Business ecosystems come of age
In September 2014, the Chinese online commerce company Alibaba Group conducted its initial public offering (IPO)—the largest ever in history. This event attracted considerable media attention, some of it naturally commenting on the changing balance of the global economy and the growing impact of digitization. Largely overlooked in the commentary, however, was another important signpost to the future. In the prospectus it compiled to describe its vision, philosophy, and growth strategy, Alibaba used one word no fewer than 160 times: “ecosystem.”

We’re all familiar with ecosystems in the natural world. The word was coined in the 1930s by British botanist Arthur Tansley to refer to a localized community of living organisms interacting with each other and their particular environment of air, water, mineral soil, and other elements. These organisms influence each other, and their terrain; they compete and collaborate, share and create resources, and co-evolve; and they are inevitably subject to external disruptions, to which they adapt together.

Noticing growing parallels, business strategist James Moore imported the concept to the increasingly dynamic and interconnected world of commerce. As he wrote in a 1993 Harvard Business Review article:

Successful businesses are those that evolve rapidly and effectively. Yet innovative businesses can’t evolve in a vacuum. They must attract resources of all sorts, drawing in capital, partners, suppliers, and customers to create cooperative networks. . . . I suggest that a company be viewed not as a member of a single industry but as part of a business ecosystem that crosses a variety of industries. In a business ecosystem, companies co-evolve capabilities around a new innovation: They work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations.

Moore’s insight was prescient—just on the cusp of the Internet era, and 15 years before the emergence of smartphones and the mobile access revolution. Initially his concept of “business ecosystems” was embraced primarily in the community that was itself creating the transformative capabilities of connection and collaboration that enabled them—the US technology sector. It continues to be critically important in that arena. Apple Inc. explicitly conceived its products and services as an ecosystem that would provide customers with a seamless experience; Facebook recognized the emphasis it had to place on deliberately building its “developer ecosystem”; some analysts no
longer see technology and media competition as simply between firms, but among ecosystems of firms operating in loose alliance.5

But the idea has now also taken root far beyond the US technology sector. Over the last few decades, driven largely by digital technologies and massively increased connectivity, the economy has been moving beyond narrowly defined industries built around large, vertically integrated, and mainly “self-contained” corporations. New means of creating value have been developing everywhere in the form of ever-denser and richer networks of connection, collaboration, and interdependence.

Businesses around the world are responding. Some view the rise of ecosystems as an opportunity for creating powerful new competitive advantage. For example, in July 2014, the CEO of Japan’s Softbank described its strategic intent as follows: “By providing all manner of services and content on (our) platforms, we are aiming to create a comprehensive ecosystem that other companies will never be able to rival.”6 A few years earlier, the CEO of Nokia similarly described a landscape of ecosystems that each encompass an array of players: “The battle of devices has now become a war of ecosystems . . . our competitors aren’t taking our market share with devices; they are taking our market share with an entire ecosystem. This means we’re going to have to decide how we either build, catalyze, or join an ecosystem.”7 Others take slightly different perspectives. South Africa’s SABMiller has made a priority of “strengthening business ecosystems” in which it participates, to the benefit of local and regional economies where it operates.8 Some leaders have even welcomed competitors to their ecosystems. Listen to MakerBot’s newly appointed CEO, Jenny Lawton, responding to the news that Autodesk planned a bigger push into 3D printing: “Autodesk’s work and thinking is necessary to the overall industry. . . So much of the success of the 3D ecosystem and future of 3D printing can be accelerated.”9 And some strong ecosystems emerge without individual powerful players: For example, in China the term “shanzhai” formerly described copycat versions of electronic goods, but is now commonly referred to as the “shanzhai ecosystem”—highly collaborative arrangements across hundreds of enterprises.

