



# Navigating Digital Disruption

## How to Thrive Through Innovation Management

### Contents

EXECUTIVE SUMMARY .....	2
INTRODUCTION .....	3
KEY CHALLENGES OF DIGITAL DISRUPTION ....	4
FIRMS THAT OVERCAME THE CHALLENGES .....	6
TRENDS IN DIGITAL DISRUPTION .....	7
NAVIGATING DIGITAL DISRUPTION: INSIGHTS FROM A MACK INSTITUTE CONFERENCE .....	10
CONCLUSION: ENSURING GREATER SUCCESS RATES.....	20

# Navigating Digital Disruption

## How to Thrive Through Innovation Management

*AUTHORED BY PRAGNA KOLLI AND SAIKAT CHAUDHURI*

*DESIGNED BY MICHELLE ECKERT*

### Executive Summary

**D**igital technologies today are swiftly disrupting the existing business models of firms. Incumbents must innovate at least at the same pace, if not faster, in order to survive the digital acceleration. While the incumbency problem is not new, the phenomenon of new business models and rapidly changing customer behaviors demands new approaches to surviving the change. Successful firms have found ways to create these approaches by building organizational processes and cultures to predict changing market conditions. Building a sustainable response environment internally aids the firm in proactively developing innovative solutions. Hence, innovation management has become more relevant today than ever.

This paper brings forth examples of firms that have successfully managed to innovate to survive, and sometimes have taken the path of continuous innovation in order to lead. It examines the contemporary issues discussed during the Mack Institute's conference on digital disruption, overlaying them with its research insights on the challenges of advancing through innovation. Along with presenting principles that can help incumbents thrive, it highlights replicable characteristics of firms with admirable success at managing innovations.

## Introduction

**D**igital technologies today are disrupting existing products, processes, and business models in various industries. Artificial intelligence, robotics, additive manufacturing, automation, cloud computing, mobile and data analytics comprise just a few notable examples. While digital disruption can affect any industry, the most impacted include media, telecommunications, consumer financial services, retail, and technology industries.<sup>1</sup>

This disruptive trend offers radical new capabilities of tapping consumer behaviors and enhancing connectivity. Take the example of cloud computing and the many innovations surrounding it, which are making digitization accessible and affordable, freeing up resources, and allowing firms to focus on managing the business aspects of scalability. The everything-as-a-service phenomenon has opened up avenues for firms to capture, store, monitor, and manage enormous amounts of data. Now with greater capacities, firms are beginning to find ways to tap into the myriad insights that the data can give. In the healthcare and transportation industries, mobile networking and data tracking are sowing disruption. Industrial internet of things (IIOT) is connecting data to devices in order to transform efficiencies across industries. And mobile technology is helping firms network with wider segments of customers and communicate in a faster and more efficient manner.

Any firm that has ever experienced competitors or new entrants threatening its business or its market is an incumbent. With digital trends disrupting markets, incumbents are forced to innovate, at a minimum, to defend their business models. Digital disruption and the incumbency problem thus go hand in hand.

---

<sup>1</sup> Rhys Grossman and Tuck Rickards, Digital Pulse 2015 (Russell Reynolds Associates), <http://www.russellreynolds.com/insights/thought-leadership/digital-pulse-2015>.

To defend itself, the incumbent can get by with simply understanding the nature of the problem and finding a way around it. But if it wants to lead the market, it needs to make the extra effort to foster and *manage* its innovations. ■

## Key Challenges of Digital Disruption

**D**isruption is an age-old problem, but advancements in digital technology have accelerated the rate of upheaval, making disruption more pronounced now than before. The unpredictable rate of digital technology evolution, combined with the increasing rate of user empowerment, makes the challenges of dealing with the disruption manifold:

### SEEING BEYOND THE INITIAL SETBACKS

Often, incumbents fail to look beyond the initial shocks and overlook the incentives to adapt when their successful business model encounters disruption.<sup>2</sup> The video-rental chain Blockbuster, for instance, was a frontrunner of innovation for its time but failed to respond to Netflix's disruptive online model.<sup>3</sup> It retreated from its own online investments due to slow growth and refused to buy Netflix when approached, only to file bankruptcy five years later.<sup>4</sup>

---

2 Rajesh K. Chandy and Gerard J. Tellis, "The Incumbent's Curse? Incumbency, Size, and Radical Product Innovation," *Journal of Marketing* 64, no. 3 (July 2000): 1-17, <http://www.jstor.org/stable/3203484>.

3 Greg Satell, "A Look Back At Why Blockbuster Really Failed And Why It Didn't Have To," *Forbes*, Sep 5, 2014, <http://www.forbes.com/sites/gregsatell/2014/09/05/a-look-back-at-why-blockbuster-really-failed-and-why-it-didnt-have-to/#93e0fe5261ab>.

4 John Antioco and Carl Icahn, "Blockbuster's Former CEO On Sparring with an Activist Shareholder," *Harvard Business Review* 89, no. 4 (April 2011): 39-44, <https://hbr.org/product/blockbusters-former-ceo-on-sparring-with-an-activist-shareholder/R1104A-PDF-ENG>.

## COURAGE TO QUESTION THE STATUS QUO

Blackberry (RIM), on the other hand, was the disruptor but failed to keep up when Apple, in turn, disrupted its business model with its no-keyboard iPhones.<sup>5</sup> In a disruptive era such as this, incumbents cannot afford to settle comfortably into their area of operations but must evaluate market signals wisely.<sup>6</sup> Having the ability to question their past investments — and the courage to even cannibalize them for newer opportunities if necessary<sup>7</sup> — can determine which side of the success line the firms stand on.

