New Paths to Customer Value

Disruptive Business Models in the Digital Vortex

An IMD and Cisco Initiative

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Introduction

In June 2015, the Global Center for Digital Business Transformation (DBT Center), an IMD and Cisco initiative, released a study entitled “Digital Vortex: How Digital Disruption is Redefining Industries.” The main finding of the research was that digital disruption would displace four out of the top 10 incumbents across industries, with an average time to “substantial disruption” of just three years. Forty-one percent of executives surveyed believed that digital disruption has increased the chance that their company will be put out of business altogether. Thus, digital disruption heralds both a fast pace of change and high stakes in terms of competitive standing. Despite these consequences, the study found that only 25 percent of firms are taking proactive measures to forestall disruption. For many companies, this passivity reflects a lack of clear understanding about the existential threat digital disruptors pose.

With the release of “Digital Vortex,” the DBT Center sought to provide a conceptual framework to consider digital disruption. As industries inexorably move toward the center of the Digital Vortex, where disruption is most intense, it is crucial to recognize that this movement is not due simply to the effects of new technologies. What is “different this time” is that digital technologies are enabling new digital business models that are giving rise to rapid competitive change.

This paper expands on the imperative, outlined in “Digital Vortex,” to create new value for customers—cost value, experience value, and platform value—and provides a taxonomy of digital business models, including examples of the disruptors who use them to create this value. As such, it presents a more detailed analysis of digital business models and the threats (and opportunities) they present. Although their business models may focus on one type of value—low cost for example—most digital disruptors practice what we call “combinatorial disruption.” They use digital technologies to fuse cost value, experience value, and platform value to deliver products and services that make offerings from incumbents immediately unattractive or obsolete.
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To understand the workings of digital disruption, the DBT Center examined the business models of more than a hundred top digital disruptors. Whatever their differences, all of them create at least one of three essential types of value for customers: cost value, experience value, and platform value (see Figure 1). Digital disruptors use these business models to undercut the price, improve the customer's experience, or use platforms to expand their reach exponentially. Each of these three categories of value in turn supports five predominant business models, which we detail below. Here, we primarily describe the benefits to the end customer (rather than the gains flowing to the innovator), as this notion of new customer value creation is the unifying trait of all disruptive business models.

While examples are provided for each of the 15 business models, it is worth noting that almost none employ just one of the business models presented; most are proficient at combinatorial disruption that undercut incumbents in multiple ways.

**Cost Value**

Let’s look first at cost value. This is perhaps the area where the competitive effects of digital disruption are most acutely felt. Disruptors employ a multiplicity of strategies to lower the cost of a product or service for the end customer. For example, virtualization (or “dematerialization”) of products and services is a key component of how digital disruptors lower costs. If you don’t have to fabricate a physical product, you can, of course, charge a lower price than you otherwise would. The Amazon Kindle and other e-readers are examples of dematerialization of products—the user downloads bits and bytes, rather than purchasing a physical book made of paper. Virtual meetings are a form of dematerialization as well. Companies like InXpo, ON24, and Unisfair offer online conferences that replace traditional business meeting travel. This impacts, among others, hotel companies that depend upon convention travel for a large share of their profits.1 Virtualization also extends to distribution. Brick-and-mortar retailers have to maintain margins that can support a network of physical stores, along with the labor to staff them. Of course, e-commerce has fundamentally upended this model.

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Many digital disruptors use analytics to create or exploit information advantages, and to optimize operations, including pricing, which drives cost value. Disruptors also often use information advantages to enable customers to “get more for less,” as in the case of coupons, rewards, or rebates that augment cost value for the end customer. Finally, we have also seen that digital disruptors tend to embrace unconventional approaches to workforce management, supply chain, and other parts of the business (leveraging cloud technology, Big Data, crowdsourcing, and more) to secure operational improvements that translate into lower costs and greater competitiveness (see the DBT Center’s forthcoming “People Leadership in the Digital Vortex” paper for more on disruptive workforce strategies).

