



# BLOCKCHAIN LEARNING PATHS

## A GUIDE TO EDUCATIONAL TRACKS FOR FOUNDATIONS, BUSINESS, TECHNOLOGY, AND GOVERNMENT

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# 1

## Executive Summary

The purpose of this document is to assist professionals in the exploration of blockchain related learning opportunities. The goal is to guide the learner to a path that best suits their current and future career aspirations or needs. We have provided several tools in this endeavor, including a learning path, a decision tree, lists of online learning sources, and a list of companies that have historically shown a strong interest in hiring and developing blockchain professionals.

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## Introduction

Blockchain is a rapidly growing emerging technology. It has the potential of transforming information and data in ways never before imagined. It is currently being leveraged by several billion-dollar organizations across a multitude of different industries, including finance, shipping, and healthcare. Because the underlying technology is often abstract and poorly understood, professionals have found it difficult to determine a robust and logical path to learning and implementing its use. Hence, the CompTIA Blockchain Advisory Council has created this document as a starting point for professionals wanting to begin their blockchain learning journey.

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## How to Use This Document?

If you're a professional and want to start or enhance your understanding of blockchain technologies, then refer to The Blockchain Learning Paths infographic below. It will help you to determine where to start and what direction we recommend you take in your learning journey.

If you want to know how your organization can utilize your newfound blockchain knowledge, then refer to our Blockchain Decision Tree, also below. This will guide you through a series of questions that will help you to gauge the value of blockchain technologies and their use cases for your specific needs.

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## BLOCKCHAIN LEARNING PATHS

## Recommended Learning Materials



## Who is this for?



## Consider Course Objectives



## Recommended Skills



## Blockchain Foundations

To learn more about the foundational concepts of blockchain, look for learning materials from trusted sources that focus on the technology and use cases.

Blockchain foundations materials are intended for anyone desiring a broad understanding of blockchain technology. The material should be introductory in its depth and breadth.

- Know the history and key developments of blockchain technology.
- Describe and understand the five key components of a blockchain.
- Define what a blockchain is and is not.
- Learn examples where blockchain is a good fit and where it is not a good fit.
- Describe the blockchain value proposition.
- Describe common blockchain use cases.
- Identify sources of documentation or technical assistance (e.g., whitepapers, online courses).

## Business Path

To learn more about a business path in blockchain, consider learning materials that discuss the commercial aspects of blockchain, such as use cases and success stories.

This path is primarily for professionals that have a business role in the blockchain industry.

- However, other professionals (see below) can benefit by gaining a better understanding of the covered topics.
- Sales & Marketing
  - Business Analysts
  - Financial Sector Professional
  - Logistics
  - Product Manager
  - Project Managers
  - C-Level Executives
  - IT-related Staff

- Describe the types of market frictions addressed by blockchain technology.
- Describe the blockchain value proposition for specific commercial use cases.
- Learn how to identify the appropriate type of blockchain in order to make informed decisions based on business requirements.
- Describe basic blockchain architectural principles.
- Describe basic/core characteristics of deploying and operating a blockchain network.
- Understand the differences and use cases of public, private, and hybrid blockchains.
- Identify resources of documentation or technical assistance (e.g., whitepapers, regulations, tools, courses).

Past education and experience in business decision making is helpful.

## Technology Path

To learn more about a technology path in blockchain, consider learning materials that discuss the technical aspects related to the blockchain technology and its use cases.

This path is primarily for technology- or technical-based roles in the blockchain industry.

- However, other professionals (see below) can also gain a better understanding of the technology through this path.
- Technical Sales & Marketing
  - Technical Analyst
  - Technical Project Manager
  - IT-related
  - Software Developer
  - DevOps
  - Cloud Engineer
  - Web Designers

- Learn how to identify the appropriate type of blockchain to make informed IT decisions based on business requirements.
- Identify technological dependencies to developing a blockchain application.
- Describe core characteristics of deploying and operating a blockchain network.
- Understand how to develop and deploy "Smart Contracts."
- Describe basic security and compliance aspects of blockchain technology.
- Identify sources of documentation or technical assistance (e.g., whitepapers, developer portals, developer communities, technology foundations, tools, courses).

Should have a firm understanding of software development including, but not limited to: HTML, CSS, Solidity, Viper, Linux, Windows, Go, C, C++, Java, JavaScript, Python, cryptography. Experience in technical writing is extremely helpful.

