HFS Research

HFS Top 10 Enterprise Blockchain Services 2018

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TOP 10

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“Enterprise blockchain is no longer just a beautiful waterfall that people admire from a distance. Enterprises are starting to get wet (or are at least feeling the mist).”

—Saurabh Gupta, Chief Strategy Officer

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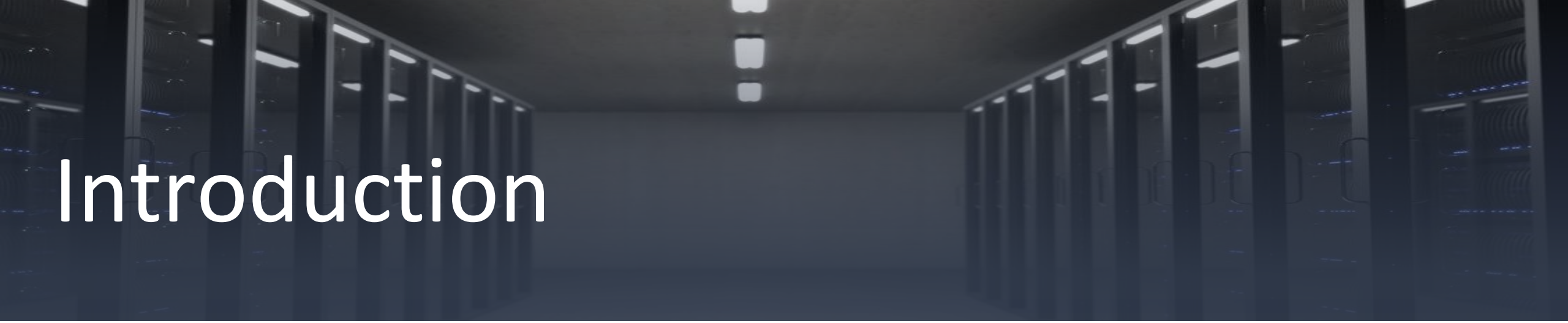

Introduction

- Blockchain is emerging as a powerful architectural technology with the potential to impact enterprise and B2B ecosystems as much as the internet and cloud.

- The 2018 Enterprise Blockchain Services Top 10 investigates the blockchain space to provide a comprehensive and foundational analysis of the blockchain services market for enterprises.

- From an enterprise or B2B adoption perspective, HFS assessed 17 leading blockchain service providers based on detailed discussions with their leadership teams, inputs from their enterprise clients, and analysis of nearly 2,800 blockchain engagements across industries and across the globe.

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Blockchain provider ecosystem

Illustrative lists, not comprehensive

This report focuses on providers of enterprise blockchain services

Blockchain solution providers

Service providers

accenture, Cognizant, IBM, LTI, NTT Data, wipro

Consulting firms

Deloitte., EY, KPMG, pwc

Consortiums

B3i, Chamber of Digital Commerce, CULedger, Fundchain, IoT World Alliance, PTOL Group, r3, Red Lyra, swisscom

Startups

BitFury, BTL, coinbase, Filament, loyyal, Mirror, skuchain, symbiont

Academia, regulators, and not-for profits

Assocham India, Berkeley, Blockchain Research Institute, IC3 The Initiative For CryptoCurrencies & Contracts, MIT, NACHA, University of Oxford, Singularity University, Stevens Institute of Technology, The Alan Turing Institute, tmforum, University of Cambridge, University of Copenhagen

Blockchain tools and software providers

BIGCHAIN DB, Blockstream, bluzelle, consensys, Contextlabs, Digital Asset Holdings, Gem, guardtime, IBM Bluemix, Microsoft Azure, symbiont

Blockchain platforms and frameworks

Permissionless (public)

Bitcoin, ethereum, factom, stellar

Permissioned (private/hybrid)

Chain, corda, Hyperledger, MultiChain, MONAX, ripple

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Research methodology

HFS assessed 17 leading blockchain service providers based on detailed discussions with their leadership teams, inputs from their enterprise clients, and analysis of nearly 2,800 blockchain engagements across industries and across the globe. The research is also augmented with information from publicly available information sources.

Blockchain service providers were assessed on the following three main dimensions:

33.3%

Voice of the customer

- Clients in live production environment
- Client feedback (number of referencible clients, client satisfaction)

33.3%

Ability to execute

- Scale and growth (number of dedicated resources, YOY growth)
- Experience (number of engagements, practice start date)
- Solution breadth and depth (industries covered, average solution depth)
- Value chain coverage (advisory, prototype, pilot, production and system integration)

33.3%

Innovation

- Intellectual property (patents, tools, solutions accelerators)
- Ecosystem (experience with blockchain platforms, partnerships, consortium memberships)
- Investments (practice building, market development)

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Blockchain service providers covered in this report

IBM
accenture
Capgemini
Cognizant
CONDUENT
Deloitte.
TATA CONSULTANCY SERVICES
DXC.technology
epam
EY
HEXAWARE
NTT DATA
Infosys
KPMG
LTI Let's Solve
wipro
Mphasis The Next Applied

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Executive summary

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Executive summary (page 1 of 2)

- **We are hurtling toward a hyperconnected economy, and blockchain will provide the way to make it happen.** Ecosystems across organizations that service the specific needs of a customer are emerging. No single organization owns the entire customer experience and competitors and peers need to figure out how to collaborate. Blockchain in combination with other emerging technologies like IoT and artificial intelligence will provide the way to make it happen.
- **The blockchain "six-pack" is driving unprecedented interest from enterprises.** There are six built-in blockchain features with long-term potential for disruption when enterprises leverage them intelligently in relevant business use cases. The blockchain six-pack includes: 1. Distributed shared data over peer-to-peer (P2P) networks reduces single points of failure; 2. Consensus-driven trust cuts out the middle-man; 3. Immutable transactions ensure trust; 4. Hashing-based data ensures integrity and security; 5. Automated smart contracts promote touchless interactions across process chains; and 6. Permissioned and permissionless flavors give enterprise users flexibility. These six blockchain features are changing the way we think about business transactions, data storage, and even industry value chains and associated revenue models.
- **Blockchain runs the risk of becoming representative of the massive hype bubble we live in today: yet another technology hammer trying to find business problems to nail.** Despite the cryptocurrency bubble-burst in 2018, blockchain continues to be the one of the most hyped emerging technologies. HFS estimates blockchain's price-to-sales ratio (a useful ratio to understand the hype) to be 125+ compared to 2.3 for the S&P 500. It's becoming harder to see through the blockchain hype these days to examine the problems we're trying to solve with, create solutions, and contextualize them in real-world scenarios. Among the hype and mad use cases there is some gold, but it's getting lost in the noise. Blockchain is not the panacea for everything and we need to choose the use cases carefully. HFS created the "Blockchain Bullshit Buster"—a set of 10 questions to help you dig out the gold from the piles of…well, you know what!
- **Despite the hype, enterprise blockchain is coming out of the closet.** The market is witnessing an explosion in blockchain proofs-of-concept (PoC) and pilots, but in-production solutions represent less than 5% of overall blockchain engagements. However, we are starting to get a critical mass of "live blockchain" solutions. HFS' database of 2,800 enterprise blockchain engagements suggests nearly 135 in-production blockchain solutions. This is a 10X+ jump from last year! This is encouraging even though almost all "live engagements" represent "shadow" or "parallel" environments where the legacy solutions has not yet been replaced.

