

The Middle Path to Innovation

Forget disruption and incrementalism. Here's how to develop high-growth products in slow-growth companies.



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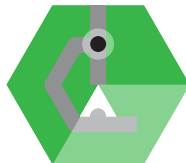
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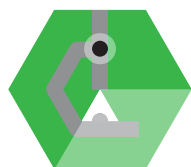
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INNOVATION



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INNOVATION



ABOUT THE ART

Carolyn Doucette's digitally altered photographs investigate the human presence in nature.

An innovation crisis is brewing in the United States:

Too many firms, both large and small, are failing to innovate. As a result, problems remain unsolved, technologies are never invented, and meaningful jobs go uncreated. According to one estimate, lost productivity cost the economy more than \$10 trillion between 2006 and 2018, roughly equivalent to \$95,000 per U.S. worker.

We believe that a primary cause of this crisis is the polarized approach companies take to innovation. At one end of the spectrum, corporations increasingly focus R&D efforts on product refreshes and incremental line upgrades. Doing so maintains revenue streams and market share while minimizing R&D budgets. These incremental innovations protect profitability and generate modest growth with lower risk.

At the other end, venture capitalists favor high-risk “transformational” innovations that seek to upend industries and generate outside returns. They anticipate that

the returns from innovation efforts that succeed will more than compensate for the failures. In order to build a viable company for an eventual M&A or IPO, the entrepreneurial team behind the innovation is forced to devote considerable time and energy to building up a range of functional and operational capabilities. The exit prices that venture capitalists require to generate the returns they need, and the bidding wars to acquire the start-ups that arise, mean that a large firm must pay a hefty price to purchase a successfully launched innovative start-up. Although observers tend to celebrate when a start-up is acquired by an established company, there's some inefficiency to this transaction. From an economic standpoint, it would be better if established companies did more innovation in-house—building, not buying.

For that reason, we suggest targeting the large gap in the middle of the innovation spectrum. This space is considered too risky for large firms, which worry about analysts' disapproval when failures drag down short-term profitability. And it's not risky enough for venture capitalists, who avoid investing in a return profile that's unsatisfying to their own investors. Yet the middle is precisely where large firms are best positioned to execute their innovation efforts.

In this article we present a new model of innovation, the *growth driver model*. To illustrate we use a detailed case study of how it revived innovation in Cordis, a large medical device technology firm. We also show the model's applicability in other sectors.

The Growth Driver Model

Our model has three stages. First, a corporation partners with an outside investor and identifies where riskier innovations are needed, how these innovations would fit into the firm's strategy, and how they might be integrated into its operational and functional units. Second, again in partnership with the outside investor, the corporation sets up an off-balance-sheet “accelerator” company that identifies and builds out the innovation projects for which the corporation will be the customer. Finally, innovations are developed. As the accelerator takes form, corporate leaders, investor partners, and the accelerator's management team identify a pipeline of “growth drivers”—products and services that will generate long-term revenue growth in markets where the



The growth driver model creates a partnership in which the corporation and investors align their interests and overcome each party's primary obstacle to growth.

firm is already established or in closely adjacent markets. The corporation then establishes an operating model for these new products that leverages its existing sales, manufacturing, regulatory, and management capabilities.

The model is most effective when created as an active partnership between a corporation and an external investor, as that enables the accelerator to leverage the capital and resources at its disposal. Typically, the partner will be an investment institution—and most likely a private equity firm—because those investors have experience working closely with large corporations. VC firms are less ideal partners because they are more interested in highly disruptive innovations and prefer to manage the risk of such investments through diversification. Institutional investors tend to be passive investors and may lack the bandwidth to engage as intensively as this model requires.

Although we lay out successive steps to the process, it's important to note that it is not precisely linear. There is a dynamic interplay between the corporation and the accelerator as innovations are identified and developed.

STAGE 1

Identifying the Opportunities

In the first stage corporate decision-makers and their investment partners target the middle of the innovation stream: the opportunities that fall between the incremental innovations favored for corporate R&D and the transformative innovations pursued by venture capital. Two types of innovations fall in this space: augmented and synergistic.

