

THE DIGITIZATION OF THE ENERGY BUSINESS ARE YOU PREPARED?

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'Digitization' is a key buzzword at the forefront of business decision-makers minds today. Its increasing usage is evidence that businesses should be looking at new ways of managing their internal and external (market-facing) processes. While digitization is nothing new (it's been going on since the advent of the computer, as companies continuously replace analog methods of transacting commerce with computerized versions), it is an approach that is becoming increasingly integral to regulated and deregulated businesses alike, across the energy industry.

As technology continues to advance, successful companies are increasingly seeking new digital methods to reduce cost and risk, and to improve profitability in highly competitive markets. Those that have managed their business operations with traditional methods are feeling increased pressure to adopt digitization to stay relevant and competitive in today's market. The competitive advantage of digitization has gone to the early adopters - those companies whose leaders possess a corporate mindset to embrace new and emerging technologies and use it to advance their businesses into the upper echelon of high performers.

These companies and their leaders demonstrate that a mindset shift, and early adoption of digital practices result in a universal restructuring of the entire fabric of business. As a result, businesses can gain a better understanding of the requirements and habits of their 'digital customers.'

CONSUMER MARKETS LEAD THE WAY

The most obvious example of a company leading the charge and reaping the benefits of digitization can be seen in consumer retail markets. Amazon's transformation from a humble online book retailer to a retail market juggernaut is due, primarily, to its use of digital technologies. These technologies - big data, data analytics, cloud computing, and supply chain automation, to name a few - were once considered bleeding edge. The early adoption of these once revolutionary technologies has changed the way consumers procure goods and services and, in the process, has reshaped consumer markets.

BANKS AND FINANCIAL INSTITUTIONS

Banks and financial institutions have been some of the earliest adopters of new technology, driven in part by the degree of state and federal regulatory oversight they face, and the need to quickly process large volumes of financial transactions. However, with increasing competition in the retail financial markets, banks, S&Ls, and brokerage firms are recognizing digitization as a strategy to offset the operating cost pressure that consistently looms over them. The broad adoption of technology has led this sector to practice vigilance, upgrading their capabilities and maintaining digital mastery over their data, systems, and processes.

Furthermore, with the number of high-profile data breaches across a multitude of markets, these same financial institutions have been at the forefront of cyber security advancement, making investments to secure and harden access to the underlying data of customer-facing systems that are critical to their commercial success.

DIGITIZATION OF ENERGY AND COMMODITIES?

While merchant retail and financial markets have been at the forefront of adopting new digital strategies to transform their businesses, energy and commodity markets have lagged. Production and transportation of commodities, such as power, crude oil, natural gas or soybeans, are capital-intensive and asset-heavy processes that haven't yet lent themselves to the digital economies of scale found in consumer markets.

Though technology adoption has increased – from monitoring and control of assets to ETRM/CTRM systems for tracking and managing trading activities – the opportunities to transform business processes, and even markets, have been less apparent for most market participants. With the rise of innovations like distributed generation and alternative energy options, energy companies can no longer afford to continue traditional approaches to their business operations.

There are numerous existing and emerging examples of companies in these markets re-aligning their thinking and embracing digitization as part of their future strategies.

The widespread deployment of smart meters combined with improvements in data processing capabilities provide opportunities for retail energy marketers to manage uncertainties in wholesale energy prices during periods of extreme weather. Missed forecasts can leave them with limited ability to revalue their retail portfolio, as demand increases and wholesale energy costs skyrocket.

Providing customers new tools to visualize energy use, in near realtime paired with price incentives, encourages reduced consumption during peak periods, thereby reducing or eliminating the need for energy retailers to buy additional supplies in a volatile wholesale market. As consumers become more tech-savvy, these tools (empowered by big data, data visualization technologies, and rich web interfaces) have become a clear competitive advantage in retaining and acquiring new customers.