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Executive summary (page 2 of 2)

- **Real blockchain clients want real business impact.** Blockchain promises "creative destruction" through disintermediation, but that is a long-term vision. Enterprise blockchain clients are investing in blockchain solutions to get real business impact in the near term. Without a tangible ROI, blockchain engagements get stuck at the PoC/pilot stage. No-nonsense, real business cases are a must-have to drive blockchain beyond the PoC-fatigue that we are witnessing today.
- **Enterprise blockchain has broader implications than just financial services.** While financial services was the first mover from an enterprise blockchain adoption perspective, other industries have had good success with blockchain. Supply chain (provenance tracking) is emerging as one of the hottest use cases for blockchain besides financial services use cases such as trade finance, payments, and KYC (identity management).
- **Blockchain technology is not the biggest adoption issue but collaborating across organizations is.** Enterprise blockchain adoption is going through a "90-9-1" adoption challenge. Ninety percent of enterprises are still trying to internalize the concept of blockchain and its relevant impact on their business. Nine percent of enterprises that identified relevant use cases are struggling to determine the starting point for their PoCs and pilots. And the 1% of enterprises that have successful pilots are challenged with scalability to a production-grade environment.Some enterprises that identified relevant use cases are struggling to determine the starting point for their PoCs and pilots. The few enterprises that do have successful pilots are challenged with scalability to a production-grade environment. There is a multitude of challenges that the market needs to overcome (lack of awareness, solution immaturity, and lack of standards and regulations, among others), but one the biggest hurdles is to get organizations (that often directly compete with each other) to come together. Until organizations are convinced of the value proposition of the hyperconnected world and a sharing economy, blockchain will struggle to realize the value potential it promises.
- **Several service providers are doing commendable work to educate, experiment, and develop enterprise blockchain solutions.** HFS assessed 17 leading blockchain service providers based on detailed discussions with their leadership teams, inputs from their enterprise clients, and analysis of nearly 2,800 blockchain engagements across industries and across the globe. The HFS Top 10 enterprise blockchain service providers for 2018 are (in rank order): 1. IBM, 2. Accenture, 3. Deloitte, 4. EY, 5. Infosys, 6. Wipro, 7. NTT DATA, 8. Cognizant, 9. TCS, and 10. KPMG.

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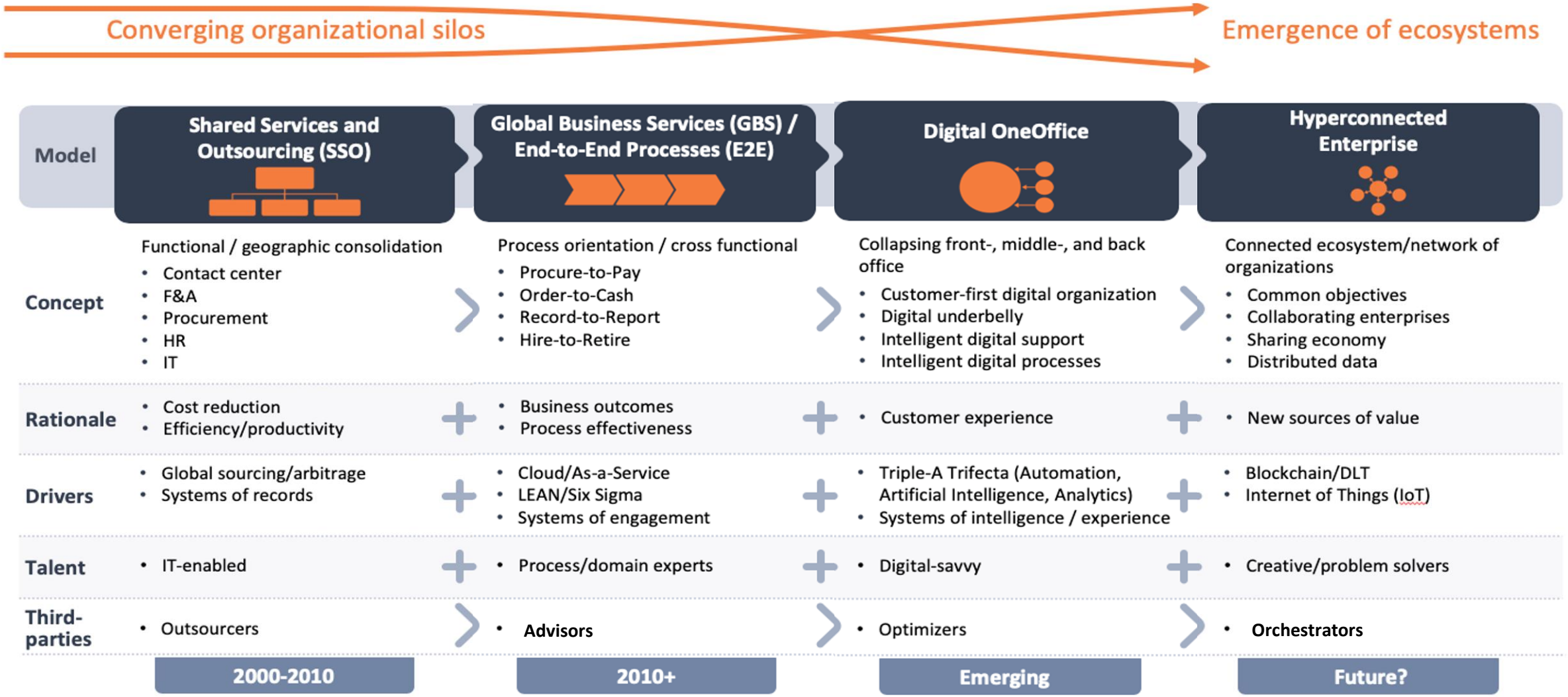
We are hurtling toward a hyperconnected economy, and blockchain will provide the way to make it happen