But cost value is not only created when a disruptor can lower the cost of its own offering relative to that of the incumbent. Cost value is also created when a disruptor reintermediates commercial interactions. For example, online travel-booking sites such as Expedia, Hotels.com, and KAYAK are not themselves airlines, hotel chains, or car rental agencies, but rather exert indirect cost pressure on firms in these industries (of course, they also place direct pressure on competitors in their own domain, namely travel agents). The comparison shopping facilitated by these sites conspires to limit the pricing power of the companies whose services are sold through this channel.

In investigating how cost value is created by digital disruptors, we have discerned five major business models (see Figure 2, next page), which collectively explain the vast majority of cost-value-creating approaches in the market today, spanning many different industries:

1. **Free Lunch** provides products or services to customers at zero cost (or nearly so). These are products and services for which customers have traditionally had to pay. As the adage goes, it is pretty hard to compete with free. Examples where customers have historically had to pay and now do not include Coursera (university classes), Skype (voice and video calling), and Spotify (music). Free Lunch also includes business models built on the provision of rewards, rebates, or other incentives that extend economic gain for end customers (and for which they do not pay), such as iBotta and Shopkick. Players that use freemium pricing, wherein basic products or services are provided at no cost, but users are charged a fee for premium or specialized variations of the offering, are also included here. DropBox, the online storage provider, is one such example.

2. **Share the Wealth** spreads costs over people or time, or creates economies from “group buying” or volume discounts. Fon, for example, bills itself as the largest Wi-Fi network in the world. The company’s members allow users to connect via one of its more than 14 million hotspots. This places a damper on Wi-Fi services from incumbent telecommunications companies as a group of customers leverage a digital business model to cooperate and spread costs. While it has encountered its share of difficulties, Groupon, the social couponing site, is another great example of how multiple users can collectively drive down costs.

3. **Hard Bargain** resulted in many of the disruptive business models associated with the first wave of e-commerce. Here, disruptors like Trivago (travel and hospitality bookings) and a wide range of comparison-shopping tools like PriceGrabber and Shopzilla create price
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transparency for buyers, creating improved price information and greater choice. In short, they enable customers to extract a better bargain from the purveyors of these products and services.

4. **Turn the Tables** hinges on reverse auctions, where sellers must bid for buyers’ business. This competition, exemplified by companies like LendingTree (mortgages and lending) and Ariba (B2B procurement), creates price pressure for suppliers and resultant cost value for customers. A reverse auction introduces uncertainty for the seller regarding the maximum price that can be charged without causing the buyer to select a competing offer from another seller. Online reverse auction settings use sophisticated software algorithms that make the bidding process faster and more dynamic, placing further downward pressure on prices.

5. **Pay as You Go** transforms utilization for customers and the items for which they ultimately pay. By switching from flat-rate pricing to an approach by which customers pay only for what they actually

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**Figure 2**

Cost-Value-Driven Business Models

**Free Lunch**
- **Definition:** Providing something for free, rather than requiring customers to pay for it; providing rebates or rewards; freemiums
- **Customer Value:** Outright elimination of cost; incremental value for loyalty or participation

**Share the Wealth**
- **Definition:** Spreading costs over people or time; buyer aggregation
- **Customer Value:** Amortization of costs over time; group discounts, buying economies of scale

**Pay as You Go**
- **Definition:** Paying only for what is used/consumed; subscription services; “X as a service”
- **Customer Value:** Variable cost, lower risk, decreased vendor overhead

**Turn the Tables**
- **Definition:** Reverse-auction-style sales; competitive bidding; “name your own price”
- **Customer Value:** Downward pricing pressure, strategic sourcing

**Hard Bargain**
- **Definition:** Facilitating price transparency
- **Customer Value:** Greater supplier choice, comparison shopping

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Source: Global Center for Digital Business Transformation, 2015
use, providers squeeze inefficiency out of consumption and deliver increased power (and cost value) to the customer. Examples of Pay as You Go include pay-as-you-drive insurance (for example, Progressive Snapshot) and cloud-based software applications (for example, Salesforce.com). In some cases, customers can move from purchasing goods as capital investments to buying services that are accounted for as operating expenses, creating greater financial flexibility and still more cost value. Companies like Rolls-Royce Holdings, the world’s second-largest manufacturer of aircraft engines, sell “business outcomes”—namely, propulsion or uptime—rather than a capital expense, such as a normal jet engine. These performance-based arrangements serve to shift financial risk from the buyer to the seller—a form of cost value.

