applications.

Even if you lay the groundwork for an ecosystem, though, the participants won’t necessarily come flocking to you—unless you back it up with extra effort and investment, as Bose is attempting to do with its augmented reality sunglasses technology. As one survey respondent from the tech sector put it, “Be ready for the level of effort involved to herd cats.” Or as an innovation leader in insurance said, “It’s like tending a garden; [it] takes care and feeding before you start to see results.”

All Collaborative Innovation Will Develop Platform Elements

As you read about IBM, Ericsson, Bose, and HubSpot, you may be thinking, “Well, that platform approach is for digital companies. How does it apply if you’re selling cars, hotel rooms, or electricity?”

Have you looked inside a new car lately? How much of the value in there is digital, generated by sensors and telematic connections and digital maps? How much of your experience once you check into a hotel room is with a piece of technology like the TV, or an in-room Amazon Alexa (Marriott has already been engaged in co-creation with Amazon to employ Alexa as a bedside concierge.)

Yes, the value of physical interaction remains. The entrepreneurs and corporate leaders bumping into each other inside J&J’s JLABS and Techstars’ intensive accelerators are going to have chance meetings and brainstorming sessions that generate ideas that wouldn’t come into being any other way.

But don’t assume that if your business isn’t digital, you can’t think like a platform.

Could Marriott’s next step be for architects to design new service or room concepts in 3D modeling software, which its employees and franchisees could try out using virtual reality glasses?

Southern Company’s utility poles are a platform, too—or could be. As Ericsson has done with 5G, they could spec out a corridor in Atlanta with instrumented lighting, audio and video sensors, and data backhaul, electronically accessible to any suppliers who want to use it. In what innovative ways would startups or partners use that data? A platform for accessing it might reveal the answers.

The same method might apply to data from a retailer like Home Depot or CVS, or a travel supplier like Expedia. Given anonymized access to their data sets—or a subset designed exclusively for testing purposes—what sorts of AI could develop-

ers apply, and what sorts of new applications might they create? Not everyone is a platform. As Boeing’s HorizonX and Bose’s AR audio demonstrate, unless you have the installed base of Apple or Facebook, platforms need a strong push from marketing, and serious investment, to be viable. But platform thinking is the future of collaborative innovation.

Based on our research, there are two possible paths for companies.

On the first path, companies continue to depend mostly on their own resources for future growth. They will invest in R&D labs and innovation groups. But these companies will be vulnerable to fast-moving startups attacking their business, and rivals that have built capabilities around creative partnering. Corporations have blindspots—often blindspots created and reinforced by long-held beliefs about the industries they operate in—and those can cause internal innovators to miss opportunities and market shifts. To remain competitive, the companies following this first path will end up losing ground to established rivals—and often acquiring those startup disruptors at the highest possible cost.

On the second path, companies will look

outwards as well as inwards. They will decide on an objective—building communities of developers around a new product, creating an offering with industry partners that blends a digital purchase with top-notch human customer service, or just shaking up senior leaders’ thinking—and then pursue it through external co-creation and ecosystem initiatives. A few years in, they’ll have grown their businesses in new directions and protected themselves from being rendered irrelevant in the market. On that second, more externally-oriented path, making digital connections easier is an imperative. The easier it is for collaborators to plug in to your company’s data, systems, and resources, the more likely it is that the next generation of startups will be compatible with your company. This is what we mean when we say that, in the long run, everyone will be a platform.

Going it alone worked great in the 20th century, especially for vertically-integrated giants and sprawling conglomerates. But profitable growth in the 21st requires that companies excel at working with others to co-create products, and build or participate in ecosystems. ♦

Ecosystem Development	
BENEFITS	CHALLENGES
<ul style="list-style-type: none"> • Get widest possible exposure to new areas of innovation • Identify promising startup companies at an early stage • Energize your internal innovators and executives by inviting them to mentor startups and exposing them to more outside ideas • Establish your company as an industry pace-setter and “partner of choice” • Enhance your products or services by attracting other innovators to build upon/enhance them 	<ul style="list-style-type: none"> • Success demands starting with a clear objective (e.g. investment, disruption, platform support) • Requires patience—ecosystems take several years to demonstrate value • Hard for most companies to move/act at the speed startups require • Can create internal conflicts with lines of business threatened by outside innovators • Sharing (IP issues) and lowering the barrier to working with many outside parties can be challenging culturally and technically

Co-Creation	
BENEFITS	CHALLENGES
<ul style="list-style-type: none"> • Partners, distributors, suppliers, and employees can help road-test ideas and provide input • Co-creation partnerships with defined goals can be easier to set up than an ecosystem • Brainstorming with companies in other industries yield new types of ideas • Works with all types of entities, including government, military, universities, nonprofits 	<ul style="list-style-type: none"> • Takes systematic effort to identify and connect with the right “dance partners” in other industries • Must prepare management that some partnerships will fail • New kinds of contracts and agreements may be required • Senior executive support required for ideas that compete with core businesses

Advice on Creating & Participating in Ecosystems

WE ASKED SURVEY RESPONDENTS TO SERVE UP THEIR ADVICE ON CREATING AND PARTICIPATING IN ECOSYSTEMS. THE ADVICE BELOW COMES FROM THE RESPONDENTS WHO SAID THEY ARE ACTIVELY WORKING TO CREATE AN ECOSYSTEM AROUND THEIR COMPANY.

“Run a workshop to identify the goals of the ecosystem.”

“Define...tangible targets of success.”

“Track and measure the value to see [which] participants are working more than others, and what needs more or less attention.”

“Start [with] consumer needs and your strategy to meet those needs. Then what you need to build (or take part in) will be clear.”

“Give before you take.”

“Cast a wide net, but be clear about what you are seeking to partner on.”

“Be clear and transparent about what drives your participation in the ecosystem.”

“Have just a few (2 to 5 people) working on this without much fanfare at first. It’s hard for the core business to understand [particularly in a conservative company], so don’t burden the initiative by putting it under a spotlight.”

“Find ways to collaborate that create win/win opportunities and learning for everyone involved.”

“It only works if you are authentically cultivating an ecosystem for the good of all participants, without pushing an immediate agenda or sales pitch.”

“As a venture, building an ecosystem requires an internal behavior change (e.g. focusing on one or two assets vs. considering all). Understand the competencies you need: market intelligence, assets, etc. Treating it as ‘this is how we operate’ vs. ‘what are the business behavior changes needed?’ will not facilitate a true ecosystem.”

“Be ready for the level of effort involved to herd cats.”

“[You need] dedicated resources. Being active in creating and adding/receiving value from an ecosystem is not a part-time role.”

“Make sure to create [and capture] institutional knowledge around the ecosystem. We use a CRM to manage this.”

“Engage both internal and external stakeholders. Have a vision that challenges the current state. Look for transformational innovation versus incremental innovation.”