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The Blockchain “six-pack” is driving unprecedented interest from enterprises

Distributed shared data over peer-to-peer (P2P) network reduces single points of failure

Consensus driven trust cuts out the middle-man

Immutable transactions ensure trust

Security driven by hashing-based data

Smart contracts promote touchless interactions across process chains

Permissioned and permissionless flavors give enterprise users flexibility

Refer to “The Blockchain Reality Check: Where Are We and What Can We Expect in 2018?” for more details on the blockchain “six-pack”

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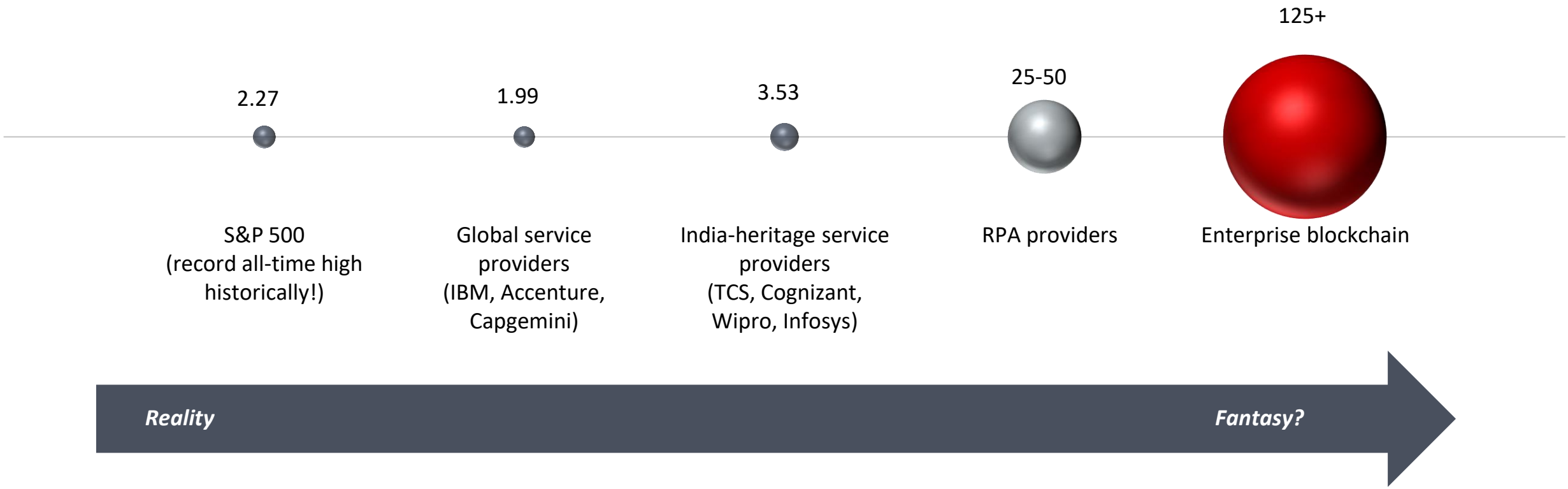
Blockchain continues to be the one of the most hyped emerging technologies

Price-to-sales (PSR) ratios as we enter 2019
(PSR = Market capitalization / revenues)



Sources of information

- *S&P 500 PSR: multipl.com*
- *Global and India Heritage Service Providers: Y Charts and financial reports*
- *RPA providers: HFS estimates*
- *Enterprise blockchain: Coinmarketcap.com and HFS estimates*

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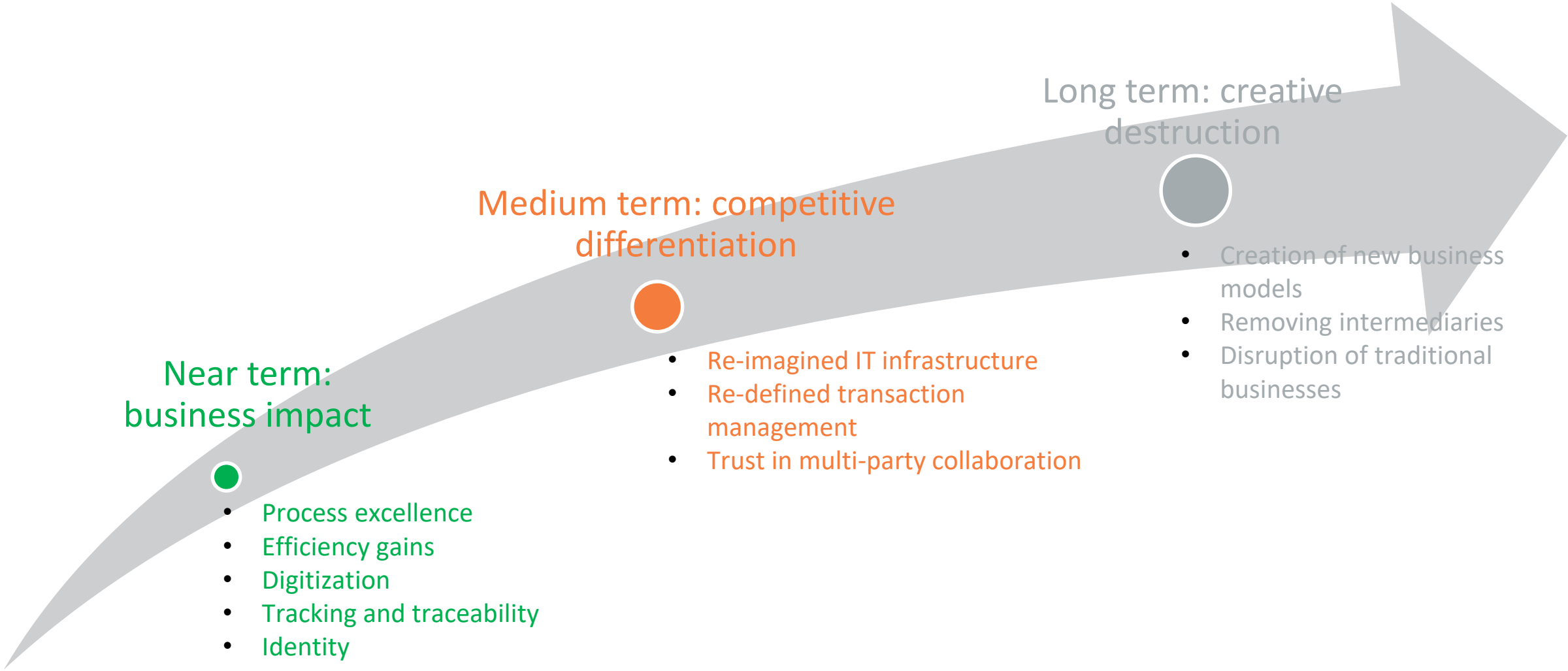
Blockchain promises “creative destruction” through disintermediation, but that is a long-term vision