Experience Value

Digital disruptors are dangerous to market leaders because they use combinatorial disruption to create offerings that are frequently better, not merely cheaper. Customers may be attracted initially by the low price of a disruptor, but become loyal enthusiasts because of the myriad other benefits they receive. The superiority of disruptor offerings can make it hard for incumbents to maintain market share based on brand or quality, and makes it easy for customers to move their business to an unconventional provider. Recent research from Cisco, for example, revealed four out of five consumers would trust a company that was not a traditional bank to handle their “banking” needs.

Experience value—offering customers more convenience, context, and control—has been central to the rapid ascent of many of today’s most disruptive companies. We noted in our earlier work that moving toward the center of the Digital Vortex implies that “whatever can be digitized is digitized.” As with cost value, experience value increases as offerings are digitized because what was formerly physical and indivisible can now be partitioned into only the units that customers want, then delivered instantly to any device or location. Disruptors that unbundle incumbents’ offerings give customers the power to select—and pay for—only the products or services they value, discarding the “bundled” elements they do not want (and that drive up the price). “Unbundlers” also attack incumbents, such as large financial institutions, that once provided significant value by aggregating services. Virtualization allows niche players to provide these services through digital channels, with more personalization, and at a lower cost (even for free). This unbundling has banks scrambling to maintain the most profitable parts of their business, such as wealth management and mortgage banking, which are rapidly being attacked by disruptors.

A digital end product is not essential to providing differentiating experience value, however. For example, Zulily has reached $1 billion in annual revenues faster than any retailer except Amazon and Old Navy by focusing on the experience of its core customers—young mothers—at every turn. Zulily uses analytics to determine what each customer is likely to buy based on shopping and browsing history, tailors personalized selections of new products each day, and provides a seamless e-commerce experience with an intuitive mobile app.
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To better understand the ways digital disruptors provide superior experience value, we will explore the five main business models (see Figure 3) that give rise to it:

1. **Power to the People** removes middlemen who do not add value (or enough value) yet still collect economic “rents” by acting as intermediaries in transactions. With these middlemen displaced, customers get what they want, avoid what they do not, and often pay a lower price. Circumventing middlemen (going direct), do-it-yourself (DIY), and placing the customer “in charge” are core elements of digital disruption. Power to the People liberates customers from “how things have always been done.” PayPal provided a new way of sending money and making purchases that skirted the traditional payment methods (and fee extraction) overseen exclusively by banks and credit card companies. Bitcoin and other cryptocurrencies are carrying this disruption forward, not merely by changing business processes but by

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**Figure 3**
Experience-Value-Driven Business Models

<table>
<thead>
<tr>
<th>Power to the People</th>
<th>Just 4 You</th>
<th>Right Here, Right Now</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definition:</strong> Enabling self-service, disintermediation of middlemen, do-it-yourself</td>
<td><strong>Definition:</strong> Personalization of products, services, experiences</td>
<td><strong>Definition:</strong> Delivering goods, services, or value-added experiences in real time, or via new device form factors (e.g., mobile), de-materialization</td>
</tr>
<tr>
<td><strong>Customer Value:</strong> Greater independence, control, convenience</td>
<td><strong>Customer Value:</strong> Increased customization, contextualization; aesthetic / design improvements</td>
<td><strong>Customer Value:</strong> Relevance, immediacy</td>
</tr>
</tbody>
</table>

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**Robo-tasking**

- **Definition:** Automation of processes using analytics or low-cost labor
- **Customer Value:** Time savings, improved execution quality, wage arbitrage

**Nonfriction**

- **Definition:** Removing latency or bottlenecks in business processes
- **Customer Value:** More simplification, greater efficiency, information aggregation