“Work with the best people, and [a] strong preference for people who are humble.”

“You need to offer some data to build upon.”

“Find partners outside the usual suspects. [Working with partners in your] same industry typically equals a lack of innovation.”

“A diverse network that includes academia, government, industry, and entrepreneurs is essential. You could also summarize this as the right mix of knowledge, money, experience, and idea.”

“Mutual respect and understanding is a requirement—no matter how big or important you think your company is, compared to others.”

“Don’t declare your intentions until you have enough momentum that neutral observers take note and detractors can’t kill [it.]”

“It takes time, persistence, and patience.”

“Start with a dream and vision. Validate with tests in small iterations. But most of all: START!”

Additional Perspectives

MORE ADVICE ON CO-CREATION AND ECOSYSTEMS FROM THE CORPORATE AND ACADEMIC LEADERS WE INTERVIEWED WHILE RESEARCHING THIS REPORT

“Five things are extremely important: 1. People: an inclusive team where you can be yourself and push the boundaries of the unknown. 2. Co-creation with users and customers, so their pain points and dreams are well comprehended. 3. Leveraging an ecosystem of partners. 4. Not being afraid: in danger there is opportunity. 5. Feeling you are working on important problems.”

—**Sophie Vandebroek, VP/Emerging Technology Partnerships, IBM**

“It cannot be called an ecosystem if it is managed. . . . What people really mean is a farm, with ownership, control, very defined outputs, constant investment. The power of the ecosystem model is that it’s very efficient, because you don’t have to keep investing in it.”

—**Dan Isenberg, Professor, Babson College**

“One of the biggest challenges for companies that are going from being a product company to a platform company [is creating a level playing field]. They’d often have like a business development group that would go off and make these very exclusive partnerships. But when you start to get into being an open platform, you have to be really careful about those exclusive partnerships, because it ends up creating this tension with other people who would want to compete in that category in the ecosystem; if you do things that effectively lock them out, they’re not going to build on your platform. They’re gonna go like, ‘Screw this, I’ll go do it somewhere else.’”

—**Scott Brinker, VP/Platform Ecosystem, HubSpot**

“[Boeing CEO] Dennis Muilenberg has an aspiration for this company that is pretty big. If every time we saw something disruptive to our core, we killed it, we would never meet that aspiration. There is no better team to eat our lunch than our own company.”

—**Michael Hauser, Investing Director/Startup Acceleration, Boeing**

“I see how often [big] corporations abuse startups. Their most precious commodity is time. We needed to learn to be good citizens in that ecosystem.”

—**Shannon Lucas, Head of Emerging Business Unit, Ericsson**

“Don’t be afraid to participate today: sponsor a startup weekend, host a hackathon, be a contest judge. You can get engaged together and it will help educate you from a corporate perspective. Get engaged in some way, start to get educated, to begin to understand.”

—**Dave Drach, VP/Corporate Strategy, Techstars**

“What’s important for us is that co-creation is not only an alignment tool; we use it different stages, getting those voices in at the right time... We have multiple stakeholders, for example, ‘You from ops, how would you change this? You from finance, from the brand, how would you change this?’ We bring them together quickly and get folks aligned.”

—**Jennifer Hsieh, VP/CX Innovation, Marriott**

Guidance

GUIDANCE FROM OUR SPONSOR, SOPHEON

Innovation Ecosystems – An Evolving and Growing Opportunity

ANDY MICHUDA, CEO, SOPHEON

As digital transformation picks up pace and changes the way business is done, innovation ecosystems have grown in variation, flexibility and desired sense of purpose, mapping to the needs and desires of the corporation involved in creating them. These ecosystems are very fluid in nature, constantly changing to match organizational priorities and processes.

Investments in ecosystems vary from very loose arrangements that allow companies to access information for the purpose of learning only, to very tight investment models involving control. We are seeing a number of emerging innovation ecosystem models gaining traction in response to the digital transformation movement.

NETWORK EXCHANGE

This is a model where a company proactively anticipates the need to leverage outside sources of knowledge and expertise to augment their internal efforts to innovate. These ecosystems are created to increase innovation success rates while at the same time reducing the level of risk related to the innovation investments. This model is especially effective in cases when companies are investing in “new to the world” or “new to the company” innovations, extending beyond their core capability and competency. Instead of accepting the risk of failure or market ignorance, these companies engage experts with deep competency and experience in the areas of innovation where they are lacking.

This ecosystem is among the most prevalent models in use today, with a high volume of talent and experience available to assist organizations in their times of need. Many market leaders have also created their own private ecosystems of experts and continue to have relationships they can engage on demand. Companies like Procter & Gamble, GE, and others have created very active ecosystems of knowledge sources, which they tap to further innovation.

The growth and expansion of this concept has caught the attention of private equity companies, and today there are a number of for-profit expert

networks available via the internet, each offering their own special expertise to apply to your innovation.

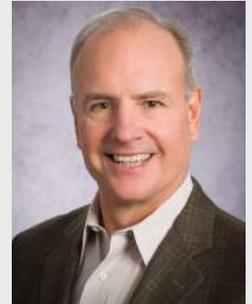
With the number and variety of rich sources and advanced expert networks available, companies are getting smarter in their innovation engagement models. A Fortune 100 company in consumer packaged goods has created a sophisticated innovation process that identifies up front, at the time of initial funding and project creation, the type of innovation required. The higher the level of innovation, the higher the risk. The higher the innovation risk, the higher the mandate to engage with an outside ecosystem to augment creation and reduce risk to the business from the investment.

This company understood the challenges of innovation based on their strategic direction. They understood the innovation risk of “you don’t know what you don’t know.” They conducted an innovation-needs ecosystem audit up front, strategically identifying the types of innovation needed to achieve their long-term roadmap. Potential ecosystem partners were evaluated, selected, and put under contract so they could be at the ready when they got a call to go “active” on a real project.

BUSINESS PARTNERSHIPS

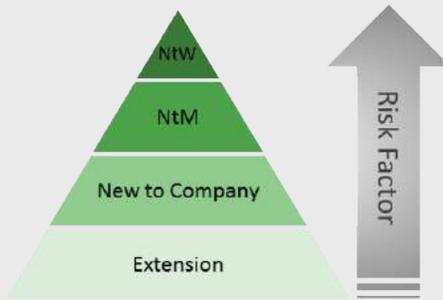
A second type of ecosystem comprises more formal business partnerships. This ecosystem is different from others in that it consists of “entities” and not individual experts. Similar to a network exchange model, business partnerships have been active in one form or another for some years. The increasingly important role of digitalization strategy is making a significant impact on the effectiveness and value of these ecosystems. Sopheon has a number of clients that work together on innovation. Business partnerships can take on a variety of different forms depending on where the value is the strongest for the partners, but typically they require formalized understandings and agreements based on trust, shared beliefs, and a joint strategy. Following is one example of this type of innovation ecosystem.

