Unleashing value from digital transformation

By Tim Paul Smith, Tim Bottke, Gregory Dost, and Diana Kearns-Manolatos
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Our analysis of 10 years of financial disclosures from more than 4,000 global organizations reveals where digital transformation actions can increase enterprise value—and, just as importantly, where they can erode it.

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Digital transformation is on everyone's agenda. But the hardest part of any transformation is not deciding whether to embark on it; it's understanding whether you're seeing distinctive returns on your investment. Organizations often struggle to determine which actions drive the most impact and which investments yield the most enterprise value.

We examined which actions can increase the odds of transformation success, and we identified the actions that drive value: those that, when combined, can create outsized returns on tech investments and those that, when done in isolation, can destroy it. According to our analysis, the right combination of digital transformation actions can unlock as much as US$1.25 trillion in additional market capitalization across all Fortune 500 companies. But the wrong combinations can erode market value, putting more than US$1.5 trillion at risk. The takeaway: Getting digital transformation right takes more than just ambition and bold investments.

**The power of being intentional in both words and actions**

We applied data science to a decade of public shareholder filings, investor relations statements, and financial data. This covered more than three million pages of financial disclosures for 4,651 US and global firms listed on the New York Stock Exchange. The goal was to assess what impact, if any, digital transformation initiatives have on enterprise value, as determined by market capitalization.

We analyzed these financial disclosures to ascertain how companies talked about their digital transformation actions—namely, how they spoke to (1) implementing a digital strategy; (2) their discrete, strategically aligned technology investments; and (3) their efforts to prepare their people and processes for digital transformation. Since these investor communications are governed by SEC regulations, they serve as a proxy for digital transformation intentions and the actions taken by the enterprise.
We applied natural language processing to scan the documents for keywords related to these actions. We then used a series of financial models to look for correlations between how the companies explained their digital transformation plans to investors and other stakeholders, and what valuations were assigned to the companies.

The findings

We found that the link between strategy and action is the determining factor in a company’s ability to derive the most value from its digital transformation. Research shows these actions can increase enterprise value if executed with intent, yet not all actions are created equal.

Clarifying the actions

Our research began with a frequency analysis of terms commonly used to set strategies, enable technologies, and mobilize the enterprise for digital change. Once this data set was formed, we then pivoted to the relationships between select groups. These relationships were analyzed via clustering terms into various actions (figure 1). These are the focal points most often discussed with our clients undergoing digital transformation and comprise a useful frame to understand how enterprises drive their efforts. In practical terms, they are defined as:

- **Digital strategy**: The strategic possibilities created by digital transformation. Examples of digital strategy terms include new digital capabilities, new markets, and new products—essentially, terms that describe efforts to enable a larger strategy, sometimes spanning multiple business units.
- **Tech aligned to strategy**: The technologies that come with digital transformation. When we say, “aligned to strategy,” we mean these technologies are being harnessed to achieve some discrete goal and bring the strategy to life.
- **Digital change**: The organization’s ability to adapt to and adopt new processes, resources, and ways of working. It refers to the more qualitative, human characteristics necessary for a transformation, encapsulating a multitude of talent domains.

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**FIG 1**: These three actions are defined using the following keywords associated with digital transformation

<table>
<thead>
<tr>
<th>Change capability</th>
<th>Digital</th>
<th>Enterprise strategy</th>
<th>Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating process, agile, agility, operating efficiency, capacity to change, workforce transformation, etc.</td>
<td>Digital strategy, digital capabilities, digital innovation, digital transformation, digitally enabled, digitize, digitization, digital ecosystem, emerging technology, etc.</td>
<td>New segment, new portfolio, competitive positioning, product innovation, business transformation, new products, new markets, etc.</td>
<td>Digital reality, big data, artificial intelligence, machine learning, cloud, RPA, cloud-native, Internet of Things, IaaS, PaaS, SaaS, XaaS, digital twin, edge technology, blockchain, cybersecurity, etc.</td>
</tr>
</tbody>
</table>