Augmented innovations significantly improve upon, but do not displace, existing products. They go beyond

incremental innovations, which aim to maintain customer interest in a product line, to devise products that are significantly better in terms of cost or functionality, helping companies capture substantial market share or obtain footholds in new markets. For example, in the medical technology field, efforts to treat cardiovascular disease have focused on blood flow in the arteries, resulting in technologies (stents, balloons, and catheters, for example) designed for that anatomy. One such device is a drug-eluting balloon, which is inserted into an artery and releases medication to reduce blockages that impede blood flow. A successful start-up by one of us (Duke) designed a balloon that was both cheaper and more effective than others on the market. That was an augmented innovation.

Synergistic innovations are new products that derive value from their adjacency to existing products. The firm can bundle the new product into its existing sales, marketing, and manufacturing processes. Synergistic products are often “innovation orphans”: Their value propositions are not high enough to attract VC investment but their risk is perceived to be too high for internal R&D investment. For example, many devices for cardiovascular procedures designed to work in arteries can be adapted to work in veins. But differences between arteries and veins, such as the veins' larger size and lower pressure, increase the risk of significant health complications. Those risks could be mitigated with devices designed explicitly for venous use, but developing a single product for veins may not grow profits relative to R&D costs sufficiently to merit development. If a series of venous devices were developed, however, a salesforce could sell them as a bundle and realize economies of scale. Such synergistic innovations are often left unrealized because



IDEA IN BRIEF

THE PROBLEM

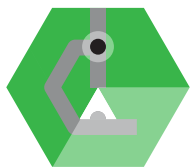
All too many companies, large and small, are failing to innovate. As a result, problems remain unsolved, technologies aren't invented, and jobs go uncreated. Lost productivity cost the U.S. economy more than \$10 trillion between 2006 and 2018.

THE REASON

Companies take a polarized approach to innovation. Corporate R&D efforts focus on safe product refreshes and incremental line upgrades; venture capitalists favor funding high-risk, high-return and often disruptive innovations, anticipating that returns from the few successes will compensate for the investments in failures.

THE SOLUTION

Exploit the space in the middle through a growth driver model that partners corporations with outside investors to identify and develop innovation opportunities, drawing on corporate resources and talent and externally recruited entrepreneurs.



INNOVATION

companies and VCs continue to approach innovation from polarized ends of the spectrum.

The growth driver model creates a partnership in which the corporation and investors align their interests and overcome each party's primary obstacle to growth. Virtually all corporate decision-makers have a long list of products they'd like to have in their portfolios but lack the funds to develop. And investors have funds at their disposal but must spend significant time and effort searching for profitable opportunities. Working together they can bridge the gap to prioritize needs in the portfolio, evaluate trade-offs, and develop a list of target areas for innovation.

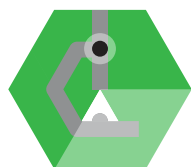
STAGE 2

Creating an Innovation Accelerator

In the second stage the corporation, in partnership with external investors, creates an off-balance-sheet accelerator to strategically deploy capital to develop the target products. The corporation's decision-makers work with the accelerator's leaders to identify where new innovations are needed, which ones are possible, and how they will fit into the firm's strategy, operations, and functional units. The corporation becomes the customer for the accelerator's innovations.

Next they determine the development budget and acquisition prices for the accelerator's products. The specific process for this will differ by industry, but certain general principles apply. Inviting trusted development teams to bid on RFPs with clear specifications will ensure the quality of products and their fit within the corporate portfolio and provide a market check on costs.

The acquisition price is set based on the anticipated value created, taking into account the budget of the winning bid. It aims to provide a superior value proposition for both parties than would either internal R&D or M&A. The corporation pays a lower price than it would in a traditional M&A context because as an early investor, it can obtain the product at a lower valuation and is not buying sales and manufacturing capabilities it doesn't need. The development team is willing to accept a lower price because of the greater certainty of acquisition and the elimination of distracting and expensive activities such as fundraising, sales, and manufacturing. A range of levers can be pulled in the negotiation, including



INNOVATION



The accelerator attracts talent because it offers a fast-paced entrepreneurial climate and removes funding and acquisition risks.

milestone-based funding, equity incentives, and cash bonuses.