## Government Path

If you want to learn more about a government path as it relates to blockchain technology, consider learning materials that discuss the legal, regulatory, and social impact of the underlying technology and its use cases.

For your convenience, we've included several resources at the end of this document.

This path is primarily for government employees or blockchain professionals working on regulatory aspects of the blockchain industry. However, other professionals (see below) can also benefit by gaining a better understanding of the covered topics.

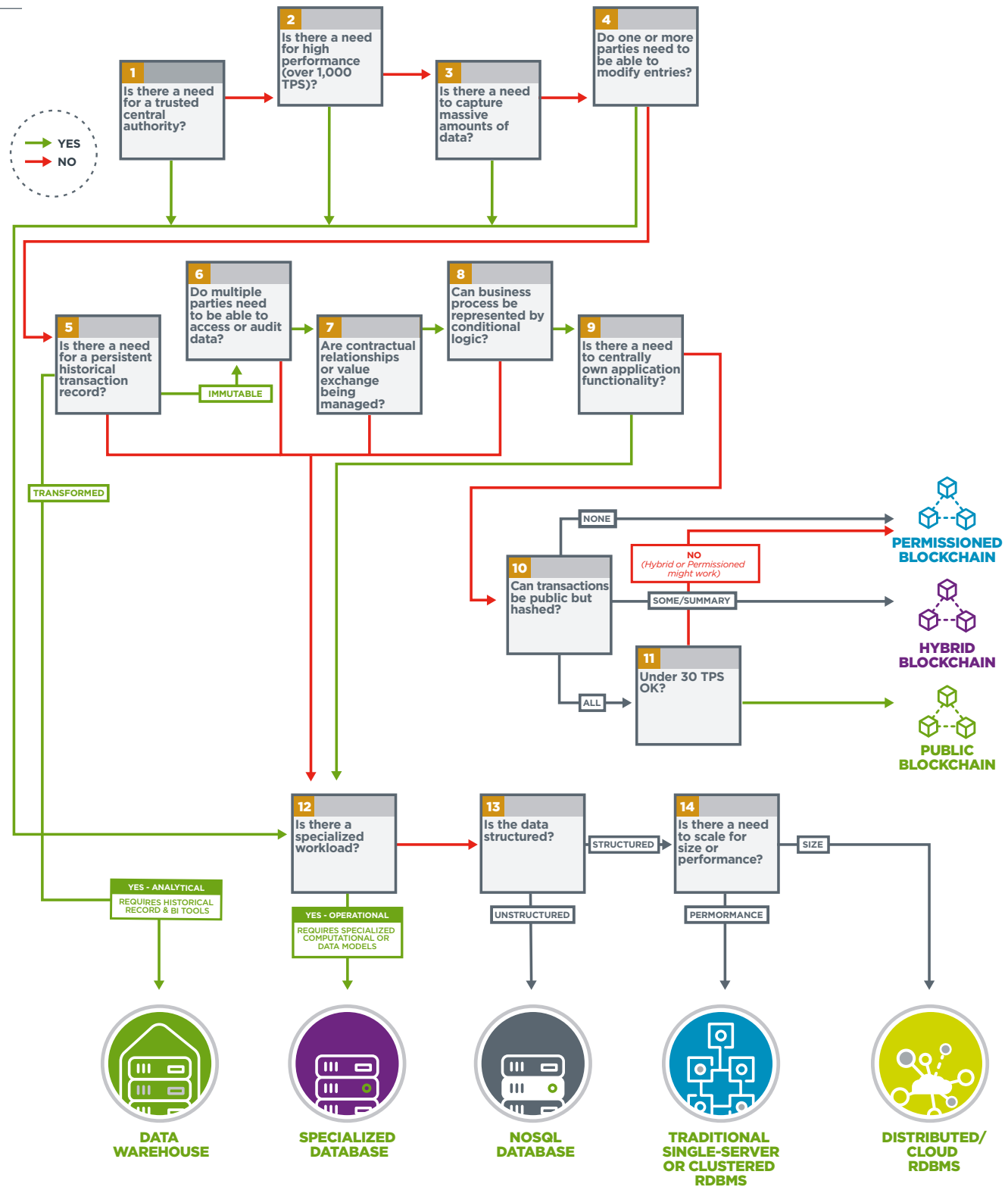
- Policy Analysts
- Tax and Legal Professionals
- Financial Regulators
- Insurance
- Risk Managers
- Program Managers
- Auditors and Certifiers

- Describe the blockchain value proposition within the scope of public sector activities.
- Understand how tokenization and cryptocurrencies are products of blockchain technology.
- Compare and contrast Federal Reserve Banking to major cryptocurrencies and their networks.
- Understand "Smart Contracts" within the context of government regulations.
- Describe basic security and compliance aspects of blockchain technology.
- Identify sources of documentation or technical assistance (e.g., whitepapers, regulations, courses).