**Action 1: Digital strategy**

*Focuses on statements that speak about the overall organizational strategy next to the broadest digital terms*

**Action 2: Tech aligned to strategy**

*Focuses on statements that speak about the overall organizational strategy next to more specific individual technologies*

**Action 3: Digital change capability**

*Focuses on statements that speak about the broader digital terms next to terms indicative of organizational change*
How the individual actions drive value

Each of these actions was correlated to market capitalization. We examined the impacts of each individually and in various combinations to understand which combinations could yield the greatest value—and which could yield the least. Several distinct patterns emerged:

Digital strategy

When a company articulated its digital strategy in its financial disclosures, we observed a significant positive impact on valuation. This is where many organizations start their digital transformation value journey, though only 44% have a high maturity related to this action. We hypothesize that the market understands the impact of “digital” on all companies regardless of industry and gives management credit for taking action to modernize the business in support of a broader strategy. Perhaps evidence of action, no matter how general, demonstrates an organization’s prioritization of digital goals.

Technology aligned to strategy

When we found evidence of technology aligned to strategy in companies’ financial disclosures, the valuation impact was two times bigger than that of digital strategy. We believe the higher valuation is due to the specificity of technologies mentioned (figure 1). This likely gives stakeholders a more tangible sense of strategies employed, and a way to keep closer tabs on where the enterprise is placing its capital bets—which, for many, can be massive. Many of these technologies are also viewed as emerging or leading-edge and can reflect a forward-looking approach to improved performance.

Digital change

Despite the positive news around the previous two actions, our research uncovered a cautionary tale for digital change. When analyzing disclosures that articulated change programs in general terms or without reference to specific digital actions, we found that market capitalization eroded. When observed on its own, digital change was nearly three times less impactful than digital strategy and put existing market cap at risk of erosion.

We believe this occurs for two reasons. First, change for change’s sake, without purpose or any ties to a broader strategy, is insufficient. It lacks the specificity to mobilize stakeholders and rally them around shared interests. Second, many stakeholders understand that change can yield a high degree of uncertainty. Without a specific plan, stakeholders discount management’s ability to move the organization forward.
Confidence is lost, momentum is impaired, and leadership could be viewed as chasing the latest management fad.

Consider Agile adoption over the years. Solving for a scaled Agile organization and achieving enterprise agility\(^7\) is certainly complex. It involves upskilling talent, building the right product teams, and instilling a new organizational mindset. But it goes well beyond that. To realize the value of Agile—the products enabled, the velocity expected, and the customer experience impacted—it all has to tie back to the enterprise strategy. If an Agile enterprise is built without these in mind, the enterprise is simply adopting a management trend and not taking full advantage of Agile as a solution. Our research suggests this is a path to value destruction.

Individual actions: The upshot

According to our analysis, if you can only do one thing, focus your efforts on technologies aligned to strategy because it drives superior market value. And the more specific you can be with stakeholders, the more you’re rewarded in the market. There’s power in being vocal about your actions with investors and other stakeholders. Think about investor relations as a possibly overlooked tool in your arsenal—a way to signal your confidence in the plans you have made and the actions you intend to take, and to demonstrate how strongly digital transformation figures into the enterprise’s plans.

**How combined actions shape value**

After we analyzed each of the actions individually, we looked for combinations that could unlock (or destroy) even more value. The results are compelling: Specific combinations of actions can yield up to a 5% increase in market capitalization, while other combinations can lead to significant value erosion risks of as much as 9%.

Transformers rejoice: Value is there if you execute with intention

The most positive combination is the digital trifecta: the presence of an articulated digital strategy, where specific technology investments are aligned and set, and the organization is mobilized and ready to manage the change. This equates to a value impact **1.2 times** that of digital strategy applied individually, and nearly **3.5 times** that of change capability on its own.

