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Hyperconnected Ecosystems: Your Path to New Sources of Business Value

An ecosystem's potential value is exponentially higher than what a single organization can achieve

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Foreword

Welcome to the hyperconnected world.

The last 12 months were the most significant change in our lifetimes, but we are still standing. Change does not sound so scary anymore. Embracing change has also made us more ambitious as business leaders. Are we satisfied with slightly cheaper, slightly better, or somewhat faster, or are we searching for fundamental new sources of value?

Senior leaders are realizing that no single organization can own the entire customer journey in an end-to-end value chain. Initiatives to develop hyper-connected enterprises that collaborate across multiple organizations with common objectives are no longer five years away...these initiatives unfolding right before our eyes.

We undertook this research initiative in partnership with TCS to understand enterprises' attitudes and perspectives on the emergence of "hyperconnected ecosystems."

Happy reading!

Phil Fersht

CEO and Chief Analyst,
HFS Research

To create exponential value, organizations are establishing partnerships that can elevate their products and services to provide a personalized customer experience at scale. Such partnerships are expanding beyond the industry boundaries to create hyperconnected purpose-led ecosystems.

While the value of ecosystems is well acknowledged, putting one in motion, and maintaining it, is not trivial. The biggest hurdle to establish business ecosystems is still the mindset change and alignment of purpose, goals, and incentives across participants. We have observed this prominently while designing blockchain solutions, where the institutional trust among the partners is reinforced with a digital platform built on algorithmic trust models.

To understand the perception of organizations about their impetus of adopting ecosystem business models and the associated challenges, a global survey of 158 C-level executives was conducted in collaboration with HFS. We believe this insightful report will help organizations prepare a realistic roadmap for crafting sustainable ecosystem business model leading to transformative growth in the post-pandemic era.

Suranjan Chatterjee

Global Head, Product Management Group,
Business and Technology Services,
Tata Consultancy Services

Executive summary

Organizations increasingly need to collaborate across industries to pinpoint disruption sources and opportunities and determine how to keep reinventing themselves in an unforgiving world in which there is no time to rest on laurels. We are at the dawn of a hyperconnected economy where ecosystems driven by collaboration across multiple organizations with common objectives will generate new sources of value.

HFS defines a “hyperconnected ecosystem” as a network driven by collaboration across multiple organizations with common objectives around driving completely new sources of value.

HFS, in partnership with TCS, surveyed 158 C-level executives globally who are already part of an ecosystem or plan to start or join one. This cross-industry global research initiative aims to understand enterprises’ attitudes and perspectives on the emergence of “hyperconnected ecosystems.” We also tested the survey findings through interviews and conversations with senior industry executives and academicians. Key findings include

- **Enterprises need to be connected to succeed.** Respondents’ top reasons to invest in ecosystems include creating a positive brand perception, discovering new business models, and developing new products and services.
- **Competitors can be friends with benefits, but it’s complicated.** Creating the elusive “network effect”¹ requires big investments. Then there are regulatory and compliance issues and fear of the loss of

proprietary information. A majority of enterprises cannot imagine collaborating with their competitors.

- **Security, privacy, incentive alignment, technology backbone, and a collaborative mindset** are the top five critical success factors to establish a successful ecosystem.
- **The concept of “hyperconnected ecosystems” is relatively nascent today but poised for take-off in the next two to three years.** Most ecosystems have fewer than 10 participants, and those are mostly within the same value chain or industry. Cross-industry collaboration with the inclusion of regulators or governing bodies is rare.
- **Over 65% of enterprises participating in ecosystems are cautiously optimistic** about their ecosystems’ potential success. Ecosystems focused on talent and skills, mobility, customer loyalty, health and wellness, supply chains, identity management, and clean air, food, and energy are likely to emerge first.
- **The emergence of blockchains is starting to make the vision of hyperconnected enterprises with distributed and trustworthy information a reality.** Some 95% of surveyed enterprises pursuing an ecosystem strategy are leveraging blockchain as the foundational technology.
- **Nine out of 10 C-level respondents predict that the current global crisis intensifies businesses’ need to cooperate.** Encouraging new forms of collaborative business models is not only good for business, it’s good for humanity to drive “profits with a purpose.”

¹ The network effect in economics states that a good or service becomes more valuable when more people use it.

Enterprises must be connected to drive “profits with a purpose”

There is a broad realization across the C-level that they need to collaborate across multiple organizations to meet their business objectives. Ninety-five percent (95%) of C-level executive respondents agree that the potential value an ecosystem generates will be exponentially higher than what a single organization can achieve.

Some 95% of the 158 C-level executives surveyed say that enterprise value is directly linked to creating, delivering, and communicating compelling customer value. However, 84% also realize no single organization can own the entire customer journey in an end-to-end value chain. Businesses today need to expand the scope

and reach of platform models to achieve non-linear, exponential growth. This need is the primary reason why an ecosystem strategy is becoming critical to ensure future success. Nearly all respondents believe in the long-term benefit of creating collaborative ecosystems either alone or as a complement to platforms supported by one or multiple entities. The common platform becomes a magnet for innovators. The degree of openness designed within the platform, coupled with relatively low access fees, encourages and stimulates complementary innovation, which will allow the ecosystem to thrive.

