Deloitte.
University Press

How to innovate the Silicon Valley way

Tapping into the Silicon Valley innovation ecosystem

Doblin, the innovation unit of Monitor Deloitte, specializes in helping companies anticipate and seize new business opportunities. It is one of the few innovation firms that goes beyond opportunity analysis and portfolio management by also working with clients to generate and build new offerings and businesses. Doblin helps clients set innovation strategy; design, build, and launch innovations; and become better innovators by developing their own signature innovation capabilities, systems, and structures that are specific to each enterprise. Learn more at www.doblin.com.

Bridge by Deloitte is a subscription-based digital platform that helps enterprises connect directly with start-ups, monitor the innovation landscape, and foster new ideas together. It combines the sector-specific knowledge and depth of Deloitte insights with powerful algorithms to scan the innovation ecosystem for start-up partners based on specified criteria. Learn more at www.deloitte.com/us/bridge.

Contents

Executive summary | 2

Silicon Valley | 3

An important center of innovation and technology disruption

The benefits of participating in innovation ecosystems | 7

Lessons from successful innovators | 9

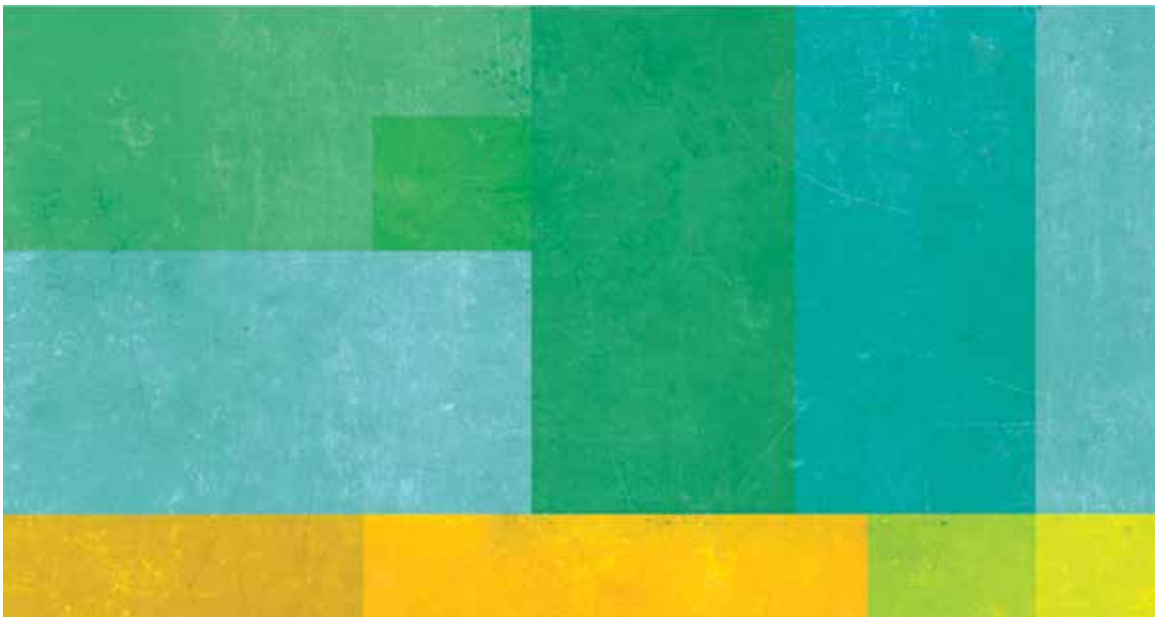
Challenges and risks | 13

Steps for effective innovation in Silicon Valley | 15

The ecosystem advantage | 18

Executive summary

Silicon Valley has been and continues to be one of the world's most important centers of innovation and technology disruption. Given the Valley's nearly unique set of assets—the presence of technology giants, world-class universities, abundant venture capital, and a hypercompetitive yet collaborative culture that celebrates both risk and failure—the Northern California region's recipe for innovation has rarely been replicated. Large enterprises are increasingly venturing into the Valley to draw upon "outside-in" innovation, but they often stumble due to cultural, structural, and regulatory hurdles. To be able to harness Silicon Valley's innovation ecosystem to their advantage, enterprises should have clearly stated objectives and direction, as well as a deep understanding of the local environment.



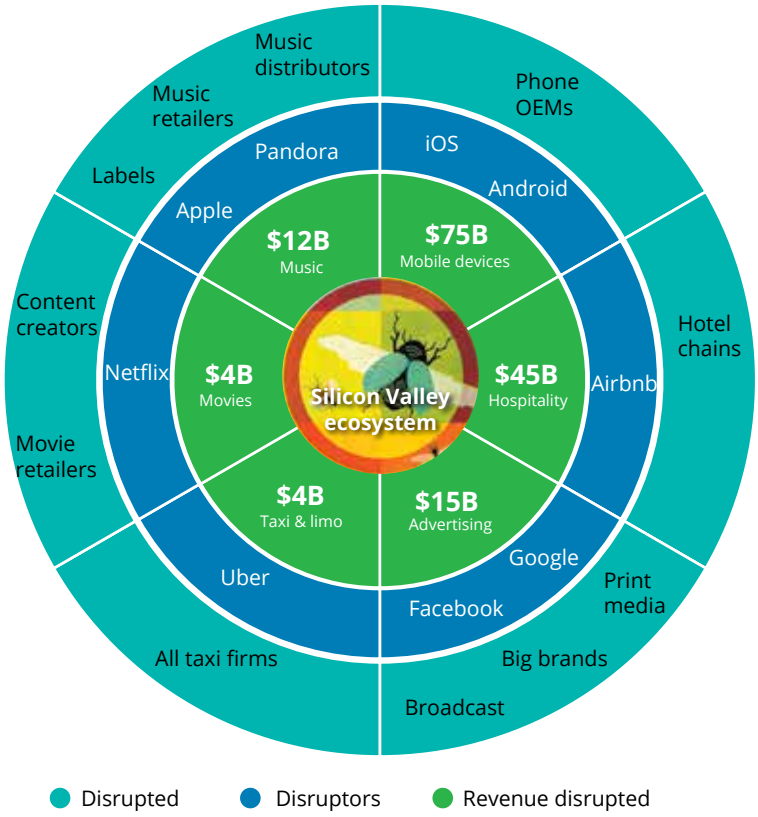
Silicon Valley

An important center of innovation and technology disruption

SILICON Valley has been driving innovation and disruption for several decades, and through the beginning of the 21st century, it continues to be one of the world's most important centers of innovation and technology disruption (figure 1). The region is notable for its combination of widely available capital and rapid scale-up of commercially viable "intellectual property (IP)". More than one-third of the 141 companies in the Americas, Europe, and Asia Pacific that grew to a valuation of greater than $1 billion between 2010 and 2015 were located in the Bay Area, a striking testament to the area's ability to accelerate commercial success.[1] Perhaps for this reason, 61 percent of companies with innovation centers have a presence in Silicon Valley.[2]

The Northern California region's recipe for innovation has rarely been replicated. Given Silicon Valley's largely unique set of assets—the presence of technology giants, world-class universities, abun-

Figure 1. Silicon Valley disruptors



Further disruption waves ahead.

Connected cars and autonomous vehicles
Examples: **Tesla's** ability to make over the air changes to vehicles, **Google's** driverless car project

Alternatives to traditional banking
Examples: **Lending Club** and Prosper which enable lending between users, **Stripe** that handles online payment transactions

Digital health and advanced robotics
Examples: Health information platforms like **Apple Healthkit**, advanced robotics development leading to robotic surgery

Source: Deloitte analysis.

Graphic: Deloitte University Press | DUPress.com

TECHNOLOGY INNOVATION HUBS WORLDWIDE

A few other innovation hubs are emerging that share a number of characteristics with Silicon Valley that make them a fertile ground for innovation: New York (for financial technology), Tel Aviv (for security), and Austin (for digital health), along with other locations such as Boston, Paris, London, and Berlin. All of these hubs are characterized by a multitude of start-ups supported by leading academic and research institutions, easy access to venture funds and accelerators, ready availability of talent, and an open, collaborative ecosystem that enables innovation.