While it would be easy to dismiss the trifecta catalyst as conventional wisdom, the evidence shows otherwise.\(^2\) Only 34% of Fortune 500 companies we analyzed showed signs of being strategic about their technology investments in their financial disclosures. It’s possible that the remainder are making important investments but have lost the plot line, are reluctant to disclose “too much” to competitors, or don’t know how best to convey the impact of those investments.

Transformers beware: Where you have the will, make sure you have the way

Our analysis revealed that change capability is the wild card: Its presence can make or break value for the enterprise. On its own, it’s a value eroder. As part of the trifecta, it’s a value catalyst. But when it’s entirely absent, we observed the worst outcome of all.

We found evidence that the combination of digital strategy and technology-aligned investments without change capability results in a significant erosion of enterprise value. The losses are **10 times greater** than those seen with the other value destroyer: digital change on its own. In fact, it’s the most negative combination, posing a 9% value erosion risk that could cost Fortune 500 firms US$1.5 trillion in value.\(^7\)

But how can that be? How can the same actions that create an outsized return also destroy value? Digital transformations require buy-in at the onset, commitment to sustain, and

**WHAT IMPACT DO INDIVIDUAL TECHNOLOGIES HAVE ON MARKET CAP?**

While our analysis suggests that discrete technology investments aligned to strategy can drive twice the competitive market capitalization than simply having a digital strategy, certain technologies are quicker to yield value than others. Cloud was first out of the gate to spark digital transformation. It’s also a natural fit for our analysis, as it serves a forcing function from the strategy to the operating model changes that come in adoption. AI and cyber increase value, though over longer horizons. As adoption accelerates, we expect the same value impacts. Cloud is the leading indicator that foundational tech will drive returns if wielded intentionally.

**HOW DO HIGH-PERFORMING ENTERPRISES FARE?**

Deloitte has researched the impact of digital transformation using other value measures and found similarly positive results. Our Exponential Enterprise index of 500 large-cap US enterprises shows that the “leaders” (Exponential Enterprises), with both a high capacity for change and an ability to win had, on average, 176% higher forward price to earnings than the lowest performers in their industry.\(^8\)

We ran our financial model on this subgroup of highest-performing organizations and found that, on average, Exponential Enterprises garner **12.5 times** the market cap increases than other organizations. However, while they see higher highs for actions that increase market cap than other organizations, they also are at greater risk of suffering from lower lows—and shouldn’t take their privileged position for granted.
Our findings were largely consistent across all industries we studied—consumer; energy, resources, and industrials; financial services; government and public services; life sciences and health care; and technology, media, and telecommunications—and for organizations of all sizes, with a few variations:

- **Large-cap organizations (US$10 billion or more)** benefited more from technology aligned to strategy than smaller organizations.
- **Small- to mid-cap organizations (less than US$10 billion)** benefited more from digital strategy than larger organizations.
- **Financial services** doesn’t see a positive impact on market cap related to a digital strategy until other factors are added. Instead, for financial services firms that discussed digital strategy on its own in their financial disclosures, we saw a correlation with a loss in market cap. In addition, the combination of digital strategy and technology aligned to strategy is a highly positive scenario for financial services firms, especially compared with other industries.

Our research shows that the power of digital strategy, brought to life by specific technology investments, and underpinned by change capabilities, can meaningfully shift a company’s valuation (figure 2).

This is easier said than done, as unlocking each takes significant time, effort, and expertise. So for the companies that aren’t leading in this today, what can executives do to capitalize? Our research findings point to four actions:

1. **Be deliberate.** When we analyzed approximately three million pages of financial disclosures, we didn’t look simply at the coexistence of digital strategy, technology aligned to strategy, and change capability. Rather, we examined both the coexistence and the proximity of those factors, and it’s the proximity of the factors that shows which companies are linking these concepts most deliberately. Proximity also made the difference in distinguishing companies that tend to outperform their peers in market valuation. Put simply, as you take deliberate action to advance your digital strategy, as you make the choice to invest in certain technologies, and as you evolve your organization’s change capability, make certain that you understand how these three factors are mutually enabling and reinforcing. Absent that alignment, your investments may not deliver the returns they could be producing.