“

An enterprise focused on big data and analytics in healthcare, likened hyperconnected enterprise ecosystems to bodies such as the United Nations (UN). In both cases, disparate elements need common goals and language, as well as standardization and information integration, to become well and fully connected. “As [diverse departments and organizations] become hyperconnected, you can really build value [and] create intelligence. But that intelligence is only useful if you feed it back into the workflow” to improve customer experiences.

**– Nagaraja Srivatsan,
Chief Data Officer for IQVIA**

”

Eighty-three percent (83%) of all survey respondents believe that “hyperconnected ecosystems” that enable collaboration across multiple organizations with common objectives are essential for meeting their specific business objectives. Over 50% believe such an ecosystem approach is such a high strategic priority; their business model depends on it (see Exhibit 1).

C-level executives believe hyperconnected enterprise ecosystems make good business sense. Top reasons to invest in ecosystems cited by respondents include creating a positive brand perception, discovering new sources of value and business models, and developing new products and services (see Exhibit 1).

Exhibit 1

83% of C-level executives believe that ecosystems are a high priority in meeting their business objectives

How important are ecosystems in helping you meet your business objectives?

Percentage of respondents



Top 10 reasons to invest to ecosystems

(% respondents that consider ecosystems to be a high/strategic priority who rank the following reasons as their top 5 reasons for an ecosystem approach)

1. Creating a positive brand perception (38%)
2. Unearthing new sources of value by developing new business models (Address an underserved market or unmet needs) (38%)
3. Developing new products or services collaboratively (38%)
4. Creating autonomous supply chain driven transparency and efficiency (36%)
5. Understanding emergent needs faster (34%)
6. Diversifying risk among ecosystem players (34%)
7. Removing bottlenecks and inefficiencies created by intermediaries (32%)
8. Addressing a societal challenge (e.g., economic inclusion, climate change, UN sustainable development) (32%)
9. Cooperating with competitors rather than competing (32%)
10. Empowering and enabling a community (31%)

Sample: 158 C-level executives across global 2000 enterprises
 Source: HFS Research in partnership with TCS, 2020

Creating a platform to achieve non-linear exponential growth is the most critical reason for ecosystem development (see Exhibit 2). Besides a few extremely successful platforms that are owned by a single entity (such as Facebook, Twitter, Uber, or Airbnb), in general, successfully creating and scaling a platform is extremely rare. You need a “hyperconnected ecosystem” approach for full platform enablement.

The pandemic shock has further exacerbated the need for ecosystems. The escalating global crisis requires us to cooperate and develop new models that enable society to succeed. Post the pandemic shock, the individualistic capitalist economy (where shareholder value supersedes stakeholder value) is being questioned. And while driving shareholder value continues to be urgent, the corporate theme of driving “profits with a purpose”

resonates with employees, customers, and shareholders. In fact, nearly 95% of the respondents believe that stakeholder (customers, employees, community, society) value is as vital, if not more so, to shareholder value. It is not surprising then that 9 out of 10 C-level respondents predict that ecosystems will be even more important in the post-COVID-19 world (see Exhibit 2).

“*Harnessing abundance and leveraging purpose-led ecosystems can be just as powerful in helping address global issues of societal significance as they are in solving business issues of board-level significance.*”

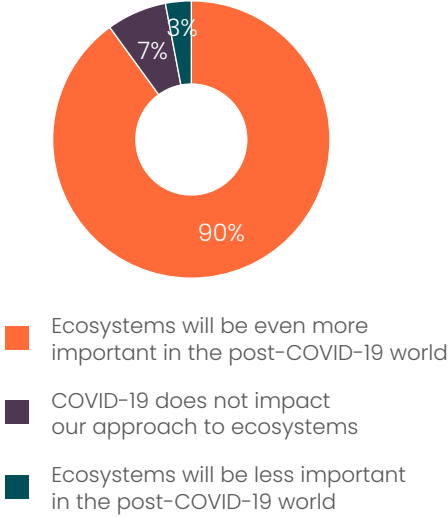
— **Krishnan Ramanujam, President and Head of Business & Technology Services in TCS**

Exhibit 2

Ecosystems will be even more important in the post-COVID-19 world

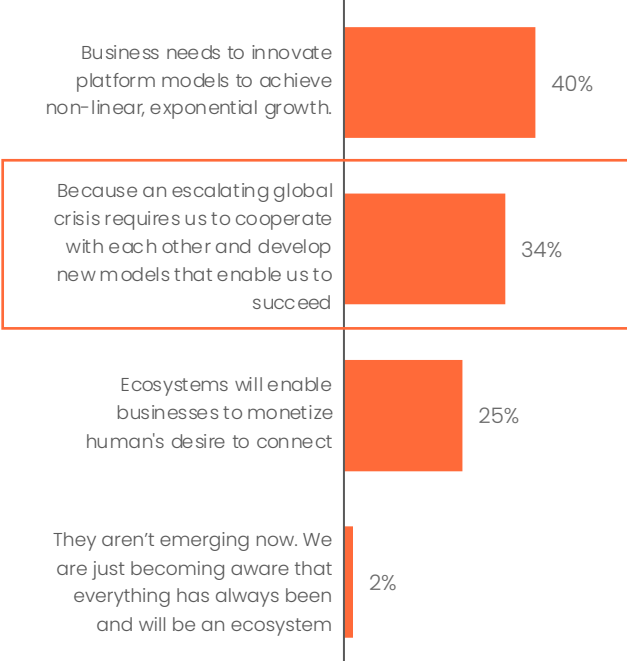
How has the COVID-19 pandemic changed the relative importance of ecosystems for your organization?

