CoreLedger

How to kickstart **a blockchain project** in your business

“Blockchain technology is not easy to understand, but it has a wide range of applications and can create a significant impact on some industries. Every business should start looking into it.”

— **Dr. Johannes Schweifer,**
CEO and Co-founer of CoreLedger

Content

“Before you start thinking of how to use blockchain technology, start with why and identify what problems you want to solve.”

— **Bernhard Elkuch,**
Head of Business Development

Introduction

Blockchain is one of the most exciting emerging technologies of our time. Even as the capabilities of this relatively young technology continue to evolve, blockchain is transforming entire sectors, including finance, insurance, supply chain, utilities, and media.

Blockchain's disruptive potential has inspired hundreds of entrepreneurs and enterprises to develop innovative use cases. Although digital currencies provided the first utility, companies are using blockchain and wider distributed ledger technologies for raising funds, developing new products and services, and reshaping existing business processes.

Starting a blockchain project can be daunting, because there's a lot to consider. Do you need to hire a developer? Which platform should you use, and how do you decide? Are there any legal considerations? How much will it cost and what will be the ROI?

The aim of this e-book is to help you understand and work through the steps involved in planning a blockchain project for your business. In the next sections, we will cover:

- Establishing why you want to implement blockchain in your business and setting objectives
- Defining how you will use blockchain to achieve your objectives
- Evaluating the factors to consider in the development of a blockchain solution, to help you select the most suitable approach for building your project

Why Implement a **Blockchain-Based Solution?**

The first step is to establish the problems you want to solve and evaluate different technology options. To make it a worthwhile endeavor, the project should aim to bring value through blockchain that cannot be achieved more efficiently using other technologies.

Therefore, your project should make use of one or more of the unique properties of blockchain. These are:

- **Decentralization** – blockchain systems are operated by multiple parties who transact on a peer-to-peer basis, thus reducing or eliminating the need for intermediaries

- **Resilience** – due to decentralization, blockchains are resilient against hacks or attacks because there is no single point of weakness, unlike centralized servers

- **Immutability** – data stored on a blockchain cannot be altered or tampered

- **Transparency** – public blockchain records are visible and traceable, which can be used for auditing and prevent frauds

- **Security** – blockchain data is encrypted meaning that transactions are secure, and can only be enacted by those who hold the required digital signatures.

The Business Case for Blockchain

It would be impossible to list all of the possible applications of blockchain that utilize these properties. However, there are several use cases that stand out.

Tokenization of real-world assets is transforming the way that businesses and individuals transact with one another. Asset tokenization is the process of issuing tokens on blockchain which represent the underlying asset or utility in the real world. Ownership of the digital token is the same as owning the underlying asset or the right to use it.

Furthermore, tokenization can enable fractional ownership of the underlying asset. Multiple tokens can represent an asset such as real estate, gold, gemstones, or fine art. Selling the tokens to represent fractional ownership of these physical assets can inject new liquidity to markets. It opens up the asset class to a whole new set of investors, who would otherwise be priced out of the market.

For example, by tokenizing a piece of real estate, a business can sell it to multiple investors anywhere in the world. Because the ownership of the property is represented in the form of tokens, each token grants a right of ownership to the investor. After selling the tokens to investors and raising sufficient funds, the owner can use the proceeds to fund a new business venture.

Individual investors now have a partial ownership right to the property. When the value of the property appreciates, the token price will also increase. They can either hold their tokens or sell them for a profit.

As the tokens represent a fractional ownership of the property, ordinary investors have the opportunity to earn a profit from any appreciation in the value of the real estate without the need to buy the whole property.

The transaction and token attributes are recorded on blockchain, both token issuers and investors are protected by the terms and conditions of the transaction. Investors do not have to trust the property owner to invest, and vice versa.

Blockchain is also revolutionizing global supply chains and logistics. Blockchain ensures traceability of goods from a point of origin to the point of sale, fewer product losses from perishing and shrinkage, and enhancing efficiency through better record management, less paperwork, and tighter controls over storage conditions.