**Right Here, Right Now**

- **Definition:** Click & Collect, Instant Delivery
- **Customer Value:** Convenience, speed

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Source: Global Center for Digital Business Transformation, 2015
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introducing entirely new modes of exchange. Netflix is another renowned example of Power to the People. Instead of having to purchase a cable package that includes hundreds of channels that go unwatched, Netflix members pay a small monthly fee that covers a huge selection of TV shows and movies, and pay an extra fee only for new shows and movies they decide to watch. Netflix uses a digitally enabled business model to unbundle television programming from the strictures imposed by middlemen (cable companies) to deliver greater independence, control, and convenience in the viewing experience. Netflix is an excellent example of combinatorial disruption that is “led” by experience value, even though cost value is clearly part of the attraction. Customers pay less by paying only for what they value.

2. Just 4 You delivers value via personalization. Value can come from either customization (where users tailor a product or service to their preferences) or from contextualization (where providers intelligently interpret a user’s location, specific needs, and more to create an experience that maximizes value). Recent Cisco research on the retail sector revealed a growing expectation among mainstream shoppers for “hyper-relevant” experiences that go beyond basic personalization capabilities, such as recognizing and welcoming a customer, or presenting search results that include items “viewed by customers like you.”

eSalon clients can customize their coloring treatment to match their hair exactly, and have it shipped to them directly instead of browsing drugstore shelves for something that “will do” or paying a salon to color their hair for them. Personalization has moved to the cellular level with healthcare disruptors such as 23andMe. The company offers customers DNA sequencing for under $100, with the tagline, “Welcome to you.” This is part of the broader “quantified self” market in which device companies such as FitBit and a huge array of apps and services provide individualized fitness and health information. Just 4 You business models may also introduce aesthetic enhancements or design innovations that a critical mass of individual customers subjectively deem quality improvements (feeling, in essence, “this is a better experience for me and my needs”). Omnichannel innovations, where consumers can enjoy comparable experiences in a channel of their choosing, also fall into this category.

3. Right Here, Right Now transforms the fulfillment of products and services, essentially removing time as a dimension in the buying cycle. This business model gives customers the value they want without having to wait, either by delivering physical products very quickly, or by providing digital versions instantaneously. Dematerialization (the conversion of a good from physical to digital, such as an e-book) plays a role here, but as we have seen in countless digital disruptions, the speed afforded by a digital business model can be equally impactful.

Instacart customers shop at participating grocers with their mobile app or online, and receive their order within an hour for only $5.99. Companies such as Shyp use a similar model, in which customers take a photo of an item to be shipped and a “Shyp Hero” comes directly to the consumer’s location to pack and ship the parcel, freeing the customer from having to wait in line at a post office or shipping outlet. Google and Amazon have been in a pitched battle over delivery speeds, with their Express and Prime Now services,
respectively. Amazon has invested in technology that will allow near-real-time delivery of manufactured goods, with delivery trucks equipped with 3D printers, and has announced an ambitious drone-based fulfillment program. Tesco, one of the most innovative retail market incumbents, has introduced a raft of experience innovations in recent years, including its “Click+Collect” approach to fulfillment: “With Grocery Click+Collect, you can order your groceries online and pick them up at a time you choose and at a location that suits you. There are more than 350 collection locations from which to choose, including Tesco stores, train stations, and local businesses (bringing Click+Collect groceries closer to you).” In the Tesco example, time is not so much collapsed; instead, waiting (the consumer frustration associated with time) is eliminated.

4. **Nonfriction** is all about making things easy for customers by digitizing physical business processes, and using technology to help them hurdle obstacles to making purchases. The sales of men’s designer jeans have taken off as casual dress has become *de rigueur*, even in the boardroom. But men often require guidance in selecting clothes, and having them altered is a time-consuming hassle. Retailer ZipFit has removed friction by using an algorithm that matches men’s sizes and shapes to the right brand and style of designer jeans. ZipFit also hems the jeans for them, down to the quarter-inch, and ships them directly.