Figure 1. Defining business ecosystems

<table>
<thead>
<tr>
<th>Ecosystems are dynamic and co-evolving communities of diverse actors</th>
<th>Ecosystems typically bring together multiple players of different types and sizes in order to create, scale, and serve markets in ways that are beyond the capacity of any single organization—or even any traditional industry. Their diversity—and their collective ability to learn, adapt, and, crucially, innovate together—are key determinants of their longer-term success.</th>
</tr>
</thead>
<tbody>
<tr>
<td>who create and capture new value</td>
<td>Enabled by greatly enhanced connectivity across specialized capabilities and resources, ecosystems develop new, co-created solutions that address fundamental human needs and desires and growing societal challenges. While forging superior ways to create new value, ecosystems also increase the importance of discovering new business models to capture that value in a world of commoditization and “de-monetization.”</td>
</tr>
<tr>
<td>through both collaboration and competition</td>
<td>Competition, while still essential, is certainly not the sole driver of sustained success. Participants are additionally incentivized by shared interests, goals, and values, as well as by the growing need to collaborate in order to meet increasing customer demands, to invest in the long-term health of their shared ecosystem, from which all can derive mutual benefit.</td>
</tr>
</tbody>
</table>

Source: Deloitte analysis.
that are accelerating entrepreneurial innovation in areas such as smartphones and the next generation of smart watches.  

Especially given the diverse usage of the term, it might be tempting to dismiss “ecosystem” as yet another management buzzword in an increasingly jargon-congested business lexicon. Certainly, the term has so far defied a precise and universally agreed definition (despite valiant efforts by many academics and theorists). But the concept’s rapid spread and uptake points to a practical utility that should not be underestimated.

At a bare minimum it has provided many businesses with a powerful metaphor from the natural world. Metaphors matter: They make it easier to explore and understand abstract concepts, and inform the decision-making heuristics and mental models leaders use to make confident choices and take timely action. Our business metaphors have historically been drawn largely from machinery and engineering, warfare and the military, and competitive sports and games. These remain apt in many ways—but in increasingly dynamic, collaborative, interdependent situations, they might mislead just as much as they inform.

Ecosystems thinking provides a new frame and mindset that captures a profound shift in the economy and the business landscape. The importance of relationships, partnerships, networks, alliances, and collaborations is obviously not novel—but it is growing. As it becomes increasingly possible for firms to deploy and activate assets they neither own nor control, to engage and mobilize larger and larger numbers of participants, and to facilitate much more complex coordination of their expertise and activities, the art of the possible is expanding rapidly.

**Five ways to think about ecosystems**

Having noted the varied definition and broad application of the term ecosystem, it makes sense to clarify how it is being used in this document: **Ecosystems are dynamic and co-evolving communities of diverse actors who create and capture new value through increasingly sophisticated models of both collaboration and competition.** This definition allows for the fact that ecosystems come in a broad array of shapes, sizes, and varieties—and also captures three core characteristics that are generally present. First, ecosystems enable and encourage the participation of a diverse range of (large and small) organizations, and often individuals, who together can create, scale, and serve markets beyond the capabilities of any single organization. This provides the requisite variety for a healthy system. Second, participating actors interact and co-create in increasingly sophisticated ways that would historically have been hard to formally coordinate in a “top-down” manner, by deploying technologies and tools of connectivity and collaboration that are still proliferating and disseminating. This means that there is dynamism and substantial latent potential for increasingly productive ecosystem development in the years ahead. Third, participants—often including customers—are bonded by some combination of shared interests, purpose, and values which incents them to collectively nurture, sustain, and protect the ecosystem as a shared “commons.” Everyone contributes, everyone benefits. This enhances the longevity and durability of ecosystems.

Our definition here is broadly consistent with the literature, and the thinking to date among business leaders, advisors, and academics, which continues to evolve as ecosystems become an increasingly critical unit of analysis. But there are further patterns and aspects of ecosystems that are now also coming into sharper focus as we consider the emerging opportunities and challenges for enterprises.

**Ecosystems create new ways to address fundamental human needs and desires**

An economy—from the most primitive to the most advanced—is essentially a system organized to meet (and often shape) human needs and desires. The major economies
that arose through the course of the last two centuries developed around the best available and most ingenious means of doing so—our long-familiar industries. In the United States, these were first codified in the 1937 Standard Industrial Classification (SIC) system, which captured well the economic and business arrangements that transformed our lives for much of the 20th century. But these structures are, inevitably, changing.

A distinctive characteristic of many ecosystems is that they form to achieve something together that lies beyond the effective scope and capabilities of any individual actor (or even group of broadly similar actors).

Humanity did not necessarily want physicians, hospitals, and pharmaceuticals—we wanted wellness. We did not particularly crave classrooms and textbooks and teachers—we wanted to learn and achieve success. We did not demand coal mines and oil and gas extraction—we wanted energy beyond the muscles of humans and harnessed animals. In many parts of the economy today, new cross-cutting ecosystems are starting to forge new means to meet our desired ends.