A number of military programs have a similar mission, which is to create innovative solutions to help their customers (i.e. countries) to defend against

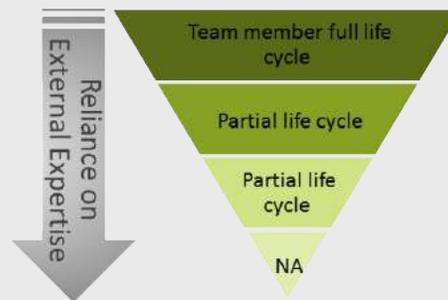


Andy Michuda
CEO, Sopheon
info@sopheon.com

Innovation Scorecard



External Expertise Assigned



An illustrative example of the correlation between the level of risk and the reliance on external expertise.

military threats and disruption.

The Program teams sit between their customers (who report daily needs and threats) and a group of external innovation technology partners (who create technical innovations to be applied by the Program in the form of solutions to their clients). The challenge commonly encountered was that the technology innovators were solving technology problems based on generic trends and incorporating roadmaps stretching 15 years out or longer, and the Program team lacked the visibility and transparency to what was being built. The result was that they became aware of the innovation projects very late in their development life cycle, at which time it was too late to influence direction or request changes to satisfy immediate client issues.

The recognition that this operating model did not contribute to them acting with the level of speed required today has resulted in an ecosystem of business partners coming together in person to discuss and answer questions like:

- Who gets access to what information and when?
- How can we share insights earlier?
- How do we protect each other's IP
- What data really needs to be managed?
- Where does that data play a role in the value mapping of the innovation lifecycle?

This innovation ecosystem is based on groups and companies recognizing that they cannot innovate at the same velocity or capability without engaging formally with other entities that possess a needed competency absent within the company.

KNOWLEDGE INSIGHTS ECOSYSTEMS

This third model represents a new type of innovation ecosystem that has been enabled by the continued advancements companies are making in digitalized operating models. These models often use "smart" technology and a corporate innovation platform to integrate multiple sources of intelligence – content, people and communities of interest – allowing innovators to quickly anticipate and mitigate real-time

changes that will affect innovation efforts.

At Sopheon we are addressing a trend where many of our clients expect our innovation platform to have the intelligence to make them aware of critical success factors that impact the success or failure of their innovation investments throughout the lifecycle of the innovation investment. One example of this type of insights ecosystem that we have experienced is described here.

A leading S&P 500 industrial manufacturer was innovating around a new-to-market concept. Their approved business case introduced a number of market assumption conditions such as cost of material, available technology, ecosystem partners, consumer trends, currency exchange rates, and more.

The business case was approved in a gate review and the innovation went through the development lifecycle. As the company continued to invest in the proposed solution, the external market shifted and one of the raw material cost assumptions made in the business case was no longer valid. They would have benefited hugely had their innovation management platform been able to notify the product team proactively and in real time that some of the underlying assumptions in their business plan or key factors affecting their innovation plan were no longer true, which would have prompted them to take immediate corrective action.

SEIZE THE OPPORTUNITY

Leading innovation companies are developing new digitalization operating models that create exciting and lucrative opportunities. This is a time for innovators to step up, be creative, and behave proactively in how they apply the potential of the rich innovation ecosystems available to them. Failing to make this a strategic priority exposes them to digital disruption, competitive pressure, and unnecessary churn in the wake of ever-changing market forces. It becomes a choice: disrupt others or be disrupted. Many are already partnering with others to advance innovation like never before. Is your enterprise ready? ♦

Case Studies

Co-creation Methodology Map, from Vodafone and Thomson Reuters **24**

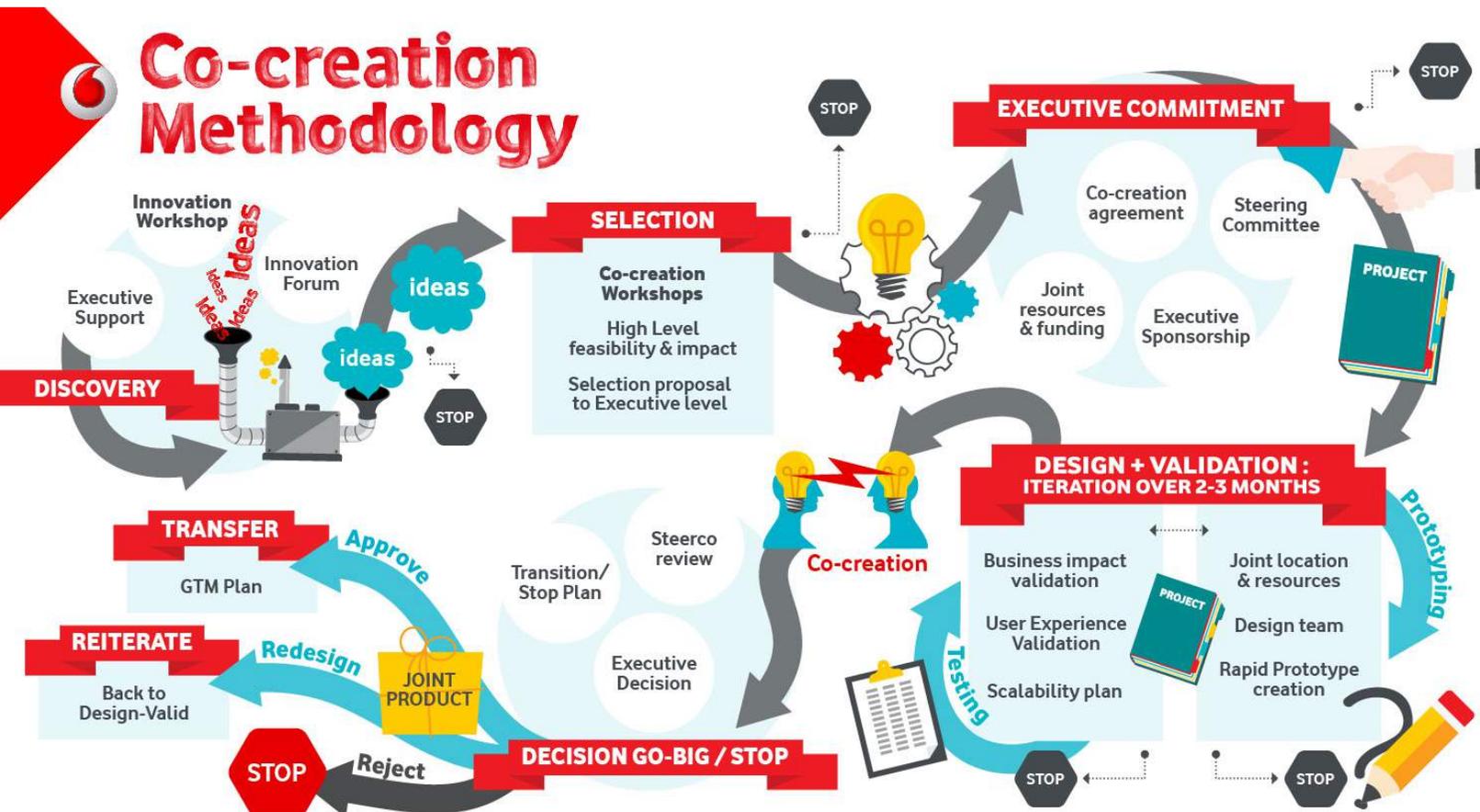
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Co-creation: Vodafone, Thomson Reuters Share Lessons Learned



How can two companies innovate together to address an opportunity that matters to them both?