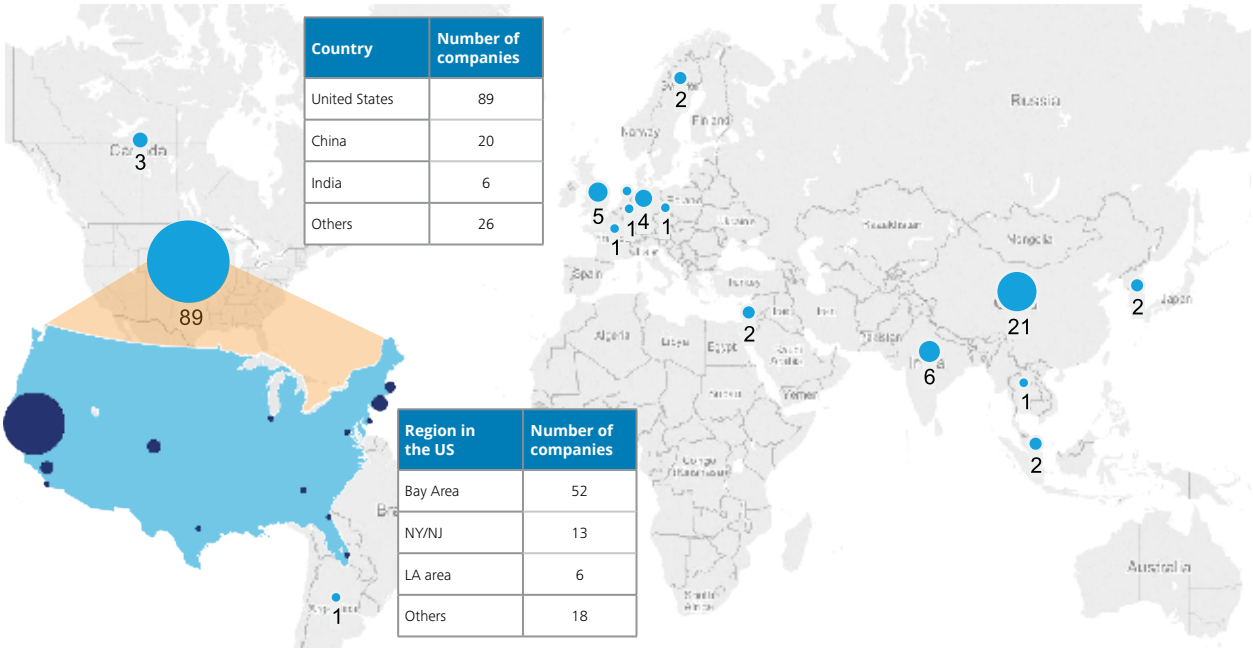
dant venture capital, and a hypercompetitive yet collaborative culture that celebrates both risk and failure—the massive scale of innovation in the area should not be a surprise.

> "Many large, successful companies are creating offices in California's Silicon Valley to spot big new trends and learn how they can transform their organization[s] in ways they couldn't otherwise imagine. It's no longer good enough to wait for change to come to your industry; you need to be out there where it's happening. And a lot is happening in Silicon Valley."
>
> —Harvard Business Review (2013)[3]

Capitalizing on external innovation: How are large enterprises tapping into Silicon Valley?

Organizations from across the globe are expending a significant and increasing amount of resources to capture external innovation from innovation hotbeds such as Silicon Valley. According to a survey of Silicon Valley-based CEOs, the main advantages of doing business in the Valley are its entrepreneurial mind-set (83 percent), access to skilled labor (81 percent), and proximity to customers and competitors (60 percent).[4] When companies are looking to

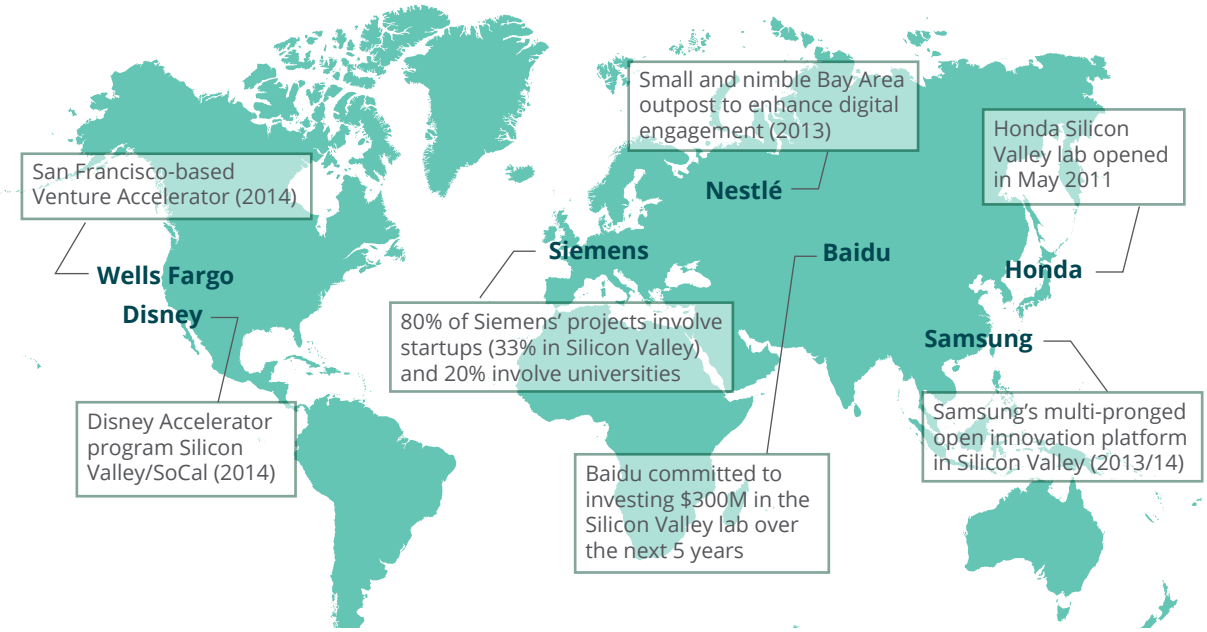
Figure 2. Geographic distribution of companies that entered the "billion dollar club" (2010–2015)



Source: CB Insights, *The unicorn list: Current private companies valued at $1B and above*, https://www.cbinsights.com/research-unicorn-companies, accessed January 2016.

Graphic: Deloitte University Press | DUPress.com

Figure 3. Enterprises across multiple industries and geographies are turning to innovation hotspots to help solve confounding strategic problems[5]



Source: Deloitte analysis.

Graphic: Deloitte University Press | DUPress.com

make strategic investments, the Valley provides them with easy access to potential collaborators. Proximity to start-ups can also make the innovation process faster and more efficient.

The movement westward is not limited to companies within a certain industry or geography (figure 3). Be it Nestlé's small and nimble Bay Area outpost to enhance digital engagement[6] or Samsung's multi-pronged open innovation initiatives in the Silicon Valley,[7] companies from all across the globe and in various industries are establishing operations in the Valley.

These corporations are exploring multiple options to access the Silicon Valley innovation ecosystem:

- **Collaborative arrangements** can be set up with players in Silicon Valley's highly diverse technology ecosystem. These can include licensing agreements for license transfers or fee-based arrangements, as well as project-based partnerships or joint investments. BMW, one of the earlier arrivals in the Valley, has benefited from its partnership with Apple Inc.[8] These collaborative agreements could represent specific project-based partnerships or longer-term "big bets."
- **Corporate accelerators** are being established by companies to nurture start-ups and scout for innovative ideas. Corporate accelerators are similar to traditional accelerators except that, while traditional accelerators focus on amplifying returns on equity investments, corporate accelerators are set up for harnessing innovation.

More than one-third of the 141 companies in the Americas, Europe, and Asia Pacific that grew to a valuation of greater than $1 billion between 2010 and 2015 were located in the Bay Area.

ACCELERATOR ADOPTION MODELS

Enterprises can choose to operate the accelerator in-house, or outsource the accelerator's operations to a partner such as Techstars, LMarks, or Nest. In the past three years, more than 100 corporate accelerators have been launched globally.[12] Our analysis suggests that roughly half of these accelerators have used a partner to manage their operations. Partners may charge several hundred thousand dollars to set up and run an accelerator.

Companies may also opt to sponsor existing accelerator programs. For example, EMC sponsors SigmaLabs.[13] As might be expected, a sponsorship model gives corporations less influence on an accelerator's strategy and functioning than an in-house or outsourced model.