Percentage of respondents



Why do you think ecosystems are starting to emerge now?

Percentage of respondents



Sample: 158 C-level executives across global 2000 enterprises
 Source: HFS Research in partnership with TCS, 2020

Can competitors be “friends with benefits”? Building a successful ecosystem is challenging.

Even 67% of decision makers at enterprises who consider ecosystems a low priority believe that they are valuable but too challenging. A majority of these enterprises just cannot imagine collaborating with their competitors. Then there is competition with other priorities and a real lack of convincing success stories. Not everyone can be or wants to be a pioneer.

“

The concept of hyperconnected ecosystems resonates a lot. The need is there but the challenge is HOW? The consumers are changing and they are not changing in a predictable way. Ecosystems have to morph a lot. It is difficult to set it up and it is difficult to change when you don't know so many things. The volatility adds to the challenge.

— **Chief Information and Digital Officer,
Multinational manufacturing company**

”

Building a successful ecosystem is challenging (see Exhibit 3). Creating an elusive network effect requires big investments. Across the 158 C-level executives who are already part of an ecosystem or plan to start or join one, on average, enterprises are willing to spend nearly \$65 million on an ecosystem opportunity. Then there are regulatory and compliance issues, fear of losing proprietary information, and concern over competitors' ability to cooperate. These reasons, especially concerns about data sharing among different ecosystem stakeholders, may explain why only 25% of C-level executives in client-facing roles such as sales and marketing and those focused on information security are excited about ecosystems' strategic importance.

“

When folks say they want transparency, they really mean they want access to other people's data but do not want to share theirs, especially with competitors.

— **Dr. Mary Lacity, Director of the Blockchain
Center of Excellence at the University of
Arkansas**

”

Commenting on the data-sharing challenge, Dr. Mary Lacity, the Director of the Blockchain Center of Excellence at the University of Arkansas and author of *A Manager's Guide to Blockchains for Business*, said that while hyperconnected enterprise ecosystems

require some level of data sharing (or transparency) to be successful, the goal of transparency can conflict with the desire to protect proprietary intellectual property or other information.

Exhibit 3

Biggest challenges in creating a successful ecosystem

What are the biggest challenges faced/facing in creating the ecosystem?

Percentage of respondents



What advice would you give to someone looking to get involved or setup an ecosystem?

Q. Trust and reliability are core tenants of a successful ecosystem – blockchain still needs caution

A. "Need to ensure it is reliable and trustworthy" Do a lot of research so you can trust the partners"

Q. There is a lag time between joining and seeing value. Patience is required

A. "Be persistent!" "It takes time for benefits to become apparent"

Q. Regulation and compliance are not optional

A. "Ensure regulatory compliance" "Follow the regulations"

Sample: 158 C-level executives across global 2000 enterprises
 Source: HFS Research in partnership with TCS, 2020

However, these challenges are not insurmountable if there is a business case. Ashu Tandon, Chief Commercial Officer for Syngene, a contract research, development, and manufacturing organization providing scientific services to the life sciences industry, said that despite being in an “extremely competitive and secretive industry” with “significant compliance and IP [intellectual property] issues,” collaboration and partnering levels are “phenomenal.” Research into drugs that can fight the COVID-19 virus has increased those levels even more, he added.

Security, privacy, incentive alignment, technology backbone, and a collaborative organizational mindset or culture are the top five critical success factors to establish a successful ecosystem (see Exhibit 4). HFS believes the growth of hyperconnected ecosystems creates both a challenge and an opportunity for organizations to improve overall cybersecurity. Every network is only as secure as its least secure participant. Regulations that impose significant fines and penalties on companies found responsible for breaches of private or personal

information are multiplying. Examples include the European Union’s General Data Protection Regulation (GDPR) and the California Consumer Privacy Act (CCPA).

Enterprises that create or participate in ecosystems must collaborate openly on security to maximize the protection of customer information and corporate intellectual property. This will require a significant change in mindset at many organizations. Given the growing range and sophistication of cybersecurity threats, a strong guiding principle can be summarized as an “ABC” approach—assume nothing, believe no one, confirm everything.

“

Research into drugs that can fight the COVID-19 virus has increased collaboration levels across pharma companies even more.