Looking forward, let’s consider, for example, the automobile industry that has richly enhanced so many lives around the world. It is certainly possible to imagine the emergence of a very different ecosystem to satisfy the desire for fast, affordable, safe, and convenient personal mobility, but that might also significantly reduce the appeal of privately owned cars. Confidence could rise for “autonomous vehicles” or self-driving cars (with a technology company, Google, perhaps helping lead the way?). Carsharing might in turn become more attractive (as cars gain the ability to deliver themselves to your door). Many car- and ride-share businesses are already experimenting, learning, and tapping into the different values of the Millennial generation. For some cities, according to former General Motors R&D chief Lawrence Burns, “about 80 percent fewer shared, coordinated vehicles would be needed than personally owned vehicles to provide the same level of mobility, with less investment.” While such dramatic change is certainly not inevitable, it is plausible that new “mobility ecosystems” might coalesce around the automobile industry, and include city planners, technology and energy players, public transportation providers, and others—collaborating, adapting, and responding to one another’s moves, and once again transforming and improving our lives.

Ecosystems drive new collaborations to address rising social and environmental challenges

A distinctive characteristic of many ecosystems is that they form to achieve something together that lies beyond the effective scope and capabilities of any individual actor (or even group of broadly similar actors). In some instances, these relate to large societal problems that no individual organization is able, or incented, to resolve. Examples where ecosystem approaches have been embraced include water resource management, child poverty, inner-city violence and gun crime, and food safety. All are obviously critical and—in some areas at least—are sources of growing pressure or threat.
Take as an example the Global Food Safety Initiative (GFSI), a non-profit organization whose members include many of the world’s largest food producers, distributors, and retailers. It helps coordinate a global, co-creative, and collaborative approach to addressing the growing challenge in a global food system of ensuring safety for consumers and protecting the reputation of the industry. Some of its members compete ferociously in their markets, but also collaborate aggressively to ensure the certification, shared standards, superior monitoring, and shared learning and leading practices that together create a safer food industry and boost consumer confidence. Here is new ecosystem-oriented behavior in which every participant benefits from their collective investment in the shared “commons”—and has acknowledged that, in the words of GFSI: “Food safety is not a competitive advantage.”

**Ecosystems create and serve communities, and harness their creativity and intelligence**

Multiple, and on the surface highly diverse, disciplines that examine the human condition—from anthropological and archeological studies of ancient “wisdom” cultures, through theology and philosophy, to today’s behavioral economics and even neuroscience—converge around a few key fundamentals. People want to belong, to understand and be understood, to achieve acknowledged competence in their chosen arena, and to make a positive difference in their world. Historically, few people could fully realize these desires beyond their own immediate and tightly constrained physical domains. Today, technology has transformed the ways and levels in which such self-actualization can occur—and many ecosystems are now benefiting from this vital shift.

The most obvious illustrations are the many business ecosystems that have been designed specifically to enable us to find and connect with our own “tribes”—those that surround businesses like Facebook, Twitter, and Yelp. Recognizing the importance of its top users (the site’s most prolific reviewer has written more than 8,000 reviews), Yelp founded its Elite program to recognize and reward its community of regular reviewers with exclusive parties and freebies.

But also consider three other exemplary arenas. Online gaming is today a $20 billion—and growing—business, and many of the most successful games not only connect people around the globe, but actively engage them in the continuous development of the games themselves. The open source movement, which originally attracted extraordinary—and often unpaid—contributions from hundreds of thousands of highly skilled individuals in the software environment, has been spreading across the economy. Other examples can now be found across diverse industries and sectors. In media, Blender’s free and open source 3D computer graphics program has been used to generate outputs as diverse as 3D models of NASA space crafts and storyboards for Spider-Man 2. In education, the Massachusetts Institute of Technology’s OpenCourseWare provides digital access to “virtually all MIT course content.”

And, for solving more specific (and sometimes also time-bound) problems, there has been a substantial rise recently in “crowdsourcing.” Organizations like Kaggle host competitions that invite participants to use data science and algorithms to solve business problems. Others, like XPRIZE, organize grand challenges that encourage players to collaborate to tackle complex social and environmental issues. The results already speak for themselves—examples include a device that skims oil off water three times faster than previously existing technology, and software that is able to show trends in symptoms of Parkinson’s disease in individual patients over time.