Companies such as Maersk, Walmart, and Nestlé have engaged their suppliers in the implementation of distributed ledger solutions. By integrating blockchain technology with Internet of Things (IoT)-enabled sensors, it's even possible to monitor the temperature of goods in transit or in storage.

Define the Goals You Want to Achieve with Your Project

When determining why you want to implement blockchain, it's important that you identify up front which of these benefits blockchain can bring to your business. This will define your goals for the project. Your goals may include some of the instances mentioned above such as:

- **Increasing** trust and transparency between business partners
- **Reducing** inefficiencies in transactions between business partners
- **Raising** funds for a business venture by offering something of value to investors
- **Reducing** dependency on third-party intermediaries

None of this should imply that blockchain is a catch-all solution. In general, it doesn't make sense to use the technology simply for replacing legacy database systems. In terms of return on investment, the best use cases for blockchain tend to be in a multiparty environment.

For example, a business that decides to accept cryptocurrencies as payment doesn't require the implementation of a blockchain solution on its own. The tools are already there, and it's a straightforward financial transaction between customer and merchant.

How to Incorporate Blockchain **to Achieve Your Goals**

Once you've laid out your goals, you can start to define how your blockchain project will help you achieve them. Whether your project is in an established company or a startup, you'll need to define the scope and the boundaries of the project.

This will include working out the resources you need, which ultimately comes down to the available financing for the project. Time is another critical dimension of the resourcing point, as your timeline will depend on how long it takes, and how far your available resources will stretch.

This step will be an iterative process. You'll need to gather information and talk to consultants with expertise on the technology and its implementation. You'll also need to establish the costs and time your project will require and balance this against what you have available.

However, in any blockchain project, there are a couple of high-level considerations that will feed into this stage of the planning process.

Public vs. Permissioned Blockchains

Over recent years, blockchain development has diverged into two camps – public and permissioned.

A public blockchain is open to everyone. In principle, anyone can run a node on the network, or develop an application that writes data to the blockchain. There is no in-built mechanism to verify the identity of anyone joining the network.

However, this doesn't mean that anyone can read all of the data on a public blockchain in all cases, although transparency is the default setting. Nevertheless, it is possible to develop public blockchain applications that require user permissions for reading or writing data within the application itself.

Bitcoin and Ethereum are the two best-known public blockchains. VeChain and Stellar are both examples of public blockchains operating enterprise-grade applications.

A significant topic of consideration when choosing an existing public blockchain is scalability and transaction throughput. Bitcoin and Ethereum are known as highly secure blockchains, but both are also inefficient and costly in terms of energy and capacity.

Bitcoin is capable of processing only six or seven transactions per second in theory, although in reality this is more like two or three per second. Ethereum is faster, but still limited to around ten or twenty transactions per second.

Other public blockchains, such as EOS or Aerum, can process hundreds or even thousands of transactions per second. Because these are public blockchains, this capacity is shared with all users across the globe.

The throughput is directly linked to the cost. So, if your project needs many transactions per second, it's better to take a blockchain that's already capable of high throughput and low transaction cost.

Conversely, a permissioned blockchain requires that users are authenticated before they can join the network. The transaction data held on the blockchain is private, only visible to those network participants who have access rights to it.

R3 Corda and Hyperledger Fabric are both general examples of permissioned blockchains. Hyperledger Fabric powers IBM's Food Trust, which is the supply chain solution used by Walmart and Nestlé, among others.

A more specific example of private blockchain would be CoreLedger's SparkNet. It's a private blockchain that ensures customer products are working perfectly.

Choosing Your Platform

A critical question here is: what kind of customization do you need? Is there an off-the-shelf solution that meets your project's requirements?

If not, then depending on your goals, your project could utilize one of the existing public or permissioned blockchain frameworks to develop an application. This is likely to mean a shorter development timeline, and a lower cost. Choosing an existing blockchain means accepting particular governance rules and protocols of that platform. Therefore, a blockchain-agnostic solution may be a more desirable option.