Shannon Lucas of Vodafone Global Enterprise and Saidah Nash Carter of Thomson Reuters shared a document (above) that addresses that question.

Lucas explains, “Vodafone ran an innovation workshop with Thomson Reuters a little over a year ago, and Saidah and I ended up sitting next to each other at dinner. We discovered that we both had a passion for helping our companies grow our businesses in Africa.” After that initial meeting, Lucas and Carter began discussing the competencies that the telecom provider and the financial data company each brought to the table and the overlap in their customer bases in Africa. “We decided to explore mobile banking,” Lucas says, “because we realized that some of the top banks in Africa were customers of both of our companies.”

The project was kicked off in September 2014, and the two companies began testing a prototype the following spring. It’s a solution that connects smallholder farmers to banking services.

This wasn’t Vodafone’s first experience with co-creation, but Lucas says it was the most complex one so far, with many different stakeholders internally and externally. Carter adds, “Co-creation of this sort is a relatively new area for Thomson Reuters, but we quickly recognized that the combination of our discrete and complementary strengths could lead to a real game-changer. Partnerships of this sort are particularly valuable when tackling an especially complicated or risky opportunity. This project ticks both those boxes.”

Above is a “co-creation methodology map” created as part of the project. An overview of the project can be found at: <http://bit.ly/co-creation-lessons>. In 2018, Lucas joined Ericsson, where she heads the emerging business unit. ♦

Cisco's Model for a Bootcamp that Brings Multiple Companies Together to Innovate

BY KAITLIN MILLIKEN, STAFF WRITER



Kate O'Keeffe,
Cisco's Hyper In-
novation Living Lab
(CHILL) Founder

San Francisco's Palace of Fine Arts has hosted collaborators from all over the world ever since it was built. In 1915, artists, inventors, and visionaries walked under the Palace's soaring Roman arches during the Panama-Pacific International Exposition, which marked the completion of the Panama Canal, as well as San Francisco's rebound from the devastating earthquake a dozen years earlier.

More than a century later, Cisco's Hyper Innovation Living Lab (CHILL), a 48-hour innovation bootcamp, transformed the Palace of Fine Arts into CHILL's Innovation Hangar. Inside the cavernous space, participants from multiple companies battled the clock to brainstorm, prototype, and present new ideas to users.

By bringing together teams from different companies, CHILL seeks solutions to problems that can only be solved collaboratively. Kate O'Keeffe, founder of CHILL, and her team carefully curate each lab, hand-picking participants from across industries.

"[I]t became clear to me that a lot of corporations needed to stop thinking about innovating independently from each other, and start thinking about how do they innovate as ecosystems," she says. "In order to achieve disruption in some of the opportunity areas, it really wasn't going to be enough for just one company to innovate in isolation."

Participating organizations have included Walgreens, University of California San Francisco, and CitiBank. CHILL has an impressive track record. According to Cisco, the living labs have so far led to two startups, seven patent applications, and over 20 internal growth initiatives, as of late 2018. During an interview with Innovation Leader, O'Keeffe discussed CHILL's founding, the structure of the two-day event, and how CHILL's formula delivers impact.

DESIGNING CHILL

Before founding CHILL, O'Keeffe led Cisco's Services Innovation Center. According to O'Keeffe, she leveraged design thinking and hackathons to field ideas from employees throughout the company.

Many of the best ideas came from employees who were engineers, or other professionals early in their careers. O'Keeffe explained: "[O]ften they were closer to the customers than...senior leadership."

While hackathons and innovation activities generated new ideas, O'Keeffe says that innovators often found themselves endlessly pitching ideas to different senior leaders to win support. After several rounds of feedback and edits, the final version looked much different than the original idea.

"[I]t was a heartbreaking process. ... [B]y the end of it, the innovator is exhausted, the idea doesn't look

anywhere near [what it] used to [look like], and something gets added to a future list of products, instead of really realizing the [initial] vision of the innovator,” O’Keeffe says.

O’Keeffe says that she designed CHILL to bring senior leadership, innovators, and end users closer together, by physically placing them in the same room. At the end of the process, O’Keeffe says innovators and senior leadership know that their solutions will be well-received in the “real world.”

“[You want] on-the-spot innovation investors to be really confident that everybody’s voice that would be needed to sign off on an innovation, that they’re there in the room,” O’Keeffe says. “[T]hey’re smiling [and] they’re clapping.”

THE BUILDING BLOCKS OF CHILL

According to O’Keeffe, the time spent preparing for CHILL is integral to the bootcamp’s success. The month before CHILL, the team identifies the issue area “where all the players have to grow, have to change, or have to participate differently or more collaboratively.” They then begin recruiting a large cohort of organizations that work in that zone.

When tackling the issue of transparency in the supply chain, for instance, Cisco worked with Intel, GE, and DB Schenker, a global logistics firm. According to O’Keeffe, “A lot of minerals that are leveraged by the technology industry...are not sourced ethically. ... [I]t’s enormously worrisome...that we don’t have [a] clean view all the way back to the mines...”

One successful solution from the bootcamp was “nano-tags,” or devices that could track minerals from the mines until they are used in products.

“I don’t think any one company would have designed a process like that,” O’Keeffe says.

Participating in CHILL comes with a price: \$200,000 in investment from each participating company before the event begins. O’Keeffe says that this payment buys the company equal rights to intellectual property, projects, prototypes, and other outputs created by CHILL.

“To innovate with [Cisco]...through my work, it needs to be peer-to-peer, which means we both have to have dollars on the table,” O’Keeffe says. “It’s not a truly egalitarian, shoulder-to-shoulder situation unless we’re both prepared to invest.”

In order to participate, organizations must also agree to send top decision-makers to participate. “We have a rule within CHILL: if your company needs the blessing of the CFO or the CEO or Bob from accounting in order to be successful, then the CEO, and the CFO, and Bob from accounting have to be there in the room at the time,” O’Keeffe says.