**— Ashu Tandon
Chief Commercial Officer, Syngene**

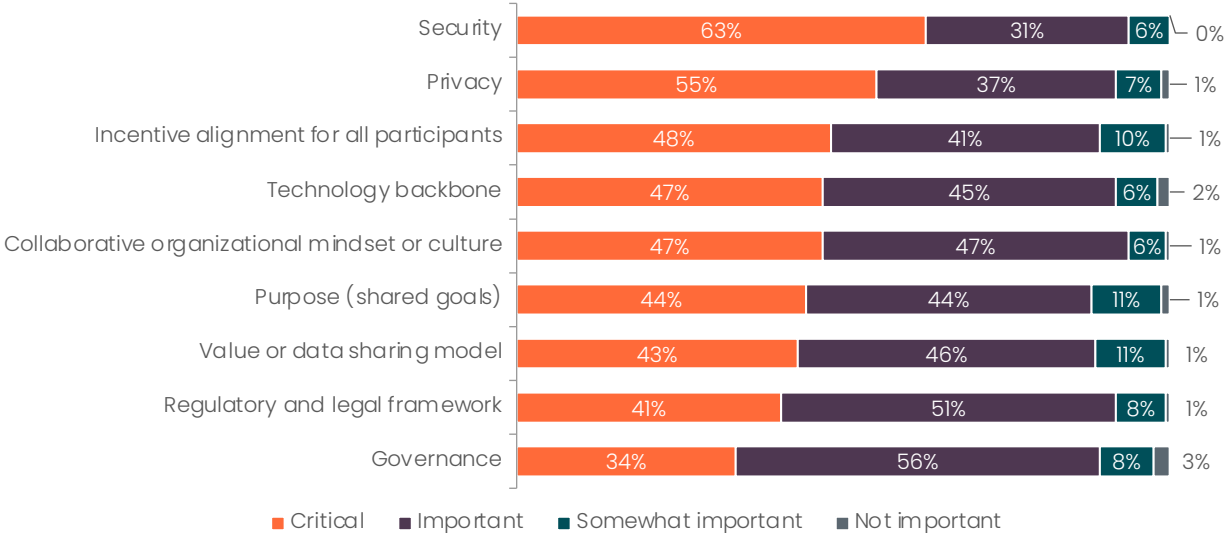
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Exhibit 4

Critical success factors for establishing an ecosystem

Please rate the importance of the following success factors of an ecosystem.

Percentage of respondents



Sample: 158 C-level executives across global 2000 enterprises
Source: HFS Research in partnership with TCS, 2020

The “hyperconnected ecosystems” concept is nascent, but it’s poised for take-off

Ecosystem investments are already bearing fruit at many enterprises. Over 65% of enterprises participating in ecosystems are cautiously optimistic about the potential success of their ecosystems. Confidence is the highest among the most financially successful companies. When ranked by top-

and bottom-line financial performance, higher-performing enterprises are more optimistic about ecosystems and are investing more in them (see Exhibit 5). High-performing enterprises are investing nearly twice the amount of low-performing enterprises in building ecosystems.

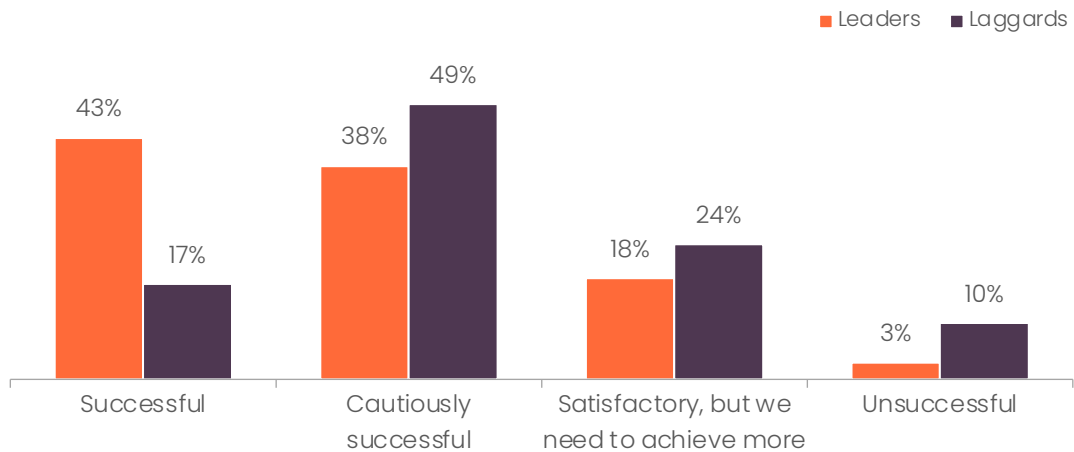
Exhibit 5

Enterprises participating in ecosystems are cautiously optimistic about the potential success of their ecosystems

How successful have your current ecosystem investments been at achieving these goals or purposes?