Mint.com, a subsidiary of Intuit, aggregates users’ account data from a variety of financial institutions in a single tool. This enables customers to track their expenses, balances, budgets, and goals in a unified portal, accounting for diverse information sources, rather than requiring the user to piece together a “true picture” of their finances across all the banks, lenders, and investment managers with which they deal. Alternative equity trading systems such as Liquidnet reduce friction in the trading of securities by eliminating inefficiencies in matching buyers and sellers to pools of liquidity, information leakage, predatory trading, and more. Liquidnet enumerates friction-reducing experience improvements that include “direct connections, anonymity, better pricing, reduced market impact, and institution-sized executions.”

5. **Robo-Tasking** provides experience value by using technology to arrange the completion of activities by others, or by automating them fully. Wealthfront is an automated investing service that uses advanced analytics to select the right investment portfolio and asset allocation based on answers to a few simple questions. Wealthfront also automatically balances investments across asset classes to maintain an ideal balance based on an investor’s goals and risk profile. Finally, it automates the process of “tax loss harvesting”—allowing investors to reduce their overall tax bill by realizing or “harvesting” losses when asset values go down. Whereas Wealthfront provides experience value in an area where many customers lack expertise, Robo-Tasking also creates time savings and offloads the performance of activities customers may dislike. Taskrabbit, for example, frees its users from drudge work, errands, and other tasks they do not have the time or inclination to undertake.

Robo-Tasking often introduces significant cost value as it improves user experience through automation. Such is the case with Wealthfront, where consumers do not need to pay
expensive financial advisors, but also via wage arbitrage (using cheaper sources of labor to perform tasks). Amazon’s Mechanical Turk offering allows companies and individuals who need basic tasks performed (such as online research, data entry) to engage an on-demand pool of low-cost labor, frequently in offshore locations. But Robo-Tasking falls squarely in the experience value camp: simplification, efficiency, and convenience are its hallmarks.

**Platform Value**

While competing on the basis of cost or quality of experience is not especially novel, platform value is the interesting competitive twist unique to digital disruption. Platform value is disruptive to competitive dynamics because it introduces an element of exponentiality. Platforms create network effects—situations where the number or type of users impacts the value derived by users. Network effects are often associated with “Metcalfe’s Law,” named after well-known technologist Robert Metcalfe, which in its simplest form states that the value of a network increases proportionately to the square of the number of users. An individual telephone by itself, for example, is not very valuable, but as the number of users grows, so does the value to each owner of a telephone. This is in large part why platforms drive disruption: because market changes are not linear.

As citizens, consumers, and businesspeople, we all encounter network effects in our daily lives: the World Wide Web, communicable diseases, tipping points, the wisdom of crowds, file sharing, social media, user-generated content, the “tragedy of the commons,” financial contagion—these are all manifestations (positive and negative) of network effects that have entered the popular consciousness in recent years. Network effects are a big-tent idea: they span peer-to-peer interactions, interdependence, viral patterns, gamification, and feedback loops. In a manner of speaking, a simple network effect is generated when participants (or “nodes”) within a network are connected in a manner that makes possible the idea of “the whole being greater than the sum of the parts.” Platforms therefore represent a kind of higher-order customer benefit that has inherent value-amplifying characteristics. They are a powerful competitive force as well: the networked nature of platforms makes them, once successfully established, more difficult to dislodge than more discrete competitive innovations, and can lead to so-called “winner-take-all” effects in which gains are disproportionately realized by dominant platform owners.12

This logic is the basis of many of the most dynamic and game-changing digital business models in existence, including those of Facebook, Google, iTunes, Twitter, and Uber. Platforms also provide a powerful mechanism to build complementary business models and to practice combinatorial disruption, melding cost value and experience value with a critical mass of customers. For example, the advertising revenue available to platform owners (by virtue of the “eyeballs” their platform offers) can offset other costs, so that the owner can then introduce incremental cost value or experience value for users, often at no charge or as a freemium-style enticement. (See “Digital Vortex” for a discussion of how Facebook is leveraging the acquisition of the WhatsApp text messaging platform to enter new markets, such as payments.) Finally, platform value is a potent source of combinatorial disruption because it adds the element of rapid scale to lower costs or to provide a superior customer experience. In fact, platform value can be the foundation of cost and
experience value by enabling companies to acquire workers and assets in a “burstable” manner depending on demand, and with minimal cost, regulatory encumbrances, and capital expense.