## DISTINGUISHING NOISE FROM OPPORTUNITIES

Kodak is a classic case of a firm's failure to recognize its own potential to lead the market.<sup>8</sup> Despite having digital technology decades ahead of its time, Kodak refused to take the product line further since going digital would mean cannibalizing its existing revenues from film cameras.<sup>9</sup>

---

5 "100 fastest-growing companies," *Forbes*, 2009, <http://archive.fortune.com/magazines/fortune/fortune/fastestgrowing/2009/snapshots/1.html>; Vauhini Vara, "How BlackBerry Fell," *The New Yorker*, Aug 12, 2013, <http://www.newyorker.com/tech/elements/how-blackberry-fell>; Chris Martin, "BlackBerry: 5 reasons it went wrong," *PC Advisor UK*, Aug 13, 2013, <http://www.pcadvisor.co.uk/news/mobile-phone/blackberry-5-reasons-it-went-wrong-3463628/>; Sam Gustin, "The Fatal Mistake That Doomed BlackBerry," *Time*, Sep 24, 2013, <http://business.time.com/2013/09/24/the-fatal-mistake-that-doomed-blackberry/>; Roy Shpitalnik and BerryIL, "The Why BlackBerry Isn't Dead Yet Podcast," UTB Networks, podcast audio, 2016-2017, <https://itunes.apple.com/us/podcast/why-blackberry-isnt-dead-yet/id1159220719?mt=2>.

6 George S. Day and Paul J.H. Schoemaker, "How to make Sense of Weak Signals," *MIT Sloan Management Review* 50, no. 3 (Spring 2009): 81-89, <https://proxy.library.upenn.edu/login?url=http://search.proquest.com/docview/224972008?accountid=14707>.

7 Rajesh K. Chandy and Gerard J. Tellis, "The Incumbent's Curse? Incumbency, Size, and Radical Product Innovation," *Journal of Marketing* 64, no. 3 (July 2000): 1-17, <http://www.jstor.org/stable/3203484>.

8 Chunka Mui, "How Kodak Failed," *Forbes*, Jan 18, 2012, <http://www.forbes.com/sites/chunka-mui/2012/01/18/how-kodak-failed/2/#1ae51f631a42>.

9 Claudia H. Deutsch, "Chief Says Kodak Is Pointed in the Right Direction," *The New York Times*, Dec 25, 1999, <http://www.nytimes.com/1999/12/25/business/chief-says-kodak-is-pointed-in-the-right-direction.html>.

Smith Corona met a similar fate: After actively developing cutting-edge technologies in typewriters, it assumed that computers were not for word processing, brushed them aside as noise and distraction, and missed a golden opportunity.<sup>10</sup> Firms can end up as struggling incumbents or worse if they fail to seize the opportunities that their competencies offer. ■

## Firms that Overcame the Challenges

**W**hile some incumbents have failed with digital disruption, some have turned around in creative ways and emerged with resonating success. The success story of Apple includes a history of years near bankruptcy. It failed continuously in the PC market with Lisa and Apple III. With the cash-cow Apple II at the end of its life cycle, the firm found itself bleeding and on the verge of bankruptcy.<sup>11</sup> From being arguably one of the worst-managed companies in the industry, Apple rose to be the world's most admired company in 2016 through innovations that redefined the industry.<sup>12</sup>

---

From being arguably one of the worst-managed companies in the industry, Apple rose to be the world's most admired company in 2016.

---

Also turning around its business is IBM, with 38 percent of its revenue (up from 27 percent in 2015) coming from emerging business segments of cutting-edge technology such as cloud, analytics, mobile, social, and

10 Jeremy Gutsche, *Exploiting Chaos: 150 Ways to Spark Innovation During Times of Change* (Penguin Publishing Group, 2009).

11 Randall Lane, "John Sculley Just Gave His Most Detailed Account Ever Of How Steve Jobs Got Fired From Apple," *Forbes*, Sep 9, 2013, <http://www.forbes.com/sites/randalllane/2013/09/09/john-sculley-just-gave-his-most-detailed-account-ever-of-how-steve-jobs-got-fired-from-apple/#3d93c63d10e9>.

12 Stewart Alsop, "Apple of Sun's eye," *Time* 147, no. 6 (February 5, 1996): 42; "World's Most Admired Companies," *Fortune* (accessed April 5, 2017), <http://fortune.com/worlds-most-admired-companies/>.

security.<sup>13</sup> Fuji faced similar threats from digital imaging as then-market leader Kodak did, but unlike Kodak, it diversified to stay relevant. It innovatively extended its technology into cosmetics, medical-imaging, and making films for LCD flat-panel screens to build future growth in the long term.<sup>14</sup> Netflix wanted to sell off its business to Blockbuster, but when Blockbuster refused to buy, Netflix tweaked its model, launched subscription-based service online, and by 2012, Forbes called it the No. 1 tech turnaround story.<sup>15</sup> ■

## Trends in Digital Disruption

**A**mong manufacturing-based industries, innovative applications of technology are helping firms overcome traditional limitations. GE, for instance, is advancing the application of 3-D printing technology by manufacturing an aircraft engine part via printing rather than the traditional method of casting and welding the metal. Also notable is Touch Bionics, which is carrying 3-D printed prosthetics into the mobile age. It designed an app that allows users to configure their grip patterns and activation triggers and recalibrate without needing a prosthetics

---

13 Panos Mourdoukoutas, "IBM's Magic Number Points To A Solid Turnaround," Forbes, July 19, 2016, <http://www.forbes.com/sites/panosmourdoukoutas/2016/07/19/ibms-magic-number-points-to-a-solid-turnaround/#77bd3cbf7986>.

