Blockchain-Based Transformation: A Gartner Trend Insight Report

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While blockchain holds long-term promise in transforming business and society, there is little evidence in short-term reality. This Special Report highlights the scope of this transformation, how it impacts various industries, and the current state and evolution of these technologies.

Opportunities and Challenges

- Blockchain technologies offer new ways to exchange value, represent digital assets and implement trust mechanisms, but successful enterprise production examples remain rare.
- Technology leaders are intrigued by the capabilities of blockchain, but they are unclear exactly where business value can be achieved in the enterprise context.
- Most enterprise blockchain experiments are an attempt to improve today's business process, but in most of those cases, blockchain is no better than proven enterprise technologies. These centralized renovations distract enterprises from other innovative possibilities offered by blockchain.
- The evolution of blockchain is rapid, but significant business challenges and technology gaps remain before blockchain is fully ready for widespread use.

What You Need to Know

Enterprise architecture (EA) and technology innovation leaders, CIOs, and technology and service providers (TSPs) seeking to exploit blockchain should know the following.

- Blockchain technologies offer a set of capabilities that provide for new business and computing paradigms. Exploiting blockchain will demand that enterprises be willing to embrace decentralization in their business models and processes. It is not straightforward.
- Blockchain technologies should not be treated as just another arrow in your quiver to solve enterprise efficiency issues. Such an approach will prove costly and have a high likelihood of failure. Focus on reimagining by using design thinking, rather than merely replatforming.

- Understand that today's technology offerings on blockchain are nascent and immature. It is crucial to experiment and explore. Focus on the business problem — not the technology solution — and avoid vendor lock-in, as you will need to pivot from today's technology within the next two years.

Insight From the Analyst

Blockchain — Early Stages of Exploration and Use

 Rajesh Kandaswamy, Research Director

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Blockchain has captured the interest of leaders across the spectrum as a technology that can radically transform business and society. But for most, the technology remains an enigma, and it is hard to find real enterprise projects where this promise has turned into reality.

The technology is intriguing, but it is not obvious how and where it will offer better value than current enterprise technologies. Lack of initial success, paired with the radical nature that this technology changes, makes it difficult for enterprises to know how to apply this technology to meet new business challenges. Furthermore, the approach in many industries is to work within or from the perspective of consortia (formal or informal). This approach requires significant governance and consideration of competing interests. Collaborative integration of data, financial returns and business models are neither straightforward, fully understood nor totally acceptable. Reconciling competing interests in a sustainable fashion may well determine the longer-term survivability of the technology and its promises. In addition, the technology does not appear to be fully ready to meet the rigors of enterprise use and, thence, large-scale deployment. Wrestling with the strategic decisions on open source, vendor centralization and less than cohesive regulatory positions is causing further hesitation for any large investment.

Hence, many enterprises have remained curious or have done only early experiments. There is a "fear of missing out" that is prevalent in many enterprises. And, CEOs want to be seen to be doing something innovative. Hence, our first Special Report on blockchain in 2017 (see "Practical Blockchain: A Gartner Trend Insight Report") highlighted multiple use case examples and provided guidance for executives on how to start to address blockchain initiatives. This second special report is a continuation of that research and puts early forays into blockchain into a broader context. Gartner's Blockchain Center of Excellence (COE) will further this research in 2018, and we welcome you to subscribe to Gartner's key initiative on blockchain to keep posted on new research.

We hope you find our collective ideas, thoughts, insights and recommendations useful.

Kind regards,

Rajesh Kandaswamy and David Furlonger

Executive Overview

Definition

Blockchain technologies offer a new paradigm in how businesses and individuals interact and transact, offering the promise of transforming business and society. From its origins in bitcoin, blockchain has evolved to become a collection of technologies that offers the potential of value generation across all industries. Its capabilities include the ability to:

- Represent assets digitally
- Enable new forms of value exchanges
- Interact/transact without a central authority or a middleman
- Ensure distributed copies of identical records that are immutable and traceable
- Enable management, governance and execution of partnerships and contracts across entities

But, many aspects of blockchain remain a work in progress, and innovations and new solutions continue to rapidly emerge.

At the core of blockchain is:

> An expanding list of cryptographically signed, irrevocable transactional records shared by all participants in a network. Each record contains a time stamp and reference links to previous transactions. With this information, anyone with access rights can trace back a transactional event, at any point in its history, belonging to any participant.

We provide this definition (from "Hype Cycle for Blockchain Technologies, 2017") to promote clarity. Our client interactions reinforce the need for executives to communicate the opportunities and challenges of blockchain from a uniform and standard starting point. This is important for two reasons:

- First, multiple blockchain terms are conflated and misused, thereby adding to market confusion and potentially generating incorrect assumptions about what these technologies can and cannot do, which can lead to ill-judged investments.

- Second, blockchain technology components and, particularly, the business outcomes they enable, are extremely different than traditional terms and conditions of doing business.

Clarifying definitions and terminology provides a more stable framework from which to make radical change, for example, in terms of implementing smart contracts or launching businesses based on decentralized business models (see Figure 1).

Figure 1. Clarifying Blockchain Concepts

Blockchain Concepts



Operation	Centralized	Decentralized	Distributed
Governance/ Business Model	Centrally Controlled	Community Controlled	Autonomous
Stability/Resilience	Unstable	Bounded Stability	Stable
Scalability	Large Throughput/ Small Number of Nodes	Small Throughput/Medium Number of Nodes	Infinite
Speed of Enterprise Development	Fast	Medium	Very Slow
Architecture Evolution/Diversity	Permissioned/Private	Hybrid	Permissionless/Public
Tokenization	No	Possibly	Yes
Trust Control	High Traditional/Low Algorithmic	Medium Traditional/ Medium Algorithmic	Low Traditional/High Algorithmic

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Source: Gartner (March 2018)

As shown in Figure 1, a variety of architectures is possible with different governance, business model and operational implications.

Our research, interactions and surveys have consistently shown that leaders are intrigued by this technology, and want to learn and experiment with it, but adoption is sparse. The Gartner 2018 CIO Survey shows that while two-thirds of CIOs have some interest in blockchain, only 1% have implemented, or invested in, blockchain, and 22% are in the short-/medium-term planning or experimenting with stage.

As technology and business executives embark on exploring blockchain possibilities, most are focusing on this technology to improve current business processes, and secondarily on records

management. While these two areas are important, we believe that investigating the possibilities of digital assets and the new business and computing paradigms of decentralization offered by blockchain holds significant potential. A focus on replatforming existing business processes and data management leads us to hypothesize that:

> Through 2022, only 10% of enterprises will achieve any radical transformation with the use of blockchain technologies.

But, simultaneously, innovative new companies will start exploiting blockchain technologies to achieve business success. This means that:

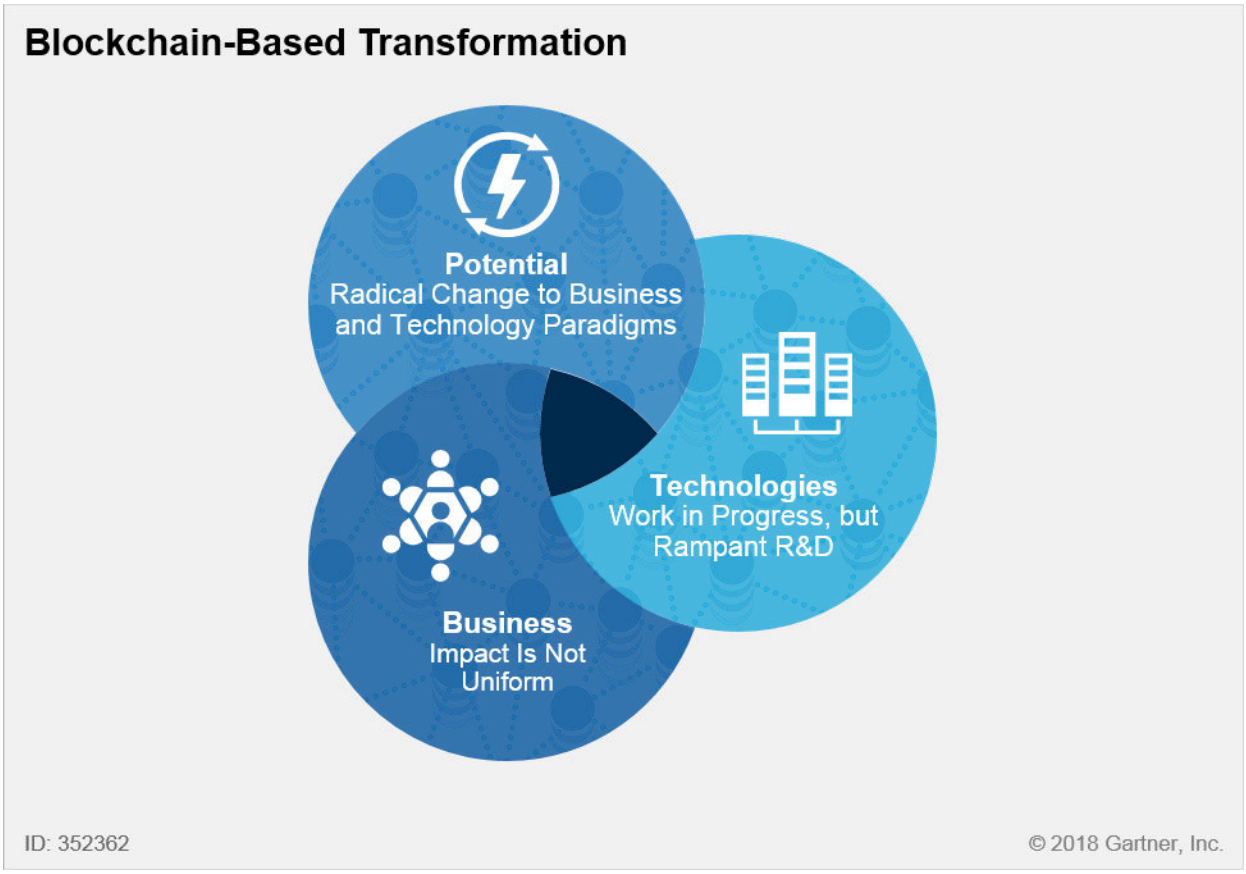
> By 2022, at least one innovative business built on blockchain technology will be worth $10 billion.

In the long run, as the technologies matures and more robust business models emerge to exploit this technology, business value will accrue across all industries and government agencies. Consequently:

> By 2026, the business value added by blockchain will grow to slightly over $360 billion, then surge to more than $3.1 trillion by 2030.

Figure 2 shows the categories of the blockchain-based transformation addressed in this Special Report.

Figure 2. Blockchain-Based Transformation



Source: Gartner (March 2018)

Our focus with this second report is to help EA and technology innovation leaders, CIOs, and TSPs understand what has changed and to assess the current market state to better prepare their enterprises as the blockchain landscape matures. This Special Report comprises the following three sections of related research notes:

- Potential — Blockchain Technologies Offer a Radical Change in Computing and Business Paradigms
- Business — Blockchain's Impact on Industries is Not Uniform, and There Are Interdependencies
- Technology — Blockchain Technologies Are a Work in Progress, but Research and Development Is Rampant

Each of the sections below have links to research notes that comprise this Special Report and we invite you to access them.

Research Highlights

Potential — Blockchain Technologies Offer a Radical Change in Computing and Business Paradigms

Blockchain technologies provide new ways for value exchange, represent assets and implement trust mechanisms. These technologies, working in conjunction, will serve as the foundation for new business and economic models impacting major swaths of business and society We refer to this as the "programmable economy" (see "The Disruptive Potential of Blockchain Technology").

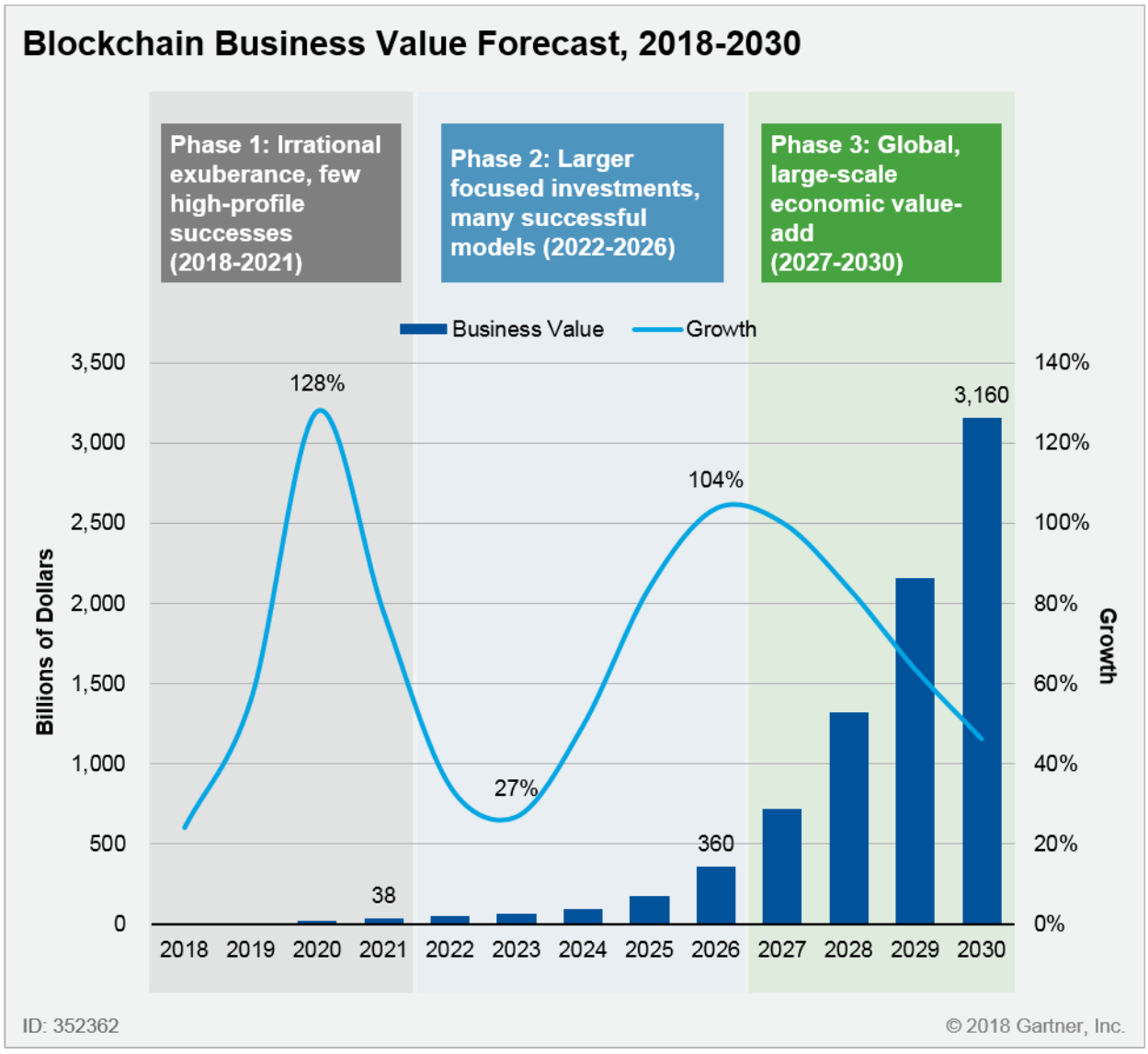
However, fully leveraging blockchain requires adapting and transforming core models, processes and systems. These systems are literally the last place a business wants change to occur, because of the large risk to operations. Addressing these business model and business value questions, preparing to adapt business processes, and implementing the technology will likely cause blockchain to take a decade to become significant in business transactions.

Blockchain was the No. 1 search term on the Gartner research portal in 2017.

Gartner forecasts that the business value from blockchain will reach $360 billion by 2026, surging to $3.1 trillion by 2030.

Figure 3 shows our model of blockchain business value creation. This model is based on the concept of economic value-add, assigned across countries, geographic regions, vertical industry and time (see "Forecast: Blockchain Business Value, Worldwide, 2017-2030"). The current phase of irrational exuberance highlights that adoption is light (through 2021), where enterprises are exploring how to achieve the most benefit. This initial phase will be followed by targeted large initiatives and many successful business models (2022 through 2026) in the second phase. However, Phase 3 will see global, large-scale value-add, and by 2030, blockchain technologies will deliver $3 trillion of value worldwide, through a combination of cost reduction and revenue gains. This forecast is dynamic, and Gartner will monitor market growth and adjust as necessary.

Figure 3. Blockchain Business Value Forecast Highlights Three Phases of Development



Source: Gartner (March 2018)

The research in this section focuses in detail on the transformative aspects of blockchain.

Related Research

"Digital Disruption Profile: Blockchain's Radical Promise Spans Business and Society" — Blockchain technologies offer new mechanisms to establish and manage trust (regardless of status) across entities and, thus, can be impactful in areas that involve consumers, businesses, governments and things. While the scope of impact spans technology, business, industry and society, blockchain is still a promise, and successful implementations are very rare. Blockchain technology needs to mature and harden, along with viable business models for the technology, for it

to fulfill its potential. Blockchain is at DD1, the initial level on Gartner's Digital Disruption Scale, and it is expected to enter DD3 by 2023. Blockchain's full potential to reach DD5 will take until 2030, based on technology maturity and market adoption.

"Top 10 Strategic Technology Trends for 2018: Blockchain" — Blockchain promises to reshape industries by enabling trust, providing transparency and reducing friction across business ecosystems. Most of the potential business use cases of blockchain are yet to be proven; however, interest in using the technology is growing.

"Blockchain Status 2018: Market Adoption Reality" — The 2018 Gartner CIO Survey provides factual evidence about the massively hyped state of blockchain adoption and deployment. EA and technology innovation leaders should use these results to temper solution provider enthusiasm and manage business expectations.

"Pay Attention to These 4 Types of Blockchain Business Initiatives" — The four types of blockchain business initiatives (blockchain disruptor, digital asset market, efficiency play and record keeper) meet the needs of most businesses. These initiatives can originate from any type of organization, including a new business startup, a consortium, or a project run by one enterprise or government entity. This research provides enterprises with a mechanism to uncover areas in which they can exploit blockchain.

"Blockchain Trials Across Industries Show a Market in Transition" — The widespread interest in blockchain has led to a proliferation of testing its capabilities via consultancy engagements in diverse geographies and sectors. Many organizations are now exploring whether blockchain technology can be used to record financial transactions, the movement of assets or data in an immutable form. In Gartner's discussions with blockchain consultants, we analyzed the results of 398 blockchain engagements, providing insight into this emerging technology. By exploring the details that these results provide, EA and technology innovation leaders can understand the current state of blockchain use. As a result, they can better refine the timing of their own efforts when attempting to explore blockchain use cases.

"Innovation Insight for Blockchain in Emerging Markets" — The most compelling argument in blockchain's favor is the reality of emerging market economies — the challenging scenarios in many national registries, real-estate transactions and so on. The good news is that blockchain is gaining mind share with CIOs in these markets and worldwide, which is always a good starting point to persuade business management.

"Maverick* Research: How Blockchain Undermines the Value Proposition of Platform Businesses" — Blockchain technologies provide mechanisms to undercut the primary competitive drivers of platform-based businesses. Over time, they invalidate the platform business model itself and will force CIOs to prepare for industry decentralization and plan to turn blockchain technologies and decentralization to their advantage.

"The Physiology of Money: When Behavioral Economics Meets Digital Business Ecosystems" — Physiology focuses on providing data and information from which outcomes can be predicted and actions established. In the increasingly complex and connected digital environments, the ability to

identify outcomes and set out appropriate actions will define successful leaders and businesses. Consequently, Gartner has sought to set this foundational research on money within the framework of a matured scientific framework that is physiology. As many of our bank clients move to become true digital businesses, Gartner has adapted this approach to physiology to highlight the interactions that will shape and meld money in the future — the physiology of money.

"Your Digital Transformation Depends on Psychology" — An important contribution of analyzing payment habits is the concept of control. Customers' perceptions of control are fundamental factors in their decision making. This research will raise awareness of what services are needed to ensure customers are in control and can manage the transition to digital financial services.

Business — Blockchain's Impact on Industries Is Not Uniform, and There Are Interdependencies

Blockchain, with its ability to store value, mitigate fraud and make payments, was considered a natural fit for financial services. But, financial services will prove to be neither the sole beneficiary nor even the first one. Blockchain's capabilities will impact all industries and government agencies, which are taking notice. CIOs from all industries and governments expressed interest in blockchain, but their interest differs in terms of investigative maturity.

While our research and client interactions indicate that blockchain applicability is specific to each industry and business process context, interdependencies are apparent (for example, between government and healthcare, or government and education, or financial services and supply chain).

This section extends our research on the impact of blockchain by looking at different industry areas and assessing market trends.

Related Research

"How Investment Management CIOs Can Identify Practical Blockchain Use Cases" — Gartner believes most investment management CIOs are being realistic in not letting themselves get carried away by the hype surrounding blockchain. But, business pressures mean that investment management CIOs have to explore any possible source of competitive advantage, however embryonic it may be. This makes identifying the right use case the most important step in understanding the benefits of adoption and building an internal *business* case for the board to consider investing in this technology. CIOs can use this research to cut through the hype and focus on use cases for this emerging technology that align with their firms' strategic objectives.

"Banks Are Still on the Journey Toward Public Blockchains" — In mid-2017, Gartner conducted a survey on digital business in banking to assess executives' views across a number of topics, including their perception of public blockchain. Most use cases being evaluated have been in the wholesale banking or the bank-to-bank relationship space, such as trade finance, correspondent banking, syndicated loans, know your customer (KYC) and bonds. Thus, retail banks have been laggards compared with commercial banks in the blockchain space.

"Blockchain Fundamentals for Supply Chain: A Guide to the New Boardroom Buzzword" — Few at the C-level have a deep understanding of what blockchain is and how it may impact supply chains

in the years ahead. Most supply chain executives struggle to understand what blockchain is, the capabilities it offers and what these might mean to their business. In addition, there is confusion over how to best navigate through the hype to determine what is real and possible, and what is not. Most importantly, supply chain executives struggle to determine when to invest in resources and the risks of doing so. This research note explains the practical realities from an operational supply chain perspective and aims to help CSCOs and other leaders to decipher what blockchain is all about.

"Follow Four Evaluation Steps to Decide If Blockchain Is Right for Your Supply Chain" — Despite hype and optimistic messaging, the early use cases for blockchain that apply in a fintech environment cannot easily be transposed in the context of more traditional manufacturing and distribution companies. There are inherently many more risk and process variables to assess, as well as a much larger pool of potential trading partners. The reality is that despite much potential, there are very few viable use cases available across an operational supply chain for a blockchain deployment. However, companies need to proceed steadily in understanding the major additional process and business factors that come into play when wanting to apply blockchain across a supply chain. Supply chain leaders should evaluate blockchain's real purpose and thoroughly assess its evaluation criteria before opening wider discussions with partners. Eventually, use cases in visibility and traceability, efficiency play and anti-counterfeits are possible.

"Supply Chains Are Racing to Understand Blockchain — What Chief Supply Chain Officers Need to Know" — Visionary chief supply chain officers (CSCOs) see the possibility of reinventing the very nature of commercial activity by removing unnecessary intermediaries and enabling more secure yet dynamic processes across expanding supply chain ecosystems of trading partners. However, reality and hype are a long way from convergence.

"Supply Chain Brief: Industry Consortia to Drive Education and Standardization of Blockchain in Transportation" — As the hype around blockchain grows, industry alliances are forming to create standards and educate users. Transportation needs standardization and collaboration in order for blockchain to be effective and to become widely adopted.

"Promising, Practical Blockchain Use Cases for Governments" — Governments have shown enthusiastic and diverse interest in blockchain. Some of the most popular and compelling blockchain use cases involve hard-to-solve problems that, while they may rely on blockchain, require many other technologies, as well as cultural and organizational changes to solve. Examples include voting, connected identities, self-sovereign wallets, cross-entity transaction efficiencies, and complex data and records.

"What Retail CIOs Need to Know About Blockchain" — The potential may exist to tap the decentralized nature of blockchains to take back control from the banks, financial institutions and card schemes — the traditional gatekeepers of financial transactions — and minimize or eliminate merchant interchange fees. Online retailers (such as Amazon, Overstock and Zappos), as well as mainstream traditional retailers (such as Walmart, Target, CVS, Kmart and Sears) began accommodating bitcoin payments (mainly through intermediary exchange for equivalent cash value versus direct acceptance) since around 2014.

"What Healthcare and Life Sciences CIOs Need to Know About Blockchain" — Blockchain technologies are extremely hyped and are gaining visibility as a potential means for linking complex healthcare and life science information. This research articulates the potential for the technology, investigates areas that will most likely be impacted, and gives a roadmap for short-term entry and long-term planning for healthcare and life science CIOs.

"Explore Blockchain's Potential in Life Science Companies' Track-and-Trace and Serialization Development Strategies" — Numerous reports cite blockchain as the "go-to" to meet global track-and-trace and serialization compliance mandates. However, the technology is largely unproven. Supply chain leaders in life science companies use this research to clearly position the true potential of blockchain's capabilities.

"Blockchain Not Ready to Unchain Customer Rewards" — Blockchain technology provides an option to make reward models more flexible, while delivering operational gains. However, the challenges facing such initiatives will demand to go beyond the initial intent and deliver truly transformational business models.

"Could Blockchain Disrupt the Print Industry? Three Possible Use Cases" — Blockchain's capabilities could be relevant to the print industry. The print industry inherently straddles many business challenges that combine the physical and digital worlds. Therefore, the print industry, in many ways, is uniquely suited to scope the potential of blockchain. Internet of Things (IoT) is another emerging technology that can complement blockchain technologies. It is critical to consider IoT and blockchain together as they are applied to emerging print industry use cases.

"Toolkit: Blockchain Consortium Initiatives" — Blockchain technology holds the promise of creating new business ecosystems. However, depending on the use case, these new ecosystems may require key industry players to join forces by entering into agreements to form blockchain consortia. These consortia include banks, insurers, healthcare organizations, energy and utility companies, transportation and logistics companies, and educational institutions. This Toolkit provides an overview of current consortia and their key characteristics to help CIOs make decisions concerning selection and potential membership based on their use cases.

"Market Trends: Providers Need Vertical and Context-Specific Strategies to Seize Growth in Blockchain Market" — Blockchain is among the most impactful digital technologies. Technology strategic planners must focus on its specific impact to their industry vertical, as well as understand the competitive dynamics and ecosystems that will help or hurt adoption.

"Market Trends: How Blockchain Impacts Different Vertical Industries" — Blockchain will impact all industries, and its effect will be felt most in industry-specific processes. As more businesses and product vendors are trialing blockchain, TSPs need to start planning to see where and how blockchain could impact their lines of business.

"Market Insight: Survive the Startup Lean Years and Capture the Blockchain Professional Services Market" — The enormous potential of blockchain professional services compels technology business unit leaders at service providers to invest now and remain relevant to capture future market opportunity. Blockchain will require creating a practice structure that can absorb lower revenue by reducing billable requirements in anticipation of future revenue streams. This approach

will also require amalgamation of blockchain with other emerging technologies as part of a client's ongoing digital transformation.

"Market Insight: How to Capitalize on Disruptive Blockchain-Based Advertising Platforms That Enable GDPR Compliance" — Today's digital advertising markets are subject to significant ad fraud. Further, many publishers, such as news or retail establishments, are being squeezed out of business as their content, products or services are increasingly commoditized. Online consumers exert minimal control over their own data, which is widely exposed and often abused by entities they are totally unaware are in possession of it. Innovative applications of blockchain technology promise to change this online paradigm and deliver a win-win-win victory to consumers, advertisers, publishers and other companies that participate in emerging ad platforms.

"Leverage Blockchain Beyond Cryptocurrency for Long-Term CRM and Customer Experience Success" — Blockchain technology is fundamentally about adding trust to an untrusted environment. Digital trust requires that participants agree, explicitly or implicitly, on the mechanisms to establish digital trust. Decentralized authority models, such as blockchain, introduce alternative methods for tracking and managing customer data as part of a digital ecosystem. Application leaders responsible for CRM and customer experience require an understanding of the impacts of using blockchain to ensure proper alignment with business strategy, information governance and compliance with regulations.

"Do Not Overly Commit Resources to Supporting Short-Term Revenue From Bitcoin Mining and Blockchain Processing" — Rising cryptocurrency value has created demand for specialist mining hardware, but risks remain due to market volatility. Technology strategic planners in mining equipment companies selecting semiconductor technologies can mitigate risks while transitioning to potential AI and blockchain markets.

"CSPs Need to Think Differently to Exploit the Disruptive Potential of Blockchain" — Communications service providers (CSPs) are ideally positioned to benefit from blockchain, but only if they look beyond using it as another technology enabler. Technology business unit leaders can use this research to exploit CSP dynamics in blockchain to set the foundation for an innovative ecosystem and enable new partners.

Technology — Blockchain Technologies Are a Work in Progress, but Research and Development Is Rampant

Blockchain represents a family of technologies that works together in different ways to achieve capabilities in exchanging value, representing assets and implementing trust mechanisms. These build on previous network computing, cryptography, data storage and computing technology capabilities.

Blockchain technology is too important to ignore, but too immature to invest in heavily.

Blockchain technologies have captured everyone's attention before they are fully ready, especially for enterprise use and before the ramifications on business operations and models have been carefully considered. Gaps remain in technology performance, scalability, latency, integration, analytics, security and other areas that must be addressed — as highlighted in "Practical Blockchain: A Gartner Trend Insight Report."

We are concerned that marketing messages promoted by startups and supply-side vendors are out of step with readiness of the technology or business capabilities to support or execute on those promises. Integration and interoperability are not established — for the technology, the business process or the partner ecosystems. Gartner's research blockchain Center of Excellence (COE) will be monitoring these developments carefully over 2018, as well as will publish broader and deeper research on these topics.

The third section of this Special Report delves into the current maturity stage of technology, some of its components and implementation considerations, and what leaders need to do today as they invest in these technologies.

Related Research

"Market Guide for Blockchain Platforms" — Use Gartner's blockchain platform functional framework to assess blockchain platform design and functional components by dissecting the underlying technologies for better alignment with your business requirements. Evaluate the underlying components to ensure the candidate platform is aligned with your business model and meets your use-case requirements. The varied nature of use cases may require multiple different platforms to be considered. Such multiplicity will put pressure on project coordination, governance and execution. Costs may be impacted as a result, especially in the context of professional services support for challenges such as interoperability.

"Blockchain: Evolving Decentralized Identity Design" — Decentralized identity and related evolving standards will be disruptive. Proof-of-concept projects have shown the potential benefits, such as enhanced privacy, reduced security risk and cost-efficiency. Self-sovereign decentralized identity models put users in control and break identity silos, addressing requirements for reusable digital identities and relationship identification, while secure and scalable relationship identification is a key enabler of digital transformation.

"Evaluating the Security Risks to Blockchain Ecosystems" — Blockchain technology certainly has a lot of promise. It has the potential to shape and disrupt a number of industries from banking to government, and overall digital business. Yet, with new technologies and approaches come new risks. As many organizations look to capitalize on the benefits of blockchain, security and risk management (SRM) leaders must ensure that they involve themselves in the process. Their core responsibility will be to define, frame, recommend and implement best security practices to mitigate organizational risk. But with blockchain technology being relatively new, especially in the enterprise, SRM leaders will need to distill down best practices from a variety of sources.

"Innovation Insight for Blockchain Security" — Blockchain has the potential to become a significant trust enabler. However, solutions are unclear, standards have yet to coalesce, and regulation is

fragmented. SRM leaders must make informed technology decisions aligned with organizational risk acceptance.

"Top Applications for Blockchain for IoT in 2018 and 2019" — Blockchain offers many interesting opportunities in the IoT domain, but it demands new implementations and system architectures to match the constraints of the IoT environment. It will ultimately be a transformative technology enabling new business models involving ecosystems of people and "things." However, IoT is an area in which blockchain is most immature. It is also an area in which academic researchers are developing new techniques, such as IoT-oriented consensus protocols.

"A Guide to Demystifying Blockchain for ERP" — Hype about blockchain is matched only by the extent to which this new technology is misunderstood. Blockchain could be a key technology for ERP, but only if significant challenges are overcome. CIOs must understand its maturity level and potential to gauge its likely impact on their ERP strategy.

"Innovation Insight for Application Ecosystems" — In order to innovate through the disruptive effects of digital business models, application leaders must implement a digital platform strategy. Some of the necessary components are already there (such as CRM or business intelligence [BI] applications), but the missing pieces can keep them from realizing the full platform potential. Ecosystems provide a rich source of prebuilt solutions that application leaders can use to complement their custom application development efforts. The best ecosystems to consider will be these that include applications being already part of their digital platform.

"Market Guide for Blockchain Consulting and Proof-of-Concept Development Services" — With blockchain's potential to streamline processes through immutable record keeping, and its potential to disrupt through disintermediation, it has applicability across all industries and geographies. While the financial services industry was the first to explore blockchain in detail, other industries have begun to make increasing investments in the last year. In light of this, several consultancy service providers have changed their focus to new verticals. In these verticals, blockchain projects may be relatively easier due to reduced regulation, a more obvious efficiency-based business case and the client being able to mandate its supply chain to use the blockchain solution. For this reason, organizations can now find niche consultancies focusing on any given vertical. Similarly, while the majority of experimentation has initially been in established geographies, there are no geographic barriers to use-case development or access to consultancy support.

"Market Insight: The Digital Business Redefines Application Software Ecosystems" — The disruptive effect of digital business models, and their contribution to exponential business growth (or fast extinction), is already visible. Therefore, technology business unit leaders at TSPs must fundamentally rethink their value proposition to address the business outcomes of their customers. By orchestrating or participating in emerging ecosystems, providers can improve access to potential customers, increase sales and better defend against competitive threats than they can by "going it alone."

Related Priorities

Table 1. Related Priorities

Priority	Focus
Digital Disruption and Innovation	Digital disruption and innovation research focuses on how organizations can incorporate elements of willful disruption into business and technology strategies.
Driving Business Transformation Through Technology Innovation	As organizations continue to invest in digital business transformation, enterprise architecture (EA) will be the "tip of their business strategic spear" to understand and implement their strategies.
Building and Expanding a Digital Business	Digital business is the creation of new business designs by blurring the digital and physical worlds. Digital business involves the interaction of people, businesses and intelligent "things."

Source: Gartner

Gartner Analysts Supporting This Trend

Gartner has established a research blockchain COE that coordinates research on blockchain across different research and advisory groups. The COE has more than 30 analysts whose research spans areas across different business areas, various industries and technology domains.

Related Resources

Webinars

"Blockchain Special Report: What to Expect in 2018"

"The New Buyers of Disruptive Technologies"

"Can Blockchain Transform Your Customer Experience?"

Articles

"The Irrational Exuberance That Is Blockchain"

"Will Blockchain Disrupt Financial Services"

"Gartner Top Strategic Predictions for 2018 and Beyond"

Gartner Recommended Reading

Some documents may not be available as part of your current Gartner subscription.

"Hype Cycle for Blockchain Business, 2017"

"Hype Cycle for Blockchain Technologies, 2017"

"Maverick* Research: The Programmable Economy Is the Ultimate Destination for Digital Business"

"Cool Vendors in Blockchain Applications, 2017"

"Cool Vendors in Blockchain Platforms"

"The Disruptive Potential of Blockchain Technology"

"What CIOs Should Tell the Board of Directors About Blockchain"

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