

Rethinking the enterprise

Becoming an AI-first company: operationalizing objectives, benchmarks, and the transformation journey

May 2021

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Introduction

We are living in extraordinary times. Even before the pandemic, the global economy was undergoing dramatic change. The deployment of digital networks, data platforms, and artificial intelligence has caused significant disruption and a growing divide between companies that have embraced digital transformation and those that have not.

To understand how to enable technology to drive maximum business impact, we need to think about the firm in a new way.

Our research shows that the core of the new, “AI First” enterprise is a different operating architecture – one centered on integrated data assets and designed to easily deploy AI and Data Analytics at scale, across any function or department, rapidly and efficiently. This new architecture enables organizations to address a vast set of quickly changing business needs, spurring innovation well beyond IT and R&D and driving the agility necessary to not only survive but prosper in these challenging times. The AI First organization is purpose-built to maximize the impact of technology, data, and artificial intelligence, and it is prepared to manage not only its opportunities, but also its challenges and risks.

Our research shows that being AI First is not the prerogative of “digital native” companies. Even among traditional enterprises, many companies have invested in the kinds of organizational, architectural, and procedural transformation necessary for digital technology to flourish. At the same time, digital native companies have much to learn, change, and improve. Becoming an “AI First” organization is an ongoing journey. This paper introduces the vision, trajectory, and assessment tools to guide organizations as they seek to make progress on this path.

The research

We started by developing a detailed framework for understanding how technology is deployed in organizations. Unlike other studies, we did not limit our focus to what technology was being deployed or how much a firm was investing. Rather, we looked deeply at *how* the organization was deploying technology, and whether it was having the impact desired.

THE FRAMEWORK

Specifically, our framework covers two key aspects of an organization:

- **Technology adoption:** Adoption covers the technology (e.g., real time streaming analytics, data discovery and refinement capabilities), processes around technology (e.g., ML DevOps), and architectures of the technology and data platform (e.g., API policies). Technology adoption is broken into technology deployed and technology architecture. Technology deployed focuses on the specific types of technologies within the organization. Technology architecture looks at how the technology is integrated and organized within the organization.
- **Technology capabilities:** Capability measures an organization's ability to develop technology and leverage technology for impact across key business processes, including various customer-facing and operational processes. A key measure takes stock of the presence of "citizen developers." Technology capabilities examines the process around technology – both the innovation and governance processes – and the use cases in which technology is leveraged. This measures how well-positioned the organization is to take advantage of technology – a critical element left out of most studies.

The framework then marries the impact of technology intensity on the organization's financial, market, and societal performance.

The results

Our recent survey of over 130 publicly traded, \$1B+ companies across healthcare, financial services, manufacturing, and retail sectors demonstrates a significant correlation between a company's "technology intensity" and its performance outcomes, such as revenue growth and total enterprise value growth. Furthermore, we find statistical evidence that superior tech architecture causes superior business outcomes, beyond a correlated relationship.

Three-year revenue compound annual growth rate (CAGR), when controlling for systematic industry differences, correlates ($p < .02$) with a strong combination of technology deployed and technology architecture within an organization.¹ Three-year revenue CAGR also correlates ($p < .05$) with a capability index of citizen developers, which are defined as "autonomous, agile teams dedicated to solving business problems through data-driven technology."

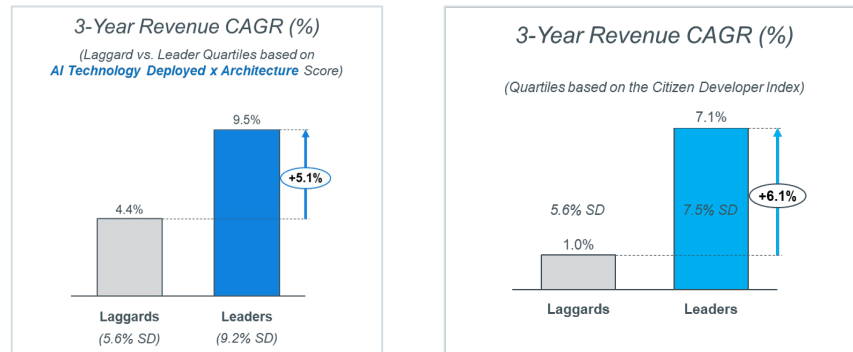


Figure 1. Three-year revenue CAGR in relation to Tech Adoption Index and Citizen Developer Index. Both show statistical significance when controlling for differences in industries.

Correlations were also found with other market metrics, including total enterprise value (TEV) growth. These organizations' three-year TEV CAGR correlates ($P < .02$) with the combination of technology deployed and technology architecture.

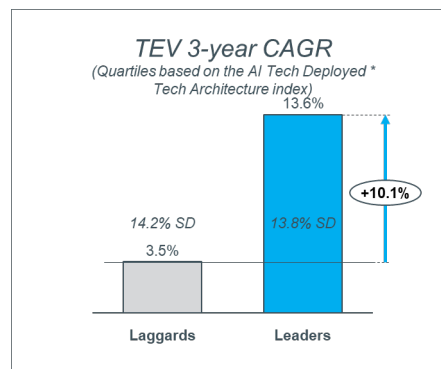


Figure 2. TEV 3-year CAGR in relation to Tech Adoption index show statistical significance.