Enterprises can utilize multiple models to set up accelerators (see sidebar, "Accelerator adoption models").[9]

- **Corporate venture capital (CVC)** funds can be used to provide market development support and enable access to technology breakthroughs. CVC funds can be set up as semi-captive funds that are open to other industrial partners, or as captive funds that are wholly owned by the parent. CVC has become an important avenue for outside-in innovation, accounting for 33 percent of total venture capital deployments in Q4 2014, up 20 percent from Q1 2013.[10]
- **Acquisitions** within core and adjacent markets to complement internal organic innovation, in which a company acquires start-ups or larger players in areas of interest, can provide access to cutting-edge technology. Venture capitalists closed 279 deals in Silicon Valley in the first quarter of 2016, and 286 in the last quarter of 2015.[11]

In practice, many companies focus largely on one-to-one partnerships to drive innovation in Silicon Valley. However, while these partnerships may help companies in their innovation efforts, executives may want to evaluate them as a complement to a broader innovation program, going beyond short-term transactional partnerships to take full advantage of distributed innovation.

The benefits of participating in innovation ecosystems

WHY should enterprises give up transactional approaches in favor of dynamic, ecosystem-led innovation? The answer lies in the enormous performance pressure companies are experiencing today in an environment that puts a premium on innovation. In a world that is increasingly characterized by technological disruption and a highly volatile demand for new products and services, corporations face the need to be more responsive and agile than ever.

The findings of the 2013 Shift Index study highlight the increasing difficulty of creating shareholder value over time. Between 1965 and 2012, US companies experienced a 75 percent decline in return on assets. Moreover, the average tenure of a company on the S&P 500 has declined from 61 to 18 years over the past 55 years.[14]

In addition, driven by large-scale digitization and connectivity, longstanding industry and market boundaries continue to blur. New cross-industry ecosystems are evolving to enable co-created solutions and to serve markets in ways that are beyond the means of any single actor (or a near-homogenous group of actors). Innovation thinkers, notably John Hagel, have emphasized the importance of such ecosystems, suggesting they provide the most sustained and important benefits to those businesses that create, lead, and participate in them.[15] This rise of ecosystems is forcing leading organizations to rethink their strategies, business models, operating models, core capabilities, value creation and capture systems, and organizational models.[16] Companies can no longer expect to succeed while operating in silos.

New cross-industry ecosystems are evolving to enable co-created solutions and to serve markets in ways that are beyond the means of any single actor (or a near-homogenous group of actors).

While multiple waves of innovation have originated from Silicon Valley over the years, the current one is particularly significant because it is driving the creation of ecosystems that cross industry borders. See the sidebar, “Disruption and evolving ecosystems in the automobile industry,” for an example of how disruption in one industry is impacting a wide array of players far beyond companies in that industry.

DISRUPTION AND EVOLVING ECOSYSTEMS IN THE AUTOMOBILE INDUSTRY

Gone are the days when cars were about engines, camshafts, or cylinder blocks. Today, between 10–25 percent of the cost of making cars comes from software.[17] The new Ford GT has 10 million lines of code—3 million more than the code found in a Boeing 787 Dreamliner.[18]

Tesla's ability to remotely make changes to its vehicles and Google's driverless project are leading the next wave of disruption in the auto industry. Silicon Valley players such as Apple Inc., Uber, and Google have been making advances into the automobile space; as a result, most major auto companies (such as Ford, Honda, and BMW) and suppliers (such as Robert Bosch GmbH and Delphi) have established a presence in the Valley to be near the automotive R&D taking place.[19] Toyota, for example, is investing $1 billion in a Silicon Valley-based research company to develop artificial intelligence and robotics.[20]

A recent Deloitte publication, *The Future of Mobility*, describes how this global transformation of the auto industry has implications for not only carmakers but also an array of players, including energy companies, insurers, mobility fleet operations such as ridesharing services, smartphone providers, sensor technology vendors, health care providers, and even government. The article highlights the need to shift from a business model based on products (in this case, the vehicle) to one based on the mobility experience.[21] The evolving mobility ecosystem presents opportunities to create value for both established companies and new entrants. Network effects will likely drive the formation of specialized ecosystems within the mobility ecosystem, which, in time, will likely consolidate, leading to a strong, concentrated group of platform providers.[22] As in other ecosystems, being the first mover is key to capturing value—think Amazon in online retailing and Google in online advertising—and followers, however fast, often risk being left behind.

Ecosystems are dynamic and co-evolving communities of diverse actors who create and capture new value through both collaboration and competition.[23]

Lessons from successful innovators

FIGURE 4 illustrates Doblin's Ten Types of Innovation® framework, with examples of companies that have used each type of innovation. It shows how various companies have used each type of innovation in their Silicon Valley-based operations.[24] That said, most successful companies have used more than one type of innovation to drive results. The following case studies explore in detail how two companies have integrated multiple types of innovation to harness innovation in Silicon Valley.

GE: The billion-dollar start-up within a global enterprise

GE considers the "Industrial Internet"—a term coined by GE to refer to the integration of complex physical machinery with networked sensors and software—to be its next fundamental growth opportunity. However, software companies with strong analytics capabilities present a threat to GE, as data feeds allow them to analyze and predict failures. In 2012, GE launched its Industrial Internet initia-

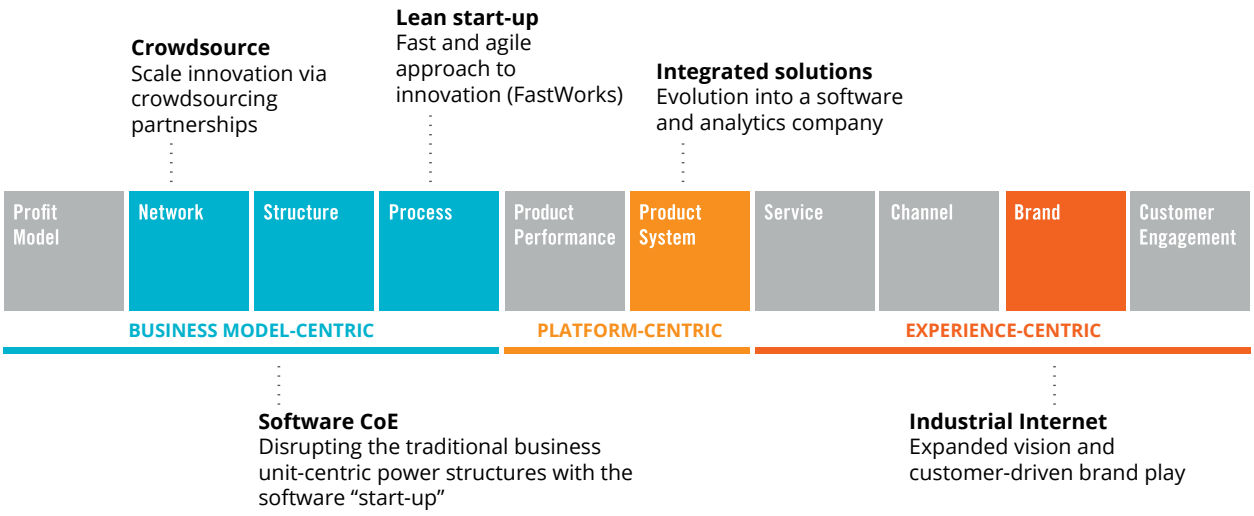
Figure 4. Ten types of innovation: Examples of successful innovation outposts

		How you...	Such as...	
CONFIGURATION	Profit Model	make money	LendingClub	Partnered with Google to pilot financing to its resellers, etc
	Network	connect with others to create value	SAP	Business analysts, consultants, and developers in the business process expert community
	Structure	align your talent and assets	Swisscom AG	Brings winners of its start-up challenge to Silicon Valley for an acceleration program
	Process	use signature or superior methods to do your work	Zappos	Zappos Labs operates in one-week sprints; the Ask Zappos service was completed in only 12 weeks
OFFERING	Product Performance	employ distinguishing features and functionality	Novartis	Partnering with Google to develop "smart" lenses to help track blood glucose levels
	Product System	create complementary products and services	Staples	Its San Mateo-based innovation lab launched a digital wallet in nine weeks
EXPERIENCE	Service	support and enhance the value of your offerings	Capital One	Capital One Labs has been aiding digital services with banking APIs
	Channel	deliver your offerings to customers and users	Target	60% of holiday season traffic on Target.com comes from mobile
	Brand	represent your offerings and business	Pearson	Evolving its brand by exploring ed-tech partnerships through RocketSpace
	Customer Engagement	foster distinctive interactions	AXA	AXA Lab is testing customized emails based on the Hearsay social platform

Source: Doblin.