Today, almost every business can find ways to benefit from this growing and global opportunity to forge, serve, and grow alongside—and with the help of—new communities, which will often include customers who were traditionally regarded as passive recipients rather than active participants. The LEGO Group, for
instance, has found new ways to connect with customers young and old with its LEGO® Ideas portal, on which fans have enthusiastically submitted and supported ideas including the Minecraft and Ghostbusters 30th Anniversary toy sets. Companies that are able to tap into the resourcefulness of their ecosystems will not only discover new points of resonance with their customers, but are also opening themselves to a universe of opportunity, just as The LEGO Group did when it found inspiration for its blockbuster The LEGO Movie™ from a collection of stop-motion films produced utilizing LEGO bricks on YouTube.22

Ecosystems often exist on top of powerful new business platforms

A “platform” is a powerful type of ecosystem, typically created and owned by a single business or entity, but deliberately designed to attract the active participation of large numbers of other actors. According to scholar Yochai Benkler, it is “a technical and organizational context in which a community can interact to achieve a specific purpose.”23 Some are designed primarily to create new markets by enabling connections between previously separated potential buyers and sellers; others are more focused on the distributed development of new products, services, and solutions. An early illustrative example combined both. In 1968, Dee Hock worked in a local bank in Washington State and spotted a problem and an opportunity in the early days of consumer credit cards.24 Many banks were attempting to issue their own proprietary product, each of them encountering the laborious burden of signing up merchants to accept them, persuading customers of their utility and security, reassuring regulators, and designing protocols and features for the new product. By proposing a shared platform to deal with all these arduous tasks—which became VISA in 1976—he enabled them to pool resources and to both collaborate and compete within a much simpler-to-develop, and hence much faster-growing, financial market for credit.

VISA may have been an early example, but it has since been joined by many other platforms, spurred by digitization and connective technologies. eBay created a global auction-based marketplace that now connects millions of buyers and sellers. More recently, a variety of new “sharing economy” platform businesses have established entirely new ecosystems that enable vast numbers of participants to share access to their previously idle or under-utilized assets, creating significant social and economic value in the process. Some, such as Airbnb and Uber, have disrupted incumbent industries—and more will likely do so in future, in additional domains of the economy.

Meanwhile, other platforms have emerged to accelerate and distribute the development of new products and services. An early example was the success of open source models that transformed the software sector by inviting vast numbers of programmers to develop products such as Linux. This established the pathway to the explosive, widely distributed development of new applications on enabling platforms created by Apple, Facebook, Google, Samsung, Salesforce, and others. In recent years literally millions of apps have been created, producing new solutions and possibilities for consumers and enterprises alike.25

The results have been spectacular for some platform creators. One estimate suggests that four of the top five most valuable global brands are largely based on platform business models.26 With many of the world’s fastest-growing, highest-profile new companies joining them, there is no sign of the phenomenon slowing.27

Ecosystems accelerate learning and innovation

Philosopher Eric Hoffer observed that, “In times of change learners inherit the earth, while the learned find themselves beautifully equipped to deal with a world that no longer exists.”28 The imperatives for businesses to learn and to translate learning into innovation have never been greater.29 And, as many corporate leaders have recognized, the smartest
people can’t all work for just one organization; this means, importantly, that they don’t all work for yours.

Ecosystems provide businesses access to sharp minds and smart resources, whether they are located with suppliers, customers, research organizations, or independently. For example, users of InnoCentive connect with an ecosystem of thousands of innovators and problem-solvers around the world. A Telstra executive once said he seeks out partners who will push new thinking: “When we look to partner, we look for . . . innovation . . . what you’re looking for is someone who’s going to

Figure 2. The platform-driven “sharing economy”

The “sharing economy” refers to growing markets, generally enabled by platforms, that aggregate underutilized and otherwise unseen resources for others to “borrow,” usually for a fee. The resulting economic and social communities of participants—each of them constituting a new ecosystem—span an increasingly wide variety of products and services.

Sources (from top left, clockwise):
• Innovative mobility carsharing outlook, UC Berkeley Transportation Sustainability Center, fall 2014, http://tsrc.berkeley.edu/sites/tsrc.berkeley.edu/files/Fall%202014%20Carsharing%20Outlook%20Final.pdf.
• Rachel Botsman and Roo Rogers, What’s Mine is Yours: The Rise of Collaborative Consumption, (Harper Business, 2010).