Past education and experience in financial, legal, and government regulations is helpful. Familiarization with financial regulations, tax codes, and associated legal documents.

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## BLOCKCHAIN DECISION TREE



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## Additional CompTIA Blockchain Resources

### 7 PHASES OF BLOCKCHAIN IMPLEMENTATION

The Blockchain Advisory Council has developed an infographic to help business of tech professionals understand the phases of a blockchain project.

### BLOCKCHAIN FOR ENTITLEMENTS

Learn six ways blockchain can help governments reduce costs, improve compliance, and monitor entitlement programs.

### 7 MYTHS ABOUT BLOCKCHAIN—BUSTED

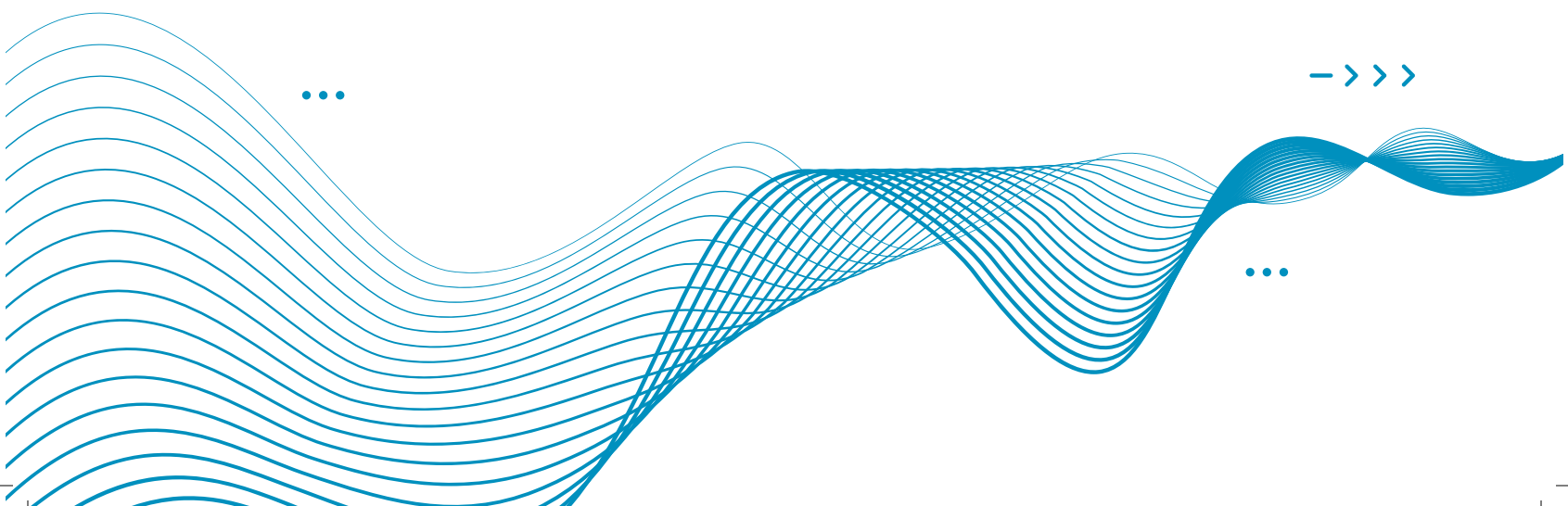
CompTIA's Blockchain Advisory Council identified seven popular myths about the technology and analyzed the truth behind each one.

### BLOCKCHAIN TERMINOLOGY: A GLOSSARY FOR BEGINNERS

Learn the basic terminology for blockchain technology. From Address to Zeppelin, here's the entire list of terms beginners need to know.

### PIVOT FROM A STRUGGLING INDUSTRY TO NEW OPPORTUNITIES: A BLOCKCHAIN USE CASE

Learn how a blockchain and AI application developer quickly adapted an existing solution focused on a challenged industry (oil and gas) to provide a much-needed solution for health care and other essential workers on the front line of the COVID-19 pandemic.