This arrangement leverages the existing operational capacities of the firm while allowing an entrepreneurial environment to flourish at the accelerator. Because the accelerator custom-builds products for the corporation, the firm is more likely to embrace them, effectively sidestepping the “not invented here” syndrome. Having a predetermined budget ensures that funding for the innovation will not fall victim to corporate cost-cutting, and a predetermined transfer price assures the accelerator of an excellent return in the event of success. The company and the accelerator may have either a shared board or independent boards, but the board structure should attain a balance between strategic alignment and operational independence. What’s key is that the accelerator’s management team should collaborate with but not report to the company’s leadership when crafting strategy and planning new products.

By externalizing innovation in this way, corporations reap several benefits. First, they gain access to new products more quickly and with lower risk than they would using typical internal R&D efforts. They also can reduce their dependence on M&As, which often fail. In addition, the model increases the likelihood that a good idea gets commercialized: Unlike a venture-backed start-up, which builds a product that needs to appeal to many potential buyers, the accelerator develops growth drivers with one specific acquirer in mind and an understanding of how that firm will manufacture, distribute, and sell it. While design and engineering challenges exist, of course, the products chosen are technically feasible, and their eventual acquisition is nearly assured. The process is more efficient than acquiring a start-up. The corporation doesn’t end up with redundant operational assets; rather, it purchases bespoke innovations.

STAGE 3

Developing the Innovations

In the third stage the accelerator’s leadership team recruits key management and technical talent to develop products and creates incentives to ensure that the new products fit the corporation’s strategic aims. The advantage of working in an accelerator is that, unlike at a VC-funded start-up, the team

developing the growth driver is not expected to spend time building up the operating infrastructure of a business (HR, accounting, marketing, and sales) or engaging in multiple and time-consuming rounds of fundraising. They are somewhat sheltered from the bureaucracy and political maneuverings of a large company. In other words, working at an accelerator allows innovative people to focus on what they do best: designing and engineering new products.

The accelerator attracts talent, both from large corporations and start-ups, because it offers a fast-paced entrepreneurial climate and removes funding and acquisition risks. The best practice is to institutionalize recruiting from an ecosystem of repeat players, which could include entire engineering teams, such as contract device and manufacturing organizations (CDMOs) in biotech or med-tech. Ideally, accelerators hire not merely to staff one project but to develop a bullpen of best-in-class talent. Trusted workers from previous projects are the best place to start, but an accelerator should consistently employ the strengths of its growing ecosystem to attract, develop, and retain new talent. Like a major league baseball team develops a minor league farm system, accelerators should use smaller projects to evaluate and nurture talent that can eventually be redeployed to larger and more complex initiatives. Some talent will join the accelerator full-time. Teams are assembled and evaluated primarily based on their level of experience in the target area, demonstrated entrepreneurial mentality, and willingness to adapt to the growth driver model. By building a complete support network for the accelerator that includes secondary functions, such as quality assurance, the accelerator’s leadership will facilitate the teams’ rapid and focused delivery of new products.

Each group of innovators creates a separate development company for each product it designs, and a team may work on three to five products at one time. The accelerator’s leadership team creates a portfolio of innovative products for the corporation through building a network of development companies. The predetermined transfer price of each successful product means that team members—who have an equity stake in the development companies they are part of—get a larger return than what they would earn if they worked at a large corporation and more certainty of an exit than if their work was backed by venture capital.

The Innovation Spectrum

This table compares three points along the innovation spectrum. Incremental innovation created within an incumbent firm is at one end, and entrepreneurial innovation created outside of incumbent firms is at the other. In the middle is the growth driver model.