Utilities are using the massive volume of smart meter data to enable data-driven decision making, improve predictive analytics, and better manage asset health. They are implementing technologies for mobile workforce enablement to increase employee productivity, streamline business operations, and more efficiently manage workflow. They are working to standardize and automate business processes, leading to cost savings which can then be passed on to end consumers.

Other energy and commodity markets, particularly the global freight and oil markets, are looking at emerging blockchain technologies to transform their businesses. Though much of the investment to date has been in the proof-of-concept or exploratory phase, many of the emerging initiatives show promise in improving information flow and validation, while simultaneously reducing costs associated with settlement and contract management. At the very least, companies are recognizing and addressing the need to refresh and replace legacy systems and move to a modern technology infrastructure, to enable adoption of emerging technologies such as blockchain. They are adopting agile methodologies that enable them to be nimbler and more responsive to technological change.

Should the trials of blockchain move into production and widespread adoption, the advantage will be with the first movers. Distributed ledgers require the establishment of standards, including smart contracts, for the commodities traded or the supply chain managed – and those that are successful in establishing these trading/logistics networks will have had the most significant influence in forming those standards. Additionally, as market gravity pulls additional trading partners into the network, its founding members will be able to recover much or all of their initial investment via transaction or usage fees.

European energy markets provide an additional example of the digitization of energy with the increasing adoption of algorithmic trading solutions. With the influx of unreliable renewable sources and the retirement of traditional baseload generation, European power markets face growing challenges to balance supply and demand, and without a robust intraday market, the physical power market would be practically unsustainable. Algo solutions, which can monitor near instantaneous price movements, and commit buy or sell orders as necessary, to ensure a balanced market and reduce extreme price volatility, are quickly transforming that market and enabling a low carbon power grid for the European continent.

Companies are most successful in extracting maximum returns from their investments in digitization by: maintaining a laser-sharp focus on their areas of expertise, fostering transformation to business processes and working to improve their connection with customers and/or trading partners.

Every company operating today has experienced some level of digitization – if nothing else, they are using software and computers to account for their business activities. However, what separates leading businesses from late adopters is a strategic vision for how technology could impact their business and markets. Late adopters have no inner guiding intuition about the specific areas where digitization can be applied to lead to the highest ROI and/or a competitive market advantage.

There is no 'one size fits all' roadmap for digitizing and transforming your company and market. Here are a few guiding principles that should be embraced by any business moving into the digital realm:

1. Adjust your thinking. Becoming a leader in a market is rarely achieved by merely reacting to change. Market leaders seek opportunity and are continually looking for new methods and technologies to harvest emerging opportunities. Technology is driving change at an accelerating rate and available reaction times are shrinking. In this environment, all market participants must invest time, and at some level, budget, in what can be called 'technology futurism' to avoid getting passed by their competition or a pivoting market.

2. Plan for success but be willing to accept some failures. Every company that has led the transformation of a market has experienced failure at some level, scaling from insignificant to spectacular. Distributed ledger technologies like blockchain may ultimately transform the global energy markets, or they may be a learning experience for early investors and a stepping stone to achieving the next 'great thing' for these markets. You should never consider any failed investment in new technology a total loss. At minimum, it will provide key insights and help to inform future decision-making.

3. Finally, think strategically, but seek out near-term tactical wins. Digitization strategies should ultimately lead to a true transformation of how a company conducts its business. However, without harvesting low-hanging fruit along the way - improving operational efficiencies and finding incremental gains in ROI through the deployment of existing technologies - momentum can be lost. As a minimum starting point, in order to enable faster adoption of emerging technologies and be more responsive to technological advances, companies should focus on refreshing technology infrastructure, replacing legacy systems, and adopting agile methodologies.



Few companies can afford to throw money at science experiments, but in today's markets, no company can afford to not invest in advancing their technology capabilities. Technological change is coming to all markets and industries, and much quicker than most can imagine. Even if your company doesn't seek to be on the leading edge of that change, investments in new software tools and strategies will be required to keep pace with your competition.

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