Another consideration would be the consensus mechanism of the blockchain. Currently in the market there are proof-of-work (PoW), proof-of-stake (PoS), proof-of authority (PoA) and other variants. Some blockchains operate a hybrid consensus model, combining PoW and PoS.

Each consensus method has its own pros and cons. Choosing the right one for your project depends on the nature of your project. Which consensus model you choose is relevant for the budget of your project. PoS chains are known to be the most expensive in terms of transaction cost, also known as "gas".

If there isn't anything out there that meets the needs of your project, then another alternative is to develop a customized blockchain from scratch. This solution could be either public or permissioned.

The trade-off is that many existing blockchains have development timelines that stretch into years, meaning there are significant ongoing costs. In all likelihood, this might not be what you are looking for. Apart from time and resources, developing a customized platform from the ground up also needs partners and a community to support the blockchain.

Does Your Project Require a Token?

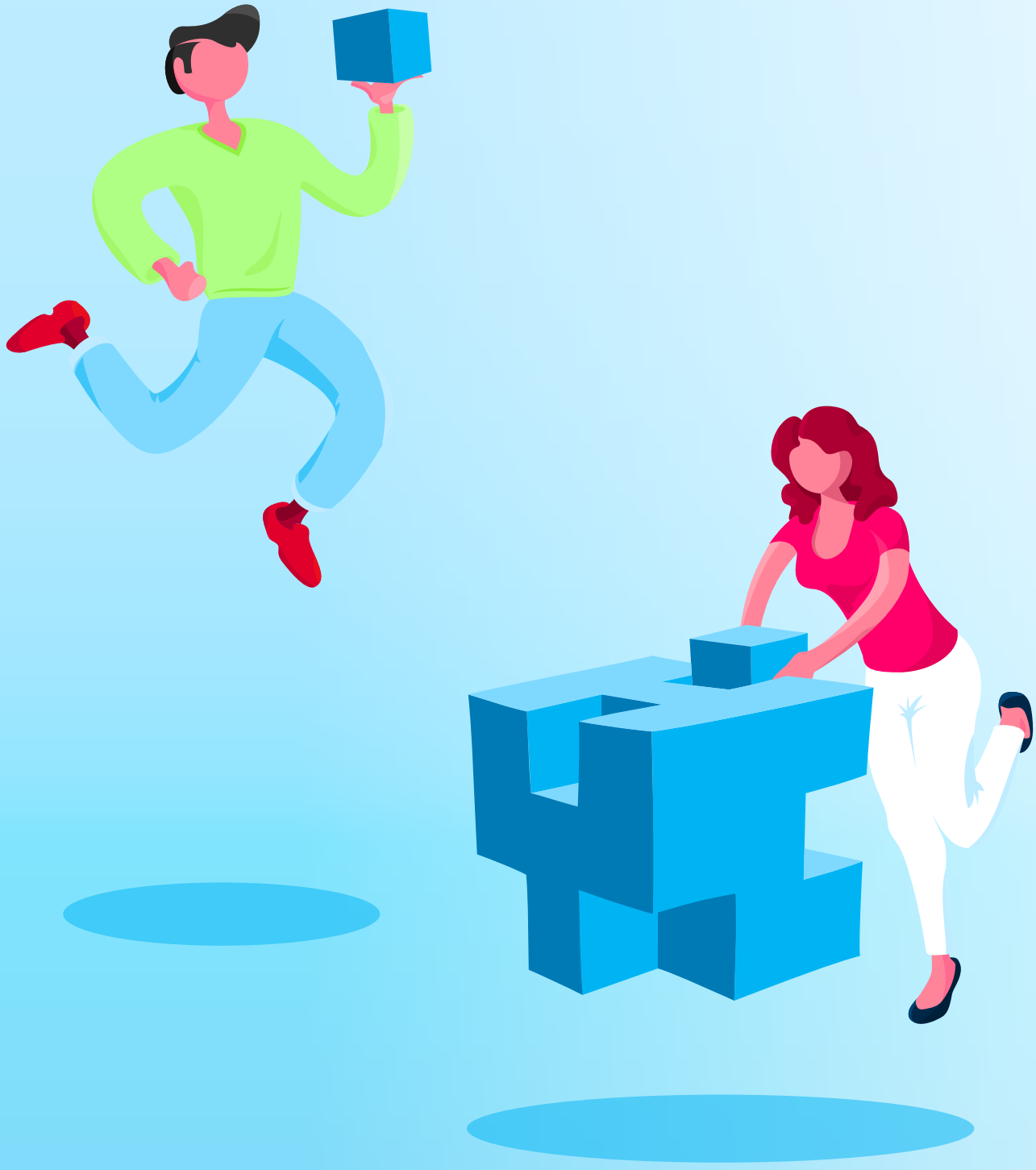
In general, if your blockchain implementation involves selling rights or ownership of assets, then you'll need a token. Tokens can also be used for the utility of accessing a particular marketplace, service, or functions, or act as permission.