2. **Communicate with purpose.** Our analysis is rooted not only in what these statements say companies are doing, but also in how companies communicate with the market about their choices. Undoubtedly, the vast majority of organizations today are making some form of technology investment to improve how they operate and how they go to market, though nearly two-thirds are unable to link their technology investments to their strategy. Nor are they able to talk about the relationship between the two. Words without action can erode value. Actions without words also limit value potential. Take stock of where you’re investing, craft a thoughtful narrative, and communicate accordingly.

3. **Get close to the technology so you can get specific.** Digital strategy is valuable, but technology aligned to strategy is twice as valuable. With the latter, companies that see added benefit are getting very specific about the technology investments they make, and they’re demonstrating how those technology investments further their enterprise strategy. It’s not enough for executives to approve and fund...
technology; they also need to have a fundamental understanding of the technology. Be sure to invest the time—and invest in the relationships—necessary to get close to the technology: what it is, how it works, how it’s architected, and why it matters. And be certain that this understanding carries through into strategy discussions.

4. **Prepare, prepare, prepare.** Any approach to digital transformation is suboptimal if it isn’t underpinned by change capabilities. And there’s only so much a company can do to fast-track. Change capability means bringing the right skill sets and culture, as well as agility. Unlocking all of this takes time, and the benefit goes to those who start earlier. Start now.

Succeeding with digital transformation requires assembling the right pieces in a multivariate puzzle. We examined multiple approaches here, but as we step back and think about the main insight from our analysis, it’s ultimately that intentionality matters.

**FIG 2:** How digital transformation factors correlate to market cap

<table>
<thead>
<tr>
<th>Correlation to market cap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital strategy + tech aligned to strategy + digital change capability</td>
</tr>
<tr>
<td>Most positive combination (&quot;THE TRIFECTA&quot;)</td>
</tr>
<tr>
<td>All three factors are present, and the organization is fully aligned for as much as a 5% market cap lift.</td>
</tr>
<tr>
<td>Tech aligned to strategy only +2x</td>
</tr>
<tr>
<td>Digital strategy only</td>
</tr>
<tr>
<td>Digital change capability only -3x</td>
</tr>
<tr>
<td>Most negative combination</td>
</tr>
<tr>
<td>Digital strategy and tech investments are aligned, but change capability is not present, risking as much as a 9% market cap erosion.</td>
</tr>
</tbody>
</table>

Source: Deloitte analysis.
Digital transformation is a continuous effort that extends well beyond one single technology, platform, or skill set. It’s the fabric for enterprise survival in the face of continuous disruption. Getting it right means crafting a strategy that places purposeful digital bets. Getting it right means allocating your capital to new technology that can power your strategic initiatives. Getting it right means mobilizing your organization and adopting a change mindset with no defined horizon (or a horizon that could go well beyond your tenure). And getting it right means explaining to stakeholders that your digital transformation actions are intentionally aimed at increasing the odds of your organization’s ongoing success.
For our data science analysis, we examined 10 years of business and financial data from 10-K filings with the US Securities and Exchange Commission covering US and global companies listed on the New York Stock Exchange as of April 2022, which totaled 4,651 organizations.

We removed high- and low-market-cap outliers that could skew results, which left more than three million pages across 18,039 filings for organizations with US$7.5 million to US$3.5 trillion in market cap. Our method and data set were inspired by research that our coauthor Tim Bottke conducted for his book, _Digital Transformation Payday_.

We chose to use these particular documents because information listed in financial findings is governed by regulatory requirements: You can’t say something in a 10-K statement if you’re not doing it. Thus, it enables us to begin to correlate action and outcomes. Specifically, we applied natural language processing to scan the documents and look at how those organizations talk about their digital strategy, existing or planned technology investments aligned to their strategy, and preparedness for people and process transformation (change capability) within investor communications, management discussions, and analysis sections of their public filings. These mentions—and, more specifically, the way these topics were mentioned—help give us a sense of the real-world actions that organizations are taking with respect to digital and tech investments.