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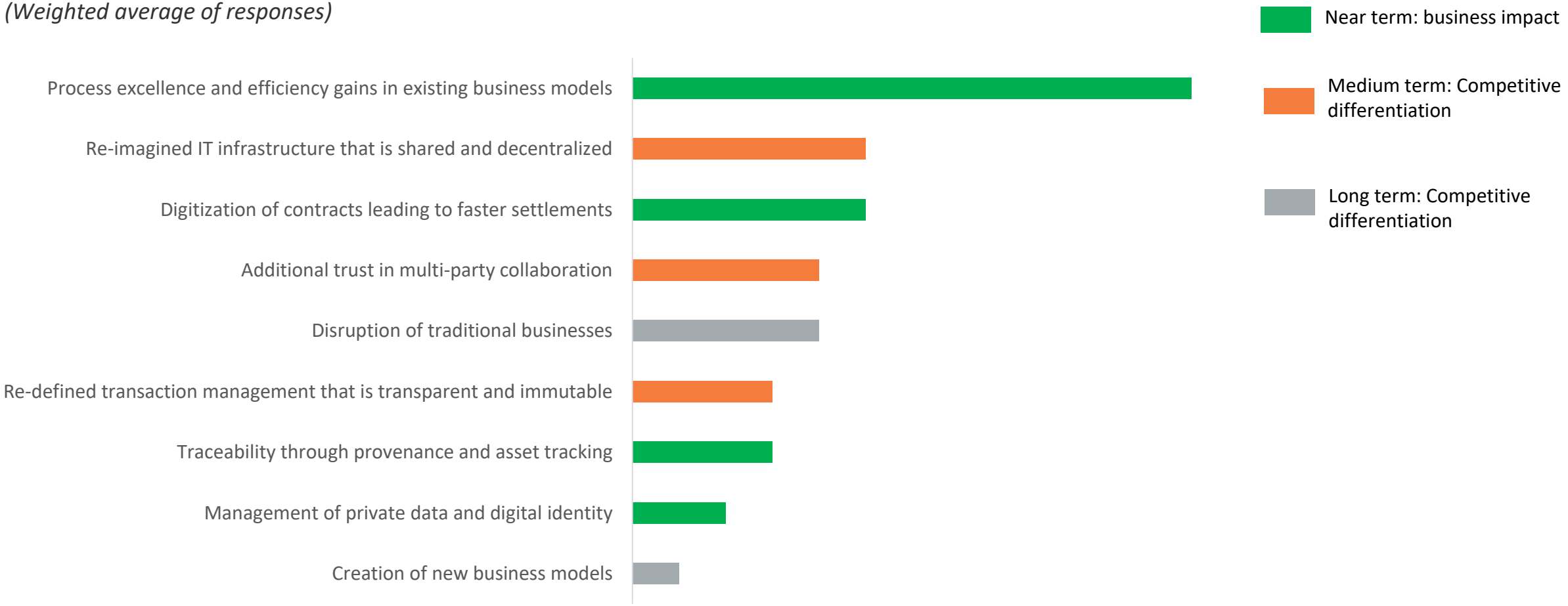
Despite all the promises, real clients need real impact in the near term

What benefits do you hope to achieve from the above woven blockchain solution?
(Weighted average of responses)



Based on ~20 interviews with real blockchain enterprise clients

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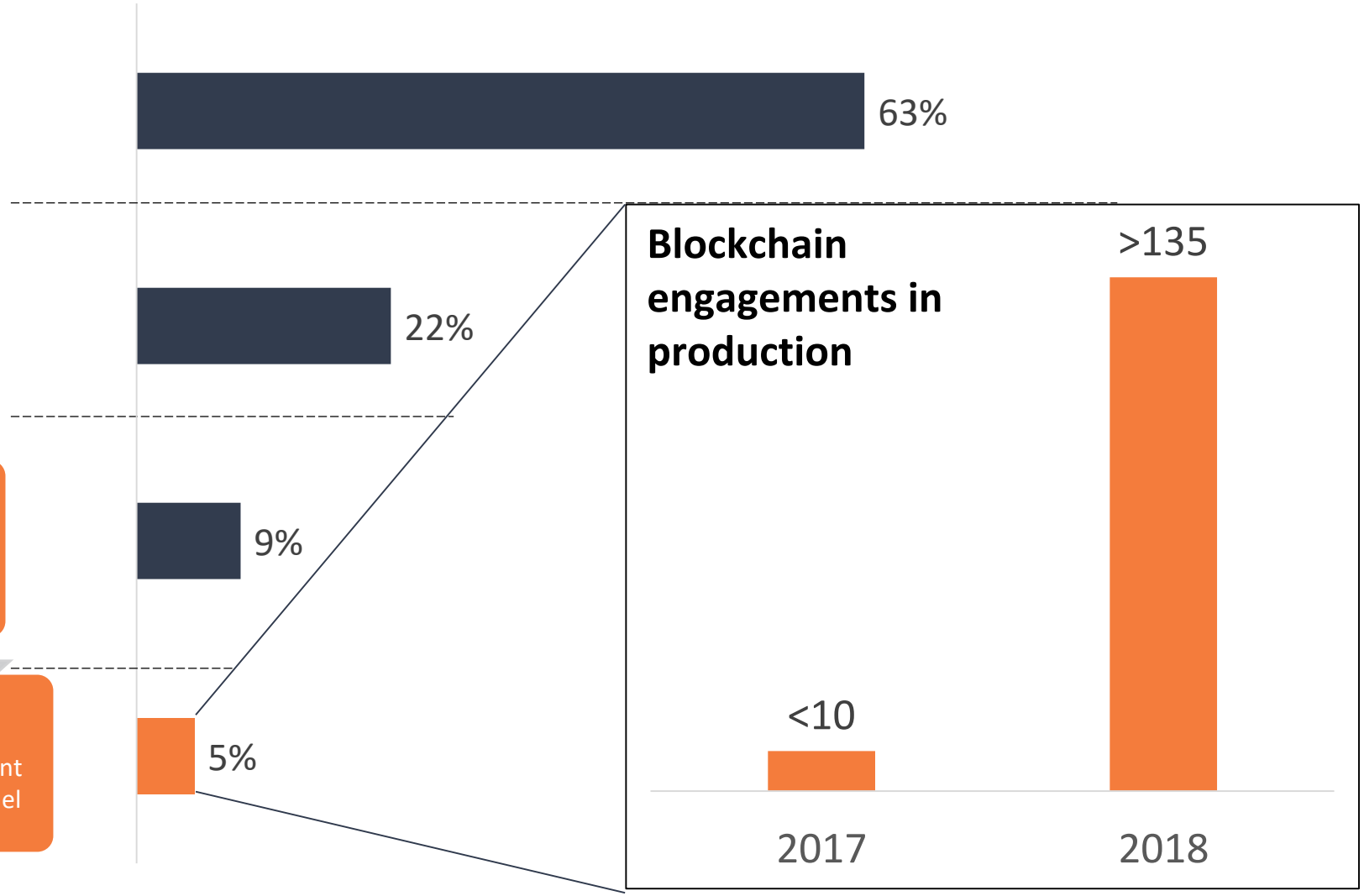
Enterprise blockchain is coming out of the closet