The creation of platform value for users flows from five major business models (see Figure 4):

1. **Digital Karma** does not directly create economic value, but can lead to its creation by virtue of intangible value. Psychologists and behavioral economists tell us we conceive of value in more than purely financial terms. Digital Karma creates platform value in the form of reputational capital, prestige, and relationships that can be converted into financial gains. The spiritual notion of karma revolves around the idea that one’s future happiness or success

![Figure 4: Platform-Value-Driven Business Models](image-url)

**Figure 4**
Platform-Value-Driven Business Models

**Digital Karma**
- **Definition:** Creating intangible value from status; gamification
- **Customer Value:** Standing or reputational capital

**Crowded House**
- **Definition:** Crowdsourcing inputs from ecosystem of contributors
- **Customer Value:** Larger volume of ideas, greater diversity of ideas, new labor sources, capture of scarce or unique information

**Data Orchestrator**
- **Definition:** Combination of sensor / machine data and analytics to create new insights
- **Customer Value:** Real-time data, new sources of data, recognizing patterns in extreme complexity, optimizing decisions

**Chain Gang**
- **Definition:** Connecting individuals and groups; creation of marketplace capability; “sharing economy” and peer-to-peer (P2P) dynamics
- **Customer Value:** Revenue from buying, selling, transacting; socialization and mobilization of resources, education of users

**Connect the Dots**
- **Definition:** Dissemination of information through a network or community of recipients; viral content
- **Customer Value:** Optimization of communications / distribution / execution

Source: Global Center for Digital Business Transformation, 2015
depends upon one's own actions and intentions. Digital Karma, then, is a quantified measure of the “good behavior” of a user in contributing to a platform. On eBay, a seller’s rating denotes his or her experience as a participant in the platform and contributes to a sense of trustworthiness in the eyes of prospective buyers. Reddit, the popular news and information bulletin board site, offers “creddits” to users for particularly compelling posts of content, and users can collect points for the quality and frequency of posts. While Reddit karma carries absolutely no financial value, it nonetheless conveys a measure of status to users, which in turn impacts the value received by a user in the platform. Digital Karma business models may also rely heavily on gamification and its ability to create social pressure, competitive tension, and the prospect of “success cachet” to motivate users, foster certain desired behaviors (such as customer loyalty), and drive engagement.

2. **Crowded House** exploits diversity of contribution as a competitive tool. Crowdsourcing of contributions benefits platform users in multiple ways. First, it can lower costs by having users themselves do work that augments the platform (this actually benefits both the user and the provider of the platform). Quora is an example of this, where users provide expert answers to questions posed by other users; Quora itself provides the venue in the form of a social network, but not the content, which is sourced from its user base on an unpaid basis. Users get their questions answered by experts at no cost. The Huffington Post has established itself as one of the most popular news aggregators on the web, largely by publishing content from bloggers and guest columnists its owners do not compensate. Unlike many news and entertainment media outlets with which HuffPost competes, it does not charge users to consume content in the form of a subscription. HuffPost has also been successful because its user base attracts marquee columnists and content providers (such as celebrities) who want to reach this readership, in a kind of virtuous circle of information supply and demand. Third, platform users benefit from diversity of insights, often where information would otherwise remain obscure. Kaggle and Innocentive are two companies that gamify technical work (predictive analytics, scientific “challenges”) to bring sought-after expertise to bear in a competitive, multi-participant setting that can contribute to breakthrough results for deep-seated business problems. WikiLeaks, the site known for “whistleblower” information, is an example of Crowded House approaches applied (anonymously) to the surfacing of scarce insights, such as confidential files, to which users otherwise would not have access.