Percentage of respondents

(Leaders are respondents in the top half by topline and bottom-line financial performance, Laggards are the bottom half)



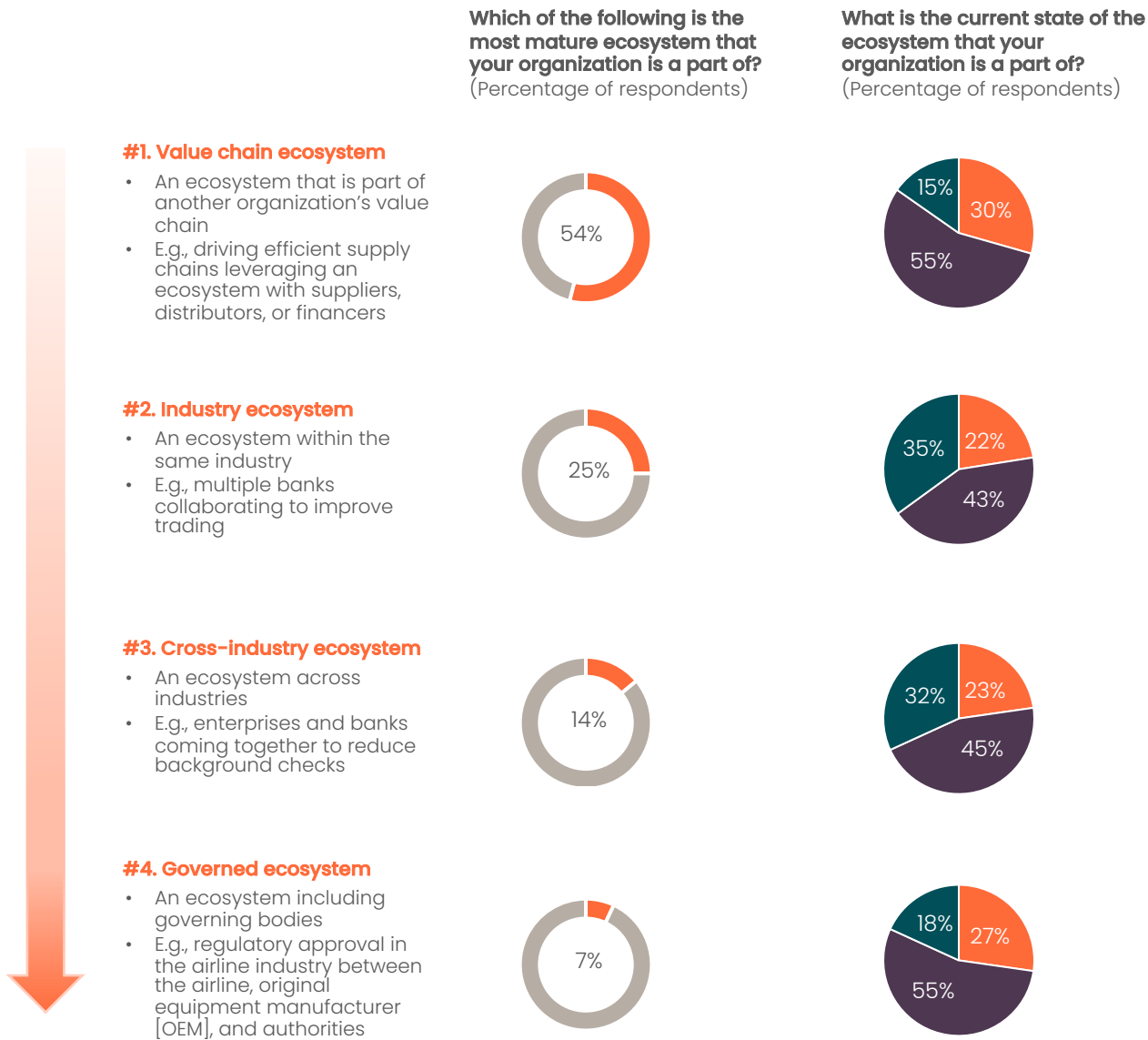
Sample: 158 C-level executives across global 2000 enterprises
Source: HFS Research in partnership with TCS, 2020

However, HFS believes ecosystems are only beginning to emerge for most enterprises, and no more than 25% of today's ecosystems can be considered mature. Most of these involve multiple organizations within the same value chain or are limited to

collaborating enterprises within the same industry. Cross-industry collaboration and inclusion of regulators or governing bodies are both rare (see Exhibit 6).

Exhibit 6

The four categories of hyperconnected ecosystems



- It is already a mature ecosystem
- We have identified the founding members and are recruiting participating organizations.
- We have plans to build an ecosystem, but it is not in place yet.

Sample: 158 C-level executives across global 2000 enterprises
Source: HFS Research in partnership with TCS, 2020

Surveyed C-level executives expect this to change as ecosystems grow in both number and size within the next few years. Most respondents believe larger and broader ecosystems will emerge in two to three years. And while most ecosystems include 10 or fewer organizations today, decision makers plan to grow their ecosystems aggressively over the next five years (see Exhibit 7). A significant challenge facing all who seek to build or participate in ecosystems will be identifying the optimum number of participants. Too few, and business value and benefit will be limited. Too many, and the ecosystem will risk becoming unwieldy and difficult to manage and secure.