Then, using a financial model, we looked for correlations between these three factors and the companies’ market capitalization, which helps us look beyond the direct value of technology investments (for example, did this technology yield operational savings from increased efficiency?) to their organizationwide impact.

While we acknowledge that there are some limitations to this approach—namely, that some organizations may be taking some of these actions but not highlighting them in their filings—we did find that those organizations that specified their actions in this area showed correlations with value. We hypothesize that this may be due in part to confidence: Those who are most confident in their digital actions are more apt to celebrate their impact.

### A look at our US$1.25 trillion value calculation and more

Our research found organizations with digital transformations that combined digital strategy, the technology aligned to strategy, and a strong change capability have the most to gain. How much? There’s no easy answer, but we ran the numbers to help guide organizations on what ultimately needs to be a very individual value journey based on what’s possible, what’s probable, and their potential.

### The maximum path to value: What’s possible?

Overall, organizations that brought together all three digital transformation actions saw as much as a 5% competitive market cap lift relative to others that didn’t take these combined actions. This is not a 5% topline return for digital transformation, but rather the relative difference—versus peers—that can be gained from the trifecta combination of these three actions when comparing group A (those in this winning scenario) versus group B (all others).

To make that more tangible, we can look at an example. If group A is all Fortune 500 companies today, their total market cap is US$37 trillion. An approximate +5% differential in market cap across all 500 companies is as much as US$1.89 trillion that they could gain compared to others. When we account for organizations that may already be getting it right, we see a value potential of US$1.25 trillion available to this group versus others.

### A realistic value path: What’s probable?

Realistically, what’s optimal isn’t always what’s probable or what the typical organization might expect to achieve. Therefore, we dug deeper to look at what might be probable for the average organization (figure 3).

Our analysis found that even if organizations set their sights low and do the minimum working toward this scenario, they could expect an approximate +0.4% average market cap lift versus peers. If all Fortune 500 companies even minimally improved relative to their peers, that approximate +0.4% lift would be, on average, US$147.8 billion. And when those that are already starting to get it right are factored in, it’s a US$97.5 billion value potential.

### The impact that action can have: What’s the potential?

Finally, to understand how mimicking the actions of a high-performing organization might impact that value potential, we ran another simulation and found a probable 1% average increase versus peers. Again, if we look at the Fortune 500 companies today, their total market cap is US$37 trillion. An approximate +1% increase in market cap across all 500 companies is as much as US$370 billion. However, 34% of companies already have tech aligned to strategy. For the remaining companies, we can see a value potential of US$244 billion available relative to others.
FIG 3: Probable market cap increase for the trifecta scenario for organizations overall and based on high performance

+0.4% COMPETITIVE INCREASE IN MARKET CAP ACROSS ALL FORTUNE 500 ORGANIZATIONS IS US$147.8 BILLION

+1% COMPETITIVE INCREASE IN MARKET CAP ACROSS ALL FORTUNE 500 ORGANIZATIONS IS US$370 BILLION

Source: Deloitte analysis.
The skills-based organization: A new operating model for work and the workforce

5. The surveys were conducted in the spring and summer of 2022 across a range of industries and in 10 countries: Australia, Brazil, Canada, Germany, India, Japan, Singapore, South Africa, the United Kingdom, and the United States.
9. Cantrell, “Beyond the job.”
11. Cantrell, “Beyond the job.”
16. Ibid.
17. Nair et al., “Use purpose to transform your workplace.”
22. Work performed at a Dutch communications company by Deloitte.
26. Christopher Mims, “Google’s 20% time, which brought you Gmail and Adsense, is now as good as dead,” Quartz, August 16, 2013.
28. Work performed at a global life sciences organization by Deloitte.