14 Kana Inagaki and Juro Osawa, "Fujifilm Chose to Change Focus; CEO Says Firm, Kodak Saw Digital Age Coming, 'the Question was, what to do about it,'" Wall Street Journal (Online), Jan 19, 2012, <https://proxy.library.upenn.edu/login?url=http://search.proquest.com/docview/916748790?accountid=14707>; Chris Nuttall and Jonathan Soble, "Change of Focus Saved Fujifilm," Financial Times, Jan 20, 2012, <https://proxy.library.upenn.edu/login?url=http://search.proquest.com/docview/916921202?accountid=14707>.

15 Adam Hartung, "Netflix - The Turnaround Story of 2012!," Jan 29, 2013, <http://www.forbes.com/sites/adamhartung/2013/01/29/netflix-the-turnaround-story-of-2012/#4f7b7d222246>.

expert.<sup>16</sup> Accuray, as another example, has designed an advanced Robotic Radiosurgery System called Cyberknife that uses shaped beams that conform to the specific contours of a tumor in the body.

Industrial internet of things (IIOT) is also producing a wave of innovations that spans industries. Manufacturers such as Klöckner, the German metals group, are following a similar pattern to iTunes and Amazon for

---

**Smart factories are emerging that control complexities while significantly boosting efficiency through automation and flexible production techniques.**

---

digitizing their supply chains, thus improving operations and services.<sup>17</sup> Smart factories are emerging that control complexities while significantly boosting efficiency through automation and flexible production techniques.<sup>18</sup> Apache, an oil production company, is using prescriptive analytics to reduce

pump failures and mitigate production losses.<sup>19</sup> Dundee Precious Metals, a mining company in Bulgaria, installed 45 kilometers of fiber-optic technology to build an underground Wi-Fi network for conducting an assay of the ore and understanding the resource in a more sophisticated way.<sup>20</sup> The company added this network on top of the ore grade sensors

---

16 Erik Sofge, "The World's Top 10 Most Innovative Companies in Robotics," Fast Company, Feb 13, 2014, <http://www.fastcompany.com/3026314/most-innovative-companies-2014/the-worlds-top-10-most-innovative-companies-in-robotics>.

17 Gisbert Rühl, interview by Rik Kirkland, McKinsey Quarterly, May, 2016, <http://www.mckinsey.com/industries/metals-and-mining/our-insights/how-a-steel-company-embraced-digital-disruption>.

18 Stefan Heng, Industry 4.0: Huge potential for value creation waiting to be tapped (Deutsche Bank Research, May 2014), [http://www.dbresearch.com/servlet/reweb2.ReWEB?rwsite=DBR\\_INTERNET\\_EN-PROD&rwobj=ReDisplay.Start.class&document=PROD0000000000335628](http://www.dbresearch.com/servlet/reweb2.ReWEB?rwsite=DBR_INTERNET_EN-PROD&rwobj=ReDisplay.Start.class&document=PROD0000000000335628).

19 MacDonald, Scott and Whitney Rockley, The Industrial Internet of Things: IIOT Report (McRock Capital, 2014), [http://www.mcrockcapital.com/uploads/1/0/9/6/10961847/mcrock\\_industrial\\_internet\\_of\\_things\\_report\\_2014.pdf](http://www.mcrockcapital.com/uploads/1/0/9/6/10961847/mcrock_industrial_internet_of_things_report_2014.pdf).

20 James Wilson, "Miners tap into rich seam of 'Internet of Things'," Financial Times, July 16, 2014, <https://www.ft.com/content/854fb212-084b-11e4-9380-00144feab7de>.



that help them decide how promptly the ore should be processed, the unmanned vehicles that improve efficiency and reduce costs, and the drones that monitor processing plants and measure ore stockpiles. BP PLC uses unmanned aerial vehicles for pipeline inspection in Alaska, Royal Dutch Shell PLC uses them for surveying, and the well-known Amazon Prime Air uses them for optimizing package delivery.

The service industry, meanwhile, is disrupting markets through innovative, lean models by leveraging technology platforms and networking. Innovations such as Airbnb and Uber are using a lean model that leverages mobile technology networks to connect supply with demand and transform their ecosystems. Uber has disrupted traditional businesses such as Transdev, which relies largely on owning large fleets of buses. The lean business model has seen further adopters such as Instacart, which delivers groceries in one hour; Handy, which does home cleaning; and DoorDash, which delivers food from restaurants — all leveraging resources without actually owning them.

---

**The lean business model has seen adopters all leveraging resources without actually owning them.**

---

In a parallel trend, healthcare is seeing as many revolutionary trends as any other industry. IBM's Watson Health is feeding its artificial intelligence system by forming a collective of health systems that speed up development of products which diagnose patients correctly the first time.<sup>21</sup> It's also transforming the industry from a fee-for-service structure to a value-based care model.<sup>22</sup> Using big data, Watson's cognitive computing

---

21 Bruce Japsen, "IBM Watson Imaging Collaborative Adds 16 Health Systems, Tech Firms," Forbes, June 22, 2016, <http://www.forbes.com/sites/brucejapsen/2016/06/22/ibm-watson-imaging-collaborative-adds-16-health-systems-tech-firms/#5450c7496d8e>.