“

We’ve seen a lot of bad attempts—C-level works together but the momentum fades. The key question is what is the Goldilocks number of participants for a minimum viable ecosystem—too few and there is no network effect.

— Dr. Mary Lacity, Director of the Blockchain Center of Excellence at the University of Arkansas

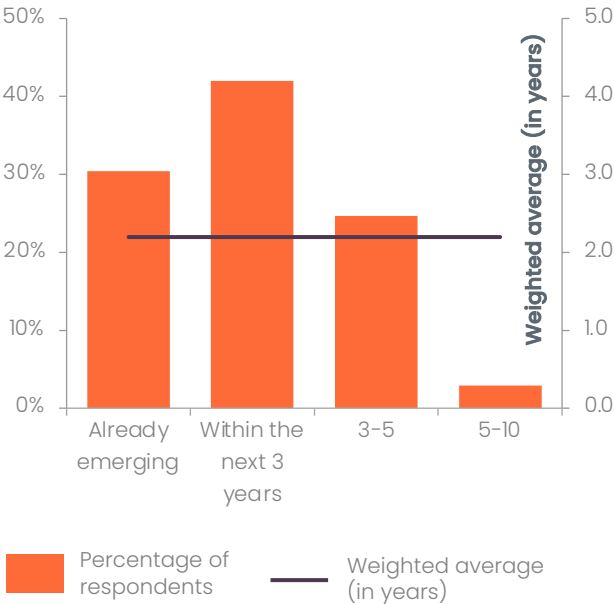
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Exhibit 7

Most respondents believe larger and broader ecosystems will start to emerge in two to three years

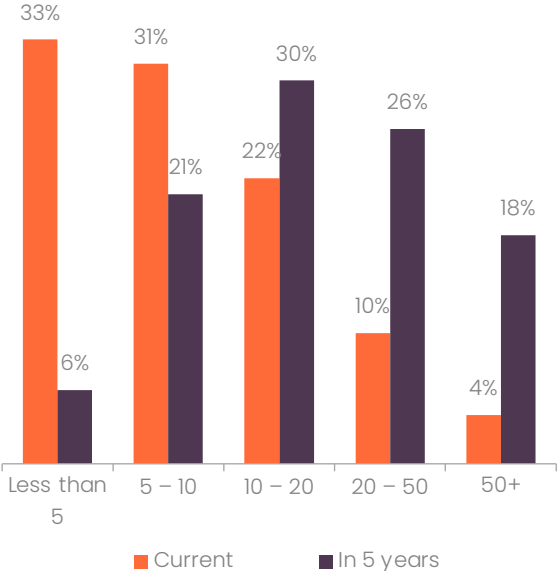
When do you think ecosystems will start to emerge?

Percentage of respondents



How many organizations participate in this ecosystem now? How many do you expect in 5 years?

Percentage of respondents



Sample: 158 C-level executives across global 2000 enterprises
Source: HFS Research in partnership with TCS, 2020

Ecosystems focused on talent and skills, mobility, customer loyalty, health and wellness, supply chains, identity management, and clean air, food, and energy are likely to emerge first (see Exhibit 8). The ecosystems enterprises are investing in today are closely tied to the dynamics of their respective industries, and each will grow and evolve uniquely based on the business goals and resources of initial participants. For instance, transparent supply chains are high on the agenda for more than half of the logistics, energy, and manufacturing companies surveyed. Customer loyalty features high on the agenda for utilities, technology, insurance,

retail, and travel and hospitality sectors. Over 70% of technology companies also focus on ecosystems around clean air, food, and energy, and over 70% of healthcare companies focus on health and wellness ecosystems. Banking and financial services focus on identity management and mobility networks.

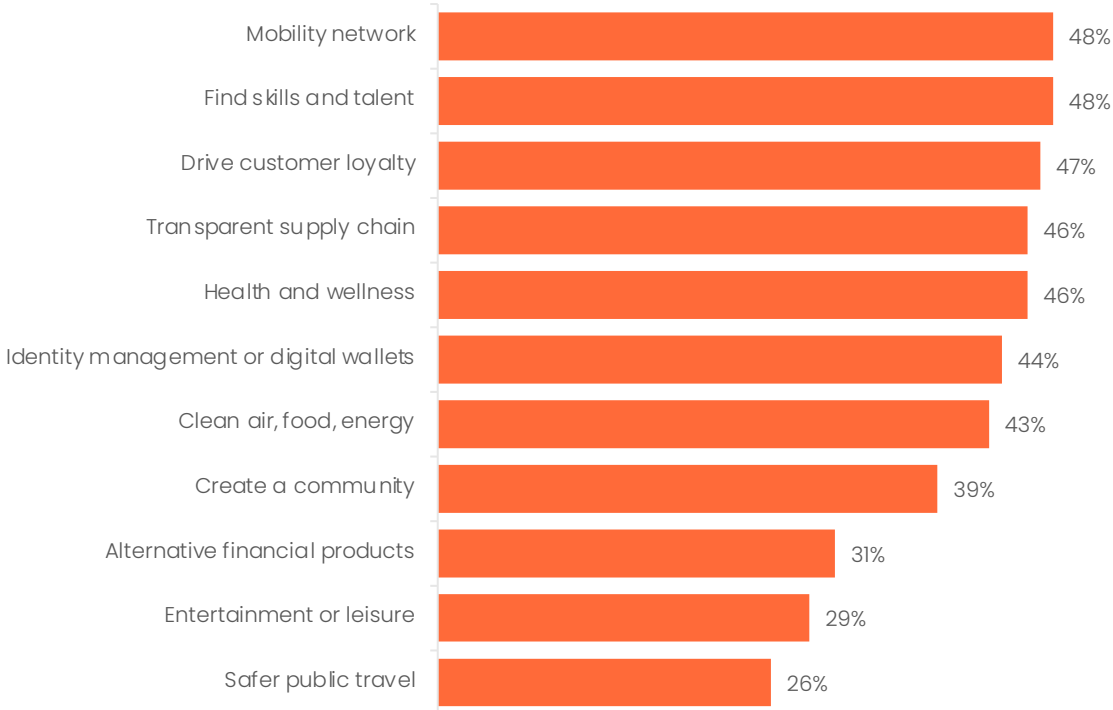
Regardless of the industry or industries involved, to deliver maximum business value, all ecosystems must include stakeholders from multiple arenas, often including technology providers and other vendors, customers, competitors, partners, and regulators. All must be equally willing and able to collaborate.