Participating companies are “aware that our own

CEO is likely to be there,” O’Keeffe says. “The minute people start hearing that you have SVPs, and you’ve got EVPs, and you got your CEO coming, there’s a beautiful kind of peer aspect to that.”

However, O’Keeffe says bringing together top leaders for weeks on end is “impossible.” So CHILL condensed its timeline to 48 hours.

THE 48 HOUR DRILL

At the beginning of CHILL, participants meet for dinner, gathering around a table with members of their new team. This initial meeting creates an opportunity to share perspectives and brainstorm ideas.

“[W]e often get really breakthrough moments over dinner,” O’Keeffe says. “[A] lot of the teams sort of throw out [initial ideas], and start again at 9 p.m. at the end of the first day.”

The next day, they walk into a large arena. Arranged like a donut, build crews sit in the center of the circle with project teams on the outer edge. According to O’Keeffe, two hours in, participants meet their first round of end-users. They then meet with four to five more rounds of end-users throughout the day—getting feedback and reshaping their ideas along the way.

“We’re constantly pushing these leaders to stop talking, and start building...and have their concept tested by users,” O’Keeffe says.

At the end of the first day, participants brief build teams, which work overnight to create a prototype of their ideas. The process ends on day two at 5:30 p.m., when teams pitch their ideas to a more senior group of stakeholders.

“That’s often when a lot of CEOs of the participating organizations arrive to see the pitches,” O’Keeffe says. “[And] folks on the teams themselves are so senior that they...have the budget to make the appropriate funding decisions without much outside support. ... [So] leads on those teams [often say,] ‘This is what I’m doing, this is what its gonna cost me, we start on Monday, off we go.’”

THE POWER OF THE END-USER

According to O’Keeffe, inviting users to give in-person feedback during CHILL helps the team better understand users’ needs.

When one CHILL lab session focused on cancer care, O’Keeffe’s team invited patients, doctors, and nurses. When cancer patients arrived at the arena in person, they were often unexpectedly accompanied by their at-home caregivers.

“Almost invariably, when you’re that sick, there’s another person there—a spouse, a partner, a parent—that is part of your day-to-day journey. And we hadn’t



Participants in Cisco's Hyper Innovation Living Lab.

explicitly thought about that category,” O’Keefe says. “If we had interviewed those end users on the phone,...we never would have met this entirely [different] group of folks.”

As a result, one startup that emerged from the lab focused not only on patients, but also on the caregivers that help them. The digital app, CircleOf, allows cancer patients and their loved ones to create a network to coordinate doctor appointments, navigate employer health benefits, and connect to all sorts of auxiliary services. CircleOf has since expanded to assist with elder care and those living with disabilities.

Initially, CircleOf CEO Michael Jordan recalls, his CHILL team was given a broad, somewhat vague mandate: providing cancer patients with a way to receive information.

“For most executives at the time, the focus was AI, predictive analytics, and machine learning,” he says. “We were thinking [that] you would put the medical records into an algorithm, and out will come sort of an optimal cancer treatment plan for that patient.”

But throughout the CHILL process, Jordan’s team saw the patient experience varied based on the number of caregivers involved, and their access to different sources of information.

“[We then said,] ‘How do you build a product that democratizes that experience, so that everyone gets the non-clinical support they need...to make good decisions about...their cancer care?’” Jordan says. “We started with AI and machine learning, and we ended with something that’s almost a social caregiving network. And that’s where the process leads you. The process leads you to the truth, not the buzzword everyone is doing at the moment.”

LIFE AFTER CHILL

Idea challenges and hackathons can often fizzle out after teams go back to their day jobs. However, O’Keefe sets follow-up meetings before CHILL ever starts to help avoid that fate. Her team also assists with intellectual property and scheduling needs.

“[W]e’ve immediately lined up a lot of these post-Living Lab activities” she says. “[T]he longer that process takes to calendar and schedule, the greater the risk we have of an idea entering the valley of

death.”

During these follow-up meetings, project leaders have to refine the business model, test assumptions, and decide how to bring the idea to fruition—as an internal initiative or a new, independent startup. If teams build their idea into a startup, they must also pick leadership for the new company.

Jordan was chosen to be CircleOf’s CEO during this follow up process. With experience launching startups, Jordan had been selected as CHILL’s “Distinguished Entrepreneur,” guiding executives along the accelerated innovation process. “At some point you’re like a little duckling, and you get kicked out of the nest and you’re on your way to building a company,” he said.

After CHILL, Jordan said, startups must also hustle to secure additional funding. “You’re able to raise money from the partners [involved in the lab], and that gives you a good chunk of seed money,” he said, “but it’s still up to the team to get enough traction to go out...and secure [more funding.]”

Not all of the lab’s partners will necessarily remain engaged after startups have gained their footing. According to Jordan, Walgreens, one initial partner, has become less involved in CircleOf. Meanwhile, his team has weekly governance calls with Community Health Network. Cisco is also one of CircleOf’s biggest customers.

According to Jordan, CHILL excels in marshalling the initial resources and support that can make the innovation process smoother, even after the bootcamp has concluded. “[CHILL] took...product development, customer development, and market research, and it brought all the stakeholders into one room to...get them invested,” he says. “If I had come up with the idea for CircleOf on my own, it would have taken six months to a year to get to where we had gotten in just 48 hours.”

The CHILL initiative recently moved into Cisco’s engineering division; it had previously been part of the company’s customer experience organization. According to O’Keefe, this shift has further enabled her teams to develop ideas after living labs are complete.

CHILL’s next bootcamp in 2019 will focus on the future of work and “Industry 4.0,” or automation in manufacturing. ♦

How Business Units Get Involved with J&J's Network of Innovation Centers

BY AMY LUCAS, CONTRIBUTING WRITER



JLABS at the Texas Medical Center

How do innovation teams build constructive working relationships with the business units? To help answer this question, we sought out advice from Darren Snellgrove, Chief Financial Officer for Johnson & Johnson's network of innovation centers. The centers aim to be an interface between J&J's various business units—including pharmaceuticals, medical devices, and consumer healthcare—and the world of startups and academic research institutions. The goal is to spark new collaborations, and sometimes investments, that will lead to new products that J&J can deliver to patients. A lightly-edited transcript follows.

...

WHAT WE DO

J&J has three sectors: pharmaceutical, medical device, and consumer, and the innovation centers are one of the few places where those three sectors come together. At J&J Innovation, we've invested in some exciting areas across all three sectors and we're seeing a lot more convergence. General areas of investment include immuno-oncology, robotic surgery, 3D-printing, gene therapy, the microbiome, wearable technologies, and light therapy for aging and acne. The consumerization of healthcare and the wearable space will have a big impact on healthcare. Wearables, for example, can provide diagnostic capability, continuous monitoring, caregiver interaction, and increased patient and physician interaction.