22 Bruce Japsen, "IBM Watson Imaging Collaborative Adds 16 Health Systems, Tech Firms," Forbes, June 22, 2016, <http://www.forbes.com/sites/brucejapsen/2016/06/22/ibm-watson-imaging-collaborative-adds-16-health-systems-tech-firms/#5450c7496d8e>.

seeks to overcome human limitations and drastically change how patients are diagnosed, treated, and monitored.<sup>23</sup> DaVita, as another example, is leveraging mobile and data tracking technologies to analyze and send vitals to doctors on their mobile devices. ■

## Navigating Digital Disruption: Insights from a Mack Institute Conference

To identify how to navigate the challenges posed by digital disruption, the Mack Institute for Innovation Management held a conference on the theme *Digital Disruption and Empowered End Users*. The conference drew insights about how changing technology trends affect the way firms operate today, what makes digital innovation management successful, and how firms can thrive in the era of digital disruption.

**Five principles emerged that can help incumbents adapt and thrive.**

### 1 RETHINK YOUR MISSION

Technologies are advancing and customer behaviors are changing more rapidly than ever. While catering to changing customer needs, firms might find themselves entering new markets that do not necessarily bear resemblance to their original mission. The Weather Channel, for instance, is now extending its focus from predicting weather to providing fitness forecasts to users, taking advantage of wearable technology that not only records fitness activity but also factors in the weather and humidity conditions to calculate vitals. The firm today recommends not just the right weather but also a list of parks to help users

---

23 Greg Satell, "How IBM Is Building A Business Around Watson," Forbes, Aug 21, 2016, <http://www.forbes.com/sites/gregsatell/2016/08/21/how-ibm-is-building-a-business-around-watson/#2e1599fd8440>.

pick the ideal places to work out, suggests the best time of day to exercise, and also recommends what is best to wear. Taking consumer insights further, the channel offers interactive tools such as hydration, calorie, and heart rate calculators.

Rethinking the firm's mission is an opportunity. By taking a targeted approach and customizing product lines to specific customer segments and their evolving needs, it's possible for a firm to distinguish itself from the competition. But this also may mean crossing the firm's established product portfolio boundaries and markets and redefining its objectives to suit the changing demands of the environment.

Changing missions to suit consumer behaviors is not necessarily an undesirable situation. Nissan, for instance, has taken advantage of changing consumer behaviors and shifted from viewing its business as providing cars to providing "mobility solutions." It designed its "Nissan Intelligent Mobility"<sup>24</sup> vision to guide and anchor critical decisions of the company around how cars are powered, driven, and how well they integrate into

---

**Corporate missions can be adapted to the changing external environment and re-created to gain competitive advantage.**

---

society, leading to a more enjoyable driving experience. The new vision intends to help cars connect to social infrastructure such as road, information, and electric power networks, eventually improving the quality of the transportation ecosystem.

Corporate missions can thus be adapted to the changing external environment and re-created to gain competitive advantage. The dynamically

---

24 "Nissan announces "Nissan Intelligent Mobility" vision - building on company leadership in electrification and vehicle intelligence - in Geneva," Nissan News, Mar 1, 2016, <http://nissannews.com/en-US/nissan/usa/releases/nissan-announces-nissan-intelligent-mobility-vision-building-on-company-leadership-in-electrification-and-vehicle-intelligence-in-geneva>.

changing needs of the empowered consumer offer an opportunity to intelligently maneuver and capitalize on the fast-changing environment. Firms must become flexible and willing to renew their missions and operational models. If executed well, firms can use consumer behavioral insights wisely by priming customers to respond positively to its new products.

Evolving the mission of the firm should follow a cautious and calculated approach. It requires not only focusing on the customer experience and responding to their needs in an increasingly interactive way, but also envisioning the future and leading the way toward evolution of the industry.

## ② YOUR USERS CAN BE YOUR INNOVATORS

**K**eeping track of consumer behaviors is bringing about a trend of user-led innovations. Take, for example, the case of WellDoc's diabe-

tes management technology, the users of which created their own ad hoc fixes to access data on their mobiles. The firm eventually recognized these customer-built solutions and added the functionalities into the app. As WellDoc's example illustrates, firms should remember that innovations are not necessarily the domain of manufacturers, but can originate from users as well.<sup>25</sup> By making advanced technologies available to consumers, firms can empower them to originate innovative ideas with a high probability of success.

---

25 Eric A. von Hippel, "The Dominant Role of Users in the Scientific Instrument Innovation Process," *Research Policy* 5, no. 3 (July 1976): 212-239, [https://doi.org/10.1016/0048-7333\(76\)90028-7](https://doi.org/10.1016/0048-7333(76)90028-7); Eric A. von Hippel, "Successful Industrial Products from Customer Ideas," *Journal of Marketing* 42, no. 1 (January 1978): 39-49, <http://www.jstor.org/stable/1250327>; Eric A. von Hippel, "Lead Users: A Source of Novel Product Concepts," *Management Science* 32, no. 7 (July 1986): 791-805, <https://evhippel.files.wordpress.com/2013/08/lead-users-paper-1986.pdf>.

