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BLOCKCHAIN TECHNICAL GUIDANCE FOR THE ELECTROINDUSTRY



ABSTRACT

This research paper was commissioned by NEMA in 2019 as a strategic initiative to develop technical industry guidance that is applicable and relevant to NEMA members. Specifically, the paper will serve to educate member companies about blockchain, to share its applications across NEMA industries, and to recommend guidelines and principles for moving forward with blockchain technology.

In order to help member companies to develop a better understanding of enterprise blockchain, the first section describes some common definitions, characteristics, and implications of blockchain on businesses. This section also dispels a few myths about blockchain and why they are not relevant to enterprise blockchain.

The next section explores many blockchain use cases. More importantly, real examples are included to demonstrate how blockchain technology is being used today and validating its status as production-ready. These examples provide insights into how blockchain can provide competitive advantages to businesses.

The paper concludes with guidelines and strategies for moving forward with enterprise blockchain, including recommended steps for those who want to lead the transition and capture an outsized share of value.

PREFACE

Approach

The objectives and outline for this paper were guided by responses from an internal survey sent to a small subset of NEMA members to gauge their awareness and involvement with blockchain. The results revealed an array of knowledge from neophyte to well-versed, indicating the content should speak to a varied audience with the goal of providing all NEMA organizations with a more well-rounded understanding of blockchain for business. Specifically, the results of the survey suggested the following prioritized focus areas for this paper:

- a. Education
- b. Use-cases for enterprises with actual examples of projects in various industries
- c. Guidance on how to proceed with a focus on value-delivery

CONTENT SOURCES

In addition to the survey feedback, the following sources were used as the foundation for this paper:

- a. Blockchain consultant industry leader Chainyard's library of blockchain experiences analyzing businesses, developing solutions, participating in industry events, and attending blockchain-focused webinars.
- b. Blockchain implementations incubating in labs or running in live production networks, spanning a wide range of industries.
- c. Research from universities, business publications, and analysts.

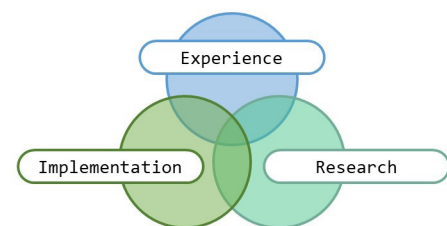


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The background features a stylized world map with a low-poly, digital aesthetic. The map is composed of various shades of blue and teal, with some areas highlighted in a brighter cyan. A network of thin, light blue lines connects several points across the map, suggesting a global network or data flow. In the top left corner, there are faint, semi-transparent numbers: '945', '43.25', '125', and '08.95'. The bottom of the image is dominated by a large, abstract geometric shape that resembles a stylized 'Z' or a series of overlapping planes, rendered in shades of teal and white. The overall composition is modern and tech-oriented.

INTRODUCTION AND ABOUT BLOCKCHAIN

Introduction

What You Need to Know

Blockchain is not a product. It is not something you buy off the shelf and deploy to your company. Blockchain is a technology that enables a company to do business more efficiently and solve challenges that may exist. Blockchain deployments provide a trust framework where tighter integrations, process automation via smart contracts, and privacy controls enable new business models.

Blockchain is happening!

It is no longer just a buzzword. The technology is being used to solve problems and streamline processes in every industry. In this paper, we explore the variety of significant benefits from new best-practices that many businesses, governments, and organizations are discovering as they (re)implement their business processes based on blockchain technology. Examples abound of trials, and we are also seeing production deployments in some industry segments among consortiums on private permissioned networks, as well as on public networks.

Projections for blockchain spending and savings are truly staggering. According to MarketAndMarket, the global blockchain market size is expected to grow from USD 3.0 billion in 2020 to USD 39.7 billion by 2025. This growth is driven by the adoption of blockchain across public, private, and governmental organizations. Here are a few of the bold predictions of the economic impact blockchain will have on the global economy:

- a. In the CIOs [Guide](#) To Blockchain, “Gartner estimates [blockchain](#) will generate \$3.1 trillion in new business value by 2030”.
- b. According to [Forbes article](#) the World Economic Forum estimated total corporate and government spending on blockchain at \$2.9 billion in 2019, an increase of 89% over the previous year, and reach \$12.4 billion by 2020. In the same article, it is noted that when PwC surveyed 600 executives, 84% said their companies are involved with blockchain.
- c. In 2019 the [World Economic Forum \(WEF\) forecast](#) that \$2.9 billion would be spent in that year. Further, they predicted spending on blockchain solutions around the world to surge more than 400% to \$12.4 billion in 2022.
- d. In the energy sector, even in early 2018 the “global blockchain in energy market” was projected to reach USD 7.1 billion by 2023, according to this [Blockchain in Energy Market report](#).
- e. Blockchain spending in the energy sector is expected to grow from half a billion in 2019 to over 8 billion by 2025, according to [a July 2020 PR NewsWire report](#).

In the CIOs Guide To Blockchain, “Gartner estimates blockchain will generate \$3.1 trillion in new business value by 2030”.

Blockchain spending in the energy sector is expected to grow from half a billion in 2019 to over 8 billion by 2025, according to a July 2020 PR NewsWire report.