3. **Chain Gang** is a classical instantiation of platform-oriented business models. The Chain Gang business model expressly seeks efficiency and scale gains from network effects that can translate into positive commercial impacts (or promote other organizational aims in the case of not-for-profit entities). We see this model almost every day as we consume information on the web. This often happens in content dissemination (for example, a Ted Talk that “goes viral”), but can apply broadly to any circumstance in which user value corresponds to efficiency or effectiveness of transmission. Nextdoor is a social network that focuses on “hyper-local” connections to create a platform for interactions among neighbors, businesses, and institutions in a given community. Nextdoor members can use its “bulletin board” capability to engage in commerce with buyers or sellers in the local community,
participate in civic activism (such as petitions), or exchange information that is valuable only to that locality, such as a missing pet, a school closure, a broken water main, and so forth. Efficiency of transmission is enhanced by allowing only local residents to participate in a given community’s communications (broader participation would dilute these interactions).

The economies of scale innate to successful platforms mean users can lower the latency of information communicated (it can be transmitted faster) and expend fewer resources in “getting their message across” or, conversely, in obtaining information that is valuable to them. This is instrumental to the success of platforms like Twitter, in which users can reach large numbers of other users at zero incremental cost. “What’s trending on Twitter”-style information improves information utility for users by pointing them to what other users have found valuable, thereby decreasing the likelihood that an individual user will consume information that is not valuable to him or her, expending needless resources (attention, time) in the process. Internet memes like “Fear of Missing Out” (FOMO) and “In Case You Missed It” (ICYMI) are reflections of the value users ascribe to Chain Gang-style platforms that can deliver information transmission efficiencies. Twitter’s “verification” mechanism also ensures a user is who he or she claims to be, eliminating uncertainty for other users. Facebook and Google extend their robust user authentication capabilities to other digital disruptors, creating convenience for users, but also positioning them as a “platform for platforms”—in essence, marketing their ability to create efficiencies in information transmission to other entities.

4. **Connect the Dots**, which has emerged as a ubiquitous feature of many digital disruptors’ strategies, is premised on creating connections among individuals and groups for their mutual benefit. This notion of benefit for both “sides” of a market is central to platform value customers realize—it is not simply about the value delivered by the disruptor itself, but rather the value facilitated. Connect the Dots includes marketplace capabilities, in which a platform provider “makes a market” in goods or services and creates a venue for buyers and sellers to transact and communicate. Etsy is an example of a disruptor using Connect the Dots to create a platform for specialty goods, such as handmade and vintage items, art, crafts, jewelry, and clothing. The company reported 2014 sales of nearly $2 billion and more than 50 million registered users. Merchants on Etsy (small, often home-based businesses, artisans, and so forth) benefit from access to buyers they would normally not be afforded through traditional retail channels. Buyers gain access to merchandise that would otherwise be impossible (or at least cumbersome) to shop for and buy. Value is accrued in the form of access, variety, and transaction efficiency.

Connect the Dots also encompasses so-called “sharing economy” players such as Airbnb, in which individual property owners can market accommodations to travelers. Guests can concurrently shop for accommodations outside the hospitality value chain of old. The sharing economy in part rests on peer-to-peer (P2P) dynamics, which represent another fundamental aspect of platforms. For Airbnb, this means converting an individual property owner (someone with a spare bedroom he or she wishes to monetize, for example) into a provider of a service, and then connecting the owner to other individuals who wish to consume the service. Again, neither Airbnb nor the providers of accommodations marketed through
its portal are hotel companies—in the case of the latter, they are themselves by and large individual consumers (while others are smaller-scale property managers).

Connect the Dots also enables connections among users that are not purely commercial. Khan Academy is an example of a nonprofit disruptor that provides educational content to students around the world free of charge. Khan Academy, like Etsy, uses a platform (actually YouTube videos) to reach an underserved, previously disconnected constituency—namely, students who do not have access to education (due to geographical, linguistic, or socioeconomic constraints) and other learners who need tutoring. The company’s learners number more than 30 million, and their lessons, on many typical K-12 topics and beyond, have been translated into nearly 40 languages. Khan Academy also provides online tools and resources via Creative Commons licensing and open source applications to educators, many of whom work in cash-strapped school systems and benefit from such platform connections.