Firms can, in fact, find ways to actively engage customers to generate ideas. Lego, for instance, encourages its customers to propose designs online, and a project gets reviewed for creation when it gets 10,000 votes. DeWalt, the high-quality power tool manufacturer, plumbs its user community for product, packaging, and marketing inventions.<sup>26</sup> Amazon encourages customer reviews on products to bring innovative ideas to market. Getting customers closely involved in innovations helps firms create solutions that will be positively received.

Whether the firm chooses to select user-led innovations or create its own fixes, its objective should be the same: to keep up with rapidly changing consumer needs. Going down the rabbit hole of consumer dynamics, combined with an increased speed and complexity in the competitive environment, demands that firms broaden their strategic peripheral vision.<sup>27</sup> In the coming decade, technology and devices will drastically change consumers' homes and workplaces.<sup>28</sup> Firms need to actively monitor changes in their environment in order to see the threats sneaking up or recognize the opportunities at the edges of their vision.

---

**Firms need to actively monitor changes in their environment in order to see the threats sneaking up or recognize the opportunities at the edges of their vision.**

---

For this, firms need to scope and scan the environment, understand what might be an opportunity, probe for validation, and act on the idea.

---

26 Sam Milbrath, "Co-creation: 5 examples of brands driving customer-driven innovation," Innovation (blog), Vision Critical, Aug 5, 2016, <https://www.visioncritical.com/5-examples-how-brands-are-using-co-creation/>.

27 Lael T. Wertenbaker, *The Eye: Window to the World (The Human Body)* (New York: Torstar Books, 2006), 146; George S. Day and Paul J.H. Schoemaker, *Peripheral Vision: Detecting the weak signals that will make or break your company* (Harvard Business School Press, 2006).

28 Kim Eichorn and Eva Ross, "U.S. Consumers Predict Unprecedented Connectivity in 2025, but Security and Privacy Concerns Linger" (McAfee Newsroom, September 16, 2014).

### 3 LISTEN TO YOUR CUSTOMER

For a product to be successful, it must offer more com-

pellent features than the rest of the products in the marketplace, meaning that firms must have a clear sense of what features its consumers actually want. It is imperative that the firm stay connected with its customers to keep pace with changing trends in the age of digital disruption.

Vitality Group, for instance, provides wellness programs for insurance companies, and is now providing a mobile app that encourages its clients' customers to increase their daily activity, even in simple ways such as a brief walk. Vitality Rewards enable members to benefit from incentives quickly through small-value weekly rewards. The group thus continuously stays connected to its stakeholders, taps into the data it retrieves on customer behavioral patterns, reviews the market trends, and aligns

Successful firms figure out innovative ways to keep in touch with their customers, rather than simply working in closed-up internal R&D labs.

its product offerings with current popular activity trends.<sup>29</sup> In doing so, it allows for a much closer relationship between insurance companies and customers than had previously been possible.

Firms such as Amazon, Netflix, and P&G further exemplify strong customer connectivity. They have

figured out innovative ways to keep in touch with their customers and design products and product lines, rather than simply working in closed-up internal R&D labs. Amazon, for example, uses a strategy that works backwards from the customer. Instead of designing products first and then testing with customers, it considers its customer requests and

<sup>29</sup> See section V, "It's all about the data"; People and Sustainable Development Report: Creating Shared Value (Vitality Group Discovery, 2015), [http://wikirate.org/Page\\_000034538](http://wikirate.org/Page_000034538).

determines which products it should invest its resources in. Amazon Web Services released about 500 new products in 2014 and a staggering 90 percent of them were determined from customer requests.<sup>30</sup> Amazon's product team needs to be convinced that a substantial number of customers want the product, fully understand the product's value proposition, and have a clear view on the product pitch. An internal press release is even devised before designing the product in order to vote on which of its benefits are more pronounced and, ultimately, which products to design and invest further resources in.

Which direction should firms take in such a dynamic, disruptive environment? Amazon's example makes the case that the best way to determine the direction is by turning toward the customers. Instead of treating customers as a means to an end, the incumbent firm can

---

**Instead of treating customers as a means to an end, the incumbent firm can invite its customers to participate in determining the future direction of the firm.**

---

invite its customers to participate in determining the future direction of the firm. Yes, it means that the firm is in some way redistributing important decision-making powers to stakeholders, but in the context of innovation, customers do have a legitimate interest in contributing.<sup>31</sup> By getting involved, customers are primed to react positively to the innovation since the products are designed to answer their immediate needs, and

---

30 Jillian D'Onfro, "Why Amazon forces its developers to write press releases," Business Insider, Mar 12, 2015, <http://www.businessinsider.com/heres-the-surprising-way-amazon-decides-what-new-enterprise-products-to-work-on-next-2015-3>.