Graphic: Deloitte University Press | DUPress.com

Figure 5. GE: Forming a start-up within a global corporation[25]



Source: Doblin.

Graphic: Deloitte University Press | DUPress.com

tive, committing to spend $1 billion over a period of three years to build solutions.[26] As part of this initiative, GE established its Silicon Valley-based Software Center, part of GE Global Research, as a start-up. After achieving reasonable scale, GE brought together the Software Center, the Intelligent Platforms business, its Global IT and commercial software teams, and Wurldtech (a provider of industrial security systems) under the GE Digital umbrella in September 2015.[27]

The Ten Types of Innovation framework helps illustrate how GE was able to scale the Software Center within a short time (figure 5):

STRUCTURE

The creation of GE's Software Center is an example of a bimodal approach to IT and business that separates digital teams from the main business, thereby enabling the digital unit to operate much faster than traditional business units.[28] In 2015, GE took this concept further by combining all of its technology efforts with the Software Center to form the GE Digital business unit and appointing chief digital officers for GE's other business units. While GE's other business units are more downstream or customer-focused, GE Digital has upstream capabilities, including portfolio and product management capabilities.

PROCESS

GE's Software Center embraced "FastWorks"—a fast approach to innovation based on Eric Ries's Lean Start-Up framework—which was then also being implemented across the broader company. In adopting this approach, leaders were aiming to make GE more agile to shorten the time to market and increase productivity. The FastWorks mode of operation starkly contrasts with GE's traditional mode, which was anchored on Lean Six Sigma. For instance, historically, products were kept hidden until their release; now, customers are part of a product's evolution. As Kevin Nolan, vice president of technology for GE Appliances, put it, "With FastWorks, we're learning that speed is our competitive advantage. How do we become much more open and collaborative with the customer base? You can't do that if you want to be secretive."[29] To overcome organizational resistance to the new approach, GE started by working with business units, such as the Software Center and later GE Digital, that were willing to adopt the agile methodology; this then created a ripple effect across the organization.

NETWORK

GE Digital has internal capabilities in software and analytics, but relies on partners for system integration and change management. Its strategy is to drive

a horizontal platform through partnering and ecosystems.[30] GE has also established an open innovation manifesto and has been launching a variety of related initiatives, including open innovation challenges that allow global communities to share ideas, proposals, and technologies to complement internal R&D. Such partnerships allow GE to extend its innovation capabilities by tapping into a wider ecosystem of ideas and talent.

PRODUCT SYSTEM

Through GE Digital, GE is expanding its product system beyond industrial products to include software and analytics. Even as far back as 2011, GE CEO Jeff Immelt declared that GE needed to evolve into a software and analytics company or risk being commoditized by digitally enabled competitors.[31] In the words of Marco Annunziata, chief economist at GE, "We're no longer selling customers just a jet engine, a locomotive, or a wind turbine; we're bringing data and actionable solutions along with the hardware to reduce costs and improve performance."[32]

BRAND

GE Digital faced the typical challenges that any start-up would encounter, and one of them was talent. While headcount targets for its software center were aggressive, brand recognition of GE's software was a huge challenge: 90 percent of recruits were not aware of a software group within GE.[33] GE hired a talent acquisition leader and made some policy and compensation revisions to stay competitive in the technology space.[34] More recently, with the launch of GE Digital, CEO Jeffrey Immelt announced that the unit was aiming to be a "top 10 software company by 2020."[35]

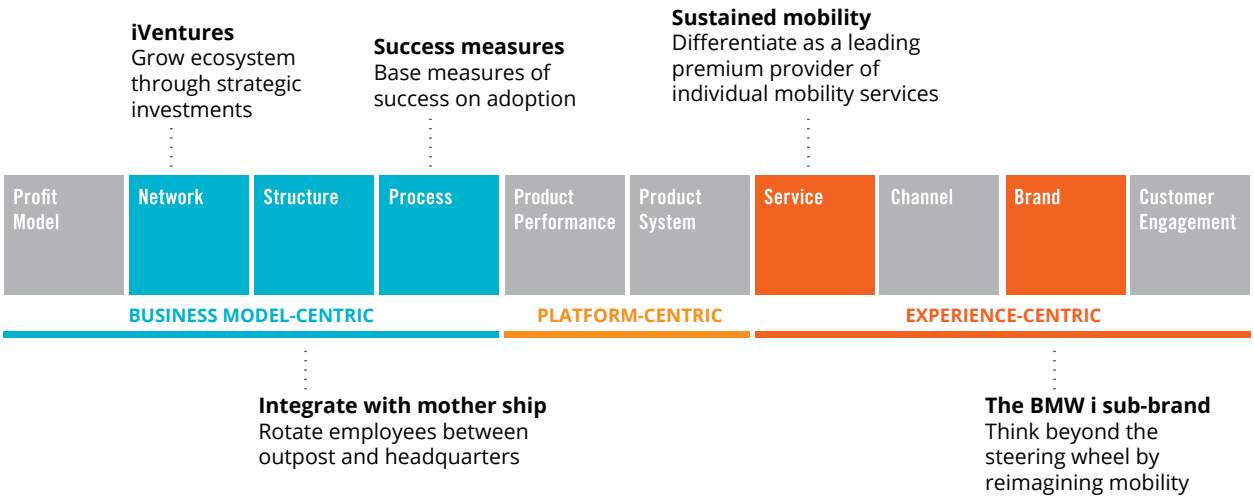
RESULTS

GE's portfolio steadily grew from 10 to 24 to 40 software and services offerings in 2014.[36] GE Digital's 2015 revenue was $5 billion, 22 percent greater than in the previous year.[37] The company has plans to triple GE Digital's revenue by 2020.[38]

BMW: Transforming from a car manufacturer to a mobility provider

BMW has been evolving into a provider of fully integrated premium mobility solutions, and it aspires to lead the industry with its vision of sustainable

Figure 6. BMW: Transforming from a car manufacturer to a mobility provider[39]



Source: Doblin.

Graphic: Deloitte University Press | DUPress.com

mobility.[40] This vision is represented by the BMW i brand, which includes electric vehicles and mobility services. To this end, BMW's Silicon Valley facility has a mandate of imagining how emerging technologies can be applied to the future of automobiles. The Palo Alto staff acts as BMW's future scan system, sensing developments in the Valley and attending conferences, networking events, and technology fairs to identify emerging technologies that impact the automobile industry.

BMW's Silicon Valley center embodies multiple types of innovation (figure 6):

STRUCTURE

Satellite outposts very often face the "not invented here" barrier when trying to disseminate new ideas throughout the company. Companies like BMW, however, ensure that the ideas generated by the satellite group are socialized through the rest of the company. Members of the Silicon Valley-based research group spend two to three years in Germany so that they can relay ideas back to headquarters, and staff from Germany, ranging from engineers to executives, regularly visit the Valley office. This rotation helps encourage those who return to headquarters to become champions for new ideas being developed in the Silicon Valley outpost.[41]

PROCESS

While the Silicon Valley center is expected to deliver disruption, it does more than blue-sky thinking. Success is measured not only by the number of interesting discoveries, but also by the adoption of emerging technologies in future designs.[42] Tying the success of innovation to adoption has helped BMW integrate emerging technologies into its automobiles.

NETWORK

BMW created a $100 million venture capital fund called BMW i Ventures to reinforce BMW i's strategy of offering premium mobility services.[43] The fund has invested in start-ups such as Life360, MyCityWay, JustPark, ChargePoint, and ChargeMaster.

SERVICE

BMW i has focused heavily on sustained mobility,[44] along with electric and hybrid cars. i Ventures relies on both internal and external innovation efforts to develop these services, which include car-dependent mobility (BMW Apps), car-related mobility (ChargeNow, a service to quickly locate and charge cars), and car-independent mobility (ParkatmyHouse, an online parking marketplace). Besides integrated mobility solutions, the company also offers "flexible usage-based" consumption services. BMW i's carsharing service, DriveNow, allows users to rent cars very flexibly, when and where they need them; its motto is "Pick up anywhere, drop off anywhere."