Unleashing value from digital transformation

1. We used natural language processing (NLP) techniques including feature extraction, topic modeling, and proximity scoring to develop our NLP crawler. It was trained to understand the association between words using proximity scoring—a method that scores the word pairs on relevance based on how close together they appear.
2. While there are many that could have been selected, the Ohlson Model was stable and allowed consistency with the prior academic research.
3. We understand that correlation—where one action relates statistically to another action—is not causation—where one action causes another to happen—but there is still significant insight organizations can gain by better understanding correlated data.
4. Presence of the factor was based on high or more mentions in the top third.
6. Presence of the factor was based on high or more mentions in the top third.
7. Deloitte analysis based on Monte Carlo simulation of the most negative scenario with inputs modeled based on the behavior of digital strategy and tech aligned to strategy with no digital change capability. The simulation modeled the delta between the current rate and moving up to the 99.9th percentile, which showed a correlated market cap erosion of 9%. For Fortune 500s in our data set, we removed those with no sustained digital change capability to get 354 companies that have a market cap of US$16.69 trillion and a value erosion risk of US$1.5 trillion.
8. The Exponential Enterprise index establishes a frame to define a truly high-performing enterprise—based on natural language processing scans related to high capacity to change and ability to win. Given these two parameters, 500 large cap US enterprises were scored on a scale of 100 based on their public documents—10Ks, investor reports, and others—and to what extent they held these attributes. Those scoring 50 points or more for both change and win scores were Exponential Enterprises. This finding compares companies with both top–quartile ability to win and capacity for change to companies with bottom–quartile ability to win and capacity for change—normalized by industry. See: Monitor Deloitte, The exponential enterprise, accessed December 23, 2022.
9. The purpose of this analysis was to link our findings to a known unique cluster of leaders in the existing Deloitte Exponential Enterprise index.
10. For this analysis, we brought in M&A activity data from Capital IQ.
11. The analysis considered the financial data for the years before and after an M&A event for all companies that had one from 2011 to 2021 and compared market cap correlation data for those with an M&A event to the tech aligned to strategy action and its correlation data.
12. Based on Vanguard data, we categorized statements based on companies that were dividend paying, which covered 301 companies across 1,815 records, and companies that were nondividend paying, covering 3,498 companies across 16,224 records.
13. Our data science analysis shows there are clearly interaction effects across these three factors that need to be accounted for when combined.
Assessing the technology deficit in the boardroom


Taking stock of manufacturers’ supply chains

4. Insights gleaned from manufacturing executives’ interviews conducted in July 2022.
5. General Motors, “General Motors and Livent enter long-term lithium hydroxide supply agreement,” news release, July 26, 2022; General Motors, “LG Chem and General Motors reach agreement for long-term supply of cathode active material to support EV growth,” news release, July 26, 2022.
8. Deloitte analysis of the data from Mergermarket.
So, based on what we’ve learned from navigating through the onslaught of disruptions caused by COVID-19, geopolitical tensions, and concerns about an impending global recession, is resilience a way of being, or has it proved to be a means to an end—a way for organizations to weather the current storm? There’s a parallel to be drawn in the quality movement: Today, quality is embedded in the fabric of every organization, virtually a nonnegotiable expectation from all stakeholders. It’s a way of being for 21st-century organizations. Yet in the second half of the 20th century, quality was a competitive differentiator and something that needed to be worked at through explicit levers such as statistical quality control, total quality management, and the implementation of ISO 9000 standards. We needed an exercise regimen to build the quality muscle repeatedly, until it became a lifestyle.

Isn’t resilience following a similar path? In conversations with executives, in business media, and in this very publication, there’s ample evidence that leaders of organizations around the world are following an exercise regimen of resilience reps spanning strategy, supply chains, finance, systems, operations, and the workforce, with a goal of achieving resilience as a way of being—a means to its own end. It seems we’re in the midst of the resilience movement.


Access more insights on how to build a more resilient organization at www.deloitte.com/resilience