Exhibit 8

Ecosystems focused on talent and skills, mobility, customer loyalty, health and wellness, supply chains, identity management, and clean air, food, and energy are likely to emerge first

Which of the following are part of your ecosystem strategy?

Percentage of respondents



Sample: 158 C-level executives across global 2000 enterprises
 Source: HFS Research in partnership with TCS, 2020

Blockchain is making hyperconnected enterprises with distributed and trustworthy information a reality

To succeed, hyperconnected enterprise ecosystems require technologies and processes that promote and enforce security, privacy, and trustworthiness of both information and participating entities (see Exhibit 4). Distributed ledger technologies (DLTs), also known as blockchains, are increasingly making trustworthy and secure hyperconnected enterprises and ecosystems a reality. Blockchain is perhaps the only emerging technology that thrives on a multi-party or inter-organizational environment. Some 95% of surveyed enterprises pursuing an ecosystem strategy are leveraging blockchain as the foundational technology (see Exhibit 9) for orchestration of key functions (functions

needed for the ecosystem to fulfill value proposition, such as funds exchanged, or tokenization), or governance (ecosystem policies and management, such as membership, decision-making rights, or distribution of assets), or both.

More traditional technologies used for ecosystem orchestration, such as web-based cloud technologies and application programming interfaces (APIs), are alternatives to blockchain but often fall short to drive the trust, transparency, and security required in a multi-party environment.

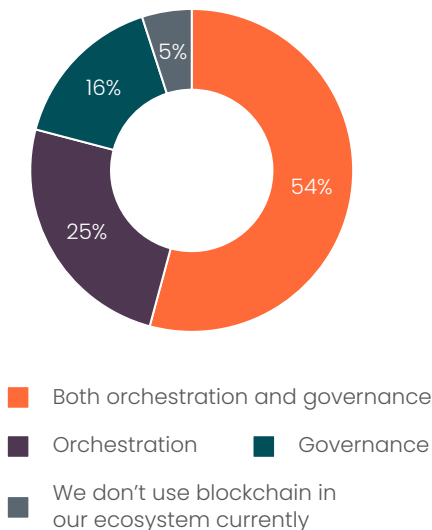
However, blockchain's "six-pack" inherent features make it an attractive ecosystem technology. (see Exhibit 9)

Exhibit 9

Blockchain emerges as the foundational technology for ecosystems

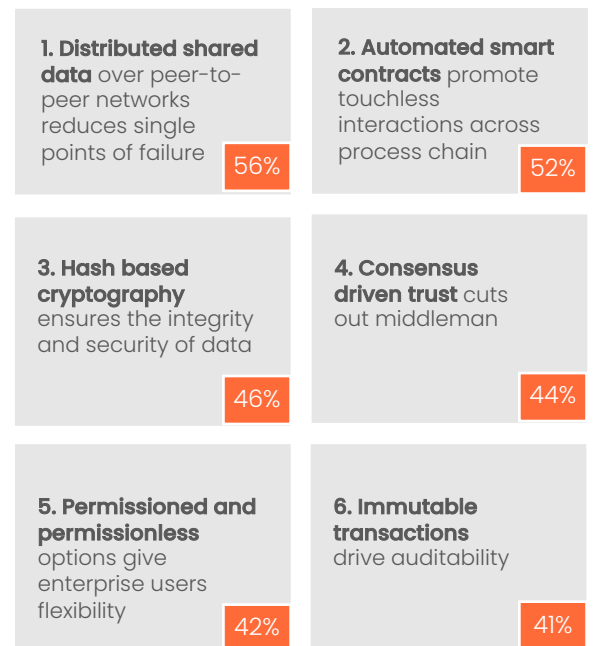
What are the primary uses of blockchain technology for your ecosystem strategy?

Percentage of respondents



Why are you using blockchain to help your ecosystem? (The Blockchain 6 Pack)

Percentage of respondents



Sample: 158 C-level executives across global 2000 enterprises
Source: HFS Research in partnership with TCS, 2020

However, blockchain alone cannot solve all the ecosystem challenges. Machine learning (ML) algorithm-based smart analytics are used by over 60% of ecosystems to make sense of the vast amounts of data on the ecosystem network. Internet of things (IoT) sensors are increasingly leveraged (nearly 60% ecosystems) to autonomously write accurate data on blockchains. Faster networks and real-time data access promised by 5G also make it an attractive ecosystem technology.

These emerging technologies, while critical, are only enablers of processes ultimately executed by collaboration across humans. Incentive alignment for all participants and a collaborative organizational mindset or culture are critical to establishing a successful ecosystem.

The Bottom Line: Start looking at an ecosystem approach within your organizational context now, or you might be in an “oh crap...I wish...” situation in a few years

Even before the pandemic, business decision makers were looking for new ways to model and achieve growth in an increasingly fluid and rapidly changing marketplace. The current global crisis intensifies the need for businesses to cooperate more broadly and develop new models for non-linear growth. Although they are just emerging, hyperconnected enterprise ecosystems that supercharge platforms and increase network effects are all but inevitable. Over 85% of the decision makers surveyed believe that without additional, deeper partnering, their industry or business will struggle. And nine out of 10 C-level respondents predict that ecosystems will be even more important in the post-COVID-19 world.

Nearly all C-level executives surveyed see a long-term benefit in choosing hyperconnected enterprises and collaborative ecosystems over separate platforms, each owned by a single entity. HFS believes those executives correctly perceive that the potential value generated by an ecosystem of hyperconnected enterprises will be exponentially higher than what can

be achieved by any single organization. Given global market conditions and the state of relevant emerging technologies, for many, if not most, enterprises, the time to start building or considering hyperconnected enterprise ecosystems is now.

Decision makers need these behaviors and traits to build and run successful, hyperconnected ecosystems:

- **Focus on trust and reliability.** A trustworthy, reliable ecosystem requires trustworthy, reliable technologies and participating stakeholders. Extensive research may be needed to acquire either or both.
- **Commit to compliance.** Compliance with laws, regulations, and business rules is not optional, especially when there is the risk of significant legal or financial penalties for non-compliance.
- **Be persistent and have patience.** It can take time for benefits to become apparent, and there will be a lag between joining an ecosystem and realizing the business value of doing so.

Appendix: research methodology and survey demographics

HFS, in partnership with TCS, surveyed 158 C-level executives who are already part of an ecosystem or plan to start or join one. The aim of this global research initiative across industries was to understand the enterprise attitude and perspective on the emergence

of “hyperconnected ecosystems.” We also tested the survey findings through interviews and conversations with senior industry executives and academicians. The graphics below summarize respondent demographics.



Sample: 158 C-level executives across global 2000 enterprises
 Source: HFS Research in partnership with TCS, 2020

HFS Research author



Saurabh Gupta, President of Research and Business Operations

Saurabh Gupta is the President of Research and Business Operations at HFS. He oversees HFS' global research function managing the international team of analysts and operations across the US, Europe, and Asia-Pac. He works closely with the CEO to set the HFS vision and ensure we deliver unmatched insights, impact, and inspiration to our clients. He sets the strategic research focus and agenda for HFS Research, understanding and predicting the industry's needs and ensuring that HFS maintains its position as the strongest impact thought leader for business operations and services research. Saurabh is also HFS' lead analyst for business services such as F&A, procurement, supply chain, horizon three emerging technologies such as blockchain, and energy and utilities.

About Tata Consultancy Services (TCS)



A special thanks to the TCS team for their valuable inputs and feedback throughout the research and publication of this report

Tata Consultancy Services is a purpose-led transformation partner to many of the world's largest businesses. For more than 50 years, it has been collaborating with clients and communities to build a greater future through innovation and collective knowledge. TCS offers an integrated portfolio of cognitive powered business, technology, and engineering services and solutions. The company's 469,000 consultants in 46 countries help empower individuals, enterprises, and societies to build on belief.

Visit www.tcs.com and follow TCS news at [@TCS_News](https://twitter.com/TCS_News).



About HFS Research: Insight, Inspiration, Impact

HFS is a unique analyst organization that combines deep visionary expertise with rapid demand side analysis of the Global 2000. Its outlook for the future is admired across the global technology and business operations industries. Its analysts are respected for their no-nonsense insights based on demand side data and engagements with industry practitioners.

HFS Research introduced the world to terms such as "RPA" (Robotic Process Automation) in 2012 and more recently, the HFS OneOffice™. The HFS mission is to provide visionary insight into the major innovations impacting business operations such as Automation, Artificial Intelligence, Blockchain, Internet of Things, Digital Business Models and Smart Analytics.

Read more about HFS and our initiatives on www.HFSresearch.com or follow [@HFSResearch](https://twitter.com/HFSResearch).