	RISK	COST	STRATEGY	CONTROL	TALENT
INTERNAL INNOVATION <i>(Example: Corporate R&D units)</i>	Avoided: Failing to produce is considered safer than producing a failure.	Avoided: R&D costs eat into EDITBA and therefore earnings per share.	Limited: Fixation on short-term profitability drowns out long-term innovation strategy.	Stifling: Innovation efforts are often killed by other priorities, bureaucracy, short-sightedness, political maneuvering, and the desire to maintain the status quo.	Squandered by bureaucracy: Best creative talent tends to avoid large bureaucratic firms.
GROWTH DRIVER MODEL <i>(Example: Independent accelerator collaborating with a large corporation and investors)</i>	Mediated: Higher-risk products are developed by trusted teams with assurance of fit.	Minimized: R&D costs are off balance-sheet, and price is pre-set below M&A value.	Maximized: Collaboration with the accelerator to develop products fills in portfolio gaps.	Moderated: Development teams have autonomy, but accelerator teams guide efforts toward the corporation's needs.	Mobilized and motivated: Talent can focus on what it does best.
EXTERNAL INNOVATION <i>(Example: M&A)</i>	Increased: The product could be lost to a competitor, underperform expectations, or need extensive modifications.	Increased: Competing bids for an innovative asset raises its price.	Opportunistic: Innovation depends on opportunism (products that happen to be available), not strategy (products intentionally developed to meet needs).	Lacking: Product development can't be aligned with a company's sales, manufacturing, and other operational strengths, making product integration time-consuming and inefficient.	Squandered by distraction: The best creative talent wants to build a product, not a company.

Overall, the growth driver model produces innovations at lower cost and greater speed thanks to efficiencies created through collaboration between the company and multiple development companies, fueled by external investment. Liberated from the distractions of fundraising and infrastructure-building, engineers can focus on their projects. Coordinated teams can produce multiple innovations simultaneously, each custom-designed for integration into an existing product portfolio, with company input along the way to ensure a fit between product development and corporate strategy. If a product ultimately does not fit the company's needs, accelerator executives, with guidance from the firm, can sell it to an outside entity. And if a product design fails to gain traction, the product portfolio is sufficiently robust to disperse risk; a few failures won't curtail the overall effort.

Now we'll look at how this model worked to kickstart innovation in a company in the medical technology sector.

The Model in Practice

Medical technology is a \$500 billion industry characterized by a polarized approach to innovation. Large med-tech companies face substantial barriers to internal innovation, including high development costs, long timelines, significant technical complexity, and regulatory hurdles. A recent McKinsey analysis found that large med-tech companies respond to those hurdles by focusing on incremental innovations to maintain market share in mature but low-growth markets. At the other end of the spectrum, there has been an increase in VC-funded start-ups, which are bought at premium price tags by larger companies that immediately disband most of the start-ups' operational capacities.

In 2021 Ajax Health, a large player in the health care sector, partnered with investment firms Hellman & Friedman and KKR to purchase Cordis, a med-tech company in the cardiovascular and endovascular space, for approximately



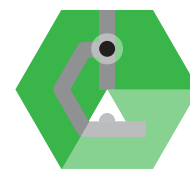
Employing this model, Ajax was able to recruit a team of engineers that had been struggling to raise funding for several transformative projects.

\$1 billion from Cardinal Health. Cordis was a well-regarded brand with yearly revenue of about \$750 million, but it had a stagnant product line and yearly revenue growth of only 2%. (Two of us, Duke and Will, are executives at Ajax.)

Prior to the purchase, the Ajax team and its investor partners had reviewed Cordis's product portfolio and identified significant gaps in multiple product ranges, such as products targeting circulatory problems and others treating cardiac complaints. They would establish an accelerator to develop products to fill those gaps, and they would be

manufactured in Cordis's plants and distributed through Cordis's existing sales and marketing channels. The development risks, therefore, were confined to the technical challenges.