Graphic: Deloitte University Press | DUPress.com
challenge you. I don’t want you to tell me I’m good. I want you to tell me what I have to do differently, how I can be different. Learning is a largely social activity; innovation is very often the result of integration and connection across different fields of expertise and domains of knowledge; and both are therefore accelerated in the fluid, exchange-oriented, and co-creative communities that are forged by ecosystems. Some observers, notably John Hagel, have suggested that such ecosystems will prove the most enduring and influential, and provide the most sustained and important benefits to those businesses that create, lead, and participate in them.  

For example, the Mahindra Group, one of India’s largest corporations with more than 200,000 employees globally and an enormous supplier network, was recently celebrated for linking suppliers and internal businesses alike in jointly owned initiatives to “accept no limits, drive positive change, and promote alternative thinking.” The resulting ecosystems of collaboration have benefited Mahindra itself by energizing and aligning learning and creativity across the diversified group. Just as importantly, however, Mahindra credits efforts like this as promoting widespread transformation across entire geographies where Mahindra’s operations are centered, like Maharashtra, India’s second most populous state and its largest contributor to GDP by far. The dynamism and productivity of such local hubs have given rise around the world to a growing focus on local and regional “start-up ecosystems” and “innovation ecosystems”—a trend actively encouraged in November 2014 by a number of senior European business leaders in an open letter to the European Union.  

The world is entering an era in which ideas and insights come from everywhere, and crowds, clouds, collaborators, competitions, and co-creators can fundamentally help define our shared future. The business environment is being permanently altered as a result.
Managing in a world of business ecosystems

The rise of business ecosystems is fundamentally altering the key success factors for leading organizations, forcing them to think and act very differently regarding their strategies, business models, leadership, core capabilities, value creation and capture systems, and organizational models. More will be learned over time, as ecosystems continue to reveal their secrets. This ongoing process is not surprising. After all, it was only in the late 1930s that we created standardized classifications for the distinct sectors of the industrial economy, and then started to track their collective output with a measure called GDP. It took almost another 30 years to hammer out the detailed, if still evolving, standards for many business professions, and almost 20 years more for the basic tools of “strategy” to be revealed.

*In this trends report, however, we will take a deeper dive into what is already clearly discernible as business ecosystems come of age—and can therefore be applied to business strategy and operations today.* Specifically, we will explore the following trends and the associated ways in which future-shaping leaders are:

- Transcending historical constraints as multiple boundaries blur and dissolve simultaneously, to create new value and redefine the “art of the possible.” (See page 17.)

- Participating in evolving ecosystems that forge alliances to address major pressing societal challenges through new solutions, generating both profits and social value at the same time. (See page 31.)

- Engaging with the domains of regulation and policy to maintain an effective balance between protecting the public’s interest and enabling the new markets and solutions which fast-evolving ecosystems make possible. (See page 43.)

- Reimagining existing supply chains as “value webs” that enjoy greater autonomy and trust, learn and innovate together, and forge the sustainable models for success that benefit all those involved. (See page 55.)

- Reconfiguring assets for a more relationship- and collaboration-based economy in which ownership and control matter less, and activating the assets of others matter more, altering M&A strategies in the process. (See page 67.)

- Creating new enterprise platforms that enable the entrepreneurship, and help liberate and harness the talents, of countless other participants. (See page 79.)

- Learning to transform businesses and organizations without destroying them, by taking a lesson from the entrepreneurs’ use of minimum viable products. (See page 91.)

- Embracing new core competencies—especially the skills embedded in the world of design—and reinventing their management thinking and practices. (See page 103.)
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Introduction

Endnotes


25. Research firm IDC estimates that there were 18.5 million professional software developers in 2014. See Steve Ranger, “There are 18.5 million software developers in the world – but which country has the most?,” *TechRepublic*, December 18, 2013, http://www.techrepublic.com/blog/european-technology/there-are-185-million-software-developers-in-the-world-but-which-country-has-the-most/, accessed March 11, 2015.


35. For example, the 1950s marked the beginning of the modern project management era; more standard tools and techniques began to be developed and applied. See David I. Cleland and Roland Gareis, *Global Project Management Handbook* (McGraw-Hill Professional, 2006), p. 1–4.

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