¹ Company financial data were collected from S&P's Capital IQ Platform

As organizations digitally transform and grow in their tech intensity, they tend to grow in both their technology adoption and their capabilities and processes. This evolution can be characterized along a technology maturity model. While some organizations may be more advanced in one “pillar” over another, we notice that most of the time, organizations must match advancements in tech deployment with growth in architecture and processes to fully reap the rewards of tech intensity. Typically, a transforming organization experiences four “levels” of maturity:

- **Traditional** organizations are the earliest in their digital transformation and are the lowest in tech intensity. They often have siloed organizations and siloed data, with on-prem infrastructure and outsourced technology.
- **Bridge** organizations have progressed further than traditional organizations and are starting to reap the rewards of transformation. They have often started to migrate their data platform to the cloud and have started to introduce agile development processes and APIs that enable data sharing, resulting in improved collaboration between the newly linked functions.
- **Hub** organizations have almost completed their transformation, with most of their data on a unified and central data platform and the expansion of data science across business units. These organizations typically put effort into ensuring that their data are easy to find for business users who are then able to leverage real-time insights to make strategic decisions.
- **Platform** organizations have an integrated foundation of data, software, and AI that supports collaborative and creative innovation in business units. These organizations emphasize the importance of data-driven decision making across the business, focusing on training up internal “citizen developers” to make decisions using data and to leverage advanced AI / ML capabilities in sophisticated ways.

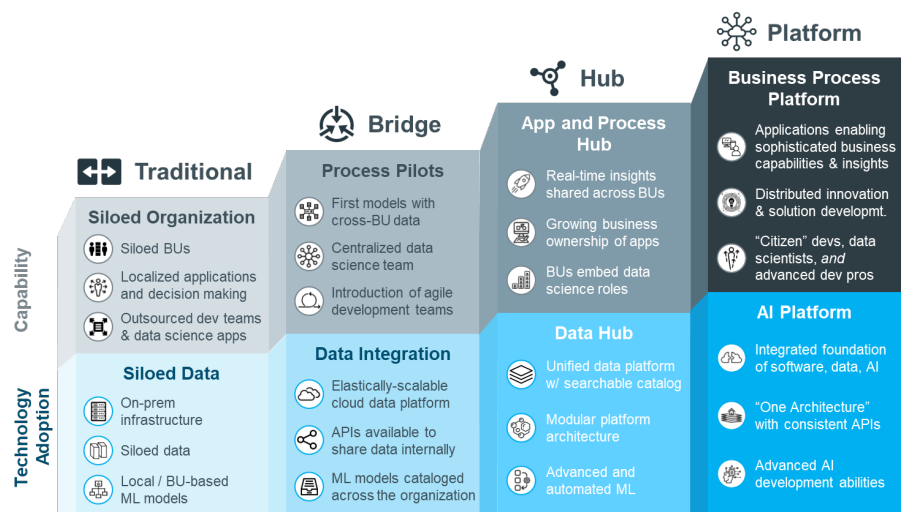


Figure 3. The typical “maturity model” experienced by enterprise organizations as part of digital transformation

In addition to these general trends across organizations, different industry verticals demonstrate various levels of maturity, ranging from verticals that are often at the lowest maturity level to those who are quite advanced in their typical tech intensity. Organizations in these verticals also tend to prioritize different use cases for the technology they deploy, across scenarios as diverse as supply chain, back-office, fraud detection, CSR, marketing, and product management.

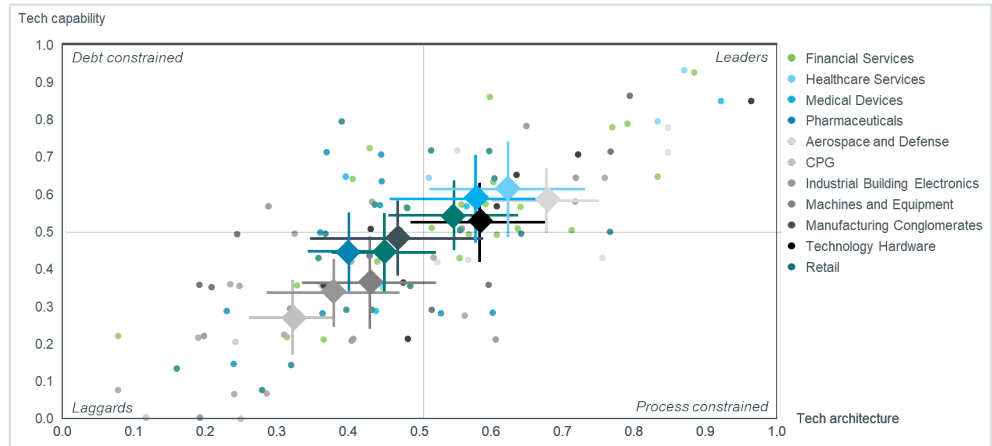


Figure 4. Spread of verticals across tech architecture and capability

Reflections

We are experiencing an era of rapid and turbulent change, with unprecedented opportunities for those organizations who are able to adapt. Organizations architected for rapid responses are best positioned to succeed.

Within our study, patterns emerged in how organizations adopted technology. For example, most organizations that received low scores on technology deployed questions also received low scores on technology architecture questions. Patterns also emerged around the business processes enabled, data architecture, machine learning operations, and citizen developers.

Whether an organization is responding to the emergence of a competitor, shifting customer needs, or unexpected events, the organizations that will thrive in the long term will be those that have the data systems, organization, and capabilities necessary to anticipate and respond to these changes.

About Keystone Strategy

Keystone Strategy is an innovative economic, technology and strategic advisory consulting firm with locations in Boston, New York, San Francisco, and the Seattle area. The firm brings an uncommon approach to deliver transformative ideas for tech clients, global law firms, and Fortune 500 companies facing complex and often not-yet solved business challenges. Keystone brings an interdisciplinary approach, leveraging the intersection of economics, technology, and business strategy. For more information about Keystone Strategy and the Tech Intensity approach, reach out to tkudrle@keystonestrategy.com.