31 R. Edward Freeman, "Stakeholder Theory of the Modern Corporation," in *Ethical Issues in Business: A Philosophical Approach*, ed. Thomas Donaldson, Patricia Hogue Werhane, and Joseph D. Van Zandt (Prentice Hall: Englewood Cliffs, NJ, 2002), 38-48, <https://businessethics.qwriting.qc.cuny.edu/files/2012/01/Freeman.pdf>; William M. Evan and R. Edward Freeman, "A stakeholder theory of the modern corporation: Kantian capitalism," in *Ethical Theory and Business*, eds. Tom L. Beauchamp and Norman E. Bowie (Prentice-Hall: Englewood Cliffs, NJ, 1988), 97-106.

the firm establishes an instrumental connection between the customers and its own objectives.<sup>32</sup>

## 4 INNOVATE INNOVATIVELY

**M**oving away from the traditional philosophy of self-re-

liant R&D, firms today have a plethora of options and sources for innovation. Many commercialize their own ideas as a way to permeate the market, but more and more, firms are bringing in innovations from other firms or co-creating with other stakeholders in the market.<sup>33</sup>

P&G's Connect + Develop initiative provides a classic example of a firm importing ideas from outside sources. The firm had observed two trends: first, that connecting ideas from across its internal businesses brought out innovative products; and second, that product acquisitions from beyond internal labs were very successful. It, therefore, decided to leverage the broader ecosystem of talent and established Connect + Develop (C+D), which aimed to acquire 50 percent of product innovations from outside the company through collaborations across the world. The firm began scanning its network ecosystem systematically for proven ideas that could be improved and/or customized to suit P&G's customers. By identifying promising ideas throughout the world and applying its internal resources, P&G managed to create cheaper and better products more quickly. It claimed to have doubled the percentage of innovations that met revenue and profit targets while lowering the costs of innovation. In

32 Thomas Donaldson and Lee E. Preston, "The Stakeholder Theory of the Corporation: Concepts, Evidence, and Implications," *Academy of Management Review* 20, no. 1 (Jan 1995): 65-91, <http://www.jstor.org/stable/258887>.

33 Henry W. Chesbrough, "The Era of Open Innovation," *MIT Sloan Management Review* 44, no. 3 (Spring 2003): 35-41, <https://proxy.library.upenn.edu/login?url=http://search.proquest.com/docview/224970683?accountid=14707>.



2010, P&G even tripled C+D's target contribution to the firm's innovation development.<sup>34</sup>

On the other hand, DoorDash, a food delivery company, taps internal resources for innovations. It actively engages employees across functions to create ideas, then brainstorms them, evaluates the ideas cross-functionally to gather analyses, and decides which new projects to invest in. Fostering an internal innovation ecosystem is a great way for companies to tap talent and ideas without the effort of networking externally.

A third path combines the above two approaches - fostering both external and internal innovation ecosystems. CA Technologies and Cisco are both actively involved in studying disruptions in the market and growing their product portfolio by co-creating with both internal and external stakeholders. Both firms embrace an open innovation ecosystem where, internally, contributions from all over the company are encouraged, analyzed, and implemented.<sup>35</sup> Externally, market disruptors are scanned for, evaluated, and embraced once the required strategic fit is found.

---

The environments in which firms operate are becoming ever more complex, with increased connectivity and network relationships becoming key factors in innovation.

---

---

34 Larry Huston and Nabil Sakkab, "Connect and Develop: Inside Procter & Gamble's New Model for Innovation," *Harvard Business Review* 84, no. 3 (Mar 2006): 58-66, <https://hbr.org/2006/03/connect-and-develop-inside-procter-gambles-new-model-for-innovation>; Bruce Brown and Scott D. Anthony, "How P&G Tripled Its Innovation Success Rate," *Harvard Business Review* 89, no. 6 (June 2011): 64-72, <https://hbr.org/2011/06/how-pg-tripled-its-innovation-success-rate>.

35 Henry W. Chesbrough, "Bringing Open Innovation to Services," *MIT Sloan Management Review* 52, no. 2 (Winter 2011): 85-90, <https://proxy.library.upenn.edu/login?url=http://search.proquest.com/docview/845235900?accountid=14707>; Ellen Enkel, Oliver Gassmann, and Henry Chesbrough, "Open R&D and Open Innovation: exploring the phenomenon," *R and D Management* 39, no. 4 (Sep 2009): 311-316, doi:10.1111/j.1467-9310.2009.00570.x.

The environments in which firms operate today are becoming ever more complex, with increased connectivity and network relationships becoming key factors in innovation.<sup>36</sup> In the age of digital disruption, firms may do well to abandon the white elephant called internal R&D, gain agility, and broaden their peripheral vision. This will open up doors to look for innovation sources that lie beyond the firm's traditional boundaries. Information and knowledge disseminate widely today, which makes it imperative that firms recognize and tap their value chain. Firms now have the opportunity to find innovative ways of implementing ideas through methods that were traditionally outside the periphery of an organization, whether they tap external resources for innovations by bringing in knowledge from the outside, such as suppliers and customers, or co-create innovations by engaging with employees, customers, distributors, and other complementary players in the environment.<sup>37</sup>

## 5 IT'S ALL ABOUT THE DATA

**D**igital marketing today often relies on predictive ana-

lytics to give firms an edge in the fast-paced market. A prime example is Netflix, which measures all aspects of customer interaction and continuously refines its analytics capabilities to develop new products. Since

36 Kuldeep Kumar and Han G. van Dissel, "Sustainable collaboration: managing conflict and cooperation in interorganizational systems," *MIS Quarterly* 20, no. 3 (Sep 1996): 279-300, <http://www.jstor.org/stable/249657>; Juliet Webster, "Networks of collaboration or conflict? Electronic data interchange and power in the supply chain," *Journal of Strategic Information Systems* 4, no. 1 (Mar 1995): 31-42, [https://doi.org/10.1016/0963-8687\(95\)80013-G](https://doi.org/10.1016/0963-8687(95)80013-G); Jan Damsgaard and Kalle Lyytinen, "Contours of diffusion of electronic data interchange in Finland: overcoming technological barriers and collaborating to make it happen," *Journal of Strategic Information Systems* 7, no. 4 (Dec 1998): 275-97, [http://dx.doi.org/10.1016/S0963-8687\(98\)00032-8](http://dx.doi.org/10.1016/S0963-8687(98)00032-8).