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## Other Blockchain Resources\*

Blockgeeks

Cryptozombies

Coursera

Consensys Academy

edX

Kingsland University

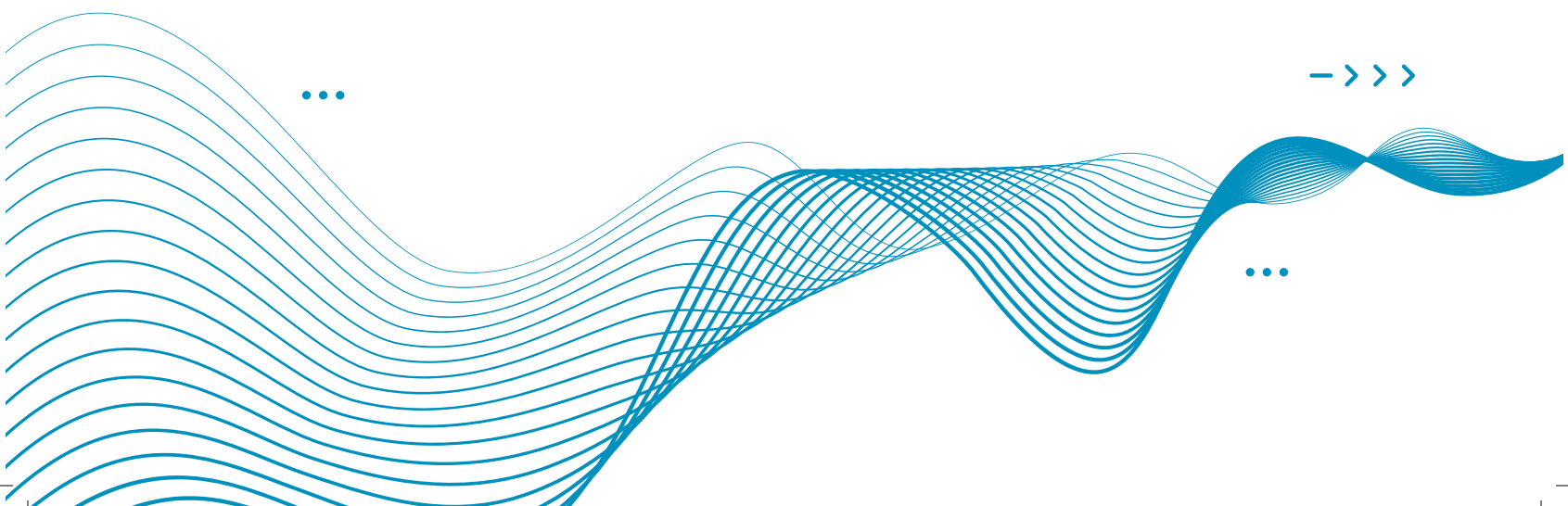
Khan Academy

Solidity

UCL Centre for Blockchain Technologies

Udemy

\* The resources listed above were aggregated independently by members of the Blockchain Advisory Council and are not an endorsement from CompTIA.



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## About the Blockchain Advisory Council

CompTIA's Blockchain Advisory Council (BCAC) brings together thought leaders and innovators to identify how channel partners and clients can leverage blockchain technology in their business cases. With representatives from supply chain consulting, software development and consulting, legal, marketing, educational, business-to-business and business-to-consumer organizations, we are well positioned to address the pain points which can be mitigated by blockchain technology.

### WHAT WE STAND FOR

The BCAC believes the adoption of blockchain technology brings tremendous opportunity—and challenges. The council is committed to developing the strategies and resources necessary to help organizations leverage blockchain to be more successful.

### HOW WE'RE MAKING AN IMPACT

The council develops best practices, use cases and other resources that are available to anyone developing, selling, or influencing blockchain solutions. The council's goal is to evangelize the underlying technology that is redefining the concept of currency, disrupting the entire financial industry, and shaking up business applications. The council also collaborates with CompTIA's other Industry Advisory Councils to further study how blockchain can be leveraged in solutions along with drones, artificial intelligence, business applications and internet of things.

### THIS DOCUMENT WAS DEVELOPED BY THE FOLLOWING BLOCKCHAIN ADVISORY COUNCIL MEMBERS:

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