HOW BUSINESS-SIDE EMPLOYEES GET INVOLVED WITH US

The model is one where we actually put the scientific and technical experts from J&J strategic areas of interest in the innovation centers. So it's somewhat unique. We've done that to make sure that there's absolute connectivity back to our R&D organization, which works side-by-side with our commercial and business unit partners. We've found this to be a pretty effective model, because it reduces the risk of doing off-strategy investments, and it speeds up the deal process because we are in direct communication. That's something that's really important for us, particularly when you're working with smaller companies and entrepreneurs where every second counts, and they don't have time to wait six months for a large corporation to make a decision.

We have one innovation center located in Silicon Valley, California; another one in Cambridge, Massachusetts; one in London, which is our hub for Europe; and then another in Shanghai.

HOW WE COLLABORATE WITH STARTUPS AND ACADEMIA

...A lot of the easy challenges in healthcare have been solved already, and we know that our scientists can't be heads down in a lab and come up with a cure for Alzheimer's on their own. They've got to be working with the best and the brightest entrepreneurs, academics, small companies, and so we put a lot of focus on collaboration.

In the past, I think J&J has done more mid to late-stage licensing deals and acquisitions [of smaller companies], and there's less of those available [in our industry]. ... Deal prices have increased, and so it's become harder to create value through those late-stage collaborations. We recognized that we needed to focus earlier, and we do this through a number of mechanisms.

We have JLABS, our incubator model. Companies can literally start with a credit card and get just the right amount of lab space that they need. They can share equipment with other companies, and it's a great way for them to get their healthcare company off the ground without investing a huge amount of capital on labs and equipment. It allows us to build a relationship with various companies such that when it comes time to do a strategic collaboration, they hopefully come to J&J first, because we've helped them and built a good relationship.

We also invest in the ecosystems that we're in, whether it be through early-stage investments in companies, providing advice and expertise, research grants, and various other mechanisms that we use to build partnerships and relationships at the early stages.

BOTH SIDES HAVE SKIN IN THE GAME

We have the business units providing at least 50 percent of our deal funding [when we make investments in startups]. Co-funding is a critical component of our model, and on every collaboration we provide 50 percent of the deal funding from J&J Innovation, and the business unit provides the other 50 percent. We have found that both sides having skin in the game, and a say in the decision making is an important component of success. We've actually looked at this model in terms of the returns that we get, and we've found that deals perform better when there's this kind of 50-50 collaboration approach.

OUR TRAINING AND EDUCATION ROLE

We provide training and education, mostly around new, disruptive technologies that we're seeing, as well as a lot of education around the types of deal structures and approaches that we're deploying. We try and take an agnostic approach to the deal structure and find what works best for the partner and for J&J, often deploying structures that our business units are not used to seeing.

“We formed a new company called Verb, which is focused on robotic surgery. It's a really exciting deal, and a great example of collaborating with a business unit to really think about the commercial strategy and how a robotic platform could play into our surgical franchise, which is a big piece of J&J's medical device business.”

**DARREN SNELGROVE, CHIEF FINANCIAL AND OPERATIONS OFFICER,
VP FINANCE JANSSEN GLOBAL R&D**

In turn, our business units educate us on the latest thinking on the business strategy, so that we can help them achieve their objectives. From my perspective, it's an extremely important relationship, and I think it's one that's evolving within J&J Innovation. We're primarily focused on product innovation, but there's a lot that we can and should do really in conjunction with the business units to help with business model innovation.

A SUCCESSFUL COLLABORATION WITH GOOGLE

One that's interesting has been a deal that we did in our medical device group in collaboration with Verily, which is Google's healthcare group. We formed a new company called Verb, which is focused on robotic surgery. It's a really exciting deal, and a great example of collaborating with a business unit to really think about the commercial strategy and how a robotic platform could play into our surgical franchise, which is a big piece of J&J's medical device business.

PULLING TOGETHER DISPARATE GROUPS

About three-and-a-half years ago, we...recognized that it wasn't that easy to do business with J&J. We're a huge company that has a lot of capabilities to offer entrepreneurs and smaller companies, but it wasn't always easy to figure out how to access those capabilities. We had a lot of externally-facing organizations, which made it even more confusing.

We wanted to simplify that and bring some of our externally-facing groups together under the J&J Innovation umbrella.

Johnson & Johnson Development Corp. [JJDC], our venture investing group, is one of those groups. It's actually been around for more than 40 years, investing in various healthcare startups. It has been quite successful and has built a great reputation. We wanted to supplement that with JLABS [our incubator model] and also the innovation centers, which really are the glue that pull all the pieces of the model together. The innovation centers have scientific and operational experts from each of our therapeutic areas and business areas surrounded by finance, legal, and business development folks that can help execute on important collaborations. The JJDC investors are co-located in our innovation centers.

TRANSFORMATIONAL INNOVATION — BUT NOT AT ANY PRICE

We are focused on transformational innovation, and so we look at factors such as the level of unmet need, the amount of differentiation, the size of the opportunity, the strategic fit with Johnson & Johnson, the technical feasibility, and then [intellectual property] protection. We're really looking for opportunities where we have line-of-sight to the

project becoming an asset that can be on-boarded into the J&J pipeline, with the goal of bringing treatments to patients. We obviously use financial models as well to assess projects.

We defined success as reaching proof of concept and onboarding assets at a steady run rate into the J&J pipeline. The projects have to be transformational, and we can't do deals at any price. We've actually developed a framework called the "value creation pathway," which we use to make sure that our deal structures are appropriate from a value creation perspective.

GOVERNANCE, FUNDING, AND THE TRANSITION

We recognize that J&J is a big company and can be overwhelming at times, particularly for smaller companies, and we try to be really respectful and thoughtful about that so that we don't overwhelm them, and we bring the best that we have to offer to help them be successful. And if they're successful, we'll be successful as well. So that's one thing I would offer up.

Another would be to think carefully about your governance process, and funding mechanism, as well as your approach to the transition from your innovation group to your mainstream business unit. These are areas that are critical to success. ♦



Darren Snellgrove is now VP of Finance for Janssen Global R&D within J&J.

Inside Xerox's 'Dreaming Sessions' with Customers

BY SCOTT KIRSNER, EDITOR



Patrick Mazeau,
the former Manager of Customer-Led Innovation at Xerox Corp.

How do you forge a better connection between R&D and actual customer needs? That was a hot-button issue several years ago at Xerox, the \$22 billion document management and business services company headquartered in Norwalk, Connecticut. Xerox R&D is perhaps best-known for its Palo Alto Research Center, situated in the heart of Silicon Valley, but it also has research sites in Rochester, New York; Europe; India; and Canada.