BRAND

The BMW i family has strengthened the company's image as an industry-leading innovator and opened up new customer segments for the group. Silicon Valley is not just a catalyst for ideas, but also an important market for the BMW i family: "We will sell a lot of i3 and i8 cars in the San Francisco Bay Area," the CEO of BMW of North America said.[45] The creation of the new sub-brand is providing BMW with the much-needed "technology halo" needed to compete with the Silicon Valley upstart Tesla Motors.

RESULTS

BMW is continuously expanding its footprint of mobility services. According to the company's 2014 annual report, 95 percent of all new vehicles in the BMW fleet are equipped with an integrated SIM card. By the end of 2014, close to 390,000 customers were registered with DriveNow.[46]

Challenges and risks

In trying to capitalize on their investments in Silicon Valley, large organizations face several challenges. The entire process of establishing a presence in Silicon Valley, from identifying a business need and screening partners to negotiating contracts and structuring pilots, can take six to eight months, often leading to a loss of momentum and resulting in less-than-favorable outcomes. Common obstacles include:

Complex regulatory requirements

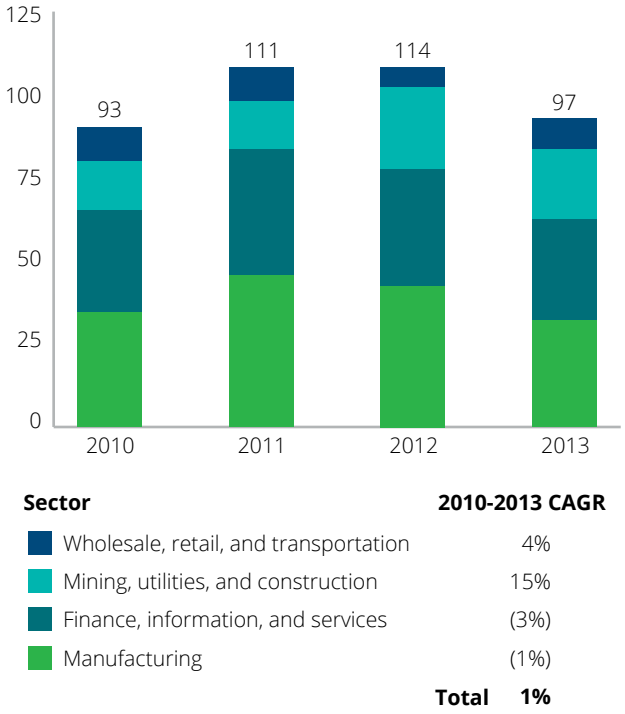
Regulatory hurdles have led to unfavorable outcomes for some multinational companies trying to access the Silicon Valley ecosystem—as well as the US market more broadly—in critical and IP-rich technology sectors.

The need to create new and specialized legal, risk, and regulatory capabilities increases complexity and often drives delays in the process of trying to access Silicon Valley players. This issue is particularly acute for non-US-based companies. All foreign investments in the United States are subject to scrutiny by the Committee for Foreign Investment in the United States (CFIUS), a body responsible for reviewing the national security implications of US companies or operations acquired by foreign companies. From 2011 to 2013, 27 investigated transactions resulted in legally binding mitigation measures.[47] These transactions occurred in multiple industries, with those in utilities, telecommunications, aerospace and defense, energy, and technology most frequently requiring mitigation (figure 7).

Operational challenges

Companies must not only learn to effectively collaborate with the larger Valley ecosystem, but also establish ways and means to stay connected with their corporate headquarters. Shortlisting ideas, pumping them up the corporate innovation pipeline, securing funding, and tracking success can prove very difficult in the absence of efficient internal structures to manage open innovation.

Figure 7. CFIUS-covered transactions by sector (2010–2013)



Source: CFIUS annual report CY2013 (declassified), Deloitte analysis.

Graphic: Deloitte University Press | DUPress.com

Talent acquisition challenges

Given the fiercely competitive market for software talent in Silicon Valley, companies can find talent acquisition and retention in the area extremely challenging. As discussed above in the GE Digital case study, this challenge can be particularly acute for

More often than not, companies that stumble in their conquest of innovation have failed to adopt practices that encourage collaborative ideation and development.

companies that have traditionally operated outside the software industry. Without proper branding and appropriate compensation structures, these companies may run the risk of losing out in talent to software giants and fast-growing digital start-ups.

A legacy of closed networks

More often than not, companies that stumble in their conquest of innovation have failed to adopt practices that encourage collaborative ideation and development. Companies often find that they must give up their traditional reliance on proprietary technology standards to successfully tap into the huge Silicon Valley ecosystem. For example, AOL was quick to realize that it must adopt "open standards" to succeed in the Valley.[48]

A key tenet of open innovation is that it must transcend organizational boundaries. Some leaders have not hesitated to welcome even competitors into their innovation ecosystems. For instance, Makerbot's CEO has this to say about Autodesk, a competitor in the additive manufacturing space: "Autodesk's work and thinking is necessary to the overall industry . . . So much of the success of the 3D ecosystem and [the] future of 3D printing can be accelerated by the . . . company's [initiatives]."[49]

Steps for effective innovation in Silicon Valley

THE mode and depth of engagement with Silicon Valley is unique to a company's situation and strategic objectives. The innovation journey is not always sequential, and executives may face different decision points depending on the organization's immediate and long-term goals. That said, below we have identified several general principles that may aid an organization's integration into the Silicon Valley ecosystem.

Set innovation strategy and direction

Innovation means different things to different people and organizations, and there are no standard processes for ideation, incubation, and scaling. Lack of alignment on the goals for innovation can lead to fragmented efforts and a disjointed investment portfolio. Before venturing into the Valley, an

Figure 8. Executives face key issues and questions throughout the innovation journey

Set innovation strategy and direction	Explore the next S-curve	Establish the innovation vehicle	Scout for the right partners	Set the modus operandi	Optimize investments
"My business needs to change, but only a few of us realize it."	"I'm not sure I've placed my bets appropriately."	"I'm afraid that regulatory hurdles may cause delays in investments."	"I want to move forward with the concept through exploring M&A."	"Our leadership supports innovation, but there is internal resistance."	"I want to optimize route to market for my new product."
• What does innovation mean for the organization? • How can leaders ensure that their companies are innovative enough?	• How can an organization build the right innovation pipeline and capitalize on trends disrupting the business?	• What innovation outposts would be most relevant? • How can firms effectively address regulatory complexity and align investments to the US regulatory environment?	• How can leaders identify the right start-ups for partnerships or acquisitions? • How can they best navigate the chaotic landscape of similar products and services, often wrapped up in slick marketing or technology lingo?	• How can organizations minimize internal resistance and accelerate time to pilot? • What are the optimal communication protocols for mutual give-and-take with the "mother ship"?	• How can firms maximize returns across the investment lifecycle—through incubation, launch, and scaling of new products?
Build case for change and get executive alignment	Identify breakthrough concept to implement	Structure transaction to mitigate regulatory risks	Ensure profitable matchmaking	Establish operating model for open innovation	Enable rapid prototyping and optimal go-to-market plan

Source: Deloitte analysis.

organization should institute a structured decision-making process to formulate its innovation goals and clearly define what specific role a Silicon Valley outpost would play in fulfilling those goals.

KEY ACTIONS

- Establish innovation goals
- Assign ownership of goals
- Create governance structure for prioritizing innovation ideas and funding approvals
- Provide adequate funding and training

Explore the next S-curve

Businesses may benefit from taking a "forward view" of their industry that accounts for potential disruptors from within and outside the industry. Effective leaders must have the ability to sense external marketplace movement, identify partnership opportunities, and formulate new ideas. Visiting Silicon Valley has typically been very helpful to corporate leaders, not only by providing insight into how innovative organizations work, but also by instilling an urgency for change at headquarters.

KEY ACTIONS

- Conduct a cross-industry assessment of disruptive trends
- Enable executive "immersion" in Silicon Valley

Establish the innovation vehicle

Enterprises should carefully assess and justify which particular type of satellite organization would be the most suitable kind of innovation outpost for the parent company. Should it be an R&D center, a corporate accelerator, a joint venture, an acquisition, or some other type of effort? Also, while establishing these vehicles, companies should be equipped to handle operational and regulatory hurdles. Investments by foreign companies, in particular, risk being hindered by lack of familiarity with the local environment. However, several recent examples of successful acquisitions by foreign companies indicate that the CFIUS review process can be effectively navigated through proactive risk management.