37 George S. Day and Christine Moorman, *Strategy from the Outside-In: Profiting from the Customer Value* (McGraw Hill, 2010); C.K. Prahalad and Venkataram Ramaswamy, "The Co-Creation Connection," *Strategy and Business* no. 2 (April 2002), <https://www.strategy-business.com/article/18458?gko=f472b>.

such products emerge from direct insights into consumers' behaviors, they appeal directly to the consumers.

The trend of utilizing big data is notable in healthcare too, with firms such as DaVita, Human Longevity Inc., and Vitality Health using consumer data to bring out innovative products and services. Human Longevity Inc., for example, harnesses big data for advancements in the healthcare sector. The firm seeks to democratize health records by making genomic data widely available. Low response rates in clinical trials render some products unsuitable for mass production, but releasing this genomic data to pharma companies will help them better determine which patients might benefit from the trials based on their DNA. This improves the predictability of success for drugs, and helps create drugs that are designed to cure less common illnesses.

---

**Unless firms learn how to use captured data points to their advantage, torrents of data will be of little value.**

---

DaVita, on the other hand, uses mobile technology to make vital health data more accessible through a software product called

Falcon-Physician.<sup>38</sup> The software integrates data from dialysis centers and doctors' offices to manage patients' records, and gives mobile access of patients' records to the relevant doctors. Furthermore, it connects providers and shares patient data for collaborative and continued care.<sup>39</sup>

Mobile phones and other digital devices make it possible to capture large amounts of data on consumer behaviors and market patterns. But unless

---

38 Falcon-Physician made true the prediction in Eichorn and Eva's study of 2014, where 70 percent of consumers studied believed that wearable devices will send health vitals directly to their physicians. Refer the study: Kim Eichorn and Eva Ross, U.S. Consumers Predict Unprecedented Connectivity in 2025, but Security and Privacy Concerns Linger (McAfee Newsroom, September 16, 2014).

39 "Falcon Physician and MEDfx Team Up to Fully Automate a Nephrology Practice," PR Newswire, June 9, 2016, <http://www.prnewswire.com/news-releases/falcon-physician-and-medfx-team-up-to-fully-automate-a-nephrology-practice-300282332.html>.

firms learn how to use the captured data points to their advantage, these torrents of data will be of little value. Today's emerging big data tools will surely allow firms to make sense of the data, but it is imperative that firms themselves build internal competencies to interpret the data contextually and redirect those insights to bring about innovations.

Firms' capacities to consume and process data are rising faster than the data generated and shared. Information consumption by consumers was found in 2009 to rise 2.6 percent a year, while the capacity to process data was rising at 30 percent a year.<sup>40</sup> In 2010, about 5 billion mobile phones were in use and about 30 billion pieces of content were shared on Facebook every month.<sup>41</sup> With an expected 60 percent potential rise in operating margins possible with big data alone, firms can build in more capacity to leverage insights. Sectors such as finance, insurance, government, healthcare, trade, retail, and real estate are among those that can derive the largest value from leveraging big data. ■

## Conclusion: Ensuring Greater Success Rates

**D**igitization is now affordable and accessible, and firms can create a system to manage innovations in order to internally build adaptability. Given the opportunities for greater customer penetration and product distribution, firms can explore a universe of potential ideas by building an innovation ecosystem, internally and externally, that fosters open innovation.

---

40 Roger Bohn and James Short, "Measuring Consumer Information," *International Journal of Communication* 6 (April 2012): 980-1000.

41 Big Data: The next frontier for innovation, competition, and productivity (McKinsey Global Institute, 2011).

A firm that actively manages innovations and witnesses high innovation success rates in the realm of digital technology would have three crucial characteristics:<sup>42</sup>

## **1) GOOD PERIPHERAL VISION<sup>43</sup>**

A successful firm would, to begin with, understand the industry dynamics thoroughly by scanning the environment for sources of innovation and digital technology trends in the market that its competitors, consumers, and other stakeholders are adopting. The defining factor here would be to know where to look more carefully, how to interpret the weak signals, and how to act when the signals are still ambiguous. Digitization is a dynamic animal, and the successful firm would explore multiple options and probe a wide variety of sources in order to discover the locus of innovation.

Also, one has to remember that sources of innovation need not necessarily be the customers or the distributors of the firm, but can be of any other product or service provider that serves the same customer as the firm. For instance, UberEATS is an on-demand meal delivery service that is powered by the Uber app. Using the same technology platform that connects supply and demand for transportation, the app allows users to order food with a drastically shortened delivery time. UberEATS not only exemplifies leveraging peripheral vision to identify opportunities but also signifies that innovations need not necessarily come from stakeholders of the same industry.

---

42 Melissa A. Schilling, *Strategic Management of Technological Innovation* (New York: McGraw-Hill/Irwin, 2005).

43 George S. Day and Paul J.H. Schoemaker, *Peripheral Vision: Detecting the weak signals that will make or break your company* (Harvard Business School Press, 2006).