1. Advisory
Opportunity identification, business case development, platform selection, roadmap definition

2. Prototype
Proof of concept or proof of value

3. Pilot
Limited solution roll-out

4. Production
Solution implementation and management in live client environment (includes parallel runs to legacy solution)



Sample: ~2,800 blockchain engagements across 17 service providers

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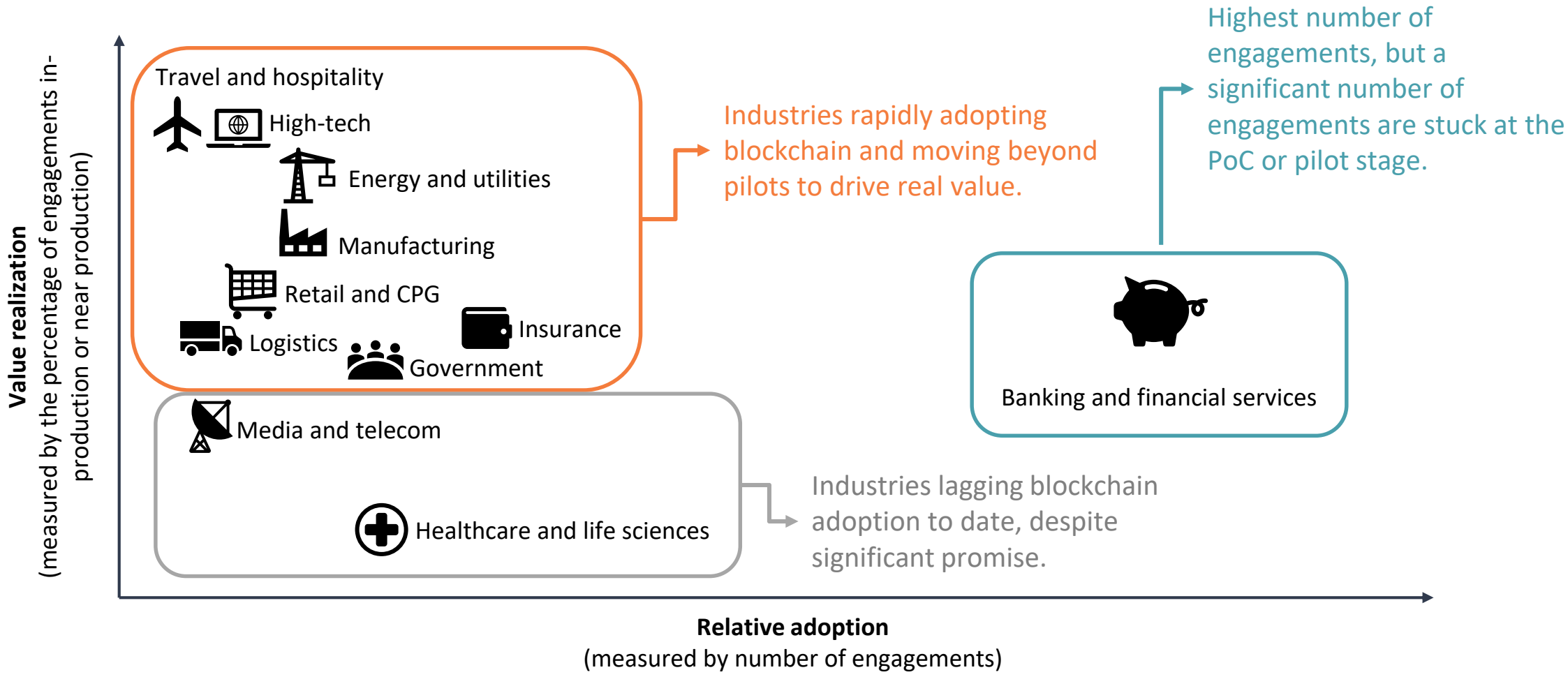
Enterprise blockchain has broader implications than just financial services



Sample: 550 blockchain engagements across 15 service providers

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Prominent blockchain use cases across industries