KEY ACTIONS

- Develop corporate venture strategy
- Adopt proactive mitigation measures early in the CFIUS review process, if applicable

Scout for the right partners

Understanding the start-up landscape and finding the right partner can be a daunting task. The ability to accurately assess the business impact of innovation, as well as the ability to appropriately structure partnerships, can help overcome these challenges. Organizations should scout for partners through a disciplined multi-step filtering process to help improve the odds of a profitable match. Examples of decision criteria that can be used to evaluate start-ups include revenue projections, current levels of funding, product vision and roadmap, competitive intensity, alignment with strategic objectives, and expected time to scale.

KEY ACTIONS

- Assess potential partners' fit with the company's innovation goals
- Conduct M&A due diligence (if the company is considering acquisitions for expanding its innovation portfolio)

Set the modus operandi

An enterprise's efforts to collaborate with start-ups should be led by the chief innovation officer or chief strategy officer. However, it is equally important to demonstrate the collaborative project's viability to all stakeholders. This can prevent certain groups, especially those that would be affected by the start-up's product, from raising concerns that may require a second due diligence process. To facilitate the integration of satellite outposts, enterprises should establish communication protocols to encourage

the launch of new products, staff the outpost with individuals that have a strong business background in networking and partnering, and establish the start-up or satellite entity's value proposition.

KEY ACTIONS

- Define the selection process for idea scouting
- Establish communication protocols with the parent corporation
- Define value levers for both parties (start-up and corporation)

Optimize investments

Large enterprises should carefully plan the investment portfolio to generate acceptable returns throughout the investment lifecycle—from incubation through new product launch and scaling. It is important to remember that the payoff from innovation investments may often take longer than the typical strategic timeframe of three to five years. Companies should carefully balance the timing of their desired ROI with their risk appetite; executive alignment on the investment's risk profile is critical. Some investments, such as many acquisitions of early-stage start-ups (like Facebook's acquisition of Oculus), are high-risk and can require significant product development and commercialization efforts to bear fruit. The nature of the innovation system will be shaped by the company's level of ambition. A company with lower ambition levels would likely be looking for incremental innovation, while one with a higher ambition level is typically pursuing fundamentally new ideas or business models (figure 9).

KEY ACTIONS

- Build business case
- Develop proof of concept and conduct rapid prototyping
- Develop innovation KPIs and key milestones

Figure 9. The innovation system will look different depending on the enterprise's level of ambition

	Lower ambition	Higher ambition
Approach	Uses standardized linear pipeline; requires narrowing of ideas and then fast selection	Supported by milestone, case-specific pipeline; begins with divergence and then iterative convergence
Organization	Can be managed within existing structures and leadership	Needs to be separate and protected from existing structures
Resources	Can be funded by product/BU P&L	Needs separate protected funds
Metrics	Measure with traditional balanced scorecard metrics	Measure with non-traditional metrics (e.g., hit rate, number of failed projects that led to insights, number of third-parties engaged)

Source: Deloitte analysis.

The ecosystem advantage

TODAY'S world is characterized by profound disruption. New and old players are innovating to challenge the fundamental dynamics of value creation across multiple industries. Many organizations adopt a reactive approach to each spike in innovation they spot in the market, focusing largely on acquiring current "hot" companies within Silicon Valley. As argued earlier, however, an ecosystem-led approach to innovation may be more effective in driving sustained competitive advantage than transactional approaches. The US technology sector has led the way in creating collaborative capabilities.[50] The open source movement paved the way for the explosion in apps; Apple Inc.'s products and services were conceived as an ecosystem to provide an enhanced customer experience; Facebook's developer ecosystem has been a critical factor in its success. Moreover, the huge wave of digitization and connectivity has taken the idea of ecosystems beyond the technology industry. Industries that were traditionally vertically integrated (such as the automobile industry) are now exploring new ways to create value by forming rich networks of diverse players of suppliers, customers, competitors, and research organizations.

An important characteristic of these innovation ecosystems is that they often exist on top of powerful business platforms that become increasingly difficult to replace over time. An early example of such a platform is that created by VISA, which successfully established a platform for collaboration and competition in the credit card market. More recently, "sharing economy" platform businesses such as Airbnb and Uber have enabled participants to share underutilized assets, creating huge social and economic value in the process. Today, four of the top five global brands have platform-based business models.[51]

An important characteristic of these innovation ecosystems is that they often exist on top of powerful business platforms that become increasingly difficult to replace over time.

Taking into account their strategic and operational imperatives, enterprises can adopt a carefully structured trajectory to capture a share of the cutting-edge innovation thriving in the Silicon Valley ecosystem. The path to integration with the Silicon Valley ecosystem will be unique for each company, depending on its strategic vision and current situation. Yet some common denominators exist: Clarity of goals, effective governance, mechanisms for collaboration, and a firm understanding of both the risks and the potential rewards of seeking innovation in the Valley. With these attributes, a company's foray into Silicon Valley may meet with success in achieving its innovation goals.

LOOKING AHEAD: DISRUPTIONS IN MANUFACTURING AND FINANCIAL SERVICES

The pace of change varies by industry, with some industries facing disruption ahead of others. Two industries in particular, manufacturing and financial services, appear ripe for disruption in the near term:

Manufacturing

3D printing, advanced materials, sensor technology, robotics, and artificial intelligence, among other technologies, are leading the way in driving changes to the manufacturing industry. The term "Industry 4.0" encapsulates this revolution in manufacturing, which is characterized by decentralized production enabled by a vast network of connected devices that complete the physical-to-digital-to-physical cycle.[52] Global manufacturers, including GE, Bosch, and Siemens, have been early adopters of Industry 4.0.[53] As an example, in GE's New York Durathon battery factory, the company collects process data around the clock through the 10,000 sensors on the assembly line and every battery.[54] This enables the company to optimize production by using real-time information from the shop floor.

Despite widespread interest in Industry 4.0, many stakeholders are unclear on how it will affect them and the broader manufacturing ecosystem. As companies plan to implement Industry 4.0 techniques, they may face several challenges, including talent shortages, interoperability issues given disparate proprietary applications, and data ownership challenges, coupled with security concerns.[55] That said, effective use of information across the value chain will likely have a positive impact on business growth and business operations, creating new winners by changing the basis of competition, the role of players in the ecosystem, and how businesses create and capture value in the manufacturing sector.[56]

Financial services

A recent World Economic Forum report identified 11 clusters of innovation that are transforming financial services' value chain across six core functions: deposits and lending, capital raising, investment management, market provisioning, payments, and insurance.[57] The industry is teeming with technological innovators: An estimated 4,000 fintech firms are challenging banks in all of their product lines, offering products including real-time settlements, peer-to-peer lending, banking as a platform (API), and "big data"-based services (such as algorithmic trading or vetting loan quality or insurance claims), among others.[58] Further, 23 percent of the corporate accelerators launched in the last three years are in financial services.[59]

Some large banks, including JP Morgan Chase, Bank of America, and Wells Fargo, are adopting parallel strategies by working with start-ups—either directly or through accelerators—while also continuing to pursue innovation internally.[60] Capital will likely to start to gravitate toward the players now operating at scale as today's largely fragmented fintech landscape begins to consolidate.[61]

The implications of emerging business models are driving significant uncertainty in the financial services industry. Indeed, disruption driven by today's new entrants may have a significant impact on the industry's long-term structure, creating new winners that employ business models that are platform-driven, data-heavy, and capital-light.[62] While incumbents may struggle to keep pace, the new entrants need to gain scale and deal with regulatory issues. All of the players—the disruptors, the incumbents, and the regulators—will likely need to collaborate to redefine the industry's risk profile.

ENDNOTES

1. CB Insights, "The unicorn list: Current private companies valued at $1B and above," https://www.cbinsights.com/research-unicorn-companies, accessed January 2016. Of the companies in this list, those housed in the Bay area have a cumulative valuation of $214 billion.

2. Brian Solis, "Why businesses back innovation centers," *TechCrunch*, October 5, 2015, http://techcrunch.com/2015/10/05/why-businesses-back-innovation-centers/.

3. Brad Power, "Leveraging Silicon Valley—From wherever you are," *Harvard Business Review*, October 28, 2013, https://hbr.org/2013/10/leveraging-silicon-valley-from-wherever-you-are/.

4. Silicon Valley Leadership Group, "Silicon Valley CEO survey: Business climate 2015," http://svlg.org/wp-content/uploads/2011/04/2015_CEOSurvey_Web.pdf.