Ajax's choice of partners was crucial. Unlike typical venture-capital firms, Hellman & Friedman and KKR were willing to partner with a large corporation. Their investment provided the scale of capital needed to support an entire accelerator, rather than individual products, and it allowed for an appropriate time horizon to build the product



INNOVATION

portfolio, with both a medium-term (three to five years) and a longer-term (five to 10 years) pipeline. To avoid a negative impact on operating profits, Cordis arranged for the accelerator to be an independent entity. As Ali Satvat, the global head of KKR's Health Care Strategic Growth platform, observes, "There are many ways to increase a company's value. Fostering innovation is often the most impactful but also the most difficult. This accelerator structures the optimal relationships among investors, corporations, and innovators to enable each to play to its strengths."

The investor partners and Ajax allocated an additional \$300 million, with the vast majority dedicated to R&D, to create an off-balance-sheet accelerator called Cordis-X, which had the same ownership structure as Cordis. Cordis-X recruited experienced teams to work on product development, with each team forming its own development companies within the accelerator.

Innovators were recruited for their technical skill, reliability, effective project management, teamwork, and creativity. Both Cordis and the innovators had to yield some autonomy to collaborate effectively. The accelerator's leaders began by inviting innovators they had worked with at Ajax to join. Recruitment snowballed as word of the unique opportunities presented by the model spread. Leveraging the Ajax network, Cordis-X's leadership expanded the range of development teams it invited to offer bids on RFPs, which it then evaluated based on the team's reputation and the cost, timeline, and quality of the proposal. Cordis-X developed a dynamic network of vetted "Ajax-verified" partners that were then routinely invited to bid on projects and even to propose project ideas of their own. Ajax also built a support network of trusted partners to handle secondary tasks, such as quality, clinical, and regulatory activities, so that the teams could focus on efficiently delivering innovative products.

Each development team worked on three to five products simultaneously with predetermined budgets and a set transfer price of three times the invested capital for successful products. In two years, the accelerator successfully initiated nine new products and closed one large-scale M&A transaction and three strategic investments. The innovations improved Cordis's offerings in access and closure of the circulatory system and added products at other stages in procedures, such as vessel prep solutions and a portfolio of

specialized balloons and stents. Two years after the purchase, Cordis's revenue was growing at 8%. Philip Hammaraskjold, the executive chairman at Hellman & Friedman, notes, "This innovative growth model is a new tool we can use to drive equity value in our companies by accelerating much needed patient-care innovation on a cost-effective basis. Looking forward, we are excited to deploy this model alongside more traditional growth strategies in other parts of our portfolio."

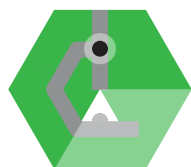
By using the growth driver model during the 2022 investment downturn, Ajax was able to recruit a team of engineers from Nidus Biomedical that had been struggling to raise venture capital for several transformative projects. The Nidus team had been pursuing innovations to address significant unmet needs in the acute and chronic heart-failure spaces, which required large, lengthy, and costly clinical trials. The team worked with Cordis-X on a series of more manageable projects that were innovative but more iterative in nature. This approach brought the team new capital to subsidize its pursuit of those higher risk, more transformative innovations—thereby satisfying both Ajax's objectives and the team's ambitions.

All this was accomplished while Cordis was navigating a complex carveout from Cardinal Health, which involved completing more than 200 transfer of service agreements, executing exit agreements in more than 90 countries, managing 4,000 employees and hiring several hundred new ones, and setting up a new infrastructure and supply chain. It would have been exceedingly difficult for the same management team to execute this carveout while pulling together an innovation strategy.

A Shield Against Disruption

We've shown how the growth driver model can kickstart growth in a stable industry. But it can also be a survival strategy for incumbents facing a disruptive challenge. The movie industry is a case in point.

Rising production costs, financial pressures on both streaming services and traditional players, and the implementation of AI tools are transforming the industry. Incumbent studios lack the data-collection capabilities of the streamers, who use customer data to come up with new



INNOVATION

products in an industry where it's notoriously difficult to accurately predict which shows and movies will become hits. The streamers are themselves locked in fierce competition for market share, and they face customer confusion over their burgeoning numbers and befuddling content tiers.