But there was a strong sense at the company that interactions between researchers and customers had become too much of a “dog and pony show,” says Patrick Mazeau, the manager of customer-led innovation at Xerox. “When researchers were in the lab, they had very limited exposure to customers and their concerns,” he says. “And when they were invited to participate in customer events, it seemed like they were giving presentations to try to impress the customer, but not really more than that.”

Customers had problems they wanted solved, and researchers wanted to explore potential applications of the software and other technologies they were developing. “They wanted to get feedback from direct discussions with customers about how their technology could be used,” Mazeau says.

For Xerox, the answer was what have come to be known as Dreaming Sessions. We asked Mazeau to explain how they work.

- We do them with existing Xerox customers. We’ve done some with companies we don’t currently work with, but it’s not always very easy for a company that doesn’t know Xerox to expose their strategy, and where they want to go.
- A few weeks before they happen, we have a member of our Customer-Led Innovation team talk with the Xerox account manager about what the customer is thinking about, and what Xerox is doing with them. Some customers may only know Xerox from printing and documents, and some may know about our human resources services or financial services. We ask many questions: What are the pain points of the customers, the opportunities for innovation, what are the new strategic imperatives?
- Then, we define an agenda for the Dreaming Session. (See slide on following page.) Usually, it starts with the customer talking about, ‘Here’s where we want to go with our business, the problems we have, the opportunities we see for innovation.’ Then we have several sessions where

our researchers come in and explain in simple terms what their technologies can do. Then we start to think of scenarios, of applications, for this piece of technology, and stories about how they might use it.

- We've trained people to facilitate these sessions, some of whom are researchers themselves. They're trying to get to the things that are not obvious, the things customers wouldn't tell you in market research. One thing we've done is divide the customer's employees into three teams. They've seen the technologies, and each team presents different scenarios or stories about how the technologies could be used in their business. Sometimes there has been voting, too, if the group is very competitive. ... With other groups, we have them draw things. From time to time, we use Lego blocks.
- We have one or two people on hand who take pictures, sometimes we film, and they also take notes. They're trying to capture all the things that are said. We sent people to a note-taking class so they would be really good at it. The notes go to the customer and the researchers afterward. We want to see if anything was misunderstood or misinterpreted, and we make the notes accessible within Xerox.
- At the end of the sessions, the goal is to have some ideas of how this technology could be used in the customer's context. Then we try to prioritize a bit: Which ones would you like to see become a reality first? If you had \$100,000, where would you put your money?
- After the Dreaming Session, the real work starts. We say, 'Let's try to pilot this technology together.' We have our researchers and engineers work hand-in-hand on developing the idea. We like to have the customer put some money on the table for the pilot. We invest, too—we're not asking for the customer to pay for all the development. Often, we have to deal with data issues, and negotiating what we have access to as part of the pilot.
- The day before we hold a Dreaming Session, we usually have a team dinner with Xerox people and the customer. We eat together, break the ice, and start to discuss some things informally. It's a way to create relationships.
- In 2013, we held 150 Dreaming Sessions globally.

Dreaming Session Agenda - Example

Time (min)	Topic	Presenter	Expectations	
15	Welcome & Introductions	xxx- Xerox	Share Goals of session	
30-40	Overview of Xerox Innovation Capabilities	CLI Coach & or AGM, Sr Exec		
60 - 75	Customer Context - Wishes & Worries , "Top of Mind Issues"	Customers Participating	Participants to share pain points, barriers to achieving their vision,	Pre-submitted questions
15	Break			
5	Innovation Opportunities	CLI coach	Concept demo / presentation, each followed by rich discussion between customers and researchers	
30-40	Topic 1	SME tbd		
30-40	Topic 2	SME tbd		
30-40	Topic 3	SME tbd		
15	Break			
20	ReCap, Prioritization of projects & Next Steps		Summarize key point and any follow-up actions identified	



Not every session gives birth to a pilot. I would estimate that 15-20 percent go on to pilots.

- We have sometimes done Dreaming Sessions with multiple customers on a specific topic, like around human resources, trying to understand what the vision is five years from now. Those typically happen over two days.

Xerox's high-level objective with its Dreaming Session strategy is "to accelerate the introduction of technologies to the market," Mazeau says. "We see it was a way to differentiate Xerox from the competition. There are many ways for large corporations to introduce new products, but with this approach, you learn things you wouldn't learn in traditional market studies. The pilot shows that there's an interest on the customer's part, and then you can start to survey other customers. Who else does it make sense for?"

That approach, Xerox believes, can help transform more of its research projects into big businesses, with a major assist from customers. ♦

How Bayer is Cultivating an Ecosystem of Consumer Health Startups

BY PAMELA BUMP, STAFF WRITER



Bayer's Berlin headquarters

More than a century after it formulated, patented, and branded Aspirin, \$51 billion Bayer AG is still best-known for that stalwart of the household medicine cabinet. But Bayer, headquartered in Leverkusen, Germany, owns a range of other healthcare-related brands, including Dr. Scholl's, Alka Seltzer, Claritin, and Coppertone. And the 150-year-old business is now in the midst of acquiring Monsanto, the St. Louis-based agriculture corporation which owns widely-used farming products like Roundup pest repellents, Fontanelle Hybrids, and Kruger Seeds.

On a smaller scale, Bayer is investing in new ecosystem engagement initiatives, like its G4A programs, to discover potential partnerships with players outside its walls.

In 2013, Bayer began to roll out its global G4A program in Berlin—under its original name “Grants4Apps”—with a focus on finding startups that could help them innovate in emerging or niche markets that were otherwise tough for big corporations to access. The G4A Generator launched in the US in January of 2018. Along with two other Berlin-based programs, Accelerator and Dealmaker, the plan is to allow new and more mature startups around the world to pitch solutions to Bayer in hopes of an acquisition, pilot, licensing deal, or other collaboration opportunities.

Priscilla Beal, who heads digital health innovation for Bayer and the US G4A initiatives, said her team felt it was the right time to bring the Berlin program to the United States.

“Bayer as an organization has been absolutely kicking ass at innovating on the molecule for the last 150 years. Now with the digital revolution, we’ve finally gotten to a place where, as an organization, we’re embracing the digital future,” says Beal.

STEPPING UP ECOSYSTEM ENGAGEMENT WITH SUBGROUPS

G4A is one of three subgroups within Beal’s Digital Health Innovation Team, which is tasked with creating new digital products and partnerships related to self-care. The other two groups are an Intelligence team and a Ventures team.

“Intelligence does scouting and strategic partnerships with five of the core innovation hubs around the world: Silicon Valley, Tel Aviv, Singapore, Shanghai, and Berlin. [Those cities are also] where our five physical locations are. They’re looking at ramping up partnerships specific to those ecosystems,” Beal explains.



Bayer AG's G4A Accelerator's 2017 cohort poses for a photo during its kickoff event.

Intelligence also focuses on strategic and academic partnerships. For example, in Pittsburgh, “They’re doing everything from partnering with organizations like the Pittsburgh Computing Center and local academic institutions like Carnegie Mellon University,” says Beal.