5. Nestlé, "Nestlé deepens digital innovation commitment in Silicon Valley," http://www.nestle.com/media/news/Nestle-digital-innovation-commitment-Silicon-Valley; Samsung Electronics, "Samsung Electronics strengthens its presence in Silicon Valley with opening of new headquarters for US semiconductor operations," http://www.samsung.com/semiconductor/about-us/news/24361; Wells Fargo, "Wells Fargo launches start-up accelerator for financial services-inspired tech innovators," https://www.wellsfargo.com/about/press/2014/launch-startup-accelerator_0820/; Daniel Terdiman, "Disney, channeling Silicon Valley, launches start-up accelerator," *CNET*, February 12, 2014, http://www.cnet.com/news/disney-channeling-silicon-valley-launches-startup-accelerator/; Eilef Trondsen, "Silicon Valley innovation outposts: Mini case studies," *Silicon Vikings*, April 6, 2015, http://silicon-vikings.com/blog/2015/4/6/silicon-valley-innovation-outposts-mini-case-studies.

6. Nestlé, "Nestlé deepens digital innovation commitment in Silicon Valley."

7. Samsung Electronics, "Samsung Electronics strengthens its presence in Silicon Valley with opening of new headquarters for US semiconductor operations."

8. Rachael King and Steven Rosenbush, "Mining Silicon Valley's culture," *Wall Street Journal*, July 24, 2013, http://www.wsj.com/articles/SB10001424127887323610704578626123357642626.

9. The article, *Corporate accelerators*, analyzes the value and adoption models of corporate accelerators in greater detail. See John Ream and David Schatsky, *Corporate accelerators: Spurring digital innovation with a page from the Silicon Valley playbook*, Deloitte University Press, February 26, 2016, http://dupress.com/articles/corporate-accelerators-spurring-innovation-startups/.

10. CB Insights, "The US venture capital year in review: 2014," https://www.cbinsights.com/venture-capital-2014.

11. Marisa Kendall, "Venture capitalists in Bay Area and across the nation rake in cash, but deals drop," *Silicon Valley Venture Capital*, April 15, 2016, http://www.siliconvalley.com/venture-capital/ci_29769398/vcs-rake-cash-but-deals-drop.

12. The Corporate Accelerator Database, Corporate-accelerators.net.

13. SigmaLabs website, Partners page, http://sigmalabs.co/partners.htm, accessed February 8, 2016.

14. John Hagel III et al., *Success or struggle: ROA as a true measure of business performance*, Deloitte University Press, October 30, 2013, http://dupress.com/articles/success-or-struggle-roa-as-a-true-measure-of-business-performance/.

15. John Hagel III et al., *The hero's journey through the landscape of the future*, Deloitte University Press, July 24, 2014, http://dupress.com/articles/heros-journey-landscape-future/.

16. Eamonn Kelly, *Business ecosystems come of age*, Deloitte University Press, April 15, 2015, http://dupress.com/periodical/trends/business-trends-series/.

17. Mike Ramsey, "Ford, Mercedes-Benz set up shop in Silicon Valley," *Wall Street Journal*, March 27, 2015, http://www.wsj.com/articles/ford-mercedes-set-up-shop-in-silicon-valley-1427475558.

18. Jon Phillips, "The Ford GT is absolutely sick with high-tech innovation and you need to know why," *PCWorld*, May 4, 2015, http://www.pcworld.com/article/2917284/the-ford-gt-is-absolutely-sick-with-high-tech-innovation-and-you-need-to-know-why.html.

19. Mike Ramsey, "Car makers hunger for self-driving tech," *Wall Street Journal*, March 24, 2016, http://www.wsj.com/articles/car-makers-hunger-for-self-driving-tech-1458811804.

20. Eric Pfanner and Yoko Kubota, "Toyota setting up major research lab in Silicon Valley," *Wall Street Journal*, November 6, 2015, http://www.wsj.com/articles/toyota-to-invest-1-billion-in-artificial-intelligence-firm-1446790646.

21. Scott Corwin et al., *The future of mobility*, Deloitte University Press, September 24, 2015, http://dupress.com/articles/future-of-mobility-transportation-technology/.

22. John Hagel III, *Navigating a shifting landscape: Capturing value in the evolving mobility ecosystem*, Deloitte University Press, Jan 7, 2016, http://dupress.com/articles/future-transportation-technology-mobility-ecosystems/.

23. Kelly, *Business ecosystems come of age*.

24. Larry Keeley et al., *Ten Types of Innovation: The Discipline of Building Breakthroughs* (New York: Wiley, 2013). The Ten Types of Innovation is a proprietary Doblin framework. Doblin is the innovation practice of Monitor Deloitte within Deloitte Consulting LLP., http://www2.deloitte.com/us/en/pages/strategy/articles/ten-types-of-innovation-the-discipline-of-building-breakthroughs.html. Trondsen, *Silicon Valley innovation outposts*; Lending Club, "Google and Lending Club partner to deliver new business financing program," January 15, 2015, https://www.lendingclub.com/public/lending-club-press-2015-01-15.action; Evie Nagy, "How Zappos uses one-week work sprints to launch big projects fast, *Fast Company,* July 11, 2014, http://www.fastcompany.com/3032947/agendas/how-zappos-uses-one-week-work-sprints-to-launch-big-projects-fast; Ursula Oesterle, *Silicon Valley outposting: Sifting for gold*, Swisscom, September 2014, https://www.b2match.eu/system/ict-siliconvalley/files/Swisscom_Outpost.pdf?1412090443; Caroline Copley, "Novartis and Google to develop 'smart' contact lens," *Reuters*, July 15, 2014, http://www.reuters.com/article/us-novartis-google-ceo-idUSKBN0FK0U320140715; Greg Sterline, "The mobile majority: 60 percent of holiday traffic came from mobile, says Target," *Marketing Land*, January 9, 2015, http://marketingland.com/mobile-majority-60-percent-holiday-traffic-came-mobile-says-target-113873; Darryl K. Taft, "Capital One launches devexchange developer portal," *eWeek*, March 11, 2016, http://www.eweek.com/developer/capital-one-launches-devexchange-developer-portal.html; Sarah Perez, "Capital One acquires budgeting app Level Money," *TechCrunch*, January 12, 2015, http://techcrunch.com/2015/01/12/capital-one-acquires-budgeting-app-level-money/; Nicholas Bry, "Innovation at AXA: Innovating like fish schools," *Rapid Innovation in Digital Time*, January 20, 2015, https://nbry.wordpress.com/2015/01/20/innovation-at-axa-innovating-like-fish-schools/; RocketSpace, *Pearson: Start-up 101 leads to business value for edtech leader*, http://info.rocketspace.com/pearson-startup-engagement-program-at-rocketspace.

25. Brad Power, "How GE applies lean start-up practices," *Harvard Business Review*, April 23, 2014, https://hbr.org/2014/04/how-ge-applies-lean-startup-practices/; Steve Rosenbush, "GE Digital CEO Bill Ruh says corporate structures must evolve with technology," January 13, 2016, *Wall Street Journal*, January 13, 2016, http://blogs.wsj.com/cio/2016/01/13/ge-digital-ceo-bill-ruh-says-corporate-structures-must-evolve-with-technology/; GE Open Innovation, http://www.ge.com/about-us/openinnovation; Brad Power, "Building a software start-up inside GE," *Harvard Business Review*, January 29, 2015,https://hbr.org/2015/01/building-a-software-start-up-inside-ge.

26. Power, "Building a software start-up inside GE."

27. GE corporate website, "Creation of GE Digital," September 14, 2015, http://www.genewsroom.com/press-releases/creation-ge-digital-281706.