## 2) CLEARLY DEFINED STRATEGIC DIRECTION

The successful firm would have a clear understanding of its core competencies, its competitive advantages, and its strategic intent. This thorough understanding is critical when adapting to changing consumer behaviors and dynamic competitive innovations.

Refer to the pattern of diluting missions discussed earlier in this paper: Understanding the firm's core competencies and playing to its strengths might sometimes constitute a better strategy than changing gears. Transdev, for instance, plays to its core competencies. Facing a classic incumbent inertia problem, Transdev decided not to play the 'lean' game.<sup>44</sup> Given that most disruptors like Uber and Lyft don't think of high-investment transportation, Transdev decided to stick to its core competency and continue to maintain and run large fleets of busses. With revenue growth of EUR 6.7 billion, the strategy has given it impressive results of growth and profits.<sup>45</sup>

## 3) A SERIES OF WELL-DEFINED PROCESSES

Implementation of the defined strategy would, of course, require more dedication and effort than the former two characteristics. A successful firm would have an organizational structure and culture that not only encourage digitization but also accommodate changes in operational models required for the new products. Creating and managing teams that can champion this digitization strategy is critical.

Several firms can be identified that are seeing contemporary success by implementing innovation strategies – Amazon, P&G, Cisco, and CA Technologies, to name a few. These firms have dedicated teams that scan for

---

44 Marvin B. Lieberman and David B. Montgomery, "Incumbent Inertia: First-Mover Disadvantage," *Strategic Management Journal* 9, special issue (Summer 1988): 41-58.

45 "Transdev's 2016 results boost its ambitions for development," Transdev (blog), Mar 29, 2017, <https://www.transdev.com/en/press/Transdev-2016-results-boost-ambitions-development>.

market opportunities, evaluate strategic fit of the ideas with the organization, and maintain a portfolio of multiproduct innovations in order to promote continuous change.<sup>46</sup> Managing multiproduct innovations in a firm correlates with flexible organization structures and priorities. The structure has to be balanced enough to provide design freedom and openness to change, but also set boundaries to ensure chaos does not ensue.

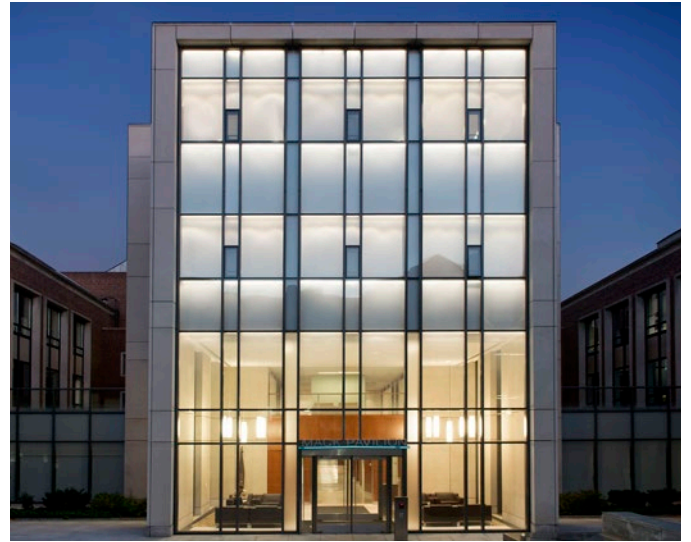
Innovation is a crucial survival skill, especially so in the age of digital disruption. Rising complexities of empowered consumers and smarter competitors demand newer ways of operating businesses. While creativity cannot be managed, innovations in a firm surely can be. Organized approaches to building a digitally innovative firm will mean taking a strategic approach toward digitization, building a culture that is conducive to dealing with data, and developing flexibility to refashion business models to suit digital processes. In order to successfully manage digital innovations, firms need to prepare ahead of time both to react to the changing environment and to be the change leaders themselves. ■

---

46 Shone Brown and Kathleen Eisenhardt, "The Art of Continuous Change: Linking Complexity Theory and Time-Paced Evolution in Relentlessly Shifting Organizations," *Administrative Science Quarterly* 42 (1997): 1-35.

## ABOUT THE MACK INSTITUTE FOR INNOVATION MANAGEMENT

**E**merging technologies and innovations can create and transform industries, while simultaneously introducing new risks and uncertainty to established organizations.



The Mack Institute for Innovation Management is an exclusive network that connects business leaders, researchers, world-class Wharton faculty, and students. At the institute, thought leaders from across academic disciplines and industries come together to explore how companies survive, compete, and thrive through innovation management. The institute's multidisciplinary faculty and researchers develop practical approaches to managing innovation and share this knowledge through thought-provoking conferences, workshops, and publications.

*PRAGNA KOLLI IS RESEARCH ASSOCIATE AT THE MACK INSTITUTE.*

*SAIKAT CHAUDHURI IS THE MACK INSTITUTE'S EXECUTIVE DIRECTOR AND ADJUNCT ASSOCIATE PROFESSOR OF MANAGEMENT AT THE WHARTON SCHOOL.*



William and Phyllis

**MACK INSTITUTE**  
for INNOVATION MANAGEMENT

MACK INSTITUTE FOR INNOVATION MANAGEMENT  
3620 LOCUST WALK  
STEINBERG HALL-DIETRICH HALL 3400  
PHILADELPHIA, PA 19104-6371

PHONE: +1.215.746.4831

EMAIL: [MACKINSTITUTE@WHARTON.UPENN.EDU](mailto:MACKINSTITUTE@WHARTON.UPENN.EDU)