5. **Data Orchestrator** leverages the disruptive power of the Internet of Things (IoT) and Big Data analytics to create new opportunities for innovation and value creation. Companies—both large and small—in a wide range of industries, including technology products and services, telecommunications, media and entertainment, manufacturing, and retail—and even in the public sector—are unleashing new intelligence for users by connecting physical objects to the Internet and then applying analytics to create monetizable insights. IoT and Big Data analytics use cases are expansive, but include applications such as a location-based services, remote monitoring and predictive maintenance, context-aware marketing offers, video analytics, and others.

IoT often involves what Cisco has referred to as “lighting up dark assets,” such as vehicles and other transportation infrastructure, buildings, plant-floor machines, medical devices, apparel, and much more. Whereas the Internet of the past several decades has overwhelmingly focused on the connection of computers (that is, machines whose reason to exist is to process information), IoT connects objects that have myriad other purposes and are not computers in the normal sense. This creates the potential for a vast platform of sensors and embedded systems, with information traveling over networks and analyzed by applications to create new insights. Many companies own or oversee large asset bases and data streams that are conducive to connection in this manner. Smart buildings, industrial automation, wearable devices, and telematics are all representative enablers of this digital business model. The possibility of creating value-added services for end customers via an IoT/analytics platform is appealing to many large companies facing digital disruption or other competitive pressures in traditional, especially product-centric, lines of business.

IoT is fundamentally about optimizing decision-making and execution. The intelligence created by connecting a previously “dark” asset—regarding its location, status, utilization, likelihood to fail, movement, speed, temperature—creates enormous platform value for users. Some of the companies pursuing the Data Orchestrator business model include Bosch, Cisco, GE, IBM, Intel, and SAP.
**Conclusion**

Digital disruptors pose an existential threat to incumbents by delivering cost value, experience value, and platform value. While companies have been competing on cost and unique value to customers for decades, digitally enabled business models allow disruptors to combine low costs and superior experiences in ways that previously could not have been accomplished. Moreover, platform value is a new source of competitive advantage that disruptors are wielding against incumbents. The ability to scale rapidly, to connect those who need a service with those willing to provide it, and to direct new sources of data to those who can act upon it were not possible just a few years ago. Now, platform value is being used to create new businesses that serve millions of customers and threaten entire industries seemingly overnight.

What makes digital disruptors most frightening to traditional market leaders is their ability to create vast new troves of value for customers, especially by meshing cost value, experience value, and platform value. Such combinatorial disruption is the wellspring of the fiercest, most dangerous digital disruptors, which we call “value vampires.” These competitors not only gain rapid market share, but also reduce the overall revenue and/or profit available in the markets they attack. But incumbents can fight back, and even seize new opportunities, by employing combinatorial disruption themselves. These opportunities are no longer “blue oceans” in which companies enjoy long periods of market dominance, but are instead “value vacancies” that must be spotted quickly, and maximized before competitors descend. In our next paper, we will explore how value vampires and value vacancies define the competitive landscape of the Digital Vortex.

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4. For example, “cost value” leaders such as Amazon and music service Pandora have consistently high net promoter scores, a metric that captures the enthusiasm customers have for a brand and the extent to which they provide positive word of mouth, and which has been linked to growth. See: “Costco, USAA, Amazon.com, and Apple Rank Among Highest for Customer Loyalty in Latest Satmetrix Net Promoter Benchmarks.”
11. Tesco

The Global Center for Digital Business Transformation (DBT Center) is an IMD and Cisco initiative that brings together innovation and learning to create disruptive business models for the digital era. The DBT Center is a global research hub at the forefront of digital business transformation, where executives engage to solve the challenges created by massive market transitions.

The DBT Center seeks diverse viewpoints from a wide range of organizations—start-ups, incumbents, and disruptors—to bring new ideas, best practices, and disruptive thinking into the process. The collaboration combines Cisco’s leadership in the Internet of Everything—the networked connection of people, process, data, and things—with IMD’s expertise in applied research and developing global leaders, focusing on the organizational change required for digital transformation.

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