28. Rosenbush, "GE Digital CEO Bill Ruh says corporate structures must evolve with technology."
29. Power, "How GE applies lean start-up practices."
30. Rosenbush, "GE Digital CEO Bill Ruh says corporate structures must evolve with technology."
31. Power, "Building a software start-up inside GE."
32. Ibid.
33. Ibid.
34. Ibid.
35. GE, "Creation of GE Digital."
36. Doug Henschen, "GE pushes for bigger industrial Internet," *InformationWeek*, October 9, 2014, http://www.informationweek.com/big-data/big-data-analytics/ge-pushes-for-bigger-industrial-internet/d/d-id/1316496.
37. GE, "GE 4Q 2015 earnings report," January 22, 2016, https://www.ge.com/sites/default/files/ge_webcast_press_release_01222016_0.pdf.
38. GE, "Creation of GE Digital."
39. Robert B. Tucker, *Driving Growth Through Innovation: How Leading Firms Are Transforming Their Futures* (San Francisco: Berrett-Koehler Publishers, 2008); Reuters, "What BMW i Ventures wants: Mobility," April 8, 2011, http://www.reuters.com/article/idUS185537975820110408; Gabe Nelson, "BMW hopes for high-tech halo with i8-focused ad campaign," Advertising Age, September 23, 2014, http://adage.com/article/cmo-strategy/bmw-hopes-high-tech-halo-i8-focused-ad-campaign/295091/.
40. BMW Group, "The future of sustainable mobility leading (e)-mobility into a new era."
41. Tucker, *Driving Growth Through Innovation*.
42. Ibid.
43. Reuters, "What BMW i Ventures wants: Mobility."
44. Joann Muller, "BMW's newest model isn't a car," *Forbes*, February 22, 2011, http://www.forbes.com/sites/joannmuller/2011/02/22/bmws-newest-model-isnt-a-car/#7ad7d63d6c47.
45. Nelson, "BMW hopes for high-tech halo with i8-focused ad campaign."
46. BMW Group, "2014 annual report," http://annual-report2014.bmwgroup.com/reports/bmwgroup/annual/2014/gb/English/0/home.html.
47. Committee on Foreign Investment in the United States (CFIUS), "Annual report to congress, CY2013 (declassified)," https://www.treasury.gov/resource-center/international/foreign-investment/Documents/2014%20CFIUS%20Annual%20Report%20for%20Public%20Release.pdf.
48. King and Rosenbush, "Mining Silicon Valley's culture."
49. Brian Krasserstein, "MakerBot's new CEO Jenny Lawton discusses the company's future as well as the industry with 3DPrint.com," *3DPrint.com*, October 10, 2014, http://3dprint.com/18506/jenny-lawton-makerbot/, accessed March 17, 2015.
50. Kelly, *Business ecosystems come of age*.
51. Interbrand, "Best global brands rankings," 2015, http://interbrand.com/best-brands/best-global-brands/2015/ranking/, accessed May 13, 2016.

52. Klaus Bauer et al., *Securing the future of German manufacturing industry: Recommendations for implementing the strategic initiative Industry 4.0*, acatech—National Academy of Science and Engineering, April 2013, http://www.acatech.de/fileadmin/user_upload/Baumstruktur_nach_Website/Acatech/root/de/Material_fuer_Sonderseiten/Industrie_4.0/Final_report__Industrie_4.0_accessible.pdf.

53. Kevin O'Marah and Pierfrancesco Manenti, "The Internet of Things will make manufacturing smarter," *IndustryWeek*, August 14, 2015, http://www.industryweek.com/manufacturing-smarter.

54. Kylie Jane Wakefield, "How the Internet Of Things is transforming manufacturing," *Forbes*, July 1, 2014, http://www.forbes.com/sites/ptc/2014/07/01/how-the-internet-of-things-is-transforming-manufacturing/#29e16f97228e.

55. Brenna Sniderman, Monika Mahto, and Mark J. Cotteleer, *Industry 4.0 and manufacturing ecosystems: Exploring the world of connected enterprises*, Deloitte University Press, February 22, 2016, http://dupress.com/articles/industry-4-0-manufacturing-ecosystems-exploring-world-connected-enterprises/.

56. Sniderman, Mahto, and Cotteleer's *Industry 4.0 and manufacturing ecosystems* offers a perspective on how manufacturers can prepare themselves for an Industry 4.0 future. The report examines in detail the information flow in connected production and supply chains, and how organizations can create value from this information.

57. World Economic Forum, *The future of financial services: How disruptive innovations are reshaping the way financial services are structured, provisioned, and consumed*, June 2015, http://www3.weforum.org/docs/WEF_The_future__of_financial_services.pdf.

58. West Coghlan,"The disruption of banking," *Economist Intelligence Unit*, October 20, 2015, https://www.eiuperspectives.economist.com/technology-innovation/disruption-banking.

59. CB Insights, *The US venture capital year in review: 2014*.

60. Kim S. Nash, "Big banks balance fintech start-up partnerships with internal innovation," *Wall Street Journal*, March 21, 2016, http://blogs.wsj.com/cio/2016/03/21/big-banks-balance-fintech-startup-partnerships-with-internal-innovation/.

61. Elis Demos and Peter Rudegeair, "Has fintech boom peaked?," *Wall Street Journal*, January 22, 2016, http://www.wsj.com/articles/has-fintech-boom-peaked-1453458781.

62. Ibid.

ABOUT THE AUTHORS

MAXIMILIAN SCHROECK

Maximilian Schroeck is a principal in Deloitte's Technology, Media, and Communications practice. He has more than 20 years of expertise in the technology sector as a thought leader in corporate strategy, innovation, and venturing as well as private equity. Schroeck has extensive experience as an executive leader in industry as well as capital management and has carried out multiple equity investing activities across global innovation hotspots. He has developed deep relationships within the Silicon Valley innovation community (in particular, with company leaders, corporate and institutional investors, and bankers). His current focus is on M&A, corporate portfolio management, and growth strategy.

GOPAL SRINIVASAN

Gopal Srinivasan is a senior manager in Deloitte Consulting's Monitor Deloitte Strategy practice. Over the past 12 years, he has worked extensively with clients in the software, hardware, networking, and semiconductor sectors. Srinivasan has helped clients in the areas of product innovation and product launch, identification of new growth opportunities, customer engagement, go-to-market models and ecosystem development, as well as designing and building out services-led business models. In recent years, he has focused on high-tech business model evolution and has helped multiple clients across industry sectors develop and operate technology businesses.

AISHWARYA SHARAN

Aishwarya Sharan is a senior consultant in Deloitte Consulting's Strategy and Operations practice. She has worked extensively in the high-tech domain with Silicon Valley players in enterprise software and services, communications equipment, and semiconductor sectors. Sharan has an in-depth understanding of technology trends and has worked on emerging areas such as "as-a-service" models and digital transformation. Her areas of focus include corporate growth strategy, go-to-market models, and business and operating model transformations.

ACKNOWLEDGEMENTS

The authors would like to thank Deloitte LLP's Center for the Edge for its invaluable perspectives on emerging opportunities found at the "edge" of business and technology. They would also like to thank **John Hagel**, co-chairman of Deloitte LLP's Center for the Edge; **Dave Couture**, principal at Deloitte Consulting LLP and the national managing director for Deloitte's Technology, Media and Telecommunications (TMT) practice; and **Geoffrey Tuff**, a principal with Deloitte Consulting LLP and a leader of Doblin, Deloitte Consulting LLP's innovation practice for their valuable insights and contributions to this article. They also are grateful to **John Seely Brown**, **Ajit Prabhu**, and **Allan Cook** for their helpful guidance.

CONTACTS

Maximilian Schroeck
Principal, Technology, Media, and Communications
Deloitte Consulting LLP
+1 408 704 4158
mschroeck@deloitte.com

Gopal Srinivasan
Senior manager, Strategy
Deloitte Consulting LLP
+1 415 932 5352
gosrinivasan@deloitte.com

Follow @DU_Press

Sign up for Deloitte University Press updates at DUPress.com.

About Deloitte University Press
Deloitte University Press publishes original articles, reports and periodicals that provide insights for businesses, the public sector and NGOs. Our goal is to draw upon research and experience from throughout our professional services organization, and that of coauthors in academia and business, to advance the conversation on a broad spectrum of topics of interest to executives and government leaders.

Deloitte University Press is an imprint of Deloitte Development LLC.

About this publication
This publication contains general information only, and none of Deloitte Touche Tohmatsu Limited, its member firms, or its and their affiliates are, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your finances or your business. Before making any decision or taking any action that may affect your finances or your business, you should consult a qualified professional adviser.

None of Deloitte Touche Tohmatsu Limited, its member firms, or its and their respective affiliates shall be responsible for any loss whatsoever sustained by any person who relies on this publication.

About Deloitte
Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee, and its network of member firms, each of which is a legally separate and independent entity. Please see www.deloitte.com/about for a detailed description of the legal structure of Deloitte Touche Tohmatsu Limited and its member firms. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.