There are often legal or financial implications for offering tokens and regulators monitor token sales to see if they constitute a sale of securities. So, think carefully about whether or not a token is really needed for your project.

If you do need a token, ensure there is clarity on the utility of the token. Then you'll need to seek legal advice to ascertain whether your project will undergo a security token offering.

Switzerland and Liechtenstein are known to offer quite favorable conditions for blockchain projects. However, when it comes to financial regulation, the Swiss regulatory hurdles may delay your project by months, if not years.

By talking to experts about your goals, you'll be in a position to start evaluating the answers to these questions. If your project only needs utility tokens, then the token treatment will be very different from security tokens.



Shaping Up
Your Blockchain Project

At this stage, you can start making the critical decisions that will shape how your blockchain project will develop.

Internal vs. Outsourced Development

Most organizations don't have an in-house team of blockchain developers, so you'll need to decide whether to hire a team or outsource the development work. This will also depend on the complexity and customization required for your project.

If you choose to run the project in-house, then you'll need to hire developers, UX/UI designers, and project management to help translate your vision into a working product. This may be a viable option for a complex build, with high customization and a long timeline.

However, the complexity of an in-house build may mean that using an outsourced provider is a more palatable choice. Outsourcing the build still means the project can be developed to your specifications, but the outsourcer manages the technical and testing work.

Particularly if you plan to develop an application based on existing infrastructure, or plan to use an off-the-shelf solution, choosing a reliable technology partner will be a more cost-effective solution and you'll also save the time in hiring and onboarding a new team.

As a result, you can spend the resources you save on the activities that play to the strengths of your company. This may be the user-facing application, a physical product, or running the business.

A great example of a company that built its product using an existing blockchain infrastructure would be Ambitorio. By building its software on top of an existing blockchain infrastructure, the company could accelerate product development and focus on their own applications.

Development Approach

Will you take a phased approach to implementing your blockchain solution, or move immediately to a full launch?

A phased approach may mean the project takes longer, but it gives time to test the solution through a proof of concept or prototype. This could save resources and reduce risks in the long run, as the project may not foresee all the potential issues that could arise after a “big bang” launch.

A quick way to develop a prototype is to deploy a ready-to-use blockchain application, such as the White-Label Marketplace from CoreLedger. It is a complete asset tokenization, documentation and trading platform for businesses to test their ideas and build rapid prototypes.

Token Sale Considerations

If your project involves a token sale, then you'll need to decide where and to whom you're going to sell tokens. You may have to target your sale to particular groups of investors. Therefore, you'll need legal and marketing support to ensure that your project remains compliant, while ensuring you can meet your token sale objectives.

Conclusion

Incorporating blockchain into your business can seem daunting, but these steps will help to start the journey. Of course, every business is different, but working thorough the stages outlined in this e-book will create a strong foundation for your project to move through to a successful implementation.

As an established infrastructure provider in the Crypto Valley here in Switzerland, CoreLedger provides end-to-end technical solutions to make your integration of blockchain seamless and cost-effective. Built by our dedicated and experienced team of technical experts, our value-added software products can help to fuel your company's blockchain transformation. If you're interested in how we can help, or simply exploring the viability of implementing blockchain technology for your businesses, drop us an email and we'd love to have a discussion with you.