Banking and financial services

Manufacturing

Government and public sector

Energy and utilities

Sample: 550 blockchain engagements across 15 service providers

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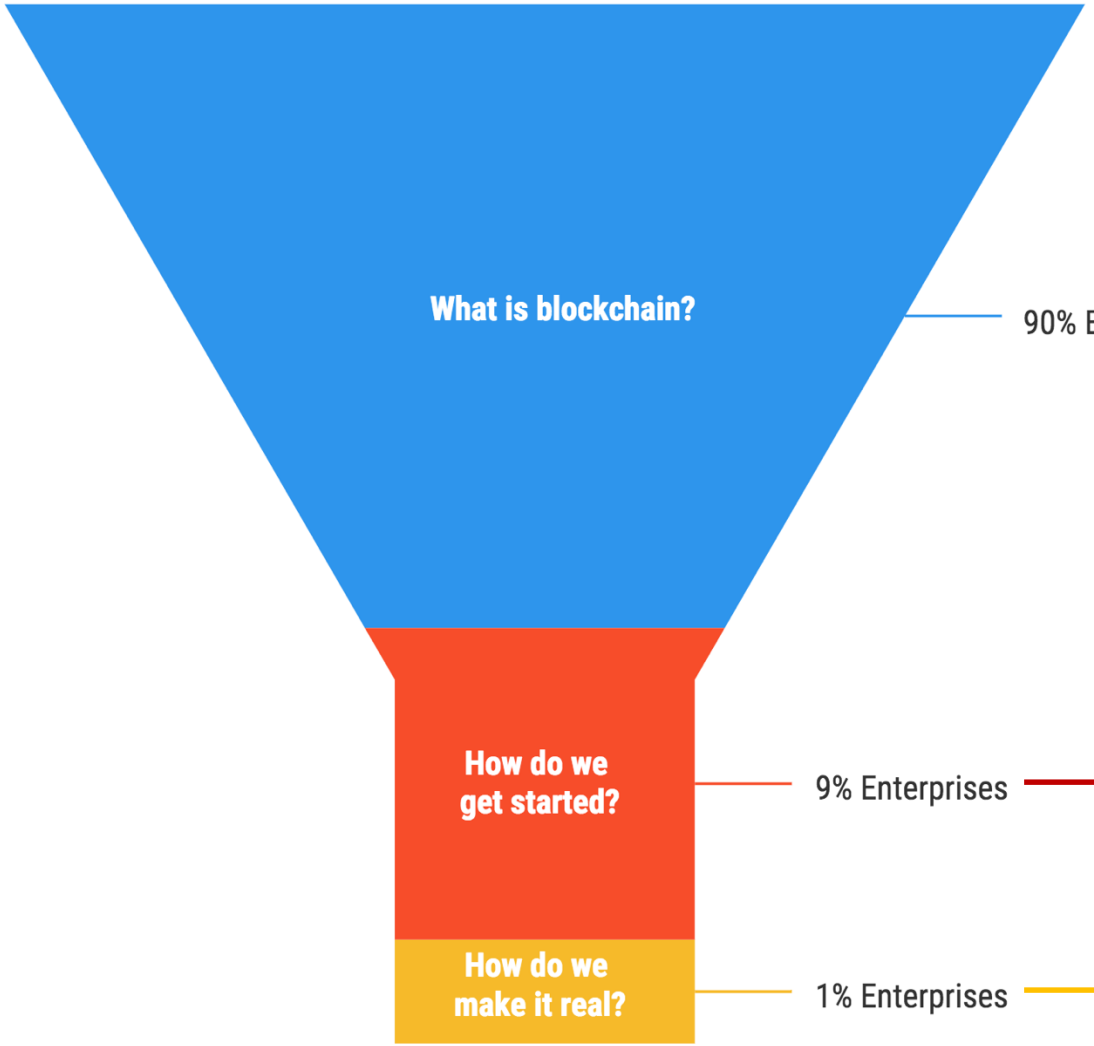
The “90-9-1” enterprise blockchain challenge



90% Enterprises

- *Overall nascence of blockchain solutions*
- *Lack of understanding in distributed ledger technologies and use cases*
- *Lack of maturity of blockchain platforms*
- *Lack of success stories in the market*
- *Internal stakeholder buy-in around business model changes and threat of disruption*

9% Enterprises

- *Consortia-related challenges (set-up, management, and governance)*
- *Difficulty in quantifying the benefits (ROI)*
- *Lack of clarity on technical architecture*
- *Permissioned versus permissionless decision*
- *Security and privacy concerns*

1% Enterprises

- *Uncertainty and lack of formal regulations*
- *Lack of talent availability*
- *Lack of market standards, inter-operability issues*
- *Integration issues with legacy*
- *Cultural change management (internal and external)*
- *Latency or throughput issues in production*
- *Service support for blockchain largely undefined*

Refer to “The Blockchain Reality Check: Where Are We and What Can We Expect in 2018?” for more details

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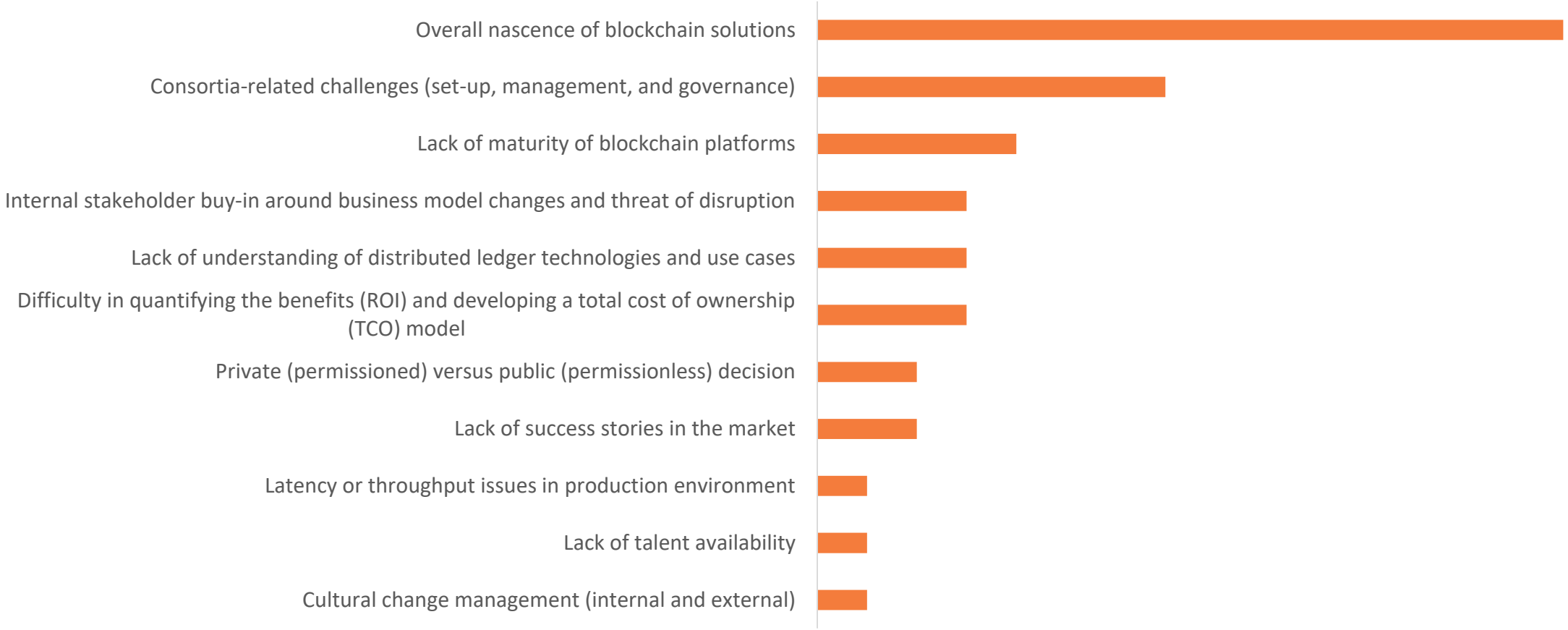
The blockchain market needs a lot more investment in education