Hollywood executives and independent film directors agree that the industry's innovation model is broken. The large studios, or "majors," have lost their edge, churning out lower risk but artistically redundant sequels and remakes. At the same time, the content arms of streaming services have crowded out many innovative independent filmmakers. Before 2010, approximately 80% of independent films (which typically cost less than \$2 million) were profitable. The revenue-sharing and distribution models of streamers have dropped that number closer to 20%, according to a 2023 study by Naomi McDougall Jones and Liz Manashil.

As the industry transforms and a new structure emerges, adopting the growth driver model could be the key to success. Consider the art-house horror movie producer Blumhouse Productions, which has already applied a version of this approach. In 2014 it found a partner, Universal, to fund the production, distribution, and marketing of the films it accepts into its portfolio. Universal provided the operational and financial support that Blumhouse lacked, offering it a 10-year deal for 15 pictures a year, five at \$5 million and the remainder at \$3 million or less.

Blumhouse effectively became an accelerator, creating innovative films for Universal to distribute and market. The directors who led the accelerator were given complete creative control and worked under a pre-arranged budget. Its films cost far less to make than the average motion picture. Innovating in the middle generated significant wins: Blumhouse creates a dozen movies a year for \$12 million or less each—and scores consistent global box-office hits like *Get Out* and *The Purge* that have earned hundreds of millions of dollars. Its low-budget model has had success with the low-cost horror genre, but hits like *BlackKkKlansman* and *Vengeance* demonstrate its potential for broader application.

Saving the Defense Sector

This model has the potential to drive growth in entire industries without radically altering the structure of the large

firms within them. Consider the defense sector, for example, where the costs of developing innovations are orders of magnitude higher than in medical technology: Developing a new category of med-tech devices costs between \$25 million and \$200 million. The F-22 Raptor aircraft costs around \$150 million to make and at least another \$100 million to operate over its lifetime, and that's not counting the billions of dollars that went into research and development.

Many observers acknowledge the U.S. defense industry is innovation-starved. Palantir and SpaceX are two examples of the limited but growing number of defense "unicorns" (start-ups valued at \$1 billion or higher), but both also produce technology that's important to the private sector. Defense start-ups routinely founder in the so-called "Valley of Death," the two-year-plus government acquisition process during which they cannot expect income. Risk-averse acquisition officers often turn back to established firms. Meanwhile, the "Big Six" defense contractors spent an average of only 2.5% of revenue on R&D in 2020, slightly less than the 4% R&D investment that was available in the national security budget, according to a McKinsey report.

The U.S. Department of Defense has launched more than 100 incubators and accelerators to spur innovation, including the Defense Innovation Unit, AFWERX, and NavalX, but the result has been characterized as "innovation theater," in which processes eclipse outcomes. Steve Blank, a cofounder of the Stanford Gordian Knot Center for National Security Innovation, writes in *War on the Rocks*, "The Pentagon's relationship with start-ups and commercial companies, already an arms-length one, is hindered by a profound lack of understanding about how the commercial innovation ecosystem works and its failure of imagination about what it could do."

Use of the growth driver model could transform the industry. An accelerator, led by a team with a strong track record in defense innovation, could deliver high-growth innovations in partnership with start-ups or independent engineering teams. The primary investor could be the government (as the buyer), a Big Six defense contractor (as the supplier), or some combination of the two, together with a major investment institution such as KKR. This approach would increase the pace of innovation while leveraging the existing industry structure—an important consideration if the U.S. is to maintain its strategic edge. As rival countries



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rapidly increase their investment in military technology, the U.S. cannot afford to disrupt its entire defense industry in pursuit of new ideas.

THE GROWTH DRIVER model leverages a firm's capabilities to unlock new revenue streams by tapping into innovators' creativity and agility. Incumbent firms develop a sustained innovation capability and are no longer reliant on costly and uncertain M&A efforts to drive future growth. Executives are better positioned to develop corporate strategy. Investors unlock greater value creation. And entrepreneurs are

empowered to focus on innovation. Moreover, society itself benefits through the creation of new jobs, a more productive use of resources, and innovative new products that improve everyone's quality of life. ☺

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