“They’re trying to build reciprocal relationships with local ecosystems and organizations that have a shared vision.”

The Ventures team is not focused on making venture investments, but rather forming companies. They’re charged with “spinning out a product—and a company around that product.” Beal adds, “Once it becomes viable, it either gets absorbed back into the company into the relevant division, or it gets spun out entirely on its own to Bayer’s [global ventures group] LEAPS.”

THE G4A INITIATIVE

Through G4A’s original Berlin program, “Grants4 Apps,” Bayer was promoting challenges focused on mobile application solutions, which were “the big thing” at the time, according to Beal. It has since expanded in scope. The startups are given 50,000 euros, 100 days in a Bayer coworking space, and mentoring from Bayer employees in order to build a product.

This program has housed startups including xbird, an artificial intelligence program that uses smartphone sensors and other movement technology to predict the signs of illnesses, such as complications related to diabetes.

Another example of a Grants4Apps participant is ThinkSono, which is developing diagnostic ultrasound technology that can diagnose Deep Vein Thrombosis, a potentially fatal condition causing blood clots to rise from the leg to the lung. Rather than forcing patients to schedule expensive and time-consuming radiology appointments to diagnose DVT, the app and technology turns portable ultrasound devices into diagnostic tools that can quickly spot clots.

The second program, Dealmaker, is for mature startups with close-to-market products. Startups similarly apply by submitting solutions to challenges

posted on Bayer’s G4A site.

Beal explains that Dealmaker is “more of a match-making program where we issue more complicated challenges from [Bayer’s pharmaceutical division] and R&D. ... We spend a very intense bootcamp day where each startup and each challenger sit in a room and hash out a letter of intent and begin to talk about a scope of work for a product, acquisition, or whatever the startup’s solution to a challenge is.”

In 2017, “[Dealmaker] had over 70 applications, and we closed 11 partnerships by the end of the year.”

G4A ENTERS THE US

The US-based “G4A Generator” program Beal oversees is modeled after Dealmaker. The emphasis is on companies that have more mature products that are close to being marketable.

In its first year, the G4A program has decided to focus on the challenges of consumer health, rather than pharmaceuticals. Challenges for the competition were created by members of the Strategic Initiatives group within Bayer’s consumer health division.

“Since the first cohort [in Berlin], we’ve really moved away from ‘One app to rule the world’ to ‘How our applications can be applied to the challenges that we have,’” Beal says.

The program, which closed applications for its first cohort in March, is also managed predominantly online. It features just one in-person pitch competition at the end.

BUILDING SUPPORT

Beal notes that in most global companies, there are always challenges related to gaining support for something new—especially something designed to move fast.

“When you’re working in a large organization and you’re coming at them with this startup spirit that the G4A team has generally, there’s a speed that takes some getting used to for others,” she says. “I would say that’s the challenge, but that’s also where the fun is.”

“The process of getting stakeholders involved in the launch of a new program is long. We spoke with dozens

of contacts in consumer health before we found the best fit,” Beal says.

Skepticism centered around costs, and questions like, “Will it really result in innovation at the P&L level?” according to Beal.

To prove the “entrepreneurial need” for the G4A initiative in the US, Beal’s team devoted time to internal messaging to promote and build support for its launch. While the digital health team is based in Pittsburgh, they sought help at other US locations from Bayer’s already-implemented Street Teams.

Street Teams, overseen by site leads at the six primary Bayer locations in the US, are made up of 10 to 20 enthusiastic Bayer employees. The teams are tasked with learning about and spreading the word on innovation initiatives within the company. Street Teams hold events about programs like G4A throughout the major Bayer cities.

“We had [a Street Team-hosted event] a few weeks ago in New York where we had a panel of speakers talk the self-care industry, and we gave an introduction to the G4A Generator specifically,” Beal says.

“We had the soft launch announcement of the program at Health 2.0 in October 2017. In January, when we launched the program, we worked with these challenge owners [who were] coming up with and digging down into what these challenge areas were, and what they wanted to accomplish. Once that was done, we had an onslaught of internal social media with newsletters, mailings, digital signage and videos to engage people with the Consumer Health Division itself.”

With approval from members of Bayer’s consumer health division, including its head, Natalie Bartner, Beal’s team began to do similar external messaging and social media campaigns to let the outside world know about the competition.

LET THE COMPETITION BEGIN

Beal has made sure to align her work with the larger vision and mission at the company. “What we’ve done is we’ve framed [the program] all around the strategic vision and mission of consumer health, which is ‘to empower patients and their ability to deliver self-care to help their lives.’”

On its website, the Generator allows startups to apply for challenges in three specific areas of self-care: nutritional support, external pain management, and skin and sun protection. It also features a fourth challenge catering to the whitespace, titled Digital Self-Care Solutions.

The Generator also has a video submission area, which gives Beal’s team a better sense of the people involved with each startup.

“We feel very strongly that it’s the team, more

often than not, that makes the startup,” Beal says.

“So we’ve crafted our program in a way that not only lets us capture very candidly the value that a possible partnership might bring, but it all still lets the personality of the startup shine through.”

Along with the video submission, the application asks entrants to briefly state the startup’s value proposition, as well as explain the market and revenue opportunities.

Four finalists from each category will pitch their product to panelists which include Bayer employees, venture capitalists, and related industry experts at a New York City Kickoff event. Following the pitches, one winner for each category will be announced.

Winners will be given a cash prize to help them move forward with their project. In early July, they will have a negotiation meeting and work to craft a letter of intent describing how their partnership with Bayer will continue. By the end of the month, partnerships will be announced and the startup will be handed off to Bayer’s consumer health division.

“Once they’re in, they’re actually in,” Beal explains. “They’re not put into an incubator where they either co-create, partner, or develop on their own. They become a partner with whomever their challenge owner is to decide how they want to move that product forward. They’ll be working and partnering with teams within consumer health.”

PLANS FOR THE FUTURE

As the submission period for the first G4A Generator cohort comes to a close, Beal says Bayer is open to making changes that new startup relationships could require.

“While we’re looking for mature startups and products close to [being] on market, we also understand that [a partnership] might require both the startup and Bayer to change—either in process, or in approach. We really have very open-ended requirements or thresholds. We’re intentionally inviting people looking for outright acquisition to investments or otherwise—whether it’s a [formal] partnership or a ‘Let’s see how it works’ project as a first go. We’re really kind of opening it up to the gamut, in hopes that it spreads that aperture of the types of innovations that come our way.”

Although the G4A Generator is still in its pilot year, Beal plans to expand the program in the future with new challenge offerings.

“We’ve launched this with very US-specific challenges for 2017, with the idea that next year we’ll expand to a globally-specific program,” Beal says. ♦



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