What were the key challenges that you faced in adopting blockchain?
(Weighted average of responses)



Based on ~20 interviews with real blockchain enterprise clients

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Introducing the HFS BBB: Blockchain Bullshit Buster

Blockchain BS busters	Your response?			
	No	Not really	Probably	Yes
Principle 1: Replacing ledgers is pointless	Stop! Blockchain is not for you.	Wait! Do you really need blockchain?	Caution! Get some professional help	Go! You've hit blockchain gold
Principle 2: The realpolitik chestnut				
Principle 3: Change for the sake of change				
Principle 4: Blindly quoting the network effect				
Principle 5: Garbage in, garbage out				
Principle 6: Stone carvings				
Principle 7: Speed of light				
Principle 8: The privacy conundrum				
Principle 9: Law ambiguity				
Principle 10: The good old cost-benefit equation				

Refer to "Is blockchain a giant digital joke?" for more details

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HFS Top 10 enterprise blockchain service providers, 2018

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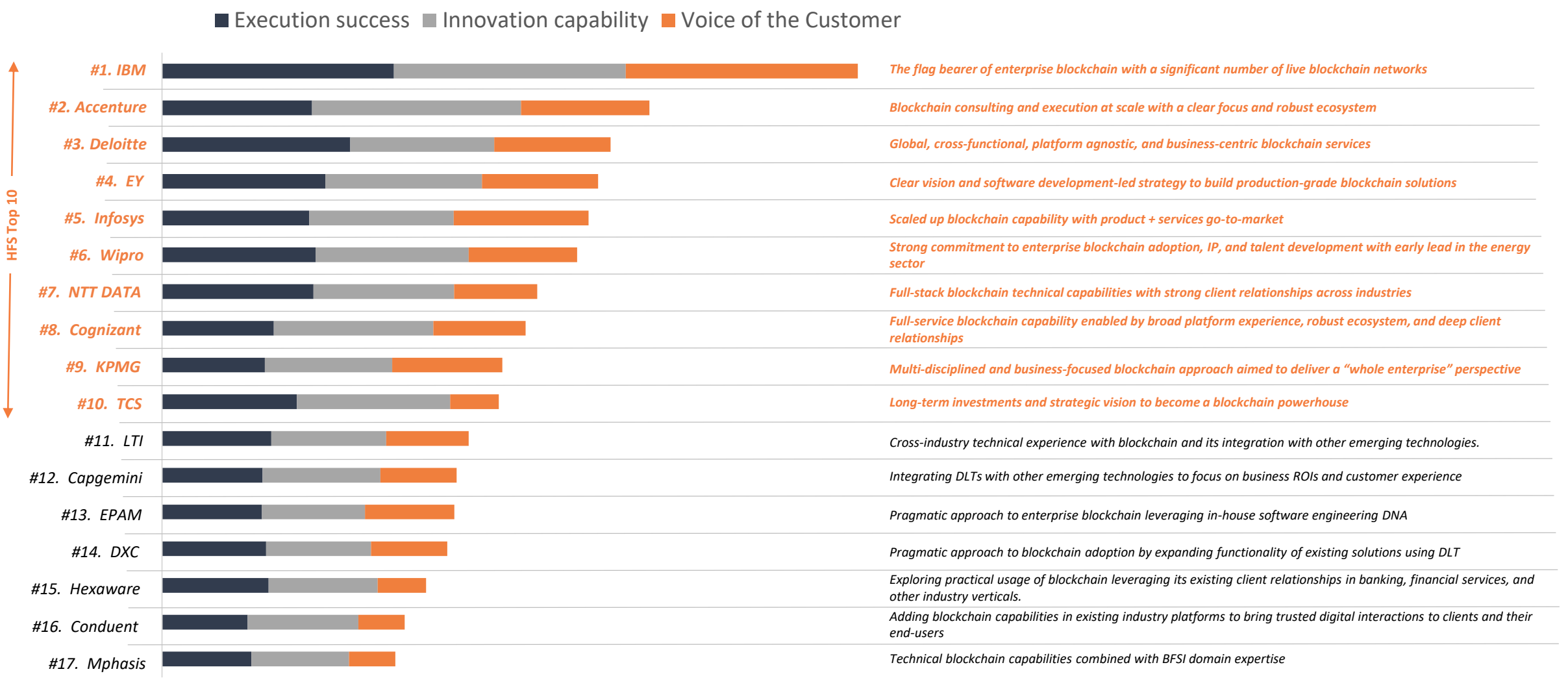
HFS Top 10 enterprise blockchain service providers, 2018



Sample: Based on detailed discussions with their leadership teams, inputs from their enterprise clients, and analysis of nearly 2,800 blockchain engagements across industries and across the globe
Source: HFS Research 2018

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HFS top five enterprise blockchain service providers by individual assessment dimensions

HFS TOP 10

Rank	Ability to execute				Innovation capability			Voice of the customer		Overall ranking
	Scale and growth	Experience	Solution breadth and depth	Value chain coverage	Intellectual property	Ecosystem	Investments	Clients in production	Client feedback	
#1	IBM	IBM	NTT DATA	IBM	IBM	Deloitte.	IBM	IBM	Infosys	IBM
#2	Deloitte.	Deloitte.	IBM	NTT DATA	accenture	IBM	accenture	accenture	Deloitte.	accenture
#3	EY	Infosys	wipro	wipro	Cognizant	accenture	EY	EY	IBM	Deloitte.
#4	Infosys	accenture	EY	EY	TATA CONSULTANCY SERVICES	Cognizant	Deloitte.	Infosys	accenture	EY
#5	wipro	TATA CONSULTANCY SERVICES	TATA CONSULTANCY SERVICES	DXC.technology	wipro	NTT DATA	Infosys	NTT DATA	KPMG	Infosys

Sample: Based on detailed discussions with their leadership teams, inputs from their enterprise clients, as well as analysis of nearly 2,800 blockchain engagements across industries and across the globe
Source: HFS Research 2018

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Enterprise blockchain service provider profiles

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NTT DATA: Full-stack blockchain technical capabilities with strong client relationships across industries

TOP 10 HFS

Dimension	
HFS Top 10 position	# 7
Ability to execute	
Scale	# 11
Experience	# 6
Solution maturity	# 1
Value chain coverage	# 2
Innovation capability	
Intellectual property	# 8
Ecosystem	# 5
Investments	# 6
Voice of the customer	
Clients in production	# 5
Client feedback	# 13

Strengths

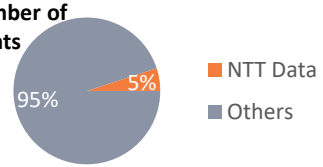
- **Robust investments**. Blockchain represents the biggest tech initiative within NTT DATA TIG with the blockchain COE spread across 20 countries globally.
- **Strong foothold in Japan and Europe across public and private sector.** Multiple large blockchain initiatives in Japan (e.g., Trade Finance with a consortia of 13 large banks, insurers, and traders), Spain (e.g., government backed Alastria consortium on digital identity), Italy (e.g., ABI Lab for interbank reconciliations) and the UK (global payments on Ripple).
- **Investments in BCOSE (Blockchain One Stop Environment)** platform that enables sharing of blockchain POCs across 20 countries, provides a use case catalog and other basic and advanced level educational assets that enable clients to cross the hurdle from POCs to commercial and in-production environments.
- **Deep experience across multiple private and public blockchain platforms** (e.g., Hyperledger Fabric, Ethereum, Corda) to choose based on client and use case requirements backed by multiple in-house solution accelerators.

Development opportunities

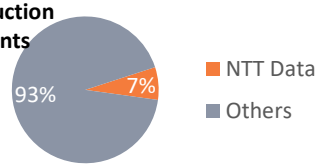
- **Consortium driven solutions.** NTT DATA has an opportunity to define consortium-based approach in developing solutions across industries and geographies with a focused GTM strategy and investments.
- **Strategic business advisory.** NTT DATA represents a one-stop-shop for all blockchain-related technical requirements but there is an opportunity to further expand its scale and presence for strategic consulting.

Market share *(HFS estimates based on ~2800 blockchain engagements incl. 135+ in-production solutions)*

% total number of engagements



% in-production engagements



Clients in production (not exhaustive)

- UK bank
- Real estate company
- Utility company

Main use cases

- Trade finance and payments
- Claims processing
- Asset management
- Provenance tracking
- Procurement and sourcing
- Carbon accounting
- Smart grids
- Health records
- Contract management
- KYC

Blockchain practice overview

- Cross-company blockchain initiative established in 2017. Blockchain initiative started in 2015 in Italy and Japan HQ Financial Sector.
- Dedicated blockchain team of 75+ people. 150+ blockchain proficient resources across 20 countries.
- 140+ engagements with clients such as ABI Lab, Cosenza Municipality, Hakuhodo, Repsol, Densai.net, Valencia Port, MUFG, and LIFULL.

Blockchain platform and technology capability

- Blockchain platform expertise includes Ethereum, Hyperledger Fabric, R3 Corda, Ripple, Quorum, Multichain, BigChain DB, Hyperledger Indy, Parity, Hyperledger Sawtooth.
- Blockchain platforms such as 4Trace (traceability platform) and blockchain-as-a-service (under development).
- Solution accelerators such as digital identity and asset digitization frameworks, Khipus and everis ID, template and accelerator for rapid application development, ready development environments templates, utilities to accelerate smart contract development.

Blockchain ecosystem

- Member of both Enterprise Ethereum Alliance and Hyperledger Project.
- **Business and solution partners**: Skuchain, NTT Laboratory, R3, ALASTRIA, Ripple, SAP, Microsoft, IoBuilders, Uport, W3C, DIF, Evernym, Consensys.
- **Partnerships with universities:** Comillas ICAI-ICADE University, Politecnico di Milano University, Oracle.

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About HFS

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HFS Research author

Saurabh Gupta
Chief Strategy Officer | HFS Research

Saurabh oversees HFS' global research function managing the global team of analysts across US, Europe, and Asia-Pac. He works closely with the CEO to set the strategic research focus and agenda for HFS Research, understanding and predicting the needs of the industry and ensuring that HFS maintains its position as the strongest impact thought leader for business operations and services research.

As an analyst, Saurabh leads our coverage for horizon 3 change agents such as blockchain, business services (such as finance & accounting and supply chain) as well as overarching and cross-cutting themes under the OneOffice concept like digital change management

He is a recognized thought leader and passionate problem solver in the global services industry. With 15+ years of experience across client, provider, advisory, and analyst roles, he brings a uniquely realistic and wide-ranging perspective to our industry's challenges and opportunities. Before joining HFS, Saurabh led strategy for Genpact's CFO and transformation services, helped shape the Business Process Services (BPS) strategy for AbbVie, managed Everest Group's global BPS practice, and worked as a techno-functional consultant at Infosys.

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Mayank Madhur
Knowledge Analyst| HFS Research

Mayank Madhur is a Knowledge Analyst at HFS Research, supporting different practice leads in area of Industry Research, IoT and Blockchain by working on secondary research, data analysis, PoV's and research writing.

Mayank has over 3.5 years of research, pre-sales and software development experience. Prior to HFS he was part of business strategy and pre sales in Altimetrik supporting vertical heads, sales and marketing team. Before it in his HCL Tech role, he worked in the delivery team of a large medical device client for R&D project.

He holds blockchain certification by IIT & IBM on "Blockchain Architecture Design and Use Cases". His other certification include certification on Google analytics, Scrum, Six Sigma etc. to name a few. Mayank holds Master's in Business Administration from Birla Institute of Technology and Science College, Pilani (BITS, Pilani University) and a Bachelor of Engineering in Electrical and Electronics from Jawaharlal Nehru National College of Engineering (Visvesvaraya Technological University), Karnataka.

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HFS Research: Defining future business operations

- The HFS mission is to provide visionary insight into major innovations impacting business operations, including: automation, artificial intelligence, blockchain, Internet of things, digital business models, and smart analytics.

- HFS defines and visualizes the future of business operations across key industries with its OneOffice™ Framework.

- HFS influences the strategies of enterprise customers, to help them develop OneOffice backbones to be competitive and to partner with capable services providers, technology suppliers, and third-party advisors.

- Read more about HFS and our initiatives on our website.

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Defining future business operations
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