

# Chapter 14

## Implementing Blockchain in Your Enterprise



Most executives are scrambling to educate themselves on how to lead their companies into the blockchain future. Adoption of technology by enterprises is on the rise. In a recent survey conducted by Juniper Research, employees of companies with more than 20,000 people were asked whether they were looking to incorporate blockchain. The survey found that 57% were interested in incorporating blockchain technology in their organizations. Additionally, 76% of the employees responded that blockchain could be “very useful” or “quite useful” to their company (Blockgeeks 2018).

How do you implement blockchain in your organization? This chapter identifies opportunities and threats, discusses decision criteria to prioritize your blockchain implementation approach, and covers a step-by-step method to plan and develop blockchain-based technology for your organization.

### Identifying Opportunities and Threats

William Mougayar, a venture capitalist at Virtual Capital Ventures and an advisor to some of the better-known blockchain organizations, published a book in 2016 arguing that blockchain has “polymorphic capabilities.” (Mougayar 2016). He compares blockchain to the Internet, maintaining that at the beginning few understood it. He sees the vast potential in blockchain and believes the scope and magnitude of this technology are going to be similar to the Web back in 1993–1994. He argues that executives need to think about blockchain in a holistic manner. Most executives involved with blockchain only consider the technology for its cryptocurrency or distributed ledger aspects. He believes the technology has more to offer, and that if executives fully understood it, they would be able to apply it to a variety of situations (Mougayar 2016).

In order for executives to successfully implement blockchain, their workplaces must be enhanced by context, structured and unstructured information, and consistent coverage of information flows. The lack of a clear distinction between tools and business needs can also make an information management system ineffective. Without a proper business case, business need, and business goal, technology delivers only limited value. An on-going employee education on the proper usage of technology is a necessary foundation for productivity and quality improvements.

There are numerous challenges for businesses to incorporate blockchain technology. We believe the most important challenges facing organizations are:

- Lack of understanding of blockchain's potentials and a lack of technical expertise among employees and leadership
- Mistaken view of blockchain technology as a short-term cost center instead of a long-term investment
- Lack of leadership and purpose
- Lack of budget
- Lack of staff resources
- Lack of sense of urgency to compete differently
- Human barriers—politics, egos, fear, and skepticism

Before incorporating the blockchain, it may make sense to calculate how much it will cost to implement this peer-to-peer network approach. Executives must account for costs beyond hosting, licensing, and implementation. For example, energy costs and storage cost will rise as the transaction volume increases. A blockchain database must store data indefinitely, which means that the database will grow substantially over time, as will the storage costs.

## **Determining Use Cases and Impact on Processes, People, and Partners**

A leading-edge workplace transformation initiative, including implementation of blockchain-based technology, should take a holistic and cross-functional approach, spanning people, places, and technology. Not all organizations, however, experience success in implementing workplace transformation projects. Increasingly, digital projects are not strategically focused. All too often, organizations overly concentrate on technology rather than on the people using the systems. Technology, alone, will never be the solution to all problems. As with any new investment, the key is to ensure that selected technology reflects the overall business strategy, and that it will significantly add value (Perks 2015). Therefore, to implement blockchain technology successfully, a cross-functional delivery team that includes senior leaders as well as IT, HR, and marketing should be formed. This team should assist future projects by providing access to expert knowledge, helping with the discovery of project-critical information, and enabling more efficient ways of working.

The team should create a digital workplace strategy that clearly articulates the business focus and guides the development of digital solutions.

To be able to implement blockchain technology successfully, organizations need to view this technology in three ways (Mougayar 2016):

**Technical.** Blockchain is a backend database that has a distributed ledger, as used in accounting

**Business.** It is an exchange network for transferring value between peers. Peer-to-peer interactions are authenticated on the blockchain

**Legal.** It doesn't require a middleman to validate the transaction. It validates a transaction and can make it valid from a legal point of view

Sometimes, systematic change is better for the overall growth of an enterprise than a piecemeal approach to incorporating new technology. As discussed in previous chapters, there are multiple forms of blockchain-based technology with many useful qualities, as well as some shortcomings. For example, public blockchain is unable to handle huge amounts of transactions and data, which is a primary requirement for many companies. On the other hand, private blockchain is labeled as fancy implementations of a shared database. Critics argue that there are far simpler implementations of a shared database that one can incorporate instead of a blockchain (Blockgeeks 2018).

## A Conceptual Model for Implementation

Gartner recently conducted a 12 month survey of enterprises with cloud management strategies and identified the three phases of cloud adoption strategy. We adopted this model and modified it to fit the leading-edge blockchain transformation initiative described below and summarized in Fig. 14.1 (Smith 2016):

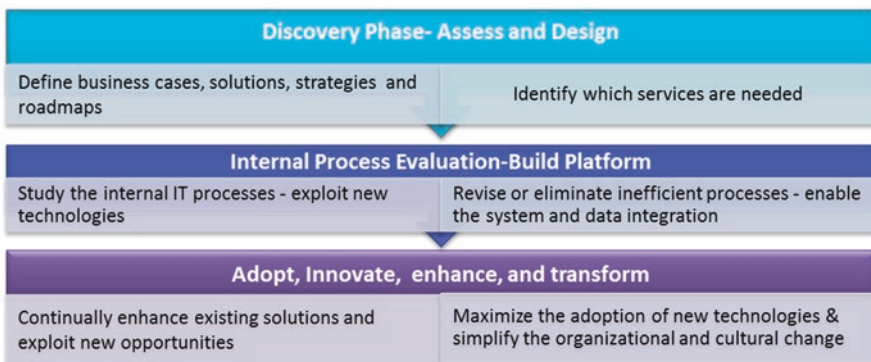


Fig. 14.1 Blockchain implementation phases

**Phase 1: Discovery Phase** Some companies want to use the blockchain to improve or lower the cost of a particular process. Other companies want to innovate without any legacy systems or existing regulations tying them down. An important step for successful implementation of blockchain technology is about opening the minds of managers and employees. The executives need to take a hard look at their business and define business cases, solutions, strategy, and roadmaps. The workplace strategy should set clear priorities and serve as a blueprint for the roles and relationships of each department. It is important to define a clear business case and determine timings for the enterprise blockchain strategy. Business should identify which digital services, workplace tools, and solutions meet the company's needs. The most impactful deployments start with users fully understanding their desired business outcomes. This requires asking questions such as what services users need, how much of each service will be consumed, when each service will be consumed, which users will consume each service, and what is a reasonable price for each service.

Answering the following questions would be helpful during the discovery phase. (Blockgeeks 2018):

- Is your company ready for incorporating a blockchain?
- Do you need to have a clear audit trail for your company?
- Does your company deal with huge amounts of data where time and speed is important?
- Does your company deal with a lot of throughputs?
- Does your company use third party for most of its operations?
- Can your company handle the costs associated with blockchain integration?
- Can you get your whole team up to speed with this shift?
- Will your clients stay loyal to you through this transition?
- Will your existing business process be able to handle disruption?
- Will your employees and managers be able to adapt to this change?
- Should you move slowly or change the entire infrastructure of your company by introducing blockchain technology?

Employees need to understand the following questions (Mougayar 2016):

- What is the technology?
- What can we do with the blockchain?
- What are the possibilities out there?

The training of managers and IT staff hold the key to the blockchain's implementation success. It is important that managers and leaders of the various divisions understand the technology and know how it is going to change the processes inside the organization. Software developers and IT consultants must also have the coding skills necessary to build and maintain the blockchain. Additionally, make sure that employees are blockchain savvy and understand the technology and its implications for the enterprise.

**Phase 2: Internal Process Evaluation** Executive or relevant employees should work with the CIO and business stakeholders to document and analyze the internal

processes that will be affected by the selected blockchain solutions. This might bring to light the need to flatten, reconfigure, realign, refine, or eliminate inefficient processes and target repetitive manual processes for automation. Executives need to understand that to increase efficiency in their organization, reworking certain legacy-based solutions might be the answer. This might mean that implementing a new technology like blockchain may not be the best immediate solution. The types of security that will be applied to the deployment must also be addressed. Companies should enable and bring together user-friendly systems, data integration, social, mobile, analytics, and cloud computing technologies to create a digital workplace that responds to the informational needs of employees. Companies should also integrate social collaboration technologies such as voice, video, messaging, and workspace tools in order to make knowledge sharing more effective. Finally, companies should provide the requisite platform to access and secure information across multiple devices and channels.

**Phase 3: Adopt, Enhance, and Transform** Companies should continually enhance existing procedures, maximize the adoption of blockchain solutions, and ensure user adoption. As the needs of workers evolve, companies should continually exploit new opportunities and deliver a consumer-like experience and a consistent user experience across multiple platforms for internal employees. Corporations should simplify the organizational and cultural changes that hinder the adoption of blockchain technology. They should engage with users to understand their needs and articulate how the blockchain technology enables them to work productively. Firms must ensure employees have access to training that enables them to use the blockchain solutions to their advantage, and that technical personnel and trainers are properly trained to support the blockchain technology. Additionally, firms must provide policy training for employees on the types of information they should or should not share, on the handling of personnel data, and on the avoidance of potentially damaging their organizational data.

## Guarantying Blockchain Transformation Success

In order to fully reap the benefits of blockchain-based solutions, organizations need to take a holistic view of the scope of the projects, exploit different technologies, identify needed services, and maximize the adoption of new technologies. The following section reviews some of the factors that will guarantee a successful blockchain technology transformation.

1. **Understanding the Hype Behind the Technology.** There has been a lot of hype behind blockchain and that puts unfair expectations on the technology. While blockchain is a great innovation, it is by no means a panacea. The technology is still very young and there are many new applications that need to be explored and improved upon. Blockchain will become more powerful as it becomes more

widely adopted. Implemented properly, the technology has the potential to reduce cost, improve efficiency, and increase profitability.

There are many relatively inexpensive tools and solutions already available to create applications without the need for extensive technical knowledge. Additionally, many providers of blockchain-based technology and software developers are making the blockchain more accessible. These companies can act as a consultant and help executives implement blockchain inside their organizations.

2. **Ready employees and clients.** On a more psychological level, introducing blockchain into your business could be intimidating. It is important that employees are mentally ready and customers understand the advantages of the technology. A Juniper Research survey found that 35% of the companies considering or actively deploying blockchain believed that blockchain integration would cause disruption to their internal operations. Moreover, 51% felt that implementing blockchain would cause a “significant disruption” to their partners and/or customers. For example, existing customer systems may no longer be compatible with the upgraded, blockchain incorporated systems. These fears are not unfounded. Besides scalability concerns, interoperability is one of the biggest worries for customers (Juniper Research 2017).
3. **Change management.** According to Forbs, 84% of technology transformation efforts fail. A 2017 survey showed that many organizations consider technology transformation as an integration of digital technologies and merely as IT transformation (Solis and Littleton 2017). Their objective is to optimize IT services for organizational needs and they do not recognize that a successful technology transformation is, first and foremost, a cultural and organizational transformation rather than a technology-driven endeavor. Implementing a leading-edge workplace technology transformation—including implementing blockchain technology—requires managing change effectively. Effective technology transformation requires businesses to develop and realign priorities, and operate with a sense of purpose and urgency (Solis and Littleton 2017). Many organizations fail at change because leaders have not given change management the proper attention. Effective change management increases the success of the implementation and the acceptance of changes. Ineffective change management can affect employees negatively and makes the next change objective that much more difficult to implement. Additionally, the fear of managing the change is a leading cause of anxiety in managers. There are several models for successful change management (Markovic 2008; Marek 2017; Decker 2017). Figure 14.2 highlights a sample model.
4. **Critical factors to consider.** To improve the chances of successful implementation, it is important to take these critical steps (Hamburg 2019):
  - Take a cross-functional and holistic view of the organization’s digital workplace and involve representatives from key stakeholders to the blockchain delivery team

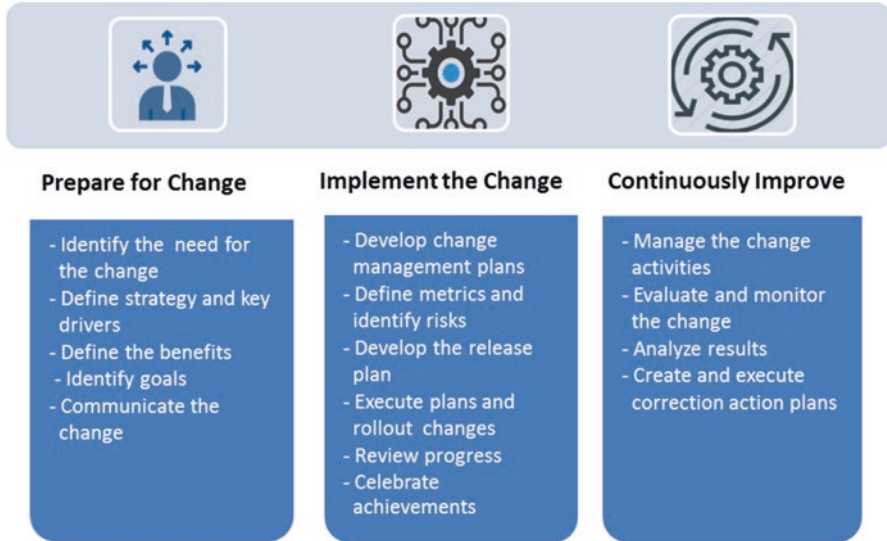


Fig. 14.2 Steps for implementing change management

- Ensure that the project is enterprise-wide and encompasses a significant proportion of the workforce
- Help to improve employee and customer experiences in using the blockchain
- Choose blockchain tools that are easy to use
- Expect changes to occur across all the pillars of transformation including strategy, people, process, and technology
- Respond rapidly as new blockchain-related technology and opportunities emerge

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