IBM Institute for Business Value

The new age of ecosystems

Redefining partnering in an ecosystem environment

Tapping data and analytics to innovate faster and at scale

To succeed in today's environment, businesses need to lead through increased complexity and volatility, drive operational excellence and enable collaboration across enterprise functions, develop higher quality leadership and talent, manage amidst constant change and unlock new possibilities grounded in data. The IBM Strategy and Analytics practice integrates management consulting expertise with the science of analytics to enable leading organizations to succeed.

By Steven Davidson, Martin Harmer and Anthony Marshall

Ecosystem has entered the vernacular of everyday business. Terms such as "business ecosystem," "collaboration ecosystem" and "economic ecosystem" are now being used universally as people seek to articulate the future of business and customer interactions. But an ecosystem reflects much more than a network, and it differs fundamentally from a market. While ecosystems will transform much of the way business operates today, it is important to understand why ecosystems are beginning to emerge now, how they differ from traditional markets, what new incentives will emerge and how individual organizations can respond. This report addresses each of these crucial aspects and provides a roadmap for organizations to pursue new types of partnering arrangements to navigate and thrive in a new age of ecosystems.

81% of consumers demand improved response time

76% expect organizations to understand individual needs

68% anticipate organizations will harmonize consumer experiences

New technologies are making business more intelligent, fast and scalable. As the world becomes more connected, organizations will encounter increasing difficulty competing as solo entities. In today's era of exponentially increasing data and information, and ubiquitous digitization, the new economic equation favors transparency and collaboration.

In search of innovation, more than half of CxOs expect to open up their enterprises — bringing down barriers to extend collaboration both inside and outside their organizations.[1] As a result, the focus of innovative organizations is likely to shift in the near future from organization-centricity to one that is ecosystem-centric. An ecosystem can be thought of as a complex web of interdependent enterprises and relationships that creates and allocates business value.

Ecosystems are broad by nature, potentially spanning multiple geographies and industries, including public and private institutions, as well as consumers (see Figure 1).

Executives will be challenged to find new avenues of partner-ship to capitalize on the opportunities presented by the emergence of new ecosystems. The most radical shift for organizations may be, according to the 2013 IBM C-Suite Study, a new view on what it means to collaborate with customers.[2] In the future, organizations will begin experiencing a duality in their strategies. They will continue to focus on their core businesses in and around their primary industries. But they will also likely seek additional growth opportunities outside traditional sources, capitalizing on particular functions or activities that constitute their true competitive advantage. As a consequence, continuing specialization will drive industry convergence.[3]

In this report, we will explore how ecosystems will change the nature of business activities, expand capabilities and enable experiences beyond anything possible today. We will demon-strate how orchestration enables mutuality and cooperation, and how value creation and capture will fundamentally differ in ecosystem environments. We will see how different strategies are required for differing business environments. And we will explore how leading organizations are already embracing ecosystems today.

Business is changing

The maturation of technologies, such as social, mobile, analytics, cloud, 3D printing, bio- and nanotechnology, are rapidly shifting the competitive landscape. Emerging technolo-gies create an environment that is connected and open, simple and intelligent, fast and scalable:

- Connected and open, as indicated by the proliferation of mobile devices and Internet access, necessitating new levels of trust and accountability with partners and consumers
- Simple and intelligent, as advances in technology continue to reduce and mask complexity and organizations leverage analytics and insights to drive decision-making
- Fast and scalable, as transactions increase in number and frequency and the cost of collaboration inside and outside the organization continues to decline.

Even as the technology driving this transparency becomes more sophisticated, intelligent and predictive, it is also becoming easier to use. Technological advances prioritize ease and usability, even as they expand computational and func-tional sophistication—allowing organizations to tap into structured and unstructured data in motivating intelligent and predictive decision-making.

ec·o·sys·tem /**ek**-oh-sis-tuhm / Noun

Origin: 1935

1. A community of organisms together with their physical environment, viewed as a system of interacting and interdependent relationships

2. A complex network or interconnected system

An ecosystem is a complex web of interdependent enterprises and relationships aimed to create and allocate business value. Ecosystems are broad by nature, potentially spanning multiple geographies and industries, including public and private institutions and consumers.
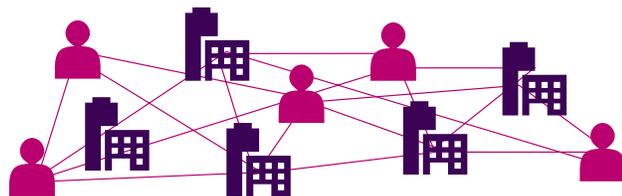

Figure 1: **An ecosystem reflects interaction and collaboration between participants.**

The rapid development of new technologies, greater openness and escalating customer expectations are converging into what is becoming a perfect storm of fundamental business change. Customers have begun to experience compelling, individualized and integrated experiences in some areas, such as telephony, and are now expecting similar experiences across all their interactions, regardless of whether they are in a business-to-consumer, business-to-business or consumer-to-government context. Most organizations are not set up to deliver these types of experiences and, as a result, are often faced with customer frustration and, at times, anger. At the same time, customers know that technology is already available to make such experiences possible—cloud, analytics, mobile and social. The stage is set for a showdown, and those organizations that can rise to the challenge are the ones that will be left standing at the end.

Customers expect simple, sophisticated experiences

Experience with new platform technologies and business models is dramatically increasing both the expectations and empowerment of consumers. They are developing an insatiable desire for compelling experiences across all areas of life. Increasing technological sophistication is leading to:

- More information to consumers, allowing more choices and enabling greater opportunity to influence organizations
- Higher expectations of integrated and sophisticated—yet simple—experiences
- Decreasing brand loyalty, as consumers have less patience and are more willing to switch interchangeably among brands.

In response, organizations are increasingly pressured to play catch-up and meet the next generation of consumer demands by providing integrated, customized experiences. Consumers expect personalization across all of their experiences, from airline counters, to online mega-retailers, to the showroom floors of automobile dealerships. They expect integration across channels and touch points, and they are quick to change loyalties to organizations that can better meet their needs. Today, 81 percent of millennial consumers demand improved response time; 76 percent expect organizations to understand individual needs and 68 percent anticipate organizations to harmonize consumer experiences (see Figure 2).[4]

Chinese smartphone manufacturer Xiaomi, for example, is seeking to engage connected consumers. Xiaomi uses customer segmentation as a brand differentiator. It sells high-end phones for prices close to cost, less than half the price of some rivals. The company leverages consumer feedback captured via Weibo (i.e. Twitter-like social media application) to release new versions of its operating system, which it does on a weekly schedule.[5]

New technologies enable consumers to expect and obtain more then ever before

Improve response time

81%

Understand individual needs

76%

Harmonize consumer experiences

68%

Source: IBM Student Study: Connected Generation Q5. "To what extent should organizations change to meet consumer expectations?"; [CEO Q9]

Figure 2: **The next generation of consumers demand similar experiences across all aspects of their lives.**

The Xiaomi example demonstrates that, to create an opportunity to provide a differentiated experience in line with consumer expectations, organizations must embrace data and analytics to underpin experience and pursue social media to promote collaboration. They will also need to reduce barriers to engagement and partnering.

Luxury fashion house Burberry, a traditionally conservative brand, digitized its organization to create a seamless consumer experience. Burberry removed organizational boundaries between digital and physical; for example, it equipped employees with iPads to enable online access to leverage consumer data to improve the in-store experience. Through digital-physical integration, Burberry has transformed into a modern, relevant, and hip luxury brand.[6]

Disruption — Break from the status quo

Disruption through rapidly advancing technologies, and the changing business economics associated with them, is becoming pervasive and inevitable. Most organizations are playing catch-up, but many executives are already aware of the implications of this technology-driven disruption. If they do not break from the status quo, organizations will miss what threatens to be a tectonic shift. They will provide competitors with the opportunity to accelerate forward. According to the 2013 IBM Global Digital Reinvention study, 71 percent of executives believe consumers will demand complete and comprehensive experiences. To create these experiences, businesses must embrace the concept, mechanics and implications of ecosystems.[7]
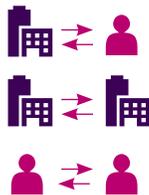
New ecosystems are emerging

Leading executives already recognize that speed and agility will be key determining factors of success in the digital, consumer-driven economy. As change will only accelerate, experimentation, rapid decision-making and robust execution will be central to the business strategy of the future. New capabilities and business models will be engineered daily, constantly reinventing the rules of competition. Accordingly, 64 percent of executives believe new business models will profoundly impact their industries.[8]

As economic value rapidly moves beyond traditional markets, organizations will need to rethink how their business environment operates, how they partner and how they interact with customers. Combined, this is necessitating the emergence of new economic ecosystems, as organizations recognize they cannot navigate this future alone. They must embrace the concept of mutuality, a level of formal or informal collaboration among organizations around shared ideals, standards, or goals (see Figure 3).

Markets comprise entities that operate out of individual self-interest

A set of individuals or organizations who exchange products or services within an environment governed by the laws of supply and demand

Ecosystems comprise entities that operate out of orchestrated, mutual shared-interest

A set of individuals or organizations who formally or informally operate together to produce something of greater value for the mutual benefit of the ecosystem as a whole
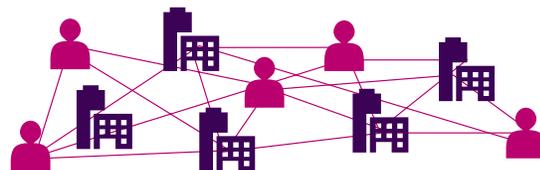

Figure 3: **The defining characteristics of an ecosystem are mutuality and orchestration.**

Ecosystems are characterized by an architecture that breaks from traditional markets. Ecosystems are structurally complex environments inhabited by diverse participants with unique rules of engagement.

Ecosystem defined

Traditionally, we have thought of an ecosystem as a community of organisms operating together within some form of physical environment. Ecosystem dynamics could be viewed as a system of interacting and interdependent relationships—a complex network or interconnected system.

In a business context, an ecosystem is a complex web of interdependent enterprises and relationships aimed at creating and allocating business value. There is something mutual and multiplicative about business ecosystems—the whole is greater than the sum of the individual parts. If this was not the case, there would be no incentive to be part of the system. Business ecosystems are broad by nature, potentially spanning multiple geographies and industries, including public and private institutions, and consumers.

Ecosystems share many of the characteristics of traditional markets

Ecosystems and markets are not unlike. They are both composed of *participants*—the individual players or organiza-

tions within the environment—and *interactions*—the products or services exchanged among participants. Each element—*participants* and *interactions*—is defined by three components. For *participants*, these are: role within the environment, reach through the environment and capability or key value proposition—that is, what the participant will actually be doing in the environment. For interactions, the components are: rules governing the environment, connections of elements and course of interactions (See Figure 4).

The defining characteristics of an ecosystem—those things that fundamentally make an ecosystem what it is—are *orchestration* and *mutuality*. Markets are comprised of individuals or organizations who exchange products or services within an environment governed by the laws of supply and demand. Ecosystems comprise entities that operate out of *mutual self-interest*. They are made of sets of individuals who formally or informally operate together to produce something of greater value for the *mutual benefit* of the organization and the ecosystem as a whole. Ecosystems exist because participants can deliver more value within the ecosystem acting together. *Mutuality* reflects an enhanced level of coordination with formally or informally shared ideals, standards, or goals.

Participants
Individual players or organizations

Role within the environment
Participants function or part played in a given environment

Reach through the environment
Participants ability to extend activity or interactions through the environment

Capability or key value proposition
Range of activities that participants are able to pursue or undertake within the environment

Interactions
Products or services interacted

Rules governing the environment
Set of explicit or implicit principles governing conduct within the environment

Connections of elements
Linkages across the environment connecting elements such as data, knowledge, or products

Course of interactions
Speed and direction at which content or value is exchanged among participants

Figure 4: **Ecosystems share many of the characteristics of markets.**

For example, Doorman, a San Francisco-based logistics service, orchestrates storage and delivery to solve the "last mile" problem of package delivery. The service facilitates carriers such as FedEx and UPS by receiving packages and delivering them at the customer's convenience after traditional carrier delivery hours, up until midnight. This enables consumers to control logistics in a manner previously unavailable.[9]

Orchestration refers to the coordination, arrangement and management of complex environments. In the context of an ecosystem, *orchestration* refers to the formal or informal coordination of interactions or collaborations among participants within the ecosystem. *Orchestration* may be informal, through cultural mores and imperatives, or it may be formal through explicit rules or the presence of an actual *orchestrator*—an explicit entity that facilitates *orchestration* processes.

Kaiser Permanente provides an excellent example of explicit orchestration. Kaiser Permanente is a U.S.-based integrated managed care consortium that orchestrates insurance, hospitals, and physicians to provide integrated healthcare services. The company coordinates and orchestrates a membership base

of 9 million members, along with physicians, doctors and medical centers. Kaiser Permanente's "My Health Manager" program facilitates the delivery of preventative care by connecting care providers, pharmacies and physicians.[10]

Value is created and captured differently in ecosystems

The way organizations create and capture value in an ecosystem differs from traditional markets. Two specific questions become imperative:

- What can organizations do to create value in ecosystems?
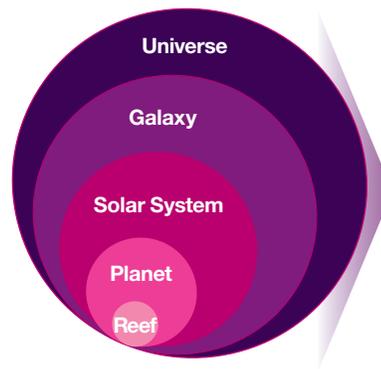- How do organizations capture the value they help to create within an ecosystem?

Value creation and value capture are related. But they are distinct elements of ecosystem activity and exchange. Value creation refers to the act of bringing something of value into existence. Participants can create value by innovating products, services or experiences. Ecosystem partners must collaborate to create and deliver something of mutually beneficial value.

An ecosystems of ecosystems

Organizations will inevitably participate within and across multiple ecosystems — an ecosystem of ecosystems.
Ecosystem of ecosystems and ecosystems within ecosystems already exist in the natural world.

An ecosystem of ecosystems underscores the natural world …

Universe
Interconnected ecosystem of galaxies, solar systems and planets

Galaxy
Complex ecosystems of solar systems distinct from other galaxies

Solar System
Complex ecosystems of planets distinct from other solar systems

Planet
Enclosed ecosystems distinct from one another

Coral reef
Individual ecosystem

Universe
Galaxy
Solar System
Planet
Reef

… but it also has ever-increasing relevance for business

Organizations may:

- **Be a part of one or many ecosystems**
- **Play different roles in different ecosystems**
- **Evolve their roles in the ecosystem, as ecosystems evolve**

Figure 5: **Organizations will ultimately participate across multiple ecosystems — an ecosystem of ecosystems.**

Value capture is the act or process of appropriating or allocating value. Participants can capture value directly through transactions or indirectly from an orchestrator. Ecosystem complexity and the extent or intensity of orchestration impact the potential and govern the nature of value capture.

Value creation differs between traditional markets and ecosystems

Creating and allocating value changes as organizations shift from participating in traditional markets or value chains to ecosystems. In traditional markets, value creation is incremental as organizations typically cover costs plus some return on assets (see Figure 6). In ecosystems, organizations create value through their engagement within the system as a whole. Consumers may not interact with individual organizations within a particular ecosystem, but they may "pay-to-play"—they may pay for access to an ecosystem, or for appropriating benefits that an ecosystem can provide. In this context, value will be defined by consumers' willingness to pay.
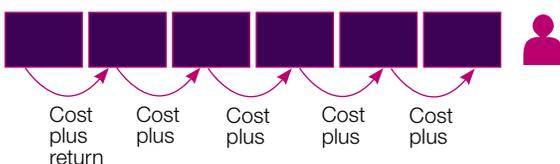
By their nature and sustained existence, ecosystems can produce more value as a whole than the sum of the individual participants acting independently.

In the emerging travel ecosystem, for example, traveler experience will likely become tailored and seamless. In traditional travel, organizations offered limited options to consumers, who were compelled to choose between standard packages or a fragmented do-it-yourself alternative. In the new world, ecosystems will enable organizations to create and offer infinitely tailored, customized experiences to consumers, who can choose from various, integrated options. Leading airlines and hotels will embrace strategic alliances and leverage synergies to create a seamless, integrated travel experience—from the home to the beach and back again.
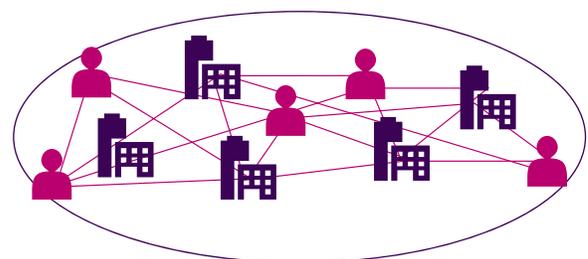
Value creation

Value creation refers to the act of bringing something of value into existence. Participants can create value through innovating products, services, or experiences. Ecosystem partners must collaborate to create and deliver something of mutually beneficial value.

Value creation in a traditional market or value chain

Cost plus return   Cost plus   Cost plus   Cost plus   Cost plus

- Value creation is incremental as organizations cover costs plus some return on assets
- Value capture reflects an additive, sequential process of exchange

Value creation in an ecosystem

- Value capture reflects a networked, dynamic, everyone-to-everyone process of exchange
- Ecosystems produce more value as a whole, than the sum of the individual participants acting independently

Figure 6: Value creation in traditional markets tends to be linear; value creation in ecosystems tends to be networked and mutual.

To create value, organizations need to identify opportunities, develop competencies and leverage synergies. In identifying opportunities, organizations must understand how value is created in the ecosystem. They will need to identify and exploit pockets of potential value creation. And they must maintain flexibility in the role they adopt within the ecosystem, as well as the type of interactions they have with other ecosystem participants.

Google is an organization that consistently identifies future trends and opportunities. Recently, Google initiated and coordinated the Open Automotive Alliance to innovate in-car operating systems with GM, Honda, Audi, Hyundai, along with organizations such as Nvidia. The technology giant aims to become the center of personal operating systems through partnerships. Google seeks to capitalize on the 80 million new cars and light trucks sold each year—a major opportunity for Internet-based services.[11]

Organizations must also leverage common synergies and complementary strengths within ecosystems to drive value creation. To do so, they will need to apply their capabilities across the ecosystem, identifying and pursuing compatibility gaps and needs, and develop contracting and connectivity arrangement to insinuate themselves to fill gaps and exploit other opportunities. The more essential and unique the activity organizations can fulfill within an ecosystem, the more sustainable will be their position and role.

One opportunity being pursued by Amazon, for example, is to use existing partnerships to target the next frontier of online sales. The online retailer has established a physical presence in the warehouses and distribution centers of existing suppliers (e.g. Procter & Gamble) through its "Vendor Flex" initiative. As a result, Amazon is expanding its selling efforts into new and different markets through partnering arrangements. It reduces fulfillment costs and delivery time and allows Amazon to compete even more aggressively with other retailers.[12]

Value capture can be direct or indirect

Ecosystem participants can capture value directly through transactions or indirectly from the orchestrator. Organizations can capture value directly through transactions that occur within the ecosystem, in which participants facilitate an exchange of value for goods or services rendered. In these instances, value capture is instantaneous and commensurate with transactions. People experience direct transactions within ecosystems everyday—for example, when they buy a ticket on public transport.

The alternative scenario is for organizations to capture value indirectly by transfer from an orchestrator (which captures value directly from consumers) for goods or services. In these instances, consumers pay-to-play for access to and engagement with the ecosystem. They pay an orchestrator for a bundled array of goods and services, and the orchestrator allocates payment to participants within the ecosystem to incent them to continue participating in the ecosystem. People also experience indirect ecosystems transactions in their daily life—if they buy a pass for all public transport in a city for unlimited trips on trains, trams, buses or subways within a defined time, or when they buy a smart device that gives them access to a depository of apps and other services.

A third scenario reflects some combination of direct and indirect, with some pay-to-play component and some direct component. In the future, different industries will likely have different orientations between direct and indirect.

In the consumer packaged goods (CPG) ecosystem of the future, for example, organizations will likely capture value directly. CPG organizations will aggressively compete in a fragmented ecosystem with minimal orchestration. In this scenario, brand reinvention will be critical to differentiate from homogenous competition, and organizations will need to aggressively seek partners to optimize transactions within their ecosystems.

Value capture
Value capture is the act or process of appropriating or allocating value. Participants can capture value directly through transactions or indirectly from an orchestrator. Ecosystem complexity and orchestration govern the potential and nature of value capture.

On the other hand, in the financial services ecosystem of the future, organizations will likely capture value indirectly. Financial services organizations will align with orchestrators to pay-to-play in the ecosystem. As they engage in specialized functions within their ecosystems, participants will accommodate the terms of an orchestrator that facilitates a universal payments environment. Consumers, from their perspective, will demand absolute ease and simplicity, mobile payments that move as they move, across channels, masking the complexity inherent in a tightly orchestrated global payments environment.

Extending beyond the earlier public transport example into a mobility (transportation) ecosystem of the future in which consumers pay to have access to services that transport them from one location to another, irrespective where they are, when they want to travel and where they want to travel to. Organizations will most likely capture value both directly and indirectly. Mobility providers will operate in an orchestrated environment, but with specific usage-based transactions co-existing with overall pay-to-play. Orchestrators will facilitate overarching ecosystems that are composed of numerous implicit services and will allocate value to participants based on the role they play in the ecosystem. Consumers may be able to choose to pay directly for specific distance-related or transportation type-related services. Direct transactions for usage-based services and infrastructure access could co-exist with an orchestrated, indirect-payment pay-to-play environment.

How should we think about value creation in ecosystems?
- Ecosystem participants can capture value directly through transactions or indirectly from the orchestrator
- Indirect value capture will typically be associated with strong, explicit orchestration
- Direct value capture will typically be associated with weaker forms of orchestration.

Strategies depend on environment

Organizations will need to pursue different actions to capture value, depending on the underlying nature of the ecosystems in which they operate. Strategies pursued in one environment may differ drastically from strategies pursued in other environments. Chief among the drivers of this difference is the level of complexity in the activities undertaken, and second, the extent and formality of the orchestration in and around the ecosystem (see Figure 7).

Complexity is a function of the number and diversity of participants, the sophistication of activities within the ecosystem and the range and nature of relationships.

High complexity reflects an environment in which barriers to entry are high and threat of new entrants is low. It suggests that a participant's role in the ecosystem is relatively secure, as what they do — their particular capabilities — are typically difficult to replicate. Think generating electricity through nuclear power, or deep-sea drilling for oil.

- **Number and diversity of participants**
- **Sophistication of activities**
- **Range and nature of relationships**

Complexity

Orchestration

- **Strength and extent of influence**
- **Formality of interactions**
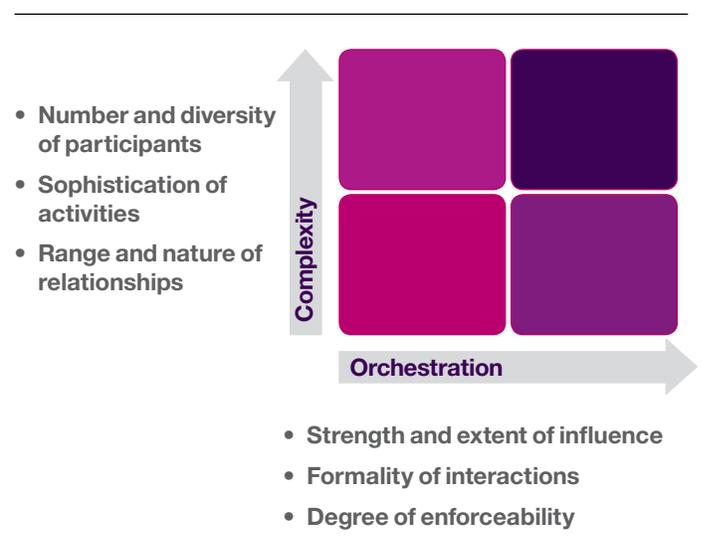- **Degree of enforceability**

Figure 7: **Ecosystems are not all alike — they differ in specific fundamental ways**

Low complexity reflects on a situation of low barriers to entry and an associated high threat of new entrants. In this environment, a participant's position in the ecosystem is relatively vulnerable, as their capabilities are typically easy to replicate. Production of consumables such as baked goods provides an example, as do many types of retail.

Orchestration reflects the extent of an organization's influence over others within an ecosystem, the formality of ecosystem interactions and the degree of enforceability and compliance. Orchestration can be either tight or loose. Tight orchestration reflects an environment in which orchestrators typically have an ability to influence behavior or actions across the entire ecosystem. Consider, for example, regulated industries, such as financial services, in which transactions are facilitated through multiple organizations, governed by stringent rules around privacy, security and compliance. Interactions tend to be rules-based, with orchestrators able to enforce their will over others.

Loose orchestration refers to an environment in which no individual participant has significant influence across the ecosystem. There is often an absence of a strong central coordinator. Interactions tend to be values-based, with limited ability for any particular participant to enforce its will over others. An example is the Internet in places that have robust freedom or speech laws. While some content and behavior is specifically outlawed on criminal grounds mirroring similar laws around offline content—in the most part, individuals and organizations are free to express themselves and behave any way they want.

Complexity and orchestration characterize a spectrum of ecosystem archetypes. We call these types the Shark Tank, the Hornet's Nest, the Wolf Pack and the Lion's Pride (see Figure 8).
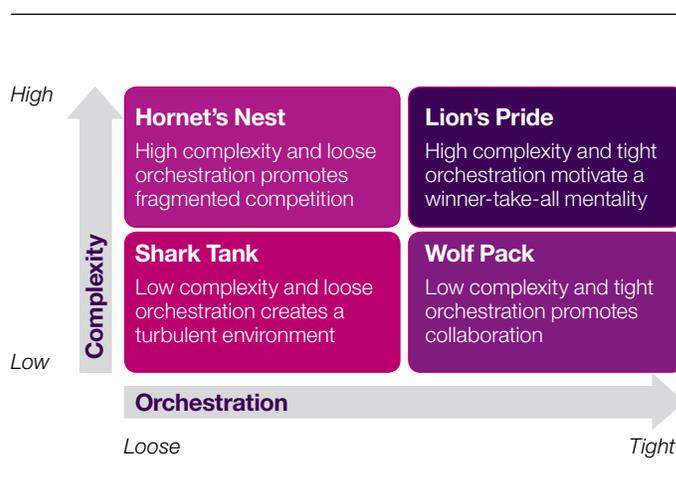

Figure 8: **Complexity and orchestration characterize a spectrum of ecosystem archetypes.**

The Shark Tank is characterized by low orchestration and low complexity. In the Shark Tank, organizations are compelled to find ways to create value through new, innovative means. There is no strong orchestrator present to protect participants in the ecosystem. Each participant must fend for themselves, identifying opportunities, aligning capabilities and making connections. Participants must capture value directly through transactions with other ecosystem participants. Reallocations from a central orchestrator for goods or services rendered are minimal or non-existent for the most part. Participants remain constantly at threat, as potential new entrants vie to challenge, disintermediate and replace incumbents, playing an ostensibly interchangeable role.

An example of Shark Tank is the retail ecosystem of the future. As new technologies make entry costs into retail ever lower, competition will become ever more intense.

Mercurial consumers will switch between products at will, while potential competitors will watch from the sidelines ready and able to pounce and dethrone incumbents at will.

Search costs will become ever lower, with multiple organizations seeking—and generally failing to—attract and connect with consumers on a sustained basis.

In this context, retailers will be ever-more compelled to differentiate their value propositions to reinvent and sustain their brands. These organizations will seek to build ecosystems to create compelling experiences for customers, as well as differentiate from competitors. But the demand to keep evolving experience will be insatiable. Even when they succeed in building a strong brand and compelling proposition, as in the case of certain high-end retailers, most will, in a very real sense, remain just a single step away from irrelevance and decline.

In the Lion's Pride, threats of new entrants are low due to the relative complexity of the activities in which participants are engaged. Orchestration in the Lion's Pride tends to be formal, facilitated by an orchestrator. The orchestrator will enable and monitor activities within the ecosystem and remunerate individuals or organizations for participating in the ecosystem—if their contribution to the ecosystem is important. Specific operations of the ecosystem will be guided by the orchestrator, who also tends to maintain robust enforcement capabilities. In the Lion's Pride, the role of the orchestrator is powerful and fundamental. But such power also creates an opportunity for a powerful participant, in what might be equivalent to a palace coup, to overwhelm and assume the orchestrator role. Lion's Pride ecosystems tend to deliver compelling, sophisticated experiences in a pay-to-pay context, with the orchestrator defining the type of experience to be delivered, and securing whatever participants are needed.

The future healthcare ecosystem is likely to closely resemble a Lion's Pride ecosystem. Specialized organizations will be positioned to orchestrate activities to deliver sophisticated health solutions. An orchestrator will likely facilitate and manage the intersection among patients, providers and physicians into what will likely to evolve into a fully integrated health, wellness, and, where necessary, medical experience.

In the Hornet's Nest, complexity is high, but orchestration is low. Barriers to entry are significant, but organizations and individuals will also be tied together by informal or cultural imperatives within the ecosystem. Participants are unlikely to be disintermediated from their role in the ecosystem, but ecosystems of this type tend to be simpler, with most of the value being transferred directly by means of payment for specific activities.

The future of Media and Entertainment will likely become the Hornet's Nest ecosystem. Quality content is generally not created cheaply or easily. For every cat or puppy video that achieves millions of likes, there are numerous dramatic series, which drive real dollars for usage. And yet consumers will likely be unwilling to be tied to a single system to view content. They will demand whatever content they want, on whatever platform or device they want, whenever they want it, anywhere in the world. In the presence of legal and other impediments to truly ubiquitous connectivity, universal content access and unrestricted viewing options on a global basis, orchestration will remain a challenge.

Finally, the Wolf Pack is characterized by relatively low complexity and high levels of orchestration. Barriers to entry are low, indicating that entry into the ecosystem is relatively easy. And yet orchestration is high, suggesting that while individual activities within the ecosystem are simple, the overall environment created is potentially highly sophisticated. Given that no single participant is likely to have very strong power source in the Wolf Pack, the incumbent orchestrator may, in fact, be safer in the Wolf Pack than in a Lion's Pride environment. From a consumer perspective, the level of sophistication of experiences achievable in the Wolf Pack will be similar to those achieved in the Lion's Pride. While composition of ecosystem participants may change much more frequently in the Wolf Pack, from the perspective of individual customers, this turnover may well be entirely masked.

The future of Energy and Utilities may provide a compelling example of a Wolf Pack ecosystem in operation. In the future, every home, building, facility or appliance may be both a consumer and producer of energy. Homes, for example, will likely sell into the grid during off times, such as daytimes when typically no one is at home, but solar panels are active. During peak demand times, homes may be a net consumer of energy. The presence of a strong orchestrator will ensure that energy flows are measured, reserve energy is stored and networks remain in good working order.

In summary, each of are four major orchestrator archetypes possess different characteristics across the dual dimensions of complexity and orchestration: The Shark Tank, with low complexity and low orchestration; the Lion's Pride, with high complexity and high orchestration; the Hornet's Nest, with high complexity and low orchestration and the Wolf Pack, with low complexity and high orchestration. Depending on which environment organizations find themselves, optimal business strategies, along with particular strategies for value creation and capture, will differ.

Recommendations—Connect to new ecosystems in new ways

As the world becomes more connected, organizations will create and capture less and less value in traditional ways. Partnering in the new age of ecosystems will be critical for those who aspire to be the outperformers of the next decade and beyond. The new economic equation will favor those who embrace collaboration and partnering.

The following recommendations will assist in making necessary transformations:

1) Change organizational mindsets to create value in entirely different ways

Successful organizations will understand how value is created in the ecosystem in which they operate. Executives will identify and exploit pockets of potential value creation—leveraging capabilities and synergies across the ecosystem. Leading organizations can stay ahead by continuously testing the possibilities of value creation.

2) Build the right connections

Explicitly form organizational connections as you promote cultural change, becoming more open and building necessary and relevant connectivity. No single organization can hope to do everything required in new ecosystems. Successful organizations will understand their capabilities and how to identify and realize synergies with ecosystem partners. Find partners who can further your objectives and decide what types of relationships you want to build with your partners.

3) Make your organization more agile

Ecosystems will continue to evolve as ecosystem participants interact with each other, and as ecosystems begin to intersect and intertwine with each other. The most successful organizations are likely to be those that evolve with their ecosystems and evolve their roles as imperatives and opportunities within and between ecosystems evolve. APIs and Cloud can empower dynamic new business models, consumer interactions and

organizational flexibility. The most successful companies will combine technology strategy with business strategy, prototype and test what is possible with new technologies and anticipate the unexpected by maintaining robust technical and operational flexibility.

But more specifically, ecosystem participants will face different pressures and optimal strategies depending on the environment in which they find themselves.

Jumping with sharks

Ecosystem participants in the Shark Tank will face minimal orchestration and low barriers to entry. To survive and prosper in the Shark Tank, organizations need to work to differentiate as much as possible from competitors. The further they move away from a perception of being a commodity player, the less contested will be their role and position. It is incumbent on Shark Tank organizations to be aware of and mitigate specific threats competitive threats or challenges. The more integral and integrated participants are to the Shark Tank, the more likely they are to sustain their position, so participants should also continually identify and engage new partners and strengthen established ecosystem relationships.

Roaring with lions

Ecosystem participants in the Lion's Pride experience both strong orchestration and high complexity in what they do and in their relationships in the ecosystem. To optimize their success, Lion's Pride ecosystem participants should work to align their strategic objectives with those of the orchestrator. To the extent that a participant can be instrumental to the orchestrator in delivering on the promise of the ecosystem, it will capture value in the ecosystem either directly or indirectly.

The more that a Lion's Pride participant can differentiate itself from potential competitors, the less likely it will be disintermediated in the ecosystem. But beyond this, the more powerful an organization can become in this environment, the more likely it will position itself to challenge the dominance of the orchestrator itself.

Flying with hornets

The Hornet's Nest has high complexity and low orchestration. Although it is unlikely that Hornet's Nest participants will be disintermediated from their ecosystem, in the absence of strong orchestration, they need to find their own way to capture value—seeking opportunities, meeting needs and building relationships. As in the Shark Tank, there is no free lunch for organizations in Hornet's Nest. They need to earn every transaction one by one. As such, the more they can build capabilities to deliver goods and services that are demanded, the more successful they will be.

Dancing with Wolves

Organizations in the Wolf Pack experience strong orchestration but low complexity. They are continually at risk of new or existing competitors disintermediating their role in the ecosystem. In additional to building sustained differentiators, such as brand or other unique attributes, it is crucial that Wolf Pack participants build and constantly sustain strong relationships with the orchestrator. In a real sense, the Wolf Pack orchestrator has the power to save or to destroy. If the orchestrator is happy with a participant, its position will remain uncontestable. However, to the extent that an orchestrator is displeased, a participant's role and position will be tenuous.

Summary

In summary, organizations will need to understand the impact of ecosystems and reinvent their businesses (see Figure 9.)

Business environments are evolving	Ecosystems are emerging	Organizations should act now
Ecosystems expand what is possible	**Business environments are not alike**	**Ecosystem strategy**
Consumers are demanding greater sophistication	The ecosystem archetype framework enables organizations to identify the ecosystems in which they compete	Organizations need to develop ecosystem strategies aligned to their particular environments
Organizations are increasingly pressured to catch-up		**Recommendations**
		Organizations can act today to embrace emerging ecosystems:
These changes are necessitating the emergence of new ecosystems	Organizations must rethink specific strategies based on the environment in which they find themselves	• Change the organizational mindset
		• Make the right connections
		• Make your organization more agile

Connected and open

Simple and intelligent

Fast and scaleable

Figure 9: **Organizations will need to reinvent their businesses in the context of the ecosystems in which they participate.**

In today's digital world, emerging technologies have already made a significant impact, creating an economic environment that is far more connected and open, simple and intelligent, fast and scalable. Consumers are forming an ever-more insatiable desire for sophisticated and compelling experiences in all aspects of their lives. Organizations are beginning to come under intense pressure to catch-up and deliver on a very different set of customer expectations. These changes are coinciding with the emergence of new ecosystems. To capitalize on what is now being demanded—and not be left behind in a rapidly transforming environment, organizations must act now to develop ecosystem strategies aligned to their particular

environments. They must challenge and change their traditional organizational mindset, make the right connections and drive forward to become the standout success story in this new age of ecosystems.

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Appendix

This report explores how emerging ecosystems are transforming the way companies engage in the marketplace. The degree of change is accelerating as a result of the maturation of numerous technologies. These technologies are impacting organizations and leading to the creation of ecosystems.

Technology enablers

New technologies, such as cloud, exponentially expand the potential of new, dynamic ecosystems.

Cloud enablers	Ecosystem enablers
Social media explosion	**Provides connectivity required for creation and evolution of ecosystem**
Mobile revolution	**Enables contextual, individualized experiences**
	Empowers simplicity to increase user accessibility while expanding sophistication
Hyper digitization	**Improves market adaptability as it enables experimentation with multiple, new partners**
	Drives business scalability with limitless, cost-effective computing power
Power of analytics	**Increases cost flexibility as costs shift from fixed to variable and users pay-as-they-go**

Clarity of action: A step by step guide

A practical step-by-step guide indicates the need for creating clarity of action.

1 Know your ecosystem and identify new opportunities
- Understand your market
- Understand your ecosystem

2 Recognize your capabilities and identify your gaps
- Identify and prioritize ecosystem value pools
- Devise business model to capture value

3 Identify ecosystem value and how you might capture it
- Understand your capabilities relative to your business model
- Determine what to invest in and what to partner for

4 Make connections in pursuit of your objectives
- Choose the right partner
- Engage in the right way

5 Measure your success and decide next steps
- Define measurement model and collect data
- Refine